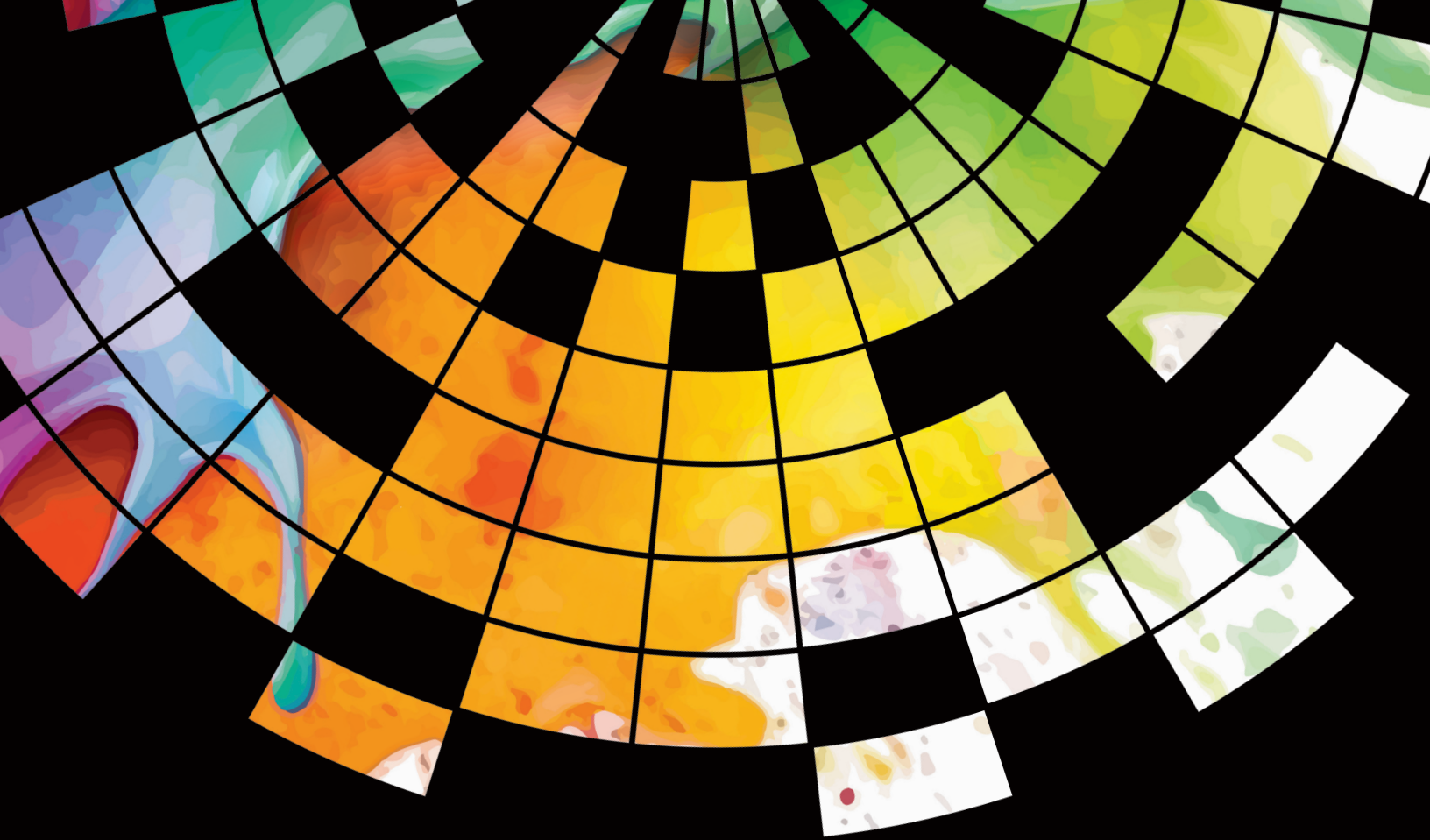




UNDERGRADUATE RESEARCH SYMPOSIUM

2026 EVENT PROGRAM

ARTS • SCIENCES • HUMANITIES • SOCIAL SCIENCES

[URDS.UOREGON.EDU/SYMPOSIUM](https://urds.uoregon.edu/symposium)



2026

UNDERGRADUATE RESEARCH SYMPOSIUM

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Welcome to the 16th Annual Undergraduate Research Symposium

May 7, 2026

Over the past 16 years, the Undergraduate Research Symposium has served as an open house of the public research university and amplified the University of Oregon's academic and service mission as a flagship liberal arts and sciences institution. The symposium steering committee has advanced two fundamental outcomes since the event's debut in 2011: the academic and career development of our students; and the direct engagement of the campus and broader communities with our students. The symposium provides a venue for disseminating new knowledge and creativity while inviting community members to visit campus and get to know our students through their ideas, discoveries, findings, and artistic expressions.

Over the past fifteen years the symposium has celebrated the research, creative work, and experiential learning of 5,845 student presenters, and recognized the mentorship of 3,580 faculty members, graduate students, and community partners. From the inaugural cohort of 69 presenters and 40 mentors representing 20 majors and four colleges in 2011, the symposium has expanded in scope and diversity to the current 597 presenters and 422 research mentors.

The record number of 493 presentations this year encompasses students from all eight colleges and schools, the Phil and Penny Knight Campus for Accelerating Scientific Impact, the Ballmer Institute for Children's Behavioral Health, 82 majors, and 73 minors. The breadth of participants is further illustrated by the 134 research centers, institutes, laboratories,

museums, and archives that hosted undergraduate presenters with 344 presenters receiving funding to support their research and creative work from 83 different internal and external sources.

The symposium continues to partner with students and mentors to diversify presentation formats. The symposium began with traditional oral and poster presentation formats and over time has adapted to offer formal options for music, dance, and theater performances; poetry and creative writing readings; film screenings; art, design, and architecture exhibits; works-in-progress talks and sessions; gallery walks; and multimedia showcases. In alignment with the Oregon Rising Career Readiness Goal this year we will introduce the Career Insights and Experiences presentation category, encouraging students to reflect and report on their professional and career development opportunities—from internship and study abroad programs, to civic engagement and advocacy work, leadership involvement, case and pitch competitions, conference participation, and entrepreneurship.

Ultimately, the symposium has evolved into a scaffolded experience where many students present multiple years spanning from a first-year seminar to a capstone honors thesis, or their research across different labs and research environments.

The symposium has fostered a network of partnerships to incorporate high schools, community colleges, visiting McNair Scholars, alumni, donors, and community members into the annual program and as a gateway to the institution. In 2026 the symposium is excited to launch a new partnership with the Office of Student Financial Aid and Scholarships and Stamps Scholars Program to invite Stamps Scholars from across the country to visit campus to present at the symposium and engage with prospective graduate programs.

The alumni keynoter personifies the convergence of the symposium's two enduring outcomes. Annually, the symposium team solicits nominations for an alum five to ten years out from graduation and invites the selectee to return to campus to deliver the reception

keynote reflecting on how their undergraduate research/creative work experience shaped their career journey post-completion. They also spend the day meeting with students through class visits and workshops. This year we are privileged to host 2018 history and environmental studies graduate Mérida Mehaffey, Bard Graduate Center master's student studying museum ethics, curatorial practice, and Native American material culture.

Congratulations to all the student participants and their research mentors; and welcome to all visiting this year!



Kevin Hatfield

Chair, Undergraduate Research Symposium Planning Committee

Assistant Vice Provost for Undergraduate Research and Distinguished Scholarships



The University of Oregon is an equal-opportunity, affirmative-action institution committed to cultural diversity and compliance with the Americans with Disabilities Act. This publication will be made available in accessible formats upon request. Accommodations for people with disabilities will be provided if requested in advance by emailing ugresearch@uoregon.edu.



Agenda Overview

Visit our [schedule web page](#) for full symposium schedule with oral presentations, creative work, film screening, career insight and experience, and poster locations in the EMU and Alan Price Science Learning Commons, as well as presenter names and project descriptions and titles.

May 7

- 9:00-10:30 a.m. Concurrent Oral Presentation Sessions
- 9:00-10:30 a.m. Works-in-Progress Session 1 (Price Science Library)
- 10:45 a.m.-12:15 p.m. Works-in-Progress and Career Insights and Experiences Session 2
(Price Science Library)
- 10:45 a.m.-12:15 p.m. Concurrent Oral Presentation Sessions
- 12:15-1:15 p.m. Keynote Reception in Redwood Auditorium
 - Opening Remarks by University President Karl Scholz
 - Address by Mérida Mehaffey '18 (Environmental Studies, History)
- 1:30-3:00 p.m. Concurrent Oral Presentation Sessions
- 1:30-3:00 p.m. Works-in-Progress and Career Insights and Experiences Session 3
(Price Science Library)
- 3:15-4:45 p.m. Concurrent Oral Presentation Sessions
- 4:30-6:30 p.m. Poster Session in EMU Ballroom and Redwood Auditorium
- 5:30-7:30 p.m. Asian Studies Event (EMU Cedar and Spruce Rooms)

May 28

All remote presentation videos will be available on the symposium [YouTube channel](#) as an ongoing digital exhibit of undergraduate research and creative work, curated through thematic playlists that are keyword searchable.



The Social Art of Research

Alumni Keynote Speaker Mérida Mehaffey '18

Thursday, May 7, 2026, 12:30 p.m., EMU Redwood Auditorium

Also available on the [symposium YouTube channel](#)

Mérida is an interdisciplinary scholar based in Brooklyn, New York. She is currently a master's student at Bard Graduate Center, where she studies museum ethics, curatorial practice, and Native American material culture. Her research is grounded in a strong belief in the importance of relational thinking, and its power to shape how knowledge is co-constructed.

Mérida graduated from the University of Oregon in 2018 (Environmental Studies and History), where she concentrated on environmental studies and cultural history. While pursuing her bachelor's degree she participated in the UO's Emerging Leaders Program and the Ronald E. McNair Scholars Program. As an undergraduate she traveled to New Zealand to study conservation and developed a deep interest in Oceanic art and cultural history. Through research on environmental history, she began to explore the intersection of land-based knowledge, politics, and material culture.

Mérida's undergraduate honors thesis focused on the environmental history of Mātīu Somes Island, which is situated off the coast of Wellington, New Zealand. This project also examined collaborative



Mérida Mehaffey '18
**Environmental
Sciences, History**



Alumni Keynote Speaker

land management partnerships, between Maori and non-Maori stakeholders, that developed after treaty redress. As part of this process, Mérida conducted primary research in New Zealand, which was supported by a UROP mini grant. Her thesis experience opened up new questions about land politics and methodologies like oral history, both of which she has explored in her graduate work, through an art-historical lens.

Soon after relocating to New York City to work in sustainable fashion, an experience teaching art history in New York City public schools led her to the museum field. In 2024 Mérida began pursuing a master's degree in design history and material culture at Bard Graduate Center. Her graduate studies have taken her abroad to work at the Pitt-Rivers Museum and more recently at the Wheelwright Museum of the American Indian. Mérida is currently training as a curator and is part of the Metropolitan Museum of Art's Alexis Gregory Curatorial Practice Program.

Centering collaborative art-historical frameworks, she engages curatorial strategies that prioritize multivocality and epistemological diversity. Concentrated on ethical scholarship, Mérida also researches how to advance culturally-responsive, care-oriented methodologies in the museum field. Her central focus is contributing to public scholarship, which she does as a member of Bard Graduate Center's Public Humanities and Research department.

In her keynote address, Mérida will discuss how her diverse undergraduate coursework and experiences conducting independent research prepared her for her current research, which explores the intersections of museum studies, cultural history, anthropology, and fine art. Her talk will focus on the social nature of research and how knowledge is co-constructed, concentrating on collaborative art-historical frameworks and their potential for expanding epistemological diversity in museum spaces.



Keynote Address Program

Redwood Auditorium, EMU

12:15 Welcome

Kevin Hatfield, Symposium Committee Chair, Assistant Vice Provost for Undergraduate Research and Distinguished Scholarships

12:20 Remarks from the President and Presentation of CURE Faculty Research Mentor Awards

University of Oregon President Karl Scholz

12:35 Introduction of Keynote Speaker

Kevin Hatfield

12:40 “The Social Art of Research”

Keynote Address by Mérida Mehaffey '18, Environmental Studies, History

1:00 Discussion and Q&A with Mérida Mehaffey

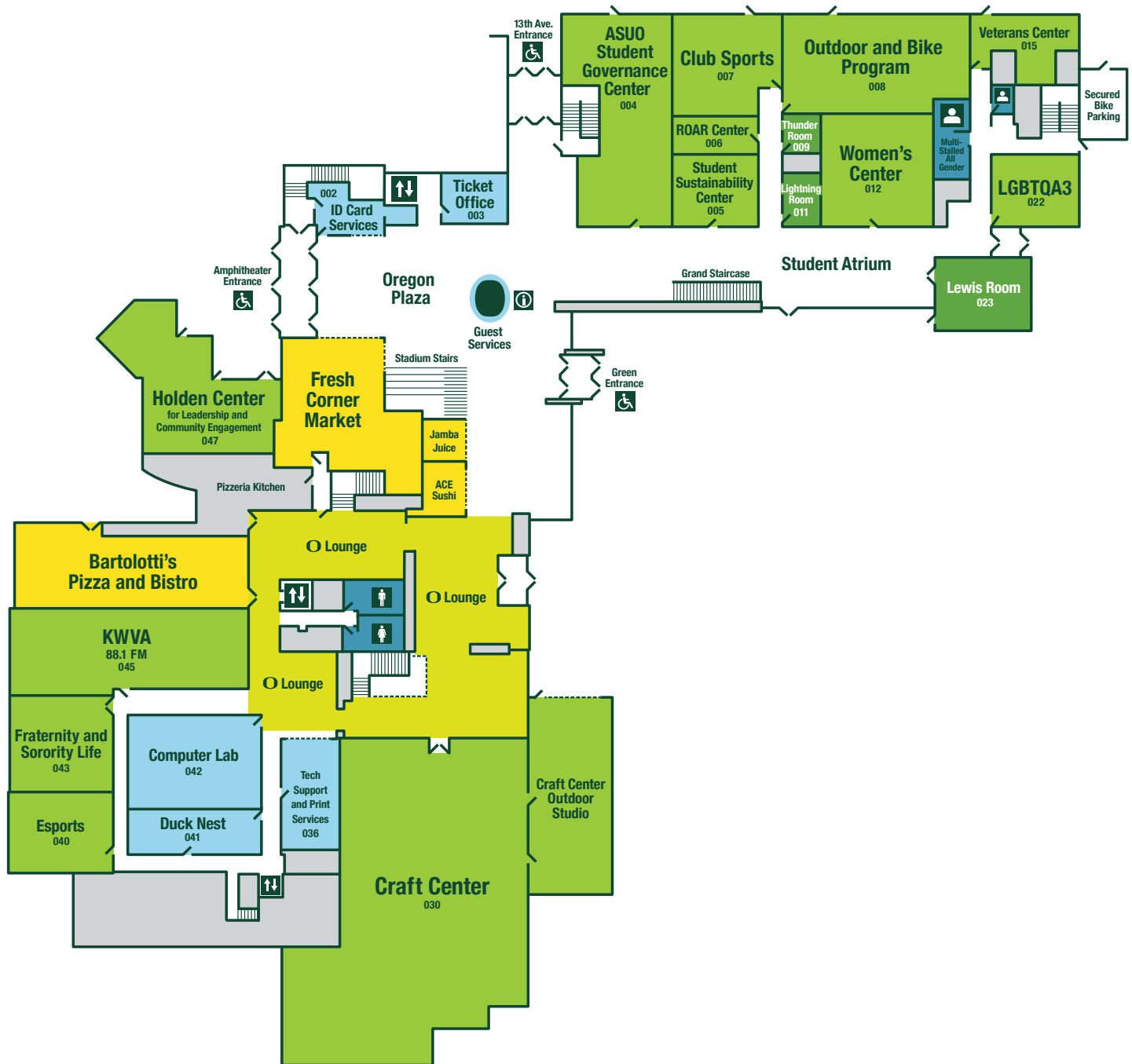
1:10 Remarks from Interim Vice President for Research and Innovation

Geri Richmond, Interim Vice President for Research and Innovation, Presidential Chair in Science and Professor of Chemistry

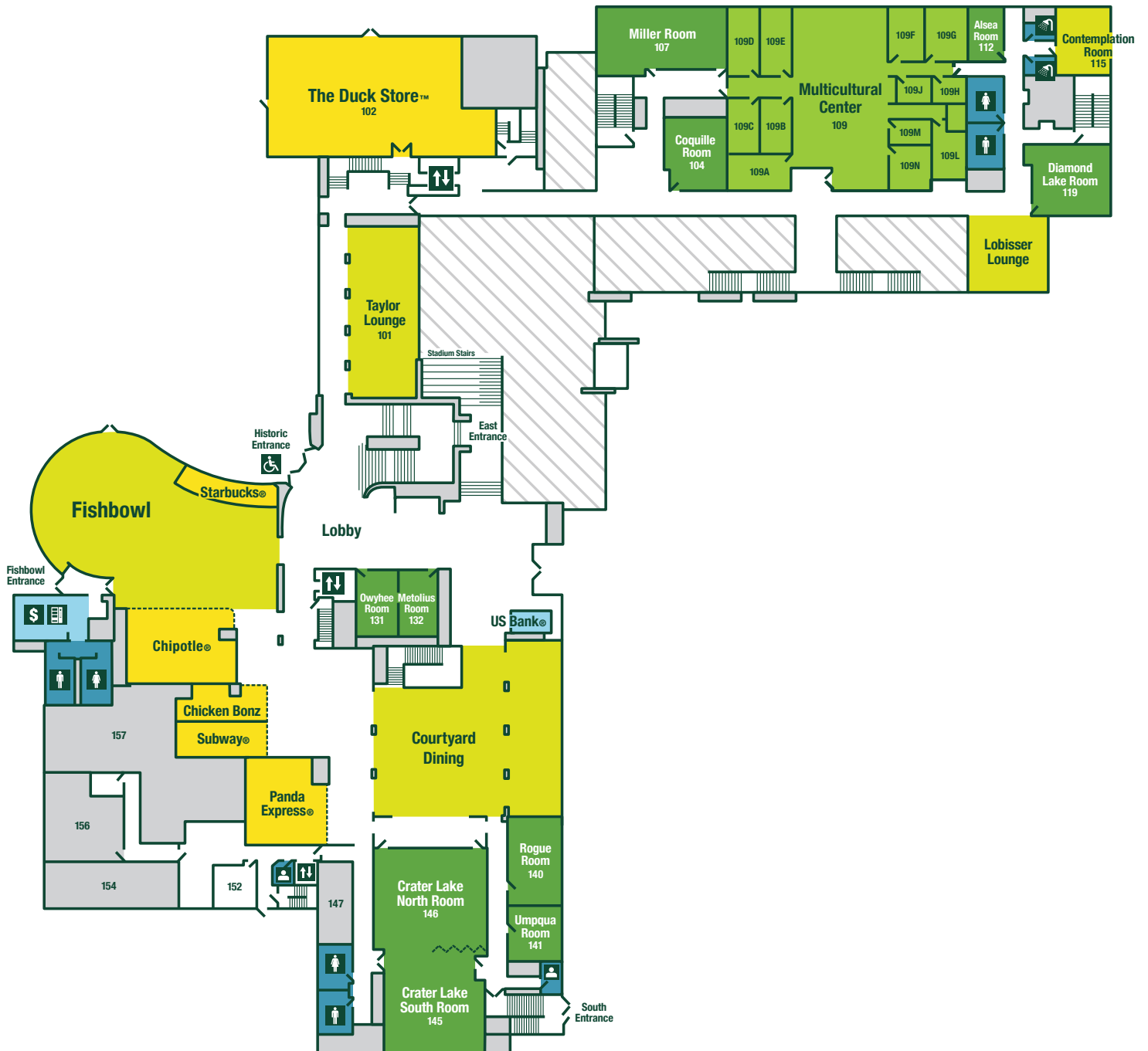
1:15 Conclusion of Reception, Introduction of Concurrent Presentation Sessions

Kevin Hatfield

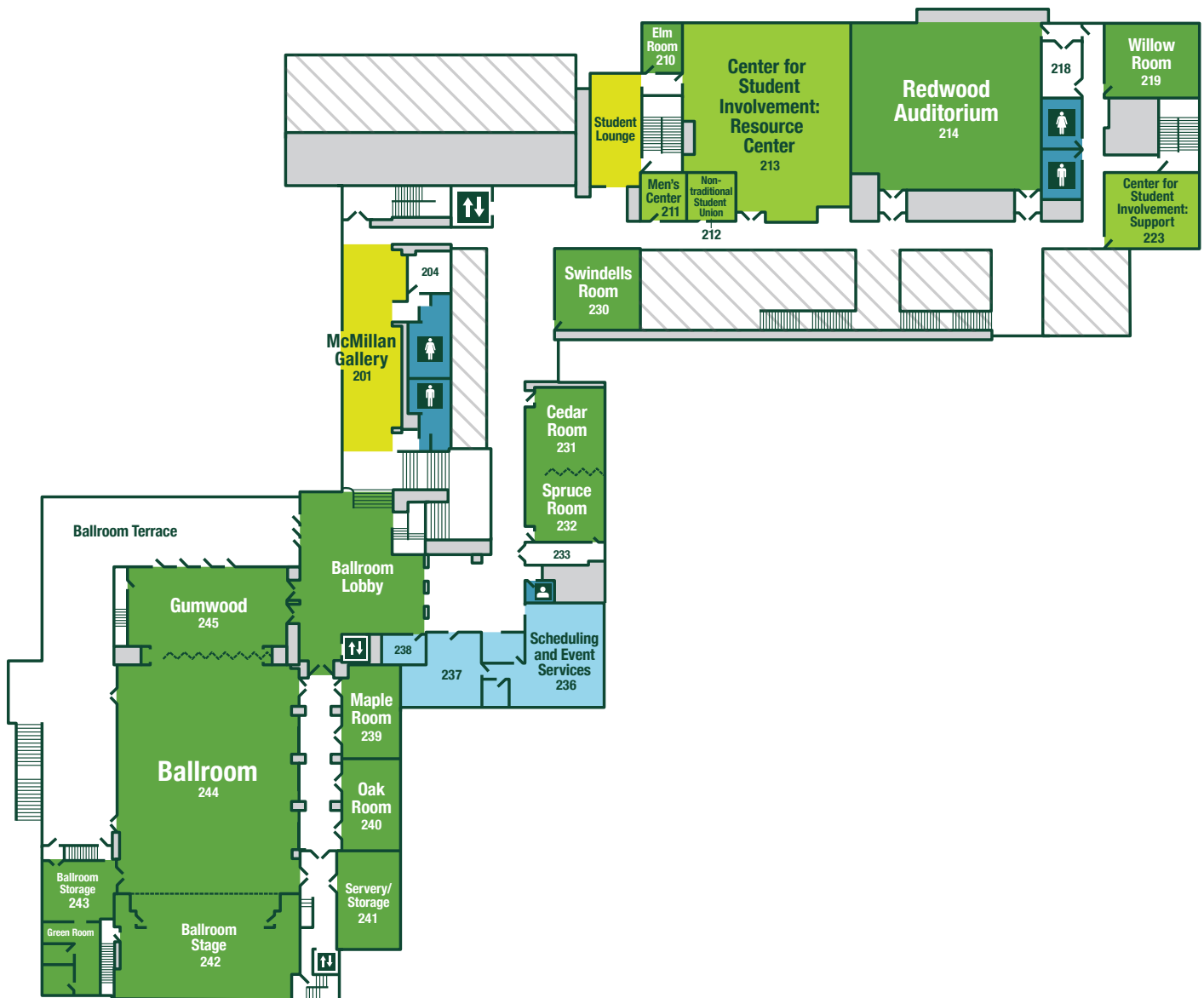
Erb Memorial Union Ground Floor



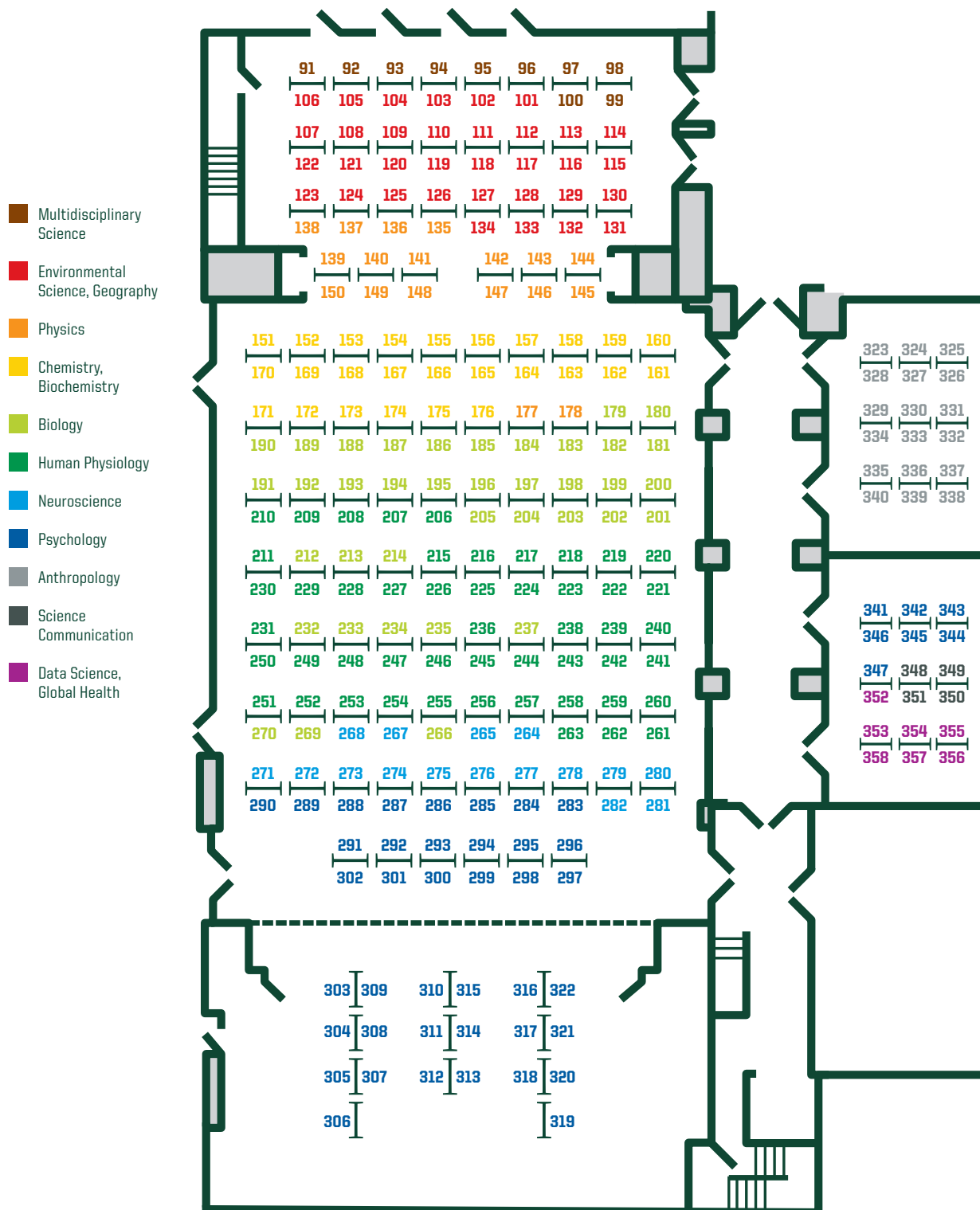
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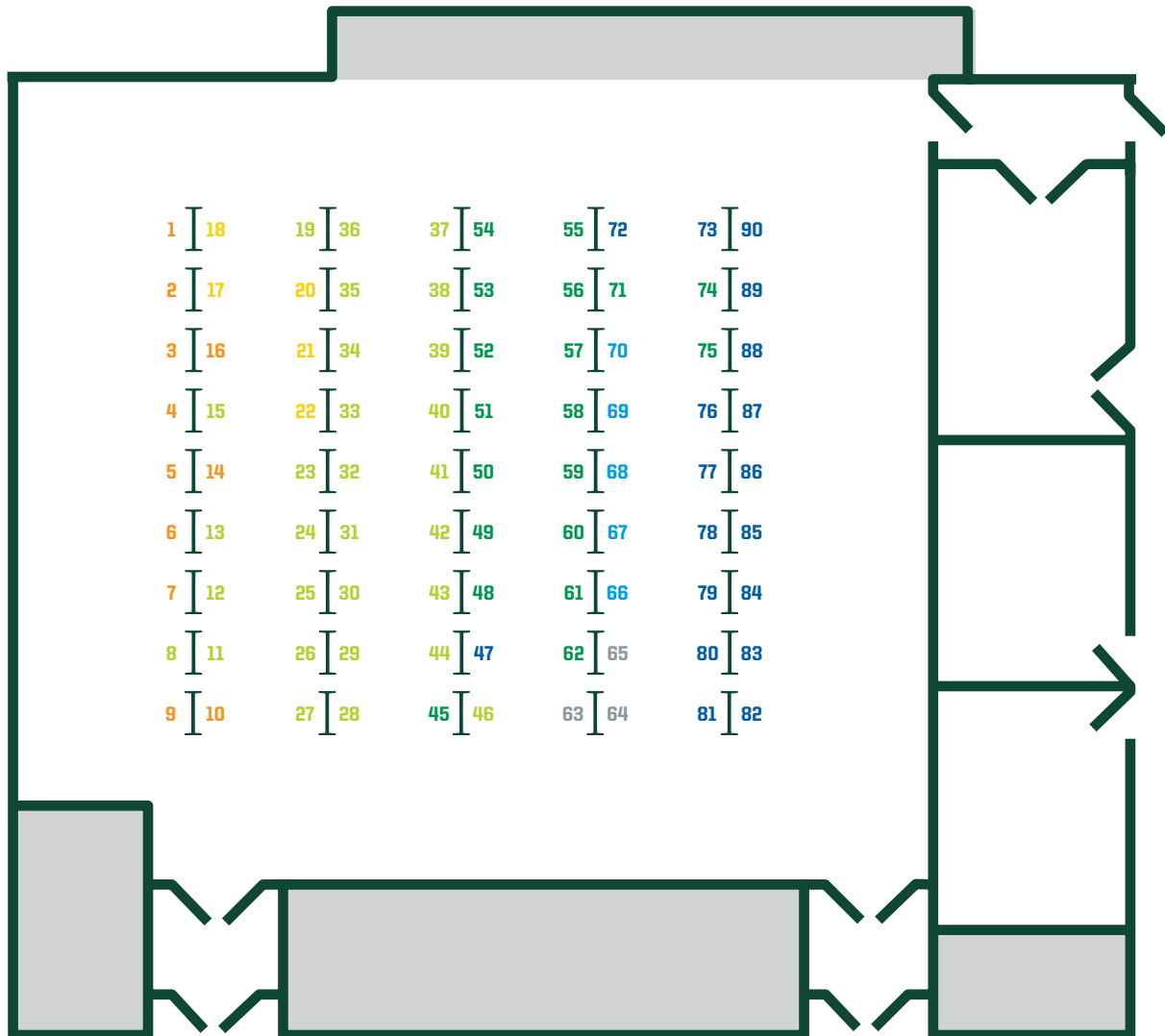
Erb Memorial Union Level Two



11



Erb Memorial Union Redwood Auditorium



- Art, Architecture
- Business
- Social Sciences, Humanities
- Legal Studies, Sociology, Political Science
- Linguistics
- Education
- International Studies



Asian Studies Research Event

Thursday, May 7, 5:30-7:30 p.m., EMU Cedar and Spruce Rooms

This event is free and open to the public. Food and drinks will be served. It will be a fun way to learn about research and celebrate student achievements. Presenters are eligible to compete for the Asian Studies Research Award.

Undergraduate Presentations

1. Gabby Shaffer, "Pottery from Prasat Baset, Cambodia: A Study Of Earthenware Ceramic Vessels and Rim Forms"
2. Hiram Hsu, "Black Rain: Bombings on Japanese Civilians in World War II" (poster)
3. Sean Gerbradt, "South Korean Migration" (poster)
4. Ellie Howard, "Chips on the Table: Examining the Semiconductor Industry in the Context of Geopolitics"
5. Tarini Ramasamy, "Cultural Practice Between Tamil-Indian and Tamil-American Musicians: A Thematic Analysis"
6. Karly Nelson, "Reweaving Traditions: Kimono, Upcycling, and Cultural Sustainability"
7. Panel Q&A



Graduate Presentations

1. Yuan Fang, "Serving the Beautiful or the Powerful? Bronze Mirrors in Ancient China"
2. Shannon Fassler, "Palatial Complexities: Imperial Identity, Gender, and the Role of Architecture in the Forbidden City and The Last Emperor"
3. Teppei Fukuda, "Transcreating Strange Sounds: Miyazawa Kenji's Onomatopoeic Signification of the Natural World and Gary Snyder's Interpretive Translation"
4. Rina Kita, "Post-War to Post-Memory: Okinawan Identity in the Works of Teruya Yūken and Sakata Kiyoko"
5. Nick Wirtz, "Double Vision: The Fictional Observational Drawing's Multistable Subject"
6. Chenmeng Li, "Between Underground and Mainstream: Xinjiang Hip Hop Culture in Contemporary China from the 2010s to the Present"
7. Sanjula Rajat, "Hindu Nationalism, Reproductive Justice, and the Politics and Possibilities of Trans Reproduction in India"
8. Panel Q&A

Contact Alisa Freedman (alisaf@uoregon.edu) or Dan Buck (danielb@uoregon.edu) if you have any questions.

See you on May 7 for informative presentations, lively discussions, and a celebration of research.



Acknowledgements

Principal Sponsors

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Division of Undergraduate Education and Student Success
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Lundquist College of Business
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Robert D. Clark Honors College
Ronald E. McNair Scholars Program
Undergraduate Research Opportunities Program
University of Oregon Alumni Association
University of Oregon Libraries
University of Oregon Stamps Scholars Program
University Advancement
University Housing

We wish to recognize the Institute of Neuroscience, the Phil and Penny Knight Campus for Accelerating Scientific Impact, University of Oregon Libraries, and Center for Undergraduate Research and Engagement for co-funding the printing of the 360 presenter posters.

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Presenter Statistics

The Undergraduate Research Symposium debuted in 2011 with 69 presenters and 40 research mentors spanning 20 majors and four colleges. Over the past sixteen years the symposium has hosted 5,845 student presenters and 3,5807 research mentors.

We are inspired to celebrate the work of 597 presenters and their 422 research mentors at the 16th annual symposium—both new milestones. We also wish to acknowledge the unprecedented number of 115 graduate student mentors this year.

The historic number of 493 presentations this year encompasses students from all eight colleges and schools, the Phil and Penny Knight Campus for Accelerating Scientific Impact, the Ballmer Institute for Children's Behavioral Health, 82 majors and 73 minors.

The breadth and diversity of undergraduate research and creative work is further illustrated by the 134 research centers, institutes, groups, laboratories, museums, and archives that hosted undergraduate presenters. 341 presenters received funding to support their research and creative work from 83 different internal and external sources.

Several institutionally sponsored research experiences for undergraduates (REUs) have incorporated symposium participation as a condition of the award to provide academic, professional, and career development, including:

- Ronald E. McNair Scholars Program
- Center for Undergraduate Research and Engagement's (CURE) Summer Under Research Fellowship (SURF), Summer Undergraduate Research Fellowship-Humanities (SURF-H), First-Year Research Experience (FYRE) Fellowship, Small Grants, and Conference Travel Award Programs

- Undergraduate Research Opportunities Program's (UROP) Hui Undergraduate Research Scholars, Humanities Undergraduate Research Fellowship (HURF), Knight Campus Undergraduate Research Scholars, O'Day Fellowship, Presidential Undergraduate Research Scholars (PURS), Vice President for Research and Innovation Research Fellowship (VPRI), and UROP Mini-Grants
- Oregon Humanities Center's Humanities Undergraduate Program for Archival Studies and Practice (HUAF) fellowship

In response to the pandemic the symposium shifted to a virtual format in 2020 and 2021 allowing 667 students to continue to present their research and creative work via synchronous remote presentations with expanded reach to families, alumni, donors, and the community. The necessity of recording presentations catalyzed the creation of a permanent digital exhibit of UO undergraduate research on the [symposium YouTube Channel](#) currently curating 527 videos comprising over 1,200 research presentations. The symposium continues to offer a virtual modality to participants to expand access, and continuously adds new content to the Channel by offering in-person presenters the option of self-recording presentation videos for submission.

The symposium is honored to continue a longstanding partnership with Central Oregon Community College, Lane Community College, and Umpqua Community College, and expand the collaboration with the NSF Science Pathways Program and Student Orientation Programs to develop a visit day agenda for the visitors, including a touch-down room with lunch, campus hosts, tour of Yasui Hall (home of the Transfer Scholars Residential Community) and the facilitation of transfer student meetings with academic departments and faculty.

This year the symposium is honored to launch a new partnership with the UO Office of Student Financial Aid and Scholarships and the Stamps Scholars Program to invite visiting stamps scholars from Stamps Scholars schools across the country. We welcome Stamps Scholars from Mercer University and Tulane University. The symposium continues to partner with the UO Ronald E. McNair Scholars Program to host visiting McNair Scholars and are delighted to welcome a McNair Scholar from Siena Heights University.

The symposium and campus partners sponsor 25 presenter awards across the humanities, social sciences, sciences, and arts, distributing nearly \$13,000 to up to 73 students. Winners will enjoy the opportunity to have their work, bios, and research mentors' bios installed in the residence halls learning commons, UO Libraries, and new EMU-symposium exhibit along tour routes for prospective students.

Presenter Profile

Total presentations.....	493
Total presenters.....	597
Total research mentors	424

All Colleges: Major and Minor Programs Represented

Colleges	8
Campuses	2
Majors.....	83
Minors.....	71

Institutional Profile

UO FTFT Students	536
UO Transfer Students	61
UO First Generation	70
ARC Students (former & current)	95
Lane Community College Students	4
Portland State University.....	2
Umpqua Community College Students	4
Visiting McNair Scholar	1
Visiting Stamps Scholar	3
Other	3

Class Standing

First-Year	52 (9%)
Sophomores	90 (15%)
Juniors	139 (23%)
Seniors	316 (53%)

Presentation Type

Poster	360 (73%)
Oral	77 (16%)
Creative Works	31 (5%)
Works in Progress	9 (2%)
Virtual	8 (2%)
Career Insights and Experiences.....	8 (2%)

Research Area by Presentations

Natural/Physical Sciences	250 (51%)
Social Sciences.....	157 (32%)
Humanities	68 (14%)
Design.....	11 (2%)
Fine/performance arts projects	7 (1%)

Major and Minor Programs Represented by College

Ballmer Institute for Children's Behavioral Health

Majors	2
Child Behavioral Health.....	2
Pre-Child Behavioral Health.....	1

College of Arts and Sciences

Majors:	46
Human Physiology	77
Psychology.....	77
Neuroscience	46
Anthropology.....	32
Biology	30
English	28
Environmental Science	21
Biochemistry.....	20
Chemistry.....	18
Physics	18
Political Science.....	18
Sociology	15
Multidisciplinary Science.....	14
Data Science	11
Earth Sciences	11
Environmental Studies	10
Global Studies.....	10
Marine Biology	10
Mathematics.....	8

History	7
Computer Science	6
Economics	6
Philosophy	6
Linguistics.....	5
Spanish.....	5
Spatial Data Science and Technology	5
Comparative Literature.....	4
Geography	4
Women's, Gender and Sexuality Studies....	4
Cinema Studies.....	3
Classics	3
Pre-Global Studies	3
Russian, East European, and Eurasian Studies	3
Theater Arts	3
Chinese.....	2
Exploring	2
French and Francophone Studies.....	2
General Social Science	2
Religious Studies	2
Asian Studies	1
Ethnic Studies.....	1
German.....	1
Humanities	1
Japanese	1
Mathematics and Computer Science	1
Romance Languages	1

Minors	54	Ethics	2
Chemistry.....	48	French and Francophone Studies.....	2
Biology	24	Forensic Anthropology	2
Global Health.....	17	German.....	2
Spanish.....	17	Arabic Studies.....	1
Creative Writing	16	Asian Studies	1
Mathematics.....	11	Classical Civilization	1
Earth Sciences	9	Computer Information Technology	1
Psychology.....	9	Digital Humanities.....	1
Criminology	8	Environmental Humanities.....	1
Sociology	8	European Studies.....	1
Queer Studies	7	Folklore and Public Culture	1
Interdisciplinary Cognitive Sciences	5	Food Studies	1
Japanese	5	Geography	1
Latinx Studies.....	5	Global Studies.....	1
Political Science.....	5	History	1
Global Service	4	International Studies	1
Physics	4	Italian.....	1
Anthropology.....	3	Korean.....	1
Biochemistry.....	3	Linguistics.....	1
Black Studies	3	Mathematical Statistics	1
Disability Studies.....	3	Middle East–North African Studies	1
English	3	Philosophy	1
Environmental Studies	3	Russian, East European, and Eurasian Studies.....	1
Economics	2	Women’s, Gender and Sexuality Studies.....	1
Ethnic Studies.....	2		
Chinese.....	2		
Comics and Cartoon Studies.....	2		
Comparative Literature.....	2		
Computer Science	2		
		Robert D. Clark Honors College	
		Students	162

Phil and Penny Knight Campus for Accelerating Scientific Impact

Minors 2

Bioengineering14

Brewing Innovation1

College of Education

Majors 3

Communication Disorders and Sciences5

Educational Foundations4

Family Human Services11

Minors 2

Secondary Education Foundations.....4

Special Education.....1

College of Design

Majors7

Architecture16

Planning, Public Policy and Management... .4

Interior Architecture..... 6

Art3

Art and Technology1

Art History1

Pre-Planning, Public Policy
and Management2

Minors 5

Planning Public Policy and Management3

Art History1

Landscape Architecture2

Art and Technology1

Product Design2

School of Music and Dance

Majors 4

Music 9

Music Composition3

Music Performance1

Dance1

Minors 3

Music5

Dance2

School of Journalism and Communication

Majors 3

Journalism: Advertising4

Journalism: Public Relations4

Journalism 6

Minors 2

Documentary Film Production.....1

Science Communication..... 8

Lundquist College of Business

Majors 3

Accounting.....1

Business Administration11

Pre-Business Administration..... 6

Minors	4
Business Administration	8
Entrepreneurship	2
Sports Business	1
Sustainable Business	1

School of Law

Minor Programs	1
Legal Studies	12

Lane Community College

Majors	6
Educational Foundations	1
Environmental Science	1
Environmental Studies	1
Family and Human Services	1
Human Physiology	1
Psychology	1

Umpqua Community College

Majors	2
Physics	3
Computer and Information Science	1

Visiting McNair Scholars

Sienna Heights University	
Majors	1
Psychology	1

Visiting Stamps Scholars

Mercer University	
Majors	3
Biochemistry	1
Mechanical Engineering	1
Spanish	1

Tulane University

Majors	2
Biology	1
Theater Arts	1

Research Centers, Institutes and Labs

Acquiring Minds Lab	3
Action Control Lab	1
Adaptive Memory Lab	1
ADDRESS: Mental Health Lab	5
Aging and Vascular Physiology Laboratory	3
Agne Lab	2
Ambati Lab (Ocular Angiogenesis– Corneal Research)	9
Aoki Coastal Ecology Group	3
Ballmer Institute for Children and Behavioral Health	2
Basic and Applied Prevention Science Lab	1
Benoit Lab for Therapeutic Biomaterials	2
Bias Busting Social Cognition Lab C2 Lab	2

Bowerman Sports Science Center	3	DIMENSIÓN Group (Diaspora and Implementation research for Mental health Enhancement and Services Innovation Group)	1
Brain and Memory Lab	2	Distopia (Distributed Systems and Databases) Lab	1
Brain Development Lab	4	Diversity and Social Cognition Lab C2 Lab . . .	2
Brozek Group (Molecular Materials Science)	1	Doe Lab	1
Cardiopulmonary and Respiratory Physiology Lab (Lovering lab)	4	DuBois Biocultural Research Lab	1
Center for Advanced Materials Characterization in Oregon (CAMCOR)	1	Dufek Multiphase Flow Group (Eruptive, Planetary and Environmental Processes) . . .	2
Center for Science Communication Research	2	Earth Surface Processes Laboratory (Josh Roering's Geomorphology Group) . . .	3
Center for the Study of Women in Society (CSWS)	2	Earthquake Hazards Group	1
Center for Translational Neuroscience	4	Environmental Archaeology and Paleoecology Lab	1
Coastal Archaeology and Ancient Proteomics Lab	3	Exercise and Environmental Physiology Labs	4
Cognitive and Affective Influences Decision Making (CAIDe) Lab	1	Forrest Lab	2
Computational Socail Neuroscience Lab . . .	1	Global Health Biomarkers Lab	2
Cook Lab (Heterogeneous and Homogeneous Catalysis to Transform Organic Molecules)	1	Global Health Lab	2
Cresko Lab	1	Great Basin Archaeology Lab	2
Dalton Lab	1	Guillemin Lab	3
Darren W. Johnson Lab	1	Guldberg Lab	4
Dassonville Lab	1	Hallett Lab	4
Deku Lab	1	Hansen Lab (Molecular Dissection of Membrane Proximal Signaling)	2
DeRose Lab	1	Harms Lab (Evolutionary Biochemistry)	1
Developing Brains in Context Lab	1	HEDCO Institute for Evidence-Based Educational Practice	1
Developmental Social Neuroscience Lab . . .	1		

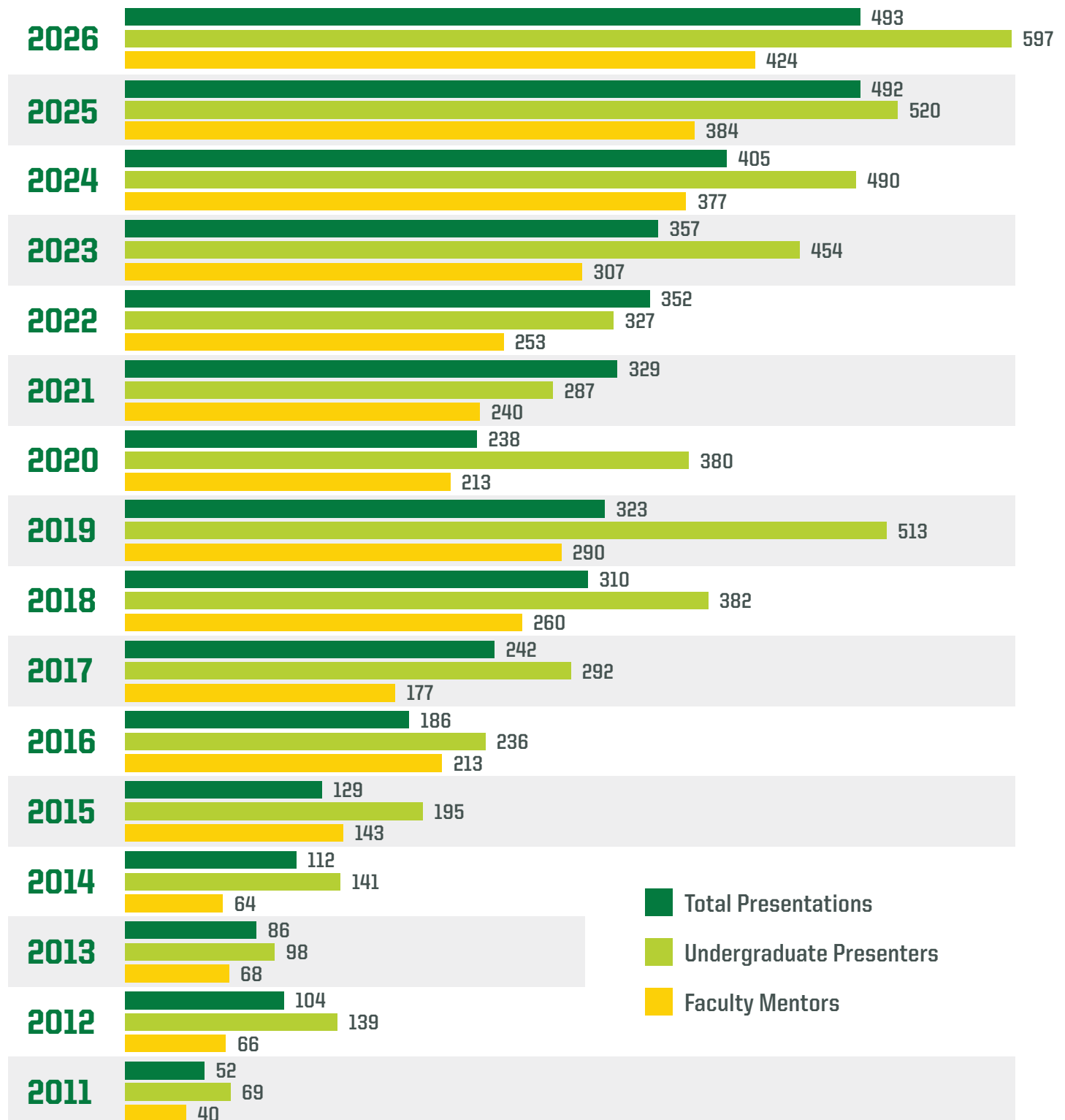
Hettiaratchi Lab	1	McCurdy Lab (Cell Signaling and Metabolism)	2
Hopkins Lab	1	McMorran Lab	1
Hutchinson Lab of Cognitive Neuroscience	2	Muscle Cellular Biology Lab	2
InfoGraphics Lab	1	Muscle Physiology Lab (Dreyer Lab)	5
Institute for Ecology and Evolution	20	Museum of Natural and Cultural History	2
Institute for Fundamental Science (IFS) ...	8	Neuromechnaics Lab	4
Institute for Policy and Research Engagement	1	Oceans and Ice Lab	1
Institute for Resilient Organizations, Communities, and Environments	1	Ong Lab	1
Institute of Molecular Biology	19	Optimizing Swallowing and Eating for the Elderly Lab—College of Education	1
Institute of Neuroscience	22	Oregon Center for Electrochemistry	1
Integrative Perception Lab	1	Oregon Center for Optical, Molecular and Quantum Science	3
Jasti Research Group	1	Oregon Cybersecurity Center of Excellence (OCCoE)	1
Kempler Group (electrochemistry enabling deep decarbonization)	1	Oregon Humanities Center	9
Kidd Creative Writing Program	22	Oregon Institute of Marine Biology	1
Kuhl Lab	1	Oregon Memory Group	2
KXN Lab Group	2	Oregon National Primate Research Center	1
Learner Corpus Research and Applied Data Science (LCR-ADS) Lab	1	Oregon Performance Research Laboratory	3
Learning Lab	1	Oregon Sleep Lab	7
Libuda Lab	2	Oregon Youth Empowerment Project	3
Lindberg Lab	1	Orthopaedic Biomechanics Lab	1
Lockery Lab (Seeking the biological origins of intelligent behavior)	2	Paleoecology and Biogeography Lab	1
London Stage Database	1	Parthasarathy Lab (Biophysics: Microbes and Microscopy)	1
Materials Science Institute	15	Personality Is Everywhere (PIE) Lab	1
McCormick Lab	1		

Phil and Penny Knight Campus for Accelerating Scientific Impact.	56	UO Special Collections and University Archives (SCUA).	4
Phillips Lab	1	University Health Services	1
Pine Mountain Observatory	5	UO Vertebrate Paleontology Lab	3
Plesa Lab	1	Washbourne Lab	3
Pluth Lab	2	Wayne Morse Center for Law and Politics ...	4
Ponisio Lab	1	Westerfield Lab	2
Postlethwait Lab	1	White Lab	7
Prevention Science Institute	5	Willett Regenerative Labs: Musculoskeletal Regenerative and Rehabilitation Engineering	1
Raciolinguistic Emotion Perception Psycholinguistics and Sociolinguistics Lab	1	Wong Lab (In situ spectroscopy of materials formation)	4
Rapp Lab	1	Wu Tsai Human Performance Alliance at Oregon	25
Rohlf's Lab	1	Zooarchaeology Lab	1
Social and Affective Neuroscience Laboratory	2		
Social Cognition Lab	1		
Soil and Water Lab	2		
Soil Plant Atmosphere Lab	1		
Southeast Asian Archaeology Lab	2		
Speech and Language Lab	1		
Spero Lab	3		
Swann Lab (Motor neuroscience of health and disease)	4		
Sylwestrak Lab (Molecular, Cellular, and Circuit Mechanisms of Motivated Behavior)	1		
Tallwood Design Institute	1		
The Renew Lab (Researching Eating and Nutrition to Enhance Wellness)	1		
		Sponsored/Funded Research and Creative Work Sources (83 Sources, 341 Students)	
		Alden Scholar Research Award	1
		American Chemical Society	1
		American Heart Association	1
		American Heart Association Scientist Development Grant	1
		Apex	3
		Baitis Undergraduate Research Scholarship	1
		Barry M. Goldwater Scholarship	2
		Blackwell Scholarship	1
		College of Arts and Sciences Experiential Learning Scholarship	19

Cascadia CoPes Hub	1	Heising-Simons Foundation	1
Center for Translational Neuroscience	1	Human Physiology Travel Conference Fund	1
Clark Honors College Mentor Research Program Funds	1	Hui Undergraduate Research Scholars	11
CoPes Hub CHARTER Program	1	Human Physiology Undergraduate Research Assistant Stipend	15
Center for Undergraduate Research and Engagement (CURE) Conference Travel Award	24	Humanities Undergrad Archival Fellowship (HUAf)	2
CURE First Year Research Experience Fellowship (FYRE)	6	HURF (Humanities Undergraduate Research Fellowship)	9
Center for Undergraduate Research and Engagement (CURE) Small Grants Award ...	11	Interior Architecture 484 Studio	1
CURE Summer Undergraduate Research Fellowship (SURF)	9	Joe and Clara Tsai Foundation	1
Department of Defense and Partnership for Clean Competition	1	Judy Fosdick Oliphant Scholarship (from the Global Studies Department)	1
Department of Human Physiology Internship Stipend	1	Kidd Creative Writing Workshops	22
Department of Human Physiology Undergrad Research Travel Award	1	Knight Campus Undergraduate Scholars (KCUS)	36
Department of Psychology	1	Knight Campus Undergraduate Training Experience (KCUTE)	2
Dr. Rob Chavez Start Up	1	Knight Campus Conference Travel Fund	1
Environmental Leadership Program	1	KXN Group Startup Fund	1
Experiential Learning Opportunity Scholarship	2	Ronald E. McNair Scholars Program	13
John Templeton Foundation and Templeton Religious Trust to CK	2	Microscopy Society of America Undergraduate Research Scholarship	1
Ganz Family Foundation	1	National Institute of Health (HL144128 and AG072805)	1
Global Health Mentored Research Program ..	2	National Institute of Mental Health	2
HEDCO Institute Undergraduate Scholars Program funding from private donors	1	National Science Foundation (NSF) Research Experience for Undergraduates (REU)	5
		Nike Inc	2
		Orthopedic Trauma Association	1

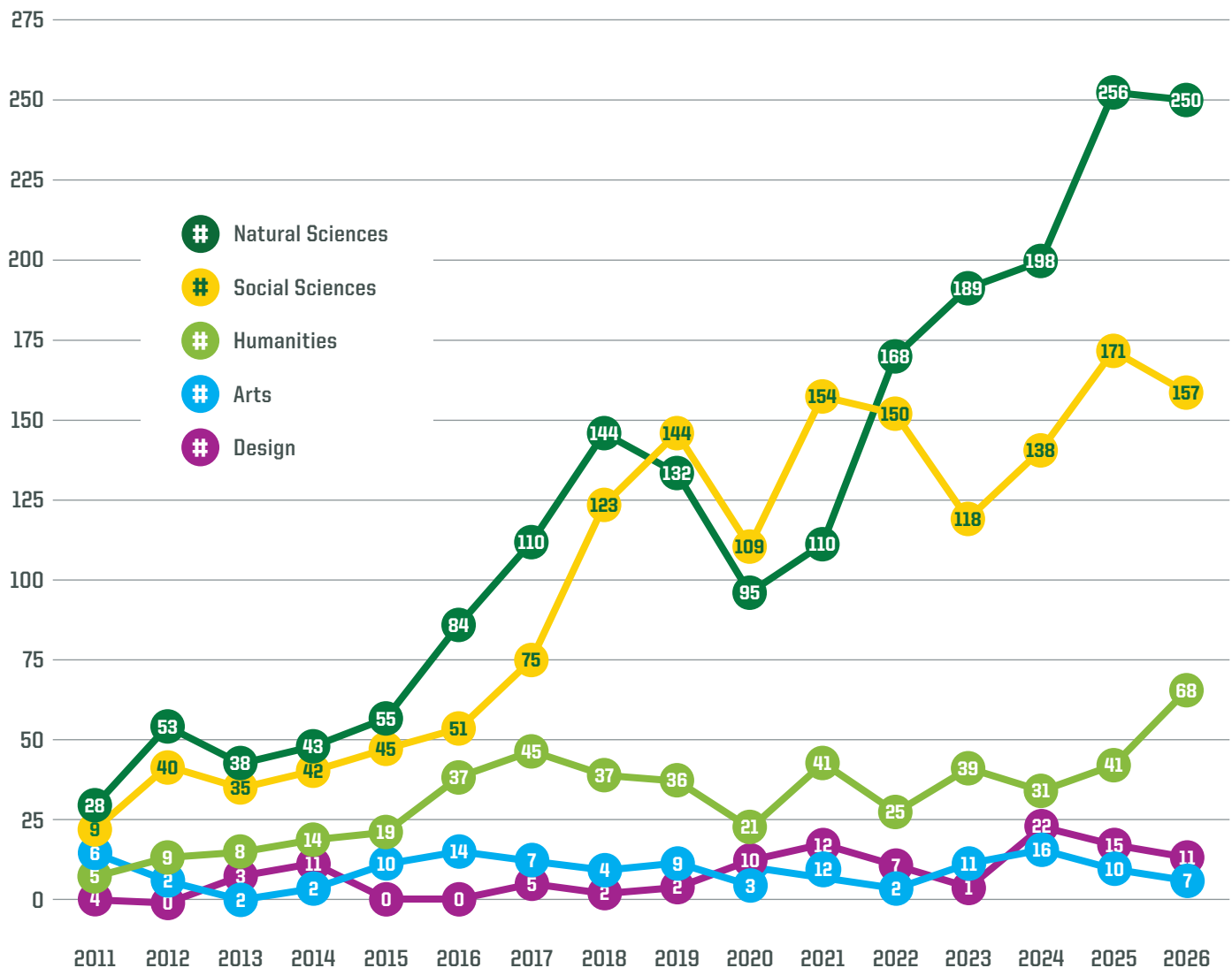
OURS Oregon Undergraduate	
Researchers in SPUR	3
Center for Undergraduate Research and	
Engagement (CURE) - Pathway to a Career	
Research Fund	1
PChem Undergraduate Fellowship	1
Peter O'Day Fellowship in	
Biological Sciences	3
Petroleum Research Fund	1
Portland State University Center	
for Entrepreneurship	2
Presidential Scholarship	1
Prison Education Program	1
Presidential Undergraduate Research	
Scholars (PURS)	5
Research Assistant Wages	1
Science Communication Research Small	
Grant Program	2
Stamps Scholarship	1
Summit Scholarship	21
Sustainable City Year Program	1
Center for the Study of Women in Society	
Summer STEAM Fellowship	1
The Oregon Foundation	1
Tinker Hatfield Award	1
U.S National Science Foundation Grant:	
Growing Collaborations and Student	
Training at the Elemental Analysis	
Facility at The Field Museum	1
Undergraduate Research and Conference	
Participation in Anthropology	1
UnderGrEBES (Evolutionary Biology and	
Ecology Students) Research Award	3
United States Department of Agriculture ...	2
UO Department of Architecture and	
Environment	1
UO Department of Chemistry	1
UO Department of Earth Sciences	5
UOWGS Undergraduate Research Award	1
Undergraduate Research and	
Distinguished Scholarships	
(URDS) Impact Fund	1
UROP (Undergraduate Research	
Opportunities Program)	25
Vice President for Research and	
Innovation (VPRI) Undergraduate	
Fellowship	7
Wayne Morse Scholarship	1
William and Genera Fieldman	
Scholarship	1
William T. Grant Foundation	3
Women in Science and Math (WiSM)	
Academic Residential Community (ARC)	
Summer Research Fellowship	2
Women in STEM Summer Research	
Scholarship	1
Wu Tsai Human Performance Alliance	11

Total Presentations, Presenters, and Faculty Mentors



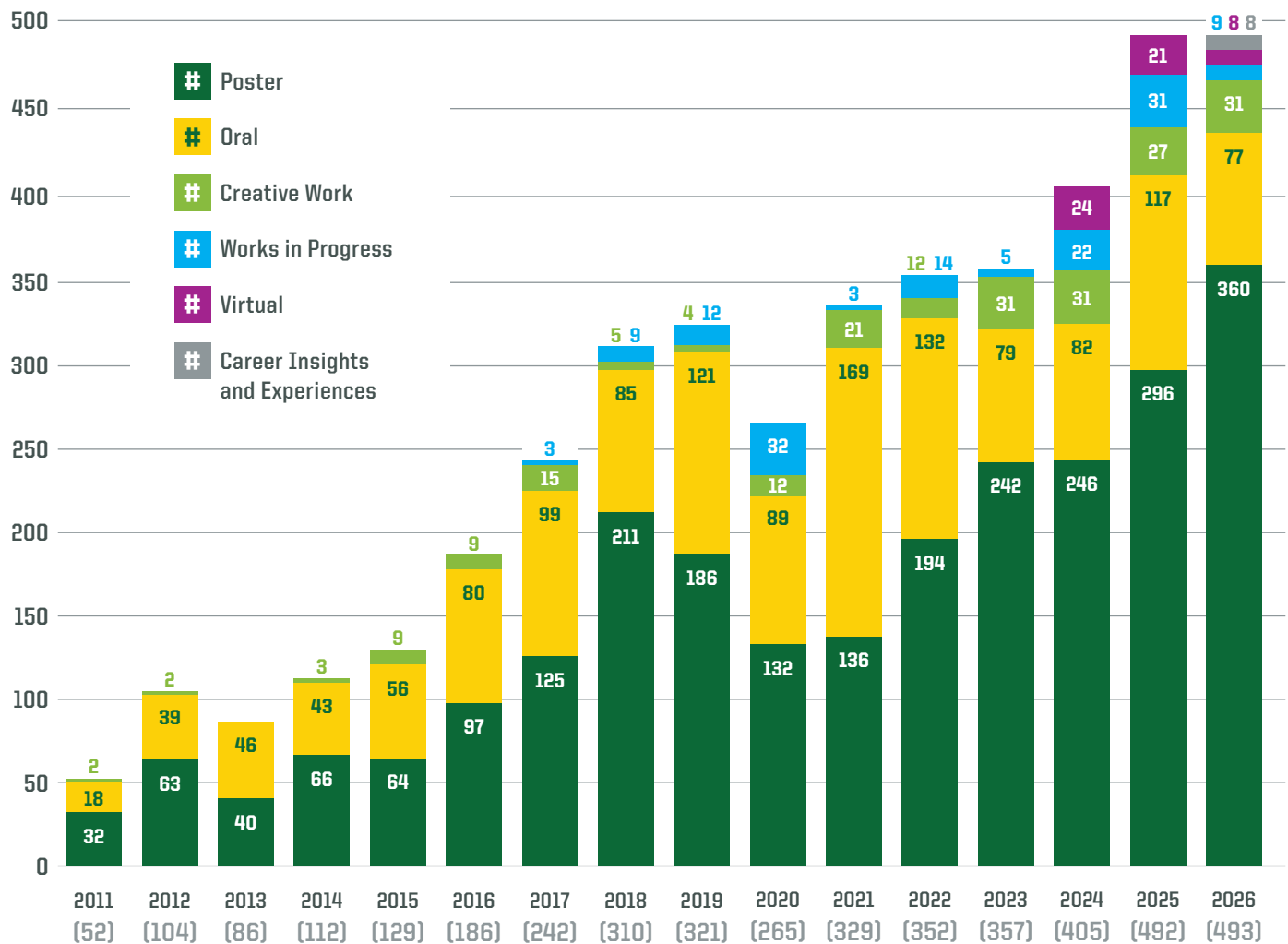


Total Presentations by Divisional Area





Total Presentations by Type





Symposium Presenters

Visit our [schedule web page](#) for full symposium schedule.

John Abraham	Madeleine (Mallie) Balser	Oliver Boorstein
Andrew Acevedo	Ana Barba	Cat Borowsky
Makena Adams	Kelly Barber	Tobias Boudreau
Sophie Adams	Elena Barth	Allison Bourassa
Alexandra Aeschliman	Emma Baxter	Jonny Bouton
Simon Aguilar Auld	Ashu Bazuzi	Kimberly Bowman
Isabella Albiani	Abby Beegle	William Boyd
Alex Allen	Sophia Beffert	Jessica Brannan
Keara Alonso-Lopez	Reanica Belknap	William Bransford
Parker Anderson	Jessalyn Beninati-Bautista	Ava Brenden
Maia Andrus	Cole Benventano	Rhiana Bretl
Will Angarola	Ezra Bergson-Michelson	Sam Brewer
Sophie Anjum	Olivia Bernhard	Janneke Broekhoff
Simon Apollo	Alekhyia Bhupalam	Owen Brooks
Zane Arky	Sophie Biegel	Xavier Brown
Elisa Ashton	Liam Bielat	Jerusha Brown
Henry Axon	Alicia Bierly	Lance Brown
Cameron Azizi	Liam Biesty	Akira Brown
Addie Bailey	Vaani Bindal	Mila Brucato
Jaya Baker	Audrey Boeschoten	Ella Bruun
Natalie Baker	Annabelle Bohling	Cooper Burke
Giovanni Balderas	Lara Bolourchian	Hope Burr
Kylie Balero	Flora Booker	Alo Burt

Symposium Presenters

Rye Butler-Corbett	Yun Craddock	Solange Dzeketey
Sydney Campbell	Chase Crandall	Alexis East
Cate Campbell	Rebecca Crook	Anna Eastin
Shaina Caplan	Becca Cruz	Ethan Ebbers
Leo Caropelo	Evelyn Cruz	Bella Ebner
Beatrix Carrott	Lynell Cuddy	Penelope Edwards
James Cecil	Sarah Culver	Kobe Edwards
Melody Chang	Andrew Curlett	Bear Elliott
Brooke Chapman	Clare Cushman	Yasmin Elzanaty
Fedor Chayka	Cocoro Darby	Faris Elzeyadi
Brandon Cheng	Maya Darmawi-Hicks	Isabella Engblom
Kalel Chester	Alana David	Liliana Escobedo
Nathan Chilin	Mitchell Davis	Diego Escobedo
Nicola Chmelir	Kimberley Davis	Isabela Espino-Marquez
Sameeha Chowdhury	Rowan Davis	J Eversberg
Carlo Cicconetti	Wynter Day	Emma Fauquembergue
Findlay Ciesla	Olivia Dean	Ava Feldman
Jessica Clark	Hannah Deibert	Peter Fengler-Johnson
Amber Clemons	Diego Delascio	Emily Ferrence
Tucker Cleveland	Rocio Dellarroquelle	Stella Fetherston
Chloe Cobos	Samara Dempsey	Meira Fiber-Munro
Jackson Coelho	Andrew Diaz	Sam Fischer
Autumn Cole	Emma Distifeno	Sasha Fish
Kian Collins	Kavi Dodge	Ella Fliesler
Pearstin Confenti	Aaron Drummond	Favour Foday
Percy Conrad	Benjamin Dunfee-Hall	Sophia Foerster
Emilio Cordero	Elizabeth Dunne	Makena Fortenbaugh
Karys Corsale	Thu Duong	Caroline Foskett

Symposium Presenters

Coretta Foster	Marie Claire Graham	Megan Henry
Ian Foster	Max Gulllickson	Fenn Hentschel
Madeline Fouts	Tessa Gushue	Brandon Hernandez-Ramos
Lily Francis	Zohar Guy	Blair Hickok
Bess Frerichs	Avery Hackenberg	Vivian Higgs
Nitai Gaash	Miles Hagen	Ben Himmelman
Grace Galliver	Macyn Hagen	Marina Hiple
Toni Garcia Galvan	Acacia Hahn	Dominic Hixson
Kiara Gardley	Auveen Hajarizadeh	Mackenzie Hobdy
Jack Garland	Armaan Hajarizadeh	Vega Hoffwood
Ava Garson	Eli Hale	Conor Holman
Adrianna Gatt	Yohann Hall	Ellie Howard
Harsh Gautam	Maya Hall	Benni Howard
Payton Gavaldon	Kam Hall	Marly Howell
Grace Gay	Olivia Hansen	Hiram Hsu
Michael Gehrig	Sara Hardwick	Hanna Hudson
Sean Gerbrandt	Joseph Harris	Sam Humphries
Silas Gerencer	Elle Harris	Marli Hutak
Parisa Ghavami	Emma Harris-Clippinger	Nikita Istratov
Ashlee Giandomenico	Tabitha Harrison	Sydney James
Zoe Gill-Errada	Maia Hart Smith	Blake Jeffries
Lia Godino	Greyson Haryanto	Lexi Jenkins
Hannah Godlis	Kris Hauke	Noah Jimenez
Sophie Gonsier	Chayton Hawk	Nels Johnson
Amelia Goodwill	Madelin Hawk	Bryce Jones
Josmarie Graciani	Kiana Heilfron	Brady Jones
Ray Grady	Charlie Heim	Ireland Joyce
Hannah Gragg	Arianna Hendler	Olivia Kadovitz

Symposium Presenters

Prabhuli Kapadia	Catalina Kurihara	Ella MacIsaac
Rose Kapelka-Wolpoff	Kalliope Kyriazis	Euan Mahood
Erin Karp	Ruby Lachenmeier	Wyne Johner Malaqui
Emma Kelly	Kat Lai	Gabriel Mancuso
Cameron Kelm	Samuel Lamb	Mollie Markey
Ally Kennedy	Audrey Lamirand	Alessandra Martinez
Quinn Keogh	Gaia Landsman	Arya Massarat
Charles Kerr	Abigail Langan-Forbes	Corin Matsuzaki
Andrew Kevin	Whitney Langford	Samuel Mayers
Graeme Kieran	Owen Laug	Aria McCarstle
Ester Kim	Jenny Le	Kaleb McClendon
Maliki King	Aleanna Lengkong	Caisa McCraw
Averie Kingsley	Kyleigh Leung	Lauren McCreary
Kaylee Kirkwood	Xiaoqing Liao	Hannah McCurry
Isabella Klawitter	Audrey Lillie	Keira McDowell
Aubrey Klebes	Karis Lincoln	Allie McFeron
Mady Kleidosty	Ava Linn	Jeffrey McNamee
Ember Klein	Charlotte Lippa	Jessica Mcneil
Lauren Kocheny	Luca Lippert	Keely Merten
Kaytlyn Kojima	Valeria Lomeli	Spud Miller
Sumaedha Konduri	Luna Lopez	Molly Milligan
Amelia Kotamarti	Sarai Lopez	Ivy Mills
Mary Kate Kramper	Adamaryz Lopez Navarrete	Grace Minnix
Louisa Krantz	Logan Love	Maria Mironova
Cam Kruckeberg	Jaelyn Lucero	Gayatri Misra
Leon Krueger	Jillian Lunnen	Emily Mitchell
Ella Kuhn	Mia Luscher	Eva Mitchell-Vargas
Allyson Kunze	Madeline Luu	Jen Mitlehner

Symposium Presenters

Jackson Mohr	Amalie Odegaard	Makenna Phillips
Emily Molianr	Charlotte Olds	Jaden Pickett
Kaydence Monson	Lydia Olma	Ava Pieter
Daela Montgomery	Jonathan Olson	Kaitlynn Ping
Tate Moore	Cecelia Ong	Isabella Piranio
Adelyn Morgan	Alfie Ong	Ryan Pirrung
Midori Mori	Tyler Orozco	Dylan Podrabsky
Ella Morris	Collin Orser	Sam Polis
Erin Morrison	Jake Pak	Noah Poteet
Megan Morrison	Eleanor Palmer	Bryanna Prado
Amelie Munday	Kyra Pan	Nikhil Prakash
Trey Munn	Carmen Park	Parker Price
Aishiki Nag	Micah Parker	Maren Price
Karly Nelson	Krishan Patel	Pragya Prithvi
Clara Neubert	Hiya Patel	Hayden Pruitt
Grace Neuner	Kara Paterson	Mae Raggett
Ethan Nguyen	Esther Paul	Saisha Rajpara
Kirsten Nguyen	Alex Payne	Shannon Raloff
Bo Nguyen	Jade Peairson	Tarini Ramasamy
Kaylee Nichols	Lindsey Pease	L'Nae Ramcharan
Zadie Niedergang	Claudia Pelayo	Mariano Ramirez
Olivia Nielson	Clarissa Perez	Bonabelle Ramirez
Reilly Norgren	Lauren Perez	Lesli Ramirez Andrade
Asa Noteboom	Samuel Peters	Caroline Ramirez-Peña
Ginger Nunnally	James Petersen	Aaliyah Reed
Anabella Nutter	David Peterson	Elia Reichardt
Isaac Nystrom Rice	Zane Peterson	Forest Reszka
Katie Oamek	Eric Pham	River Ribeiro

Symposium Presenters

Calvin Rice	Ronan Santaniello	Jacqui Shvartsman
Lily Rice	Madeline Santoso	Riley Silvyn
Natalie Rico Carvajal	Natalie Sarason	Sam Simon
Neha Rimal	Sophia Sargent	Sabrina Simoni
Aiden Rinehart	Rishi Sastry	Krista Simpler
Ella Robinson	Addison Sattler	Elizabeth Simpson
Aleida Robles Rodriguez	Colin Scales	Lindsay Sinclair
Elsa Rogers	Brody Schmidt	Aashi Singhani
Eevi Rolfe	Victoria Schnebly	Ava Sipos
Lucy Rose	Jack Schneider	Elsa Smith
Madeline Rose	Elizabeth Schoen	Sydney Smith
Alexa Rose	James Schofield	Makenna Smith
Leah Rosenberg	Dylan Schroeder	Parker Smith
Olivia Rossi	Grace Schulte	Alexandre Smith
Emily Rothrock	Mia Schumann	Emily Smotryski
Mason Roy-Hart	Samantha Schweikhard	Isabella Snyder
Tanner Rozendal	Theo Scott	Addison Sobotta
Danna Rubesh	Tharusha Seagoe	Cam Solis Mejias
Elisha Rudy	Megan Sebree	Maddie Spanks
Rose Ruhnke	Christian Serrano	Cass Speyer
Aiden Ryan	Morgan Seymour	Mahathi Sridhar
Josaphine Saccio-Devine	Gabby Shaffer	Anisha Srinivasan
Harini Sachidhanand	Subrina Shah	Christopher Steven
Jackson Sager	Ameya Shenoy	Makani Stevenson
Saliem Hatsey	Ian Sherman	Elinor Stoufer
Lily Salimena	Kate Shields	Joshua Strege
Kaija Salwasser	Brian Short	John Porter Strother
Evan Sande	Kara Shreckengast	Henry Stubbart

Symposium Presenters

Kasey Sucec	Metta Truong	Zoe Whitcomb
Bryn Sullivan	Cheyenne Tsuang	Garrow Whitefield
Avery Suriano	Oyinkansola Tunji-Ogunsanya	Benjamin Whitten
Natafira Suryanata	Sara Twiggs	Melanie Wiegand
Shamiyah Sweet	Ollie Twitchell	Miranda Wijaya
Emily Swift	Helena Tyberg	Elise Willette
Sara Swinson	Kierstin Uehara	Evan Williams
Samantha Tan	Sebastian Vagner	Nex Wilson
Emma Tanaka	Claudia van Ek	Shyla Winchester
Kayla Taylor	Annemarijn van Zwol	Ben Winjum
Rora Te	Nora Vanasse	Vivian Winkler
Maggie Tegtmeyer	Isadora Vazquez	Phoebe Wise
Madison Teopaco	Alan Vera	Kylee Wittwer
Emily Terry	Anna Viden	Emily Wolf
Malia Thacker	Sarasvati Vincent	Iris Wolfe
Prerana Thilavalli	Hannah Voigt	Katherine Wolfinbarger
Seth Thompson	Anika Vyas	Lindsay Wong
Laila Thompson	Violet Wade	Paris Woodward-Ganz
Audrey Thompson	Madi Wagner	Sadie Woolman-Schlukerbier
Alexander Tidwell	Addi Wagner	Julia Wu
Olivia Tinio	Sarah Wahlen	Kira Xu
Jason Tongue	Sydney Weddle	Megan Yellowtail
Angelina Torres Granados	Kimball Weeks	Morgan Yellowtail
Maggie Trail	Jack Weggland	Katherine Young Stallings
Shivani Trivedi	Emma Wesley	Ayanna Zelaya
Haley Trombley	Lillian Wesse	Kasey Ziegler



Research Mentors

Carolina Adam

Postdoctoral Fellow, Data Science

Matthias Agne

Assistant Professor, Chemistry and Biochemistry

Kyu-ho Ahn

Associate Professor, Interior Architecture

Jasmin Albert

Graduate Student, Hallett Lab

Jessica Aldrich

Post-Doctoral Researcher, Bioengineering

Ramón Alvarado

Associate Professor, Philosophy

Althea Amaris

Graduate Student, Chemistry and Biochemistry

Bala Ambati

Research Professor, Bioengineering

Piyush Amitabh

Graduate Student, Physics

Angel Amores

Assistant Professor, Neuroscience

Ifra Ansari

Graduate Student, Chemistry and Biochemistry

Lillian Aoki

Assistant Professor, Environmental Studies

Denicia Aragon

Graduate Student, Psychology

Shahrzad Ayoubipour

Graduate Student, Human Physiology

Gaby Bailey

Graduate Student, Chemistry

Vi Baird

Graduate Student, Chemistry

Dare Baldwin

Professor, Psychology, Clark Honors College

Madeline Ball

PhD Candidate, Earth Science

Faith Barter

Assistant Professor, English

Alex Batelaan

Graduate Student, Chemistry

Erin Beck

Associate Professor, Political Science

Research Mentors

Steven Beda

Professor, History

Susana Beltrán-Grimm

Assistant Professor, Portland State University Psychology Department

Smadar Ben-Natan

Assistant Professor, Global Studies

Danielle Benoit

Professor / Lorry Lokey Chair of the Department of Bioengineering, Bioengineering

Lauren Berger

Graduate Student, Biology, Environmental Studies

Elliot Berkman

Professor, Neuroscience, Psychology

Kristina Binder

Graduate Student, Human Physiology

Robert Binder

Visiting Assistant Professor, School of Planning, Public Policy, & Management

Mark Blaine

Professor of Practice, School of Journalism and Communication

Leah Blankenship

Graduate Student, Neuroscience

Christina Bollo

Assistant Professor, School of Architecture and Environment

Malu Borja Lopez

Visiting Faculty, School of Architecture and Environment

Peg Boulay

Co-Director Environmental Leadership Program, Environmental Studies

Lara Bovilsky

Professor, English

Kyla Brannigan

Graduate Student, Psychology

Ernie Brannon

Graduate Student, Psychology

James Brau

Professor Emeritus, Physics

Ben Brissette

Postdoctoral Fellow, Institute of Neuroscience

Carl Brozek

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Daniel Buck

Associate Professor, Asian Studies, Food Studies, Geography, Schnitzer School of Global Studies and Languages

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Elizabeth Budd

Evergreen Associate Professor, College of Education, Family and Human Services, Prevention Science

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Associate Professor, Economics

Bernadette Calafell

Professor, Indigenous, Race, and Ethnic Studies

Damien Callahan

Assistant Professor, Human Physiology

Alison Carter

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Melynda Casement

Associate Professor, Department of Psychology and Neuroscience

Melynda Casement

Professor, Department of Psychology

Ulrick Casimir

Associate Teaching Professor of Narrative, Clark Honors College, English

Maya Casper

Lab Manager, Prevention Science Institute

Rutger Ceballos

Assistant Professor, Political Science

Kate Celis Mills

Associate Professor, Psychology

Marjorie Celona

Professor, Creative Writing

Yvette Cendes

Professor, Department of Physics

Anita Chari

Professor, Clark Honors College, Political Science

DeShea Chasko

Graduate Teaching Fellow, Bioengineering

Dayna Chatman

Associate Teaching Professor of Media and Intersectionality, School of Journalism and Communication

Robert Chavez

Associate Professor, Psychology

Joyce Chen

Assistant Professor of Historical Keyboards, School of Music and Dance

Lan Chen

Graduate Student, Chemistry and Biochemistry

Mai-Lin Cheng

Associate Professor, English

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Lisa K. Chinn

Postdoctoral Scholar, HEDCO Institute for Evidence-Based Educational Practice in the College of Education

Evelyn Cho

Assistant Professor, Psychology

Deanna Choi

Graduate Student, Human Physiology

MacKenzie Christensen

Assistant Professor, Sociology

John Christian

Assistant Professor, Geography

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Assistant Professor, Human Physiology



Faculty Research Mentor Awards

The Center for Undergraduate Research and Engagement (CURE) has recognized 37 faculty for their outstanding mentorship of undergraduate research, creative work, and experiential learning since debuting the Faculty Research Mentor Award in 2018.

In alignment with [UO Mentorship Reimagined](#) principles, the award recognizes faculty who help undergraduate students build their mentorship network, while providing responsive, reciprocal and adaptive mentorship themselves. The Faculty Research Mentor Award is open to all full-time and part-time research and instructional faculty employed by the University of Oregon, which includes tenure related and career faculty, emerit faculty, library faculty, and officers of research, including research assistants, research associates, and postdoctoral scholars.

Nominators are asked to provide examples of responsive, reciprocal and adaptive mentorship, as well as support for mentorship network development. Nominations are solicited widely from current students, alumni, faculty, and staff. Awardees are recognized as part of the Undergraduate Research Symposium in May. The awards include a \$2500 prize, framed certificate, and profiles published in the Symposium Program Book and on the [Undergraduate Research and Distinguished Scholarships website](#).

Faculty Research Mentor Awards

A team of graduate students in the Hutchinson Lab of Cognitive Neuroscience who have closely observed Professor Hutchinson's mentorship of undergraduate researchers recognized his approach "exemplifies the principles of responsive, reciprocal, and adaptive mentorship, while actively fostering network-based mentorship for his students."

"Professor Hutchinson currently mentors eight undergraduate researchers, four of whom are completing honors theses, with additional students preparing to apply. Across all levels of experience, he creates an environment in which students are treated as developing scientists. Undergraduates are not only trained in research methods, but are encouraged to engage deeply with the full research process, including study design, pre-registration, data analysis, and scientific communication. His commitment to open science practices, such as requiring pre-registration for student-led projects, reflects both rigor and trust in students' intellectual contributions."

"Professor Hutchinson's mentorship is also deeply adaptive. He carefully tailors responsibilities and expectations based on each student's experience level and goals. Early-stage undergraduate researchers are supported in building foundational skills, while more advanced students are challenged with increasingly independent work, including leading projects, mentoring peers. He integrates professional development into lab meetings, offering guidance on graduate school preparation and exposing students to a wide range of academic pathways. Activities such as 'dream study' presentations encourage students to think creatively and ambitiously about research design, while structured 'jigsaw' discussions promote collaborative learning and critical engagement with scientific literature across experience levels."

"As graduate students, we have also been shaped by Hutchinson's mentorship philosophy. His approach has influenced how we support and mentor undergraduate researchers in the lab, reinforcing the importance of meeting students where they are, fostering independence, and creating opportunities for meaningful contribution. His mentorship extends beyond individual relationships to cultivate a collaborative and supportive lab environment."



Benjamin Hutchinson
Assistant Professor,
Neuroscience, Psychology

Faculty Research Mentor Awards

A diverse community of current undergraduate students and former mentees writing as alumni collectively endorsed Professor McDonough as “responsive, reciprocal, and adaptive in every sense that makes a great mentor. She not only sets the model but also exceeds it.”

Professor McDonough’s students convey a narrative of enduring and progressive mentorship beginning in courses like Principles of Archaeology, Oregon Archaeology, and Cultural Resource Management; advancing through research with the Connley Caves Archaeology Field School, Great Basin Archaeology Lab, and Environmental Archaeology and Paleoecology Lab; and continuing with advising capstone theses, admissions to top graduate programs, and securing professional positions.

Her nominators shared: “Always eager to offer support, Professor McDonough goes the extra mile to show she is invested in her students’ success, offering experiential opportunities both in the field and in the lab where she makes a concerted effort to prepare students as the next generation of experts.”

“She is approachable, open, and accommodating to her students who have questions, concerns, need help overcoming barriers, or simply need direction. As her student, you become her priority. Her inclusive teaching style ensures that everyone feels they belong in the classroom, or out in the field, regardless of their background or physical hurdles, which directly prepared me for graduate-level research and a future career.”

“In all regards, Dr. McDonough has enabled the success of numerous students, many of whom are practicing archaeologists today. Consistently, she demonstrates her willingness to guide, help, and uplift students, whether it is by providing them with opportunities in lab spaces, connections with professionals in other settings, manuscript or grant application edits, and preparation for graduate school.”

“She is the professor and mentor that I think of when I think of the kind of professor I would like to be.”



Katelyn McDonough

Assistant Professor,
Department of
Anthropology; Affiliated
Faculty, Native American
and Indigenous Studies;
Curator of Great Basin
Archaeology, Museum
of Natural and Cultural
History

Faculty Research Mentor Awards

Professor Shune's mentees in the Optimizing Swallowing and Eating for the Elderly (O-SEE) Lab commended her "consistently demonstrated responsive, reciprocal, and adaptive mentorship."

"Professor Shune meets students where they are in their academic journeys, supporting those new to research as they build foundational skills and confidence engaging with complex topics such as dysphagia, aging, and neurodegenerative disease. In lab meetings and journal club discussions, students are encouraged to engage critically with scientific literature and contribute their own perspectives. These conversations frequently center on applied clinical topics in speech-language pathology, including dysphagia management, instrumental assessment, and communication barriers in healthcare. She intentionally integrates medical and disability studies perspectives, fostering interdisciplinary thinking and deeper engagement with both research and clinical implications."

"Professor Shune further exemplifies network-based mentorship by helping students connect with broader professional communities. Through journal clubs, interdisciplinary discussions, and exposure to clinical and research pathways, she helps students build relationships that extend beyond the lab. In doing so, she fosters mentorship as an interconnected system rather than a single advisor-mentee relationship."

"Beyond her academic leadership, Shune creates a sense of belonging within the lab. She takes the time to get to know students as individuals, not just as researchers, and fosters an environment where students feel supported both academically and personally. Her approachability and genuine investment in student development are consistently evident, including through community-building lab events that strengthen relationships among members."

"Professor Shune has had a profound impact on each of us. She has supported our growth from students exploring the field to individuals confident in pursuing research and future careers in speech-language pathology and healthcare."



Samantha Shune

Associate Professor,
Communication Disorders
and Sciences Program;
Affiliate Faculty,
Prevention Science
Program, College of
Education

Faculty Research Mentor Awards

Professor Williamson's nomination from a cohort of 15 undergraduate mentees affirmed he epitomizes "the UO Mentorship Reimagined principles of responsive, reciprocal, and adaptive mentorship. Professor Williamson understands that every student has a unique set of experiences, motivations, and challenges that shape their professional goals. This understanding guides his approach to mentorship. He puts great effort into getting to know his students. Every request for a letter of recommendation, help with a résumé, or guidance on approaching a scholarly project is met with a thoughtful and considerate response. Professor Williamson places tremendous value on professionalization opportunities, and he is an invaluable resource to students in the department seeking career advice."

"Professor Williamson supports mentees in the pursuit of their goals by adapting his mentoring to his students' career stages and circumstances. He believes strongly in the importance of experiential learning inside and outside the classroom and helps to connect students with meaningful professional development opportunities. Last spring in CINE490: Hands-On Film History, he gave every student the platform to publish a blog-style research essay online on the "Kingdom of Shadows" blog. As an associate editor of Animation: An Interdisciplinary Journal, Professor Williamson offers his students field-specific advice on everything from diction to the sequencing of ideas. He helps students feel more comfortable engaging with the wider academic community and connecting with other scholars through shared interests and research areas."

"Professor Williamson has facilitated network-based mentorship by helping his mentees to build connections with peers and faculty throughout the department as well as with professional contacts around the world. Joining this network of scholars has helped me to build real connections with people whose names I recognize from book covers and course reading lists. I feel regarded as a welcome member of the academic community, rather than an outsider looking in."



Colin Williamson

Assistant Professor,
Department of Cinema
Studies

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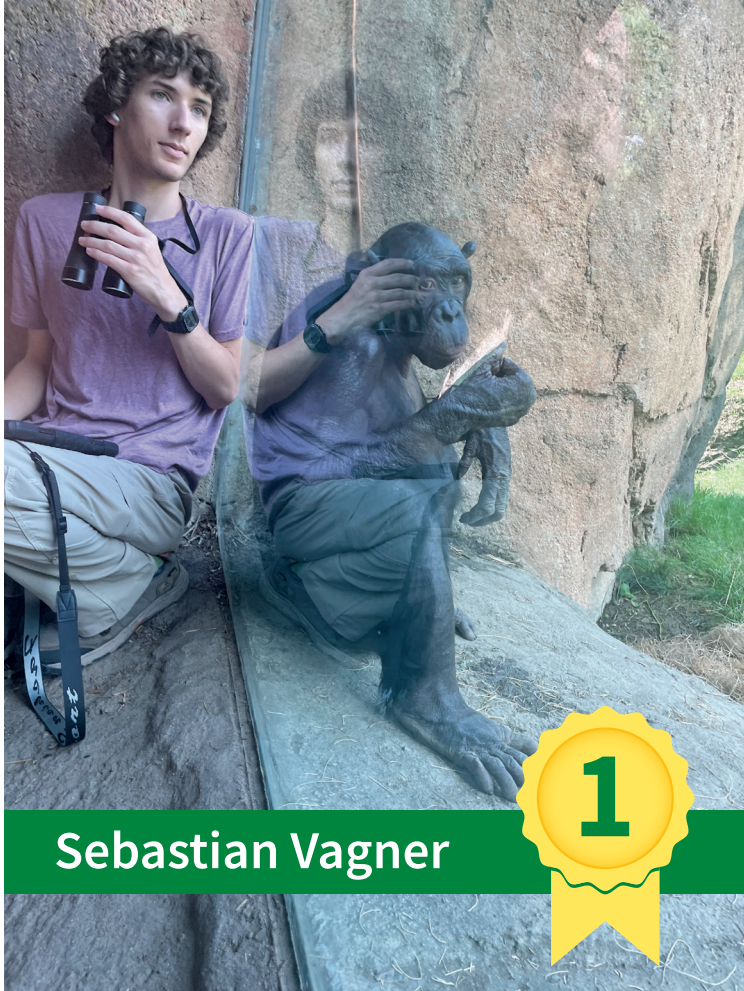
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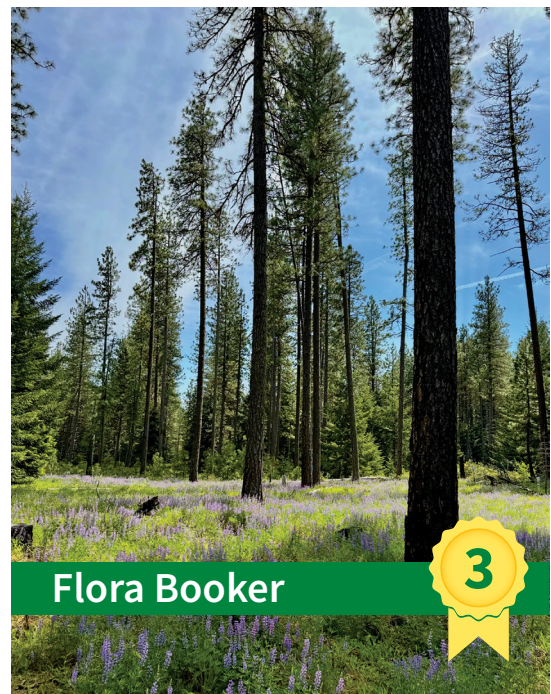
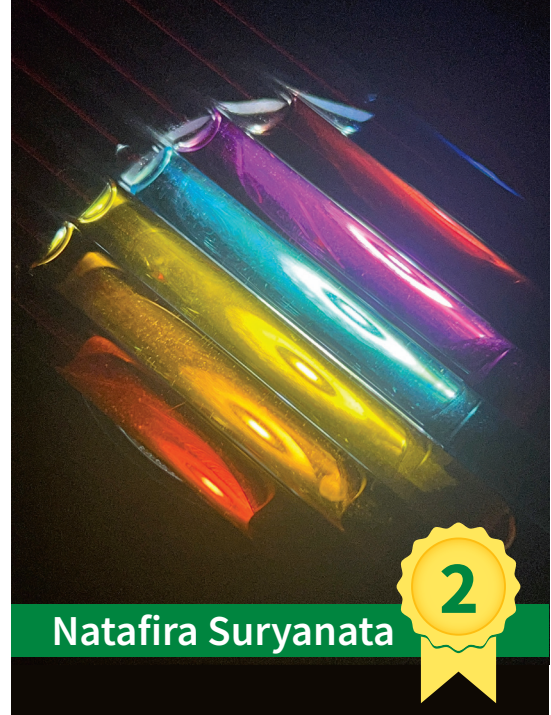
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Symposium Engagement Survey

Created in collaboration with the Tutoring and Academic Engagement Center, the Symposium Engagement Survey is a versatile tool to encourage students to attend the Undergraduate Research Symposium and reflect on their takeaways. Attending the symposium offers undergraduates a prime opportunity to explore research and creative works produced by their own peers. It provides a conference environment that serves as a safe learning ground, demystifies research, offers networking opportunities, inspires new ideas, and illuminates paths.

The Symposium Engagement Survey prompts attendees to reflect on their symposium experience after attending a session or event. Accessed at the symposium venue via QR code, the survey is to be completed at the end of each event attended. It asks attendees what they learned from the event, what insights they gained from talking with presenters, and about their experience. It also prompts them to consider next steps to engage in research and creative work.



The smartphone screen displays the survey interface. At the top is a banner with a green and yellow geometric pattern on the left, the University of Oregon logo, and the text "UNDERGRADUATE RESEARCH SYMPOSIUM". Below the banner, the title "Symposium Engagement Survey" is centered. The question "How are you affiliated?" is followed by three radio button options: "uo", "An Oregon community college", and "Other". Below these options is a text input field. At the bottom right is a green button labeled "NEXT >>". At the very bottom, it says "Powered by Qualtrics" with a logo and the URL "oregon.qualtrics.com".

Symposium Engagement Survey

Faculty and program coordinators can incentivize their students to attend the symposium and track engagement by affiliating with the survey. For instance, a professor can affiliate with the survey and create an assignment for their students to attend the symposium. Custom questions can be added to the survey if desired. Following the symposium, the professor will receive results from their students, allowing them to discern who attended and assess their responses to the survey questions.

Since its inaugural year in 2023, the Symposium Engagement Survey has attracted a broad audience and revealed enriching experiences. More than 30 courses and programs have affiliated with the survey spanning first-year programs to African studies to neuroscience. Overall, there have been nearly 200 responses to the survey. The responses reveal deep engagement with attendees relating knowledge to their courses, fields of interest, and themselves. Respondents discovered various ways that research is conducted, reported feeling connected with others, inspired, and excited about expanding their insights.

—Kenyon Plummer, Math and Science Learning Specialist



Presentation Abstracts

Visit our [schedule web page](#) for full symposium schedule.

Abraham, John

University of Oregon

Mentor(s): Dominique Granville

Poster #232

CGRP and AT-RvD1: anti-inflammatory & anti-fibrotic candidates for chronic musculoskeletal pain

Volumetric muscle loss, defined as the loss of $\geq 15\%$ of muscle mass, is associated with chronic inflammation, fibrosis, and pain; with inflammation and fibrosis exacerbating pain. Chronic musculoskeletal pain affects $\leq 33\%$ of the global population and costs the U.S. \$635 billion annually. Current analgesics are ill-suited for treatment of chronic pain due to side-effects, addiction risk, and impeded regeneration, highlighting the need for safer alternatives. This study evaluates the analgesic and regenerative potential of calcitonin gene-related peptide (CGRP) and aspirin-triggered resolvin D1 (AT-RvD1). We hypothesized that CGRP and AT-RvD1 would enhance myoblast differentiation under pro-inflammatory and fibrotic conditions. C2C12 mouse myoblast cells were cultured to $\sim 70\%$ confluency in growth media, then switched to differentiation media (positive control) or differentiation media containing TGF- β , a proinflammatory, fibrotic cytokine known to inhibit myoblast differentiation. Cells received no treatment (negative control) or co-treatment with varying concentrations of CGRP (1000nM, 100nM, 10nM) or AT-RvD1 (500ng/ml, 100ng/ml, 20ng/ml, 4ng/ml). After four days of treatment, cells were fixed, stained for myosin heavy chain, and visualized with microscopy to quantify cell differentiation by counting myotubes, myonuclei, and cell fusion index. Preliminary results suggest CGRP restores myonuclei counts to positive control levels, while AT-RvD1 requires further investigation.

Acevedo, Andrew

University of Oregon

Mentor(s): Lindsey Hayward, Robert Binder

Poster #007

Pathways to Progress: Transportation Planning for People, Parking and Public Spaces in Tualatin

At the heart of downtown Tualatin, wide roads, rail crossings, and surface parking shape how people move. This project evaluates transportation conditions and improvement opportunities in the Lake at the Commons area of downtown Tualatin, Oregon, focusing on three interconnected areas: multimodal transportation, street network, and parking and land use. Together, these focus areas explore how downtown Tualatin can better support safe mobility, accessibility, and community life. Today, the downtown area is characterized by high-traffic arterial roads, commuter through-traffic, and physical barriers such as Interstate 5 and rail crossings. These conditions create unsafe and uncomfortable environments for walking and biking, limit intuitive connections between key destinations like the WES station, downtown businesses, and the Lake at the Commons, and result in large areas of underutilized surface parking. This project proposes a set of coordinated recommendations to improve safety, connectivity, and place-making while maintaining regional mobility. Key strategies include rail grade separation, corridor redesigns to prioritize walking and biking, targeted pedestrian safety improvements, downtown pedestrian-oriented spaces, and parking consolidation to support mixed-use redevelopment. Collectively, these recommendations demonstrate how downtown Tualatin can transition from a car-oriented environment into a more connected, people-centered, and vibrant urban core.

Acevedo, Andrew

University of Oregon

Mentor(s): José Meléndez

Poster #008

Rethinking Privilege: An Original Theoretical Framework on Perception, Power, and Responsibility

This research project presents an updated version of Perceived Privilege Theory, an original framework that examines how socially perceived privilege can be leveraged to support advocacy and systemic change. Perceived Privilege refers to forms of credibility, authority, or access that individuals may be socially granted, regardless of whether they hold traditional power or belong to marginalized groups. This updated project builds on the original theory by further analyzing how Perceived Privilege operates within institutional, academic, and professional systems. It focuses on how individuals with Perceived Privilege can access

platforms, networks, and resources that are often unavailable to others, and how these positions can be intentionally used to amplify marginalized voices rather than reinforce existing hierarchies. The main finding of this research is that Perceived Privilege can become a powerful tool for equity when applied with intentionality, reflexivity, and accountability. This project reframes perceived privilege as a strategic opportunity for advocacy and contributes to broader conversations on allyship, power, and social change.

Acevedo, Andrew

University of Oregon

Mentor(s): Jenna Tilt

Oral

Advancing Equitable Disaster Preparedness for Spanish-Speaking Immigrant Communities on the Oregon Coast

Coastal Oregon communities face significant risk from a Cascadia Subduction Zone (CSZ) earthquake and tsunami, yet disaster preparedness resources do not serve all residents equitably. Predominantly Spanish-speaking immigrant communities experience persistent barriers to preparedness due to limited access to culturally and linguistically appropriate hazard information. Existing CSZ awareness and preparedness materials are largely designed for residents and visitors with high English proficiency, stable housing, financial resources, and physical mobility. This research evaluates current CSZ preparedness resources produced by federal, state, and local governmental agencies to assess their accessibility and relevance for underrepresented populations. Using a content analysis approach, a structured scorecard was developed and applied to each resource across eight evaluation categories: material characteristics, readability and literacy demand, graphics, cultural appropriateness, layout and typography, dissemination, content, and learning stimulation and motivation. These criteria were drawn from risk communication literature and refined in collaboration with community partners to better reflect local needs. The resulting ratings and evaluation framework provide actionable guidance for emergency managers, community organizations, and educators seeking to improve equity in hazard communication and support more inclusive disaster preparedness across Oregon's coastal communities.

Adams, Makena

University of Oregon

Mentor(s): Peter Schlachte

Creative Work

Dear Dernier Rêve

Over the course of this year in the Kidd Creative Writing Workshops, I have focused on experimenting with form. Dear Dernier Rêve is my first attempt at writing in an epistolary style, a form I chose to complement the

central question of my story: how does the subconscious interact with grief and remembrance? This story is in direct conversation with the narrator's subconscious, *Dernier Rêve*, as they try to understand their strange dreams. At first, the dreams evoke seemingly random memories, but once they are placed in the context of loss, everything comes into focus for the narrator. She ultimately makes their own conclusions about why her subconscious wanted her to see these dreams: that although the world she lives in is one of chaos and permanence, she must not resign herself to what could have been, but instead continue to dream.

Aeschliman, Alexandra

University of Oregon

Mentor(s): Vignesh Rangasami, Danielle Benoit

Oral

Leveraging cyclic peptide ligands for targeted nanoparticle drug delivery systems

Polymeric nanoparticles (NPs) are engineered as drug delivery systems (DDS) for their tunable physicochemical properties. We have previously demonstrated that poly(styrene-*alt*-maleic anhydride-*b*-poly(styrene)) (PSMA-*b*-PS) NPs functionalized with a linear tartrate-resistant acid phosphatase (TRAP) binding peptide (TBP) enable fracture-specific NP accumulation, as osteoclasts deposit TRAP during bone resorption following injury. Despite this promise, off-target accumulation is still observed. We aim to reduce this by increasing TBP's affinity for TRAP. Peptide cyclization has been shown to increase binding affinity by alleviating the entropic penalty of binding through conformational pre-restriction. We hypothesize that cyclization of TBP will increase NP-DDS accumulation at fracture sites. TBP was synthesized with and without cysteines at the N- and C-termini. Cysteine-bracketed TBP was reacted to form Cyclic TBP (cTBP) and verified by Ellman's assay. Circular dichroism revealed that cTBP secondary structure had 10% greater parallel β -sheet composition over TBP. Peptide binding affinities (K_d) to TRAP were measured with biolayer interferometry, with cTBP exhibiting increased affinity over TBP, from $775.5 \pm 394.3 \mu\text{M}$ to $28.3 \pm 14.5 \mu\text{M}$. In silico modeling of peptide:protein complexes revealed a candidate cTBP:TRAP complexed via β -sheet H-bonding. Negative controls showed no interactions. Current experiments are investigating NP affinities followed by biodistribution analyses.

Aguilar Auld, Simon

University of Oregon

Mentor(s): Jarod Forer

Poster #205

Acute Running Exercise Does Not Alter Lymphatic or Venous Clearance in Rat Achilles Tendons

Achilles tendinopathy (AT) reduces functional capacity and quality of life and is often associated with increased fluid content, though its relationship to fluid clearance is unclear. Exercise is a primary treatment, but the mechanisms driving tendon adaptation remain poorly understood. While exercise enhances fluid transport in other musculoskeletal tissues, its effects on Achilles tendon clearance are not well defined. This study examined the effect of treadmill running on Achilles tendon fluid clearance in skeletally mature female Sprague-Dawley rats (N=4). Each rat completed four conditions: sedentary control, level running, incline running, and interval running. Venous and lymphatic clearance were assessed using intratendinous injections of two size-differentiated near-infrared tracers given prior to exercise, and clearance rates were calculated from the decline in fluorescence over time. We hypothesized exercise would increase lymphatic clearance while venous clearance would remain unchanged.

No significant differences in clearance were observed between sedentary and exercise conditions. These findings suggest acute running may not influence tendon fluid clearance. Tendon's limited vascularity and insufficient exercise duration or intensity may explain these results. Future work will test longer, more clinically relevant interventions and controlled muscle stimulation.

Albiani, Isabella

University of Oregon

Mentor(s): J. Josh Snodgrass, Lesley Jo Weaver

Oral

Experiences of Food Insecurity among People Experiencing Homelessness: A mixed methods analysis

Access to adequate food is a significant challenge for people experiencing homelessness (PEH). Even with support from the Supplemental Nutrition Assistance Program (SNAP) and community programs, many PEH experience food insecurity (FI). This presentation explores FI among adult PEH in a mid-sized city in Oregon using data collected by the Homelessness Policy and Health research group. Quantitative data on FI and associated factors was collected from questionnaires conducted with 298 PEH. Qualitative data was collected through life history interviews with a subset of 45 participants that included discussion of food

access. A pilot study on Water, Sanitation, and Hygiene Access additionally surveyed 38 participants about their primary food sources. Results indicate that 85% of PEH were food insecure, and 90% received SNAP benefits, with 86.4% of those individuals reporting FI. In multivariable models examining factors associated with FI, higher depression and anxiety symptom scores were associated with higher odds of FI (OR = 1.081, 95% CI: 1.027-1.137), and increased social connection was marginally associated with higher odds of FI (OR = 1.037, 95% CI: 1.007-1.068). Qualitative findings demonstrate that SNAP is failing to address hunger and community and nonprofit efforts periodically meet caloric needs but not nutritional or cultural ones. This work points to the need for increased investment in SNAP and more comprehensive nutrition support programs for PEH.

Allen, Alexander
University of Oregon
Poster #090

Ukrainian conflict and its effect on European market trends

See Strege, Joshua

Alonso-Lopez, Keara
University of Oregon
Mentor(s): Amanda Stasiewicz
Poster #127

Wildfire Mitigation in Northern California

This ongoing research project questions what institutions and infrastructures shape the design and accessibility of mitigation markets in Sonoma County, California. Additionally, how the mitigation market is perceived by key informants and market members in one community, and how different actors engage with or navigate it. We began to better understand this through the collection of data via interviews in two different communities. We asked members to share their experiences with wildfires, their mitigation strategies and to quantify the actors they engage with. The outputs will include a visual map of mitigation market actors and a policy brief for local governments and insurers. This project will provide an analysis of the complexity and accessibility of the wildfire mitigation market to offer evidence of gaps, obstacles and advantages to policy makers.

Alonso-Lopez, Keara

University of Oregon

Poster #013

Mapping the Student-Centered Foodscape: A GIS Analysis of Food Access Barriers at the UO

See Brannan, Jessica

Anderson, Parker

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #044

Strange Case of Dr Jekyll and Mr Hyde Physiognomy in Nineteenth Century Literature

For this project, I studied the presence of physiognomy in nineteenth-century literature in order to find out how characters' personalities influenced the physical characteristics authors chose to give them. Physiognomy is the pseudo-scientific practice of determining a person's morality, intelligence, social standing, and personality through their physical characteristics, especially their facial features. As it was a common practice in the nineteenth century, authors often used it to convey the personalities of their characters to their audience without having to mention those traits directly. In his novella *Strange Case of Dr. Jekyll and Mr. Hyde*, Robert Louis Stevenson describes Hyde using the typical physiognomic characteristics of a criminal, creating a vague yet menacing figure composed of features that readers of the time associated with a man inclined to crime. Using *Strange Case* as my focal point, I looked at it through the lens of eighteenth-century handbooks on Physiognomy and twenty-first-century reflections on the practice. Looking at works like *Strange Case* from a physiognomic perspective lets the modern reader of nineteenth-century literature enter the minds of the audience they were written for. This allows for new discoveries about characters and the worlds they move through that may have otherwise been overlooked.

Andrus, Maia

University of Oregon

Mentor(s): Forest Pyle, Lara Bovilsky

Oral

Female Autonomy and Genre Determination in Shakespeare's *Much Ado About Nothing* and *Othello*

This project examines passages from Shakespeare's plays '*Much Ado About Nothing*' and '*Othello*,' analyzing the manner in which femininity and masculinity manifest semantically in the characters' speeches, as well

as the role that female autonomy plays in syntactic genre determination. This project uses affect theory as the foundation for a structural analysis. The close-reading analyses foreground the subjective, embodied reading experience, particularly as it relates to stage performance as a medium. By foregrounding affective analysis, this project offers an alternative way of approaching genre analysis and gender representation in Shakespeare scholarship. Placing a comedy play and a tragedy play in conversation with one another illuminates the divergent manners in which rhetorical leveraging of femininity and masculinity create narrative tension and destabilization. When female characters successfully assert their autonomy, narrative tension is resolved, and when female characters do not successfully assert their autonomy, narrative tension remains unresolved, resulting in tragedy.

Angarola, Will

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

Incomplete

I wrote these poems while enrolled in the Kidd Workshop. The Kidd program has greatly improved my writing over the course of the last six months. I've been writing songs for a while, but I wrote poetry for the first time last year in Intro to Poetry. I found that I really loved it and applied to the Kidd program. My poems are usually portraits of longing and loss of identity. I joined the program at the perfect time because I was going through a tough time and writing about it a lot was very helpful. I had also started a solo music project, and my lyric skills have been improving by leaps and bounds. Most of the poems I wrote came from carrying around a little yellow note book and writing down scraps of ideas as they came throughout the day. The second part of my process is the fear of deadlines. I would take my little idea scraps and in a furious panic let them fuel my stream of consciousness until I had something I could be at least somewhat proud of. This usually happens right before the poem is due. I really like revision. If I'm lucky enough for motivation and inspiration to find me early I enjoy polishing a poem for a long time and fussing over every word. I also read the poems out loud many times for editing purposes, but also just because I like them and I get attached to them.

Anjum, Saraf

University of Oregon

Poster #096

Identifying Blood Flow Through Stall Catchers

See Silvyn, Riley

Apollo, Simon

University of Oregon

Poster #324

Re-animating Research: Cataloguing the Skeletons in our Closet

See Kelly, Emma

Arky, Zane

University of Oregon

Mentor(s): David Renteria Escobedo

Creative Work

Retrieval

Retrieval is a short story that explores memory, grief, and quiet distances which form between the people we love. This piece is inspired by an interest for the way memory and identity is formed through language in childhood. Then, how it is accessed years later. It is about the process of coming back to a part of yourself which was lost: of either picking it apart, or grasping it again, with a newfound perspective.

Ashton, Elisa

University of Oregon

Mentor(s): Peg Boulay, Sean Prive

Poster #123

Co-Presenter(s): Sara Hardwick, Noah Poteet, Stella Fetherston, Aaron Drummond

Monitoring Pollinator Habitat Enhancement Seeding Three Years Post-Salvage Harvest

This study will continue work from previous years of the Environmental Leadership Program and the UO Ponisio Lab to evaluate ongoing pollinator restoration efforts at Whitewater Ranch, located in the McKenzie River Valley, Oregon, after the 2020 Holiday Farm Fire and subsequent salvage harvest. Due to habitat loss, agricultural intensification, and landscape changes, global insect and pollinator populations are declining rapidly. Previous research at this study site has found that floral enhancements seeded in burned slash piles can increase the pollinator conservation value of harvested forests. This continuing research examines the persistence of these enhancements to better understand their survival over time, with significant implications for biodiversity and pollinator conservation.

This study compares plots in burned slash piles and adjacent harvested stands. A total of 20 native wildflower species (19 in each plot) were directly seeded in plots in each treatment group; 0.25 m² subplots within each plot were planted with each focal species. Monitoring to determine seeded wildflower

persistence will include number of individuals, number of blooms, and percent cover of the focal species, as well as percent cover by invaders. This research will inform adaptive silviculture and restoration practices in order to increase ecosystem and pollinator diversity.

Axon, Henry

University of Oregon

Mentor(s): John Christian

Poster #102

Amplification of Climate Change Signal by Greenland Outlet Glaciers

Mass loss from the Greenland and Antarctic ice sheets contributes to sea level rise, and the rate of mass loss has accelerated in recent decades. Since 2003 the Greenland ice sheet has been losing approximately 200 billion tons of ice per year, while the Antarctic ice sheet has been losing around 118 billion tons per year. Climate variations also affect ice-sheet mass by driving changes in the flow of glaciers that discharge ice into the ocean. However, changes in ice flow take years to centuries to adjust across an ice sheet, making the response of a full ice sheet to climate change complex in space and time. Although recent mass loss from ice sheets is clear, it remains uncertain when and where the ice-flow effects of anthropogenic warming will statistically emerge from natural climate variability. To study the way that changes propagate through marine glacier responses, we used a numerical ice flow model and large ensembles of simulation to statistically estimate the impact of longer-term trends and variability across the spatial profile of a glacier. For the case of ocean warming, we find the clearest signal in ice-flow velocity emerges near but not directly at the terminus. In contrast, the thickness response is amplified more uniformly across the glacier and propagates inland even after the trend ends. Using these methods on increasingly realistic glacier geometries might be one way of projecting how a glacier might change in response to a noisy climate trend.

Azizi, Cameron

University of Oregon

Mentor(s): Robert Guldberg, Nicholas Pancheri

Poster #195

Dose-Dependent Effects of Specialized Pro-Resolving Lipid Mediators on Chondrocyte Metabolism

Osteoarthritis (OA) is a degenerative joint disease characterized by cartilage breakdown and chronic inflammation following injury. While inflammation is essential for tissue repair, failure of resolution leads to persistent inflammation and disease progression. Current treatments primarily address symptoms, highlighting the need for disease-modifying therapies. This project investigates the therapeutic potential

of Specialized Pro-resolving Lipid Mediators (SPMs), derived from docosahexaenoic acid (DHA), in promoting inflammatory resolution and regenerative signaling in chondrocytes.

Human and bovine articular chondrocytes were cultured and stimulated with IL-1 β to model an OA-like inflammatory environment. Cells were then treated with DHA, Resolvin D1 (RvD1), or a synthetic analogue (WKYMVm). Metabolic activity was assessed using the Alamar Blue assay.

Results demonstrate a dose-dependent response to lipid mediators. Low DHA concentrations (5-20 μ M) increased metabolic activity, while concentrations ≥ 40 μ M reduced activity, indicating cytotoxic effects. RvD1 showed no significant effect, and synthetic analogues exhibited cytotoxicity at higher doses. This work highlights the importance of dosing in SPM-based therapies and supports further investigation into their regenerative potential in OA.

Bailey, Addison

University of Oregon

Poster #018

Fox Sports FIFA World Cup Fandom Analysis

See Sager, Jackson

Baker, Jaya

University of Oregon

Mentor(s): Samantha Shune

Poster #028

Co-Presenter(s): Ava Linn, Megan Morrison

A Longitudinal Qualitative Study on Caregiver Burden and Identity in Dementia Care

This qualitative research project, conducted in the Optimizing Swallowing and Eating for the Elderly (O-SEE) Lab under the mentorship of Dr. Samantha Shune in the Communication Disorders and Sciences program, examines how caregiver identity changes over time among first-time caregivers of parents with dementia. While caregiving research often emphasizes stress and functional burden, less attention has been paid to how caregiving roles transform individuals' self-perception and their beliefs about others' perceptions of them.

This study included four adult caregivers, all of whom cared for a parent with dementia. Participants engaged in monthly, semi-structured interviews over a five-month period. Zoom-recorded interviews were transcribed verbatim and analyzed using multiple coding methods in a three-pass process. Findings indicate

that caregiving is experienced not only as a set of responsibilities, but as a core component of identity. Participants struggled to balance caregiving responsibilities with self-prioritization. Structural and systemic constraints increased caregiver burden.

This project contributes to clinical and psychosocial understandings of dementia caregiving by foregrounding identity as a critical yet underexamined dimension of caregiving burden. These findings emphasize the importance of integrating emotionally responsive supports for caregivers within clinical, community, and interdisciplinary care contexts.

Baker, Natalie

University of Oregon

Mentor(s): Mariah Kornbluh, gabi garcia

Poster #308

Examining the Culture of “Drink Spiking” on the University of Oregon Campus

Drink spiking - the act of dosing another person's beverage with a substance without their consent or knowledge - is a crime that has been steadily increasing in prevalence around the globe for the past several decades (Brown, 2023). This issue is especially widespread on college campuses (Swan et al., 2014). The current project examines University of Oregon students' current attitudes towards and knowledge of drink spiking incidents on and around campus, as well as self-reported incidence of drink spiking victimization. An ecological systems theory-based framework is used to analyze the issue of drink spiking on and around campus, incorporating individual experiences and societal narratives. In order to examine student attitudes and knowledge, a survey was distributed to ~5,000 undergraduates via social media. The survey received 74 total responses. Ten percent of respondents indicated that they believed they had been a victim of a drink spiking incident, while 2% reported being unsure. Given this rate of incidence, and other survey responses indicating student concern around the issue and lack of administration response, an intervention is suggested. A peer-led program that focuses on accountability, consent, engagement, and education on the ramifications of drink spiking for the victim as well as the perpetrator to be implemented in fraternities is recommended to help equip students in reducing drink-spiking prevalence on campus.

Balderas, Giovanni

University of Oregon

Mentor(s): Timothy Williams

Oral

Fugitive Slaves on the Run: Traveling from the Southern U.S. to Mexico During the Civil War Era

In Winter term of 2026, I enrolled in a History 407 class with Professor Timothy Williams, which culminated in a 20+ page research paper. The general topic for the paper was the American Civil War era, and I ultimately chose to do my paper on fugitive slaves in Texas fleeing to the northeastern part of Mexico. My main thesis for this paper was that many fugitive slaves who escaped from slavery fled based on three factors: geography, treatment comparisons in Texas and Mexico, and finally, how Mexico reacted to the influx of fugitive slaves, both its people and government. This project showed the good and bad of the Civil War era, as many of the primary sources I used described harsh conditions these former slaves had endured during their time as slaves in the United States, but also the freedoms many people documented once they had made it to Mexico. The secondary sources I used supported my main claim, each describing one of the three factors mentioned in my thesis. The research project as a whole was to highlight the many black communities in Mexico that many people don't realise exist. Mexico is a very diverse country, as people of Indigenous, African, and Asian descent live amongst the commonly known European descendants, and all these descendants call Mexico home.

Balero, Kylie

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

Poetry Crafted from the KIDD Creative Writing Program

Through my poetry, I enjoy exploring fantastical worlds that highlight psychological ideas. Whether that is writing about the beauty in rain or losing a loved one, I tend to focus on the softness and beauty in difficult and hard concepts. Through the KIDD program, I have been given the opportunity to perfect my craft through form, rhyme scheme, consistent themes, and word choice. Looking at my writing as a whole, I tend to personify things such as the moon, streetlights, and even death. Images such as these have been the frontline of my works and have inspired many of my poems. For those who read my work, I hope that they can not only relate to the words that I write on a page but also find that hard topics can be handled delicately. As a psychology major, I enjoy writing deeper about interpersonal relationships while also putting my own creative take on how it can reflect in literature. In addition, when creating fantastical worlds, I enjoy immersing notable literary characters in my poetry and expanding on emotions that are not typically

described in the stories they are in. As I continue to write, my hope is to invite those who read to think critically and immerse themselves through the images that I create. Lastly, although my poetry can focus on more emotional topics there is strength in relating to things that are difficult and surrounding yourself around communities that do.

Balser, Madeleine (Mallie)

University of Oregon

Mentor(s): Gabriel Sanchez

Poster #323

Reinvestigation of Danger Cave through Coprolite Analyses

This study reinvestigates Danger Cave, located in Wendover, Utah, through the lens of archaeological coprolite analyses. Coprolite analysis provides a critical lens into paleoenvironmental reconstruction, human diets, and health. The research conducted in this study used fine-grained analyses that included zooarchaeological, paleoethnobotanical, proteomics, lipid biomarker, and ancient DNA studies. In this study, I report findings from zooarchaeological and ancient proteomic data from Danger Cave. I analyzed and sorted 22 coprolites from the site, representing more than 1083 identified bone specimens. These data provide unique insights into human and non-human diets spanning the last 11,000 years within North America and the Great Basin.

Barba, Ana

University of Oregon

Mentor(s): Kyla Brannigan

Poster #292

Decision Maximization and Life Satisfaction Does Less Equal More

This study examined decision maximization, defined as the tendency to exhaustively evaluate options to select the best possible choice, and life satisfaction, defined as how closely one's expectations match their current life situation, to determine if there is a correlation. Prior research suggests that people who tend to maximize their decisions may experience lower life satisfaction, although some findings have been mixed. A sample of 1,055 students at the University of Oregon enrolled in a research methods class completed measures of decision maximization and life satisfaction for class credit. A Pearson correlation revealed no significant relationship between the two variables. The results do not support the hypothesis that higher maximization is associated with lower life satisfaction. Limitations that may have contributed to the null findings included low internal consistency for the maximization scale used and response bias. Implications for future research on decision-making are discussed, including replication with more reliable maximization scales and longitudinal studies.

Barber, Kelly

University of Oregon

Mentor(s): Arifa Raza, Marcus Cumberbatch

Poster #026

The Impact of Intimate Partner Violence on Black Queer People

Intimate partner violence (IPV) disproportionately impacts Black and Queer communities, yet research addressing this intersection remains sparse. Guided by an intersectional framework, this study uses NIBRS data (2022-2023) and logistic regression to examine how race and sexual orientation influence the classification of IPV. Findings reveal a significant interaction effect: while the white straight group showed the highest probability of IPV classification (38%), the “queer” label functioned differently across racial lines. For white victims, a queer identity resulted in a 7% decrease in probability to (31%) compared to the control. However, for Black victims, identifying as queer led to a 2% increase in probability (from 29% to 31%) compared to Black straight counterparts. This compounded effect demonstrates that intersectional identities fundamentally alter legal perceptions of violence, challenging additive models of oppression. These results suggest that standard victim profiles fail to protect Black queer survivors, often leading to systemic neglect or criminalization. The study concludes by advocating for intersectional policy reforms and universally competent resources that address the unique needs of survivors at this critical social interaction.

Barth, Elena

University of Oregon

Mentor(s): Peter Newstein, Chirs Doe

Oral

The Transcription Factor Bar Specifies Molecular Identity and Muscle Targeting in Drosophila

Processes underlying neural circuit development are not well understood, despite their importance to human disease. Emerging evidence suggests that transcription factors guide these processes. In the neuromuscular system, transcription factors regulate gene expression to define motor neuron subtypes, control their differentiation, and guide their axon projections to specific muscle targets. Using *Drosophila melanogaster* as a model organism, this project investigates the transcription factor Bar, a potential regulator in the motor neuron specification hierarchy. Misexpression of Bar leads to repression of Eve, a well-studied transcription factor normally expressed in U motor neurons, suggesting that Bar influences neuronal identity, potentially through interactions with other transcription factors such as Eve and Nkx6. Using immunohistochemistry, the projections of neurons misexpressing Bar were analyzed to further assess its role in circuit formation. Under Bar misexpression, these neurons ectopically project through the segmental nerve to transverse muscles,

which are normally innervated by neurons that endogenously express Bar. These findings provide insight into transcriptional programs that link motor identity to connectivity, advancing our understanding of functional motor circuits and highlighting principles relevant to human motor development and disease.

Baxter, Emma

University of Oregon

Mentor(s): Emma Reed

Poster #255

Repeated far infrared sauna bathing and metabolic outcomes in adults with elevated body mass index

Excess adiposity can impair metabolic function and passive heat therapy with hot tubs has improved metabolic health. It is unknown if far infrared (FIR) sauna bathing can also improve metabolic health. We hypothesized that 30 sessions of FIR sauna bathing would improve the metabolic profile in adults with an elevated BMI. Sixteen adults (40 ± 10 y, BMI: 37.8 ± 3.4 kg/m²) were assigned to a heat therapy (n=9) or control (n=7) group. The heat therapy group completed 30 sessions of FIR sauna bathing for 8-10 weeks. The control group did not complete sauna sessions. Fasting glucose and insulin concentrations were measured before (PRE) and after (POST) the 8-10 weeks from a venous blood draw. Plasma glucose was analyzed via the glucose oxidase method and serum insulin was analyzed with an enzyme-linked immunosorbent assay. Data were analyzed with a two-way analysis of variance with alpha set to 0.05. There were no differences in glucose or insulin at PRE between groups (both $P > 0.07$). Glucose decreased from PRE to POST with heat therapy (93 [80, 107] to 81 [65, 96] mg/dL; $P < 0.01$) but there was no change in the control group (77 [65, 90] to 73 [64, 82] mg/dL; $P = 0.47$). There was no change in insulin from PRE to POST in the heat therapy (12.0 [7.9, 16.0] to 10.8 [6.3, 15.4] μ U/mL; $P = 0.37$) or control (10.5 [6.3, 14.7] to 10.7 [5.9, 15.4] μ U/mL; $P = 0.98$) groups. These data suggest an improvement in metabolic health in adults with an elevated BMI with repeated use of a FIR sauna.

Bazuzi, Ashu

University of Oregon

Mentor(s): Asako Yonan

Oral

Mechanical Turks, Mechanical Terrorists: Metatextual Orientalism in Interactive Technologies

In 1770, Hungarian engineer Wolfgang von Kempelen built the Mechanical Turk, an automaton in a turban that could supposedly play chess, as if it was a human. His queen ordered him to tour the machine around Europe,

improving her new empire's scientific reputation. In 2009, Activision released Call of Duty: Modern Warfare 2, with a new "Dynamic AI" system allowing the computer controlled enemies to act more realistically, as if they were humans. The series often caricatures Arabs and Muslims, usually as terrorists, always fetishizes American techno-military might, and works PR for U.S. interventionism. The texts parallel in that they both use cutting-edge technology and abstractions of Oriental figures via object substitutes for politically timely ideological work.

I analyze the Mechanical Turk as a case study in generating Orientalist messages via the medium of a work, alongside the content itself. I then use that model to identify a similar process in modern military video games, such as Call of Duty. Through historical, marketing, and video game analysis guided by Said's concept of Orientalism I found that both of these interactive works generate ideas of technological supremacy of the West over and contrasted with the East through both their textual messaging and their own status as technological marvels.

I hope this research will further the recognition of medium and production as aspects of storytelling and meaning-making.

Beegle, Abby

University of Oregon

Poster #161

Oxidative Addition of Chlorosilanes to Palladium

See Lomeli, Valeria

Beffert, Sophia

University of Oregon

Mentor(s): David Renteria Escobedo, Brian Trapp

Creative Work

Straight and Narrow Path

For this Kidd writing workshop I wrote, and then based on peer workshopping revised, multiple short stories throughout this past year. I chose this one to read because it is my most recent and the most representative of what I have learned. The process of revision involved synthesizing varying feedback in a way that helped me understand the true ways that the story fell short and then improving it. My story, The Straight and Narrow Path explores identity, and finding beauty in both the unusual and the usual.

Belknap, Reanica

University of Oregon

Mentor(s): Melynda Casement

Poster #312

Investigating Sleep Health as a Moderator Between Socioeconomic Disadvantage and Depressive Symptoms

Sleep is critical for physical and mental health, with established links to mood regulation, cognitive performance, and resilience to stress. Socioeconomic disadvantages are a well-documented risk factor for depression. Yet, current literature lacks consensus on how sleep health may protect adolescents from the heightened risk associated with lower socioeconomic status (SES). This project examines how sleep health may serve as a moderating link between socioeconomic adversity and depressive symptoms, including whether the risk of poor multidimensional sleep health amplifies or buffers the impact of socioeconomic disadvantage on depressive outcomes, and to what extent.

This project is using data from the ongoing Mechanisms of Depression in Adolescents (MoDA) study from the Oregon Sleep Lab in Eugene, Oregon. Specifically, the MoDA study investigates the link between sleep duration and timing to reward- and stress-related brain function. This study will examine whether multidimensional sleep health moderates the association between socioeconomic adversity and depressive symptoms in 14-18-year-olds.

Findings aim to clarify the role of sleep as a potential resilience or vulnerability factor that impacts the association between socioeconomic conditions and adolescent depression. Identifying the degree to which sleep health moderates the effects of socioeconomic adversity on depressive symptoms may also inform future research on interventions designed to reduce disparities.

Beninati-Bautista, Jessalyn

University of Oregon

Mentor(s): Chanel Meyers, Isabella Crame

Poster #315

Prototypicality, Race, and Gender Shape Meta-Perceptions of Discrimination in Multiracials

As the multiracial population in the U.S. continues to grow, individuals with racially ambiguous features challenge society's perceptions of race (Nicolas et al., 2017). People's ideas about intersecting identities develop through exposure to physical traits, cultural norms, and dominant social identities, shaping

attributions of discrimination across race and gender (Lei et al., 2023). Specifically, we will examine how physical features such as prototypicality, race, and gender shape people's meta-perceptions about Multiracial individuals' experience with discrimination. Participants will be shown a range of images of Multiracial individuals that manipulate racial background (Black-White vs. Asian-White). Based on gendered race theory (Lei et al., 2023), we hypothesize that when Multiracial individuals are high in prototypicality both Black-White and Asian-White women would be perceived as experiencing similar levels of discrimination. However, when prototypicality is low, we expect Black-White women will be perceived to experience more discrimination than Asian-White women. Conversely, for Multiracial men, we predict that prototypicality would not have an impact on perceptions of their experiences with discrimination and instead expect that Black-White men to be rated as experiencing more discrimination than Asian-White men. Examining prototypicality, race, and gender may help show how appearance shapes perceptions of discrimination and whose experiences are recognized.

Benventano, Cole

University of Oregon

Mentor(s): Lauren Forrest, Robert Chavez

Poster #294

The Treatment Gap in Later Life: Predictors of Mental Health Service Use Among Older Adults

Older adults face unique mental health challenges at an increased rate compared to their younger counterparts. Despite these difficulties, this population is less likely than any other age group to seek mental health services. The present study examines demographic, behavioral, and healthcare access factors associated with mental health treatment seeking among older adults. Data was drawn from the National Survey on Drug Use and Health (NSDUH) from 2002 to 2019, and included 2,512 adults aged 65 and older who reported mental health difficulties over the past year. Results from a chi-square analysis found that treatment seeking differed significantly by sex and mental health insurance status, with women and individuals with mental health coverage seeking treatment more often than men and those without mental health coverage. These findings highlight gaps in access to mental health care among older adults, particularly suggesting a targeted effort in improving mental health service utilization among older men and individuals without mental health coverage.

Bergson-Michelson, Ezra

University of Oregon

Mentor(s): Lillian Aoki, Katya Podkovyroff Lewis

Poster #118

Signals in the Sediment: A Biogeochemical Analysis of Land-Use History of the Ni-les'tun Marshes

Wetlands are vital ecosystems, providing 40% of ecosystem services despite a small footprint. In Oregon, over 68% of tidal wetlands have been destroyed. Ni-les'tun Marsh is a restored wetland in Bandon Marshes that has undergone indigenous settlement and usage, European colonization and agriculture, and restoration. The project aims to answer the question: How have long-term geological cycles and shifts in land use affected the successional trajectory of the Ni-les'tun Marsh, and what can be extrapolated to the broader issue of tidal wetland conversion and restoration in similar ecosystems? Several biogeochemical tools were used to measure the alterations that different eras of human habitation and rehabilitation have made on the landscape; X-ray fluorescence to measure trace element levels, isotope analysis, and inorganic carbon content analysis were conducted. The results will help answer questions about modal uses and their biogeochemical impacts, help study the efficacy of restoration efforts in altering soil chemistry, and aid in piecing together a more complete history of the site. As part of a larger dissertation project with environmental DNA, pollen analysis, and a variety of biologically-focused methods, future results may work in conjunction with the dissertation and its biologically focused methods to understand the history of ecological succession at the site. Together, these histories can guide future land use and restoration goals.

Bernhard, Olivia

University of Oregon

Poster #160

Bottom-Up Organic Synthesis Approach to Carbon Nano-structures for Novel Material Applications

See Morgan, Adelyn

Bhupalam, Alekhya

University of Oregon

Mentor(s): Alayna Park, Alyssa Herman

Poster #316

Racial/Ethnic Representation in Mental Health Websites

Racial/ethnic minoritized people encounter unique structural, knowledge, and attitudinal barriers to accessing mental health services. Mental health websites may help address these barriers but may require surface structure (i.e., changes to improve the look and feel of websites) and deep structure (i.e., changes to improve the meaning and relevance of websites) adaptations to be useful to racial/ethnic minoritized people given their significant underrepresentation in the mental health field. The study characterized racial/ethnic representation on mental health websites and examined the association between representation and users' perception of the websites. Undergraduate research assistants characterized 59 websites about suicide and non-suicidal self-injury (NSSI) for surface and deep structure adaptations. Participants interacted with these websites and rated their usefulness. Results showed limited racial/ethnic representation on the websites. Surface structure adaptations included translation tools and diverse visual representation. Deep structure adaptations included adapted website content, often acknowledging historical harms. No significant associations were found between the representation on websites and usefulness ratings. While the findings indicate that representation did not improve or detract from ratings, the lack of representation and prior research might highlight a need for website developers to incorporate more adaptations.

Biegel, Sophie

University of Oregon

Mentor(s): Danielle Benoit, Phillip Hernandez

Poster #234

3D in vitro model of osteoarthritic cartilage for screening therapeutic siRNA-loaded nanoparticles

Osteoarthritis (OA) is a prevalent joint disease, with no disease-modifying drugs available. Since OA is characterized by articular cartilage degradation with poor intrinsic healing capacity, silencing OA-associated genes via small interfering RNA (siRNA) is a promising therapeutic strategy, although delivery remains a barrier. We previously developed a polymeric nanoparticle (PNP) platform for siRNA delivery. Here, siRNA-loaded PNPs were tested in a 3D in vitro model of human osteoarthritic cartilage, enabling representative, high-throughput testing of gene targets. Chondrocytes were isolated from a healthy donor, pelleted and cultured for 14 days to promote chondrogenesis, and stimulated with IL-1 β and TNF- α on day 11 to induce an OA phenotype. This resulted in a $57 \pm 6\%$ reduction in glycosaminoglycan (GAG) content compared to controls,

validating this model. To measure gene silencing and tissue compatibility, chondrocytes were treated with GAPDH or non-targeting siRNA-loaded PNPs and cultured as pellets. On day 2, $74 \pm 15\%$ of GAPDH expression was silenced relative to controls. On day 7, GAG synthesis did not significantly decrease compared to PBS-treated controls. These results suggest specific genes can be silenced without inducing degradation of extracellular matrix components. Ongoing studies focus on identifying therapeutic gene targets using RNA sequencing. Broadly, this work provides a foundation for complex OA drug screening models to advance siRNA-based therapies.

Bielat, Liam

University of Oregon

Mentor(s): Matthias Agne

Poster #140

Using Machine Learning to Extract Phonon Scattering Parameters from Thermal Conductivity Data

This project explores whether machine learning can be used to extract physically meaningful phonon scattering information from thermal conductivity data. In crystalline materials, heat is carried by lattice vibrations, and the way these vibrations scatter strongly influences thermal transport. Traditional analytical approaches can describe this behavior but often rely on difficult parameter fitting. Building on these ideas, this work uses synthetic thermal conductivity data generated from established transport models to train neural networks to predict underlying scattering parameters directly from thermal conductivity data. A key focus of the project is understanding how the temperature range of the input data affects the accuracy of the extracted coefficients, particularly the important role of low-temperature data in providing useful scattering information. By comparing predictions on synthetic and real material data, this project evaluates both the promise and the limitations of machine learning for interpreting thermal transport. More broadly, it shows how data-driven methods can complement physics-based modeling in the study of solid-state material thermal conductivity.

Bierly, Alicia

University of Oregon

Mentor(s): Rori Rohlf

Poster #191

Role of Tandem Repeats in Adaptive Archaic Introgression Across the Human Genome

Tandem repeats (TRs) are highly variable DNA elements characterized by consecutive motif repetitions, influencing gene expression and protein structure. Their high mutation rates make them compelling sources of adaptive variation in human evolution. One evolutionary process of interest is adaptive introgression,

defined as the transfer of favorable alleles through archaic tracts. These genomic regions, inherited from archaic humans, can carry adaptive alleles maintained through positive selection. While the role of single-nucleotide polymorphisms (SNPs) in adaptive introgression has been studied, the role of TRs remains unexplored. Scientists studying the MUC19 gene using SNPs identified a positively selected introgressed tract containing a TR, highlighting the potential in this research. However, no genome-wide study has examined this relationship. Recent advances in long-read sequencing and introgression mapping enable the investigation of TRs within introgressed regions and offer insights into their joint relationship in human adaptation. Our goal is to investigate the broad role of TRs across the genome in adaptive archaic introgression. Using 1000 Genomes dataset, we constructed a per-individual-haploid table of TR loci and introgressed tracts across 663 samples. Our analysis investigates patterns of divergence in TRs and their relation to archaic introgression. These results could implicate TRs as a source of importance in exploring variation in evolution.

Biesty, Liam

University of Oregon

Mentor(s): Scott Fisher, Jim Imamura

Poster #141

Co-Presenter(s): Ian Sherman

Calibrating and Quantifying Cluster Membership of M52 Using GAIA/PMO Photometry

In summer 2025 we obtained images of the open cluster M52 in the Johnson B, V, and R filters using the Robbins telescope at Pine Mountain Observatory (PMO). After data reduction and calibration procedures, the data was used to create color-color and color-magnitude diagrams (CMD) for the cluster. Cluster membership was determined via program pyUPMASK, an unsupervised statistical method using principal component analysis. Field photometry was performed with AstroImageJ (AIJ), including background subtraction and annulus corrections. Comparison stars were selected through coordinate matching the SIMBAD database and our reduced GAIA membership list. Manual removal of stars deemed too difficult to individually resolve also occurred. PMO's exposure time limited detection to roughly 17th magnitude stars, inhibiting our ability to detect stars on the main sequence. Using custom python scripts, a CMD was constructed and then fitted with theoretical isochrones from the PARSEC program. Good alignment of Gaia and PMO's CMD enabled us to determine estimates of age and distance to the cluster. The original goal to refine M52's cluster member catalog has since changed to adopting strategies to create better quality photometry data for future observing.

Bindal, Vaani

University of Oregon

Mentor(s): Hironori Uehara, Balamurali Ambati

Poster #266

Developing an in vitro model for late-onset Fuchs Endothelial Corneal Dystrophy

Purpose: Late-onset Fuchs endothelial corneal dystrophy (FECD), which is caused by expanded (CTG)_n repeat in the intron of TCF4 gene, is a leading cause of corneal transplantation. Here, we determine whether TCF4 minigene with expanded CTG repeat can induce FECD phenotypes in mouse corneal endothelial cells (CEC).

Methods: Recombinant adenoviruses (Ad-hTCF4-CTG960 and Ad-hTCF4-CTG0) were used for introducing TCF4 minigene to mouse CECs. CCK-8 assay and crystal violet assay were used to determine cell viability. (CUG) RNA expression was confirmed by in situ hybridization. RT-PCR was performed to detect TCF4 minigene expression and RNA splicing shift. Immunostaining was done with ZO-1 and alpha-SMA to visualize change in phenotype of mouse CECs.

Results: Cells treated with Ad-hTCF4-CTG960, determined by in situ hybridization, had 31.4% more than four RNA-foci while CTG-0 and no infection had 2.0%. RT-PCR revealed mbnl1 and mbnl2 alternative splicing shifts similar to FECD by hTCF4-CTG960. Immunostaining data of the cell viability of the mouse CEC with ZO-1 and alpha-SMA show a trend that increased passaging of the cells increases alpha-SMA expression and decreases ZO-1 expression.

Conclusion/Discussion: The hTCF4 minigene with long CTG trinucleotide repeats induced FECD phenotypes in the mouse CEC in vitro. Our in vitro model captures characteristics of FECD expression pattern and may be useful for understanding FECD developing mechanisms and drug discovery.

Boeschoten, Audrey

University of Oregon

Mentor(s): Audrey Davenport, Carl Brozek

Poster #159

Novel Functionalized Cu-4-methyl-1,2,3-triazolate MOF for Tunable Sorptive Properties

The world is currently in a clean water crisis due to climate change and water pollution. Current methods for harvesting clean water from the atmosphere include condensation, which is high in energy and inefficient. The chemical tunability and high porosity of Metal-Organic Frameworks (MOFs) make them good candidates for passive water harvesting to produce clean, drinkable water sources. Recently, our lab has investigated Cu-1,2,3-triazolate at the nanoscale for its effective water adsorptive properties that are observed alongside

a structural phase change. To understand why this phase change occurs with adsorption, an intimate understanding of the pore space is needed. My project focuses on functionalizing the linker of Cu-1,2,3-triazolate to synthesize novel Cu-4-methyl-1,2,3-triazolate for studying adsorptive properties and dynamic phase change behavior. Preliminary data has shown some synthetic challenges fundamental to MOF synthesis, which can be analyzed by characterization with PXRD and SEM to shape future synthetic steps.

Bohling, Annabelle

University of Oregon

Mentor(s): Andie Pruett

Creative Work

You are not alone

My struggles with mental health inspired me to pick up the pen; what kept me writing was learning that I'm not alone in my struggles and I want to make sure others know they aren't alone either.

Bolourchian, Lara

University of Oregon

Poster #300

Infant Object Holding Episodes in 1-hour of Daily Life

See Shah, Subrina

Booker, Flora

University of Oregon

Mentor(s): Tobias Policha, Amanda Stasiewicz, Marisa King

Poster #125

Early Successional Dynamics Following Prescribed Fire In A Ponderosa Pine Woodland

As wildfire intensity and extent increases under climate change, it is vital to explore the role of community-led prescribed fire in both reducing wildfire risk and shaping plant growth in eastern Cascade ponderosa pine ecosystems. I analyzed plant presence across prescribed fire and other treatments implemented over seven years by the Mount Adams Resource Stewards Prescribed Burn Association (MARS PBA) in Glenwood, Washington. I focused on *Purshia tridentata*, given its role as a ladder fuel that could assist fire into the forest canopy. Community impacts were measured and facilitated by (1) quantifying the amount and diversity of species and functional groups across sites with different treatments, (2) recording overstory plant size and structure, and (3) fostering community science engagement.

Data were analyzed using generalized mixed models across functional groups, revealing that the height of the ladder fuel *Purshia tridentata* significantly decreased after fire relative to other treatments, suggesting that burning can contribute to increased wildfire resilience ($P = 0.0079$). Species richness increased with time since burn, and plant communities diverged by treatment, with some species occurring in burned plots and others restricted to unburned areas. Community science efforts were supported by developing a field-ready plant guide and creating an iNaturalist project to create accessible tools that support education, outreach, and ongoing stewardship efforts.

Boorstein, Oliver

University of Oregon

Mentor(s): Reza Rejaie, Chris Misa

Oral

ATLANTIS: Aggregating Telemetry for Large-scale Analysis of Network Traffic and Internet Structure

The University of Oregon's network processes over 1 billion flows and nearly 100 TB of data daily, a scale that makes manual analysis infeasible. Existing tools are either command-line-only or costly commercial platforms, neither suited to interactive research. Built for large-scale network research and released under the MIT license, ATLANTIS fills this gap. ATLANTIS reads raw NetFlow records from disk and processes them into a database optimized for interactive queries, including multifractal address analysis. Queries return in under a second, even across millions of flows. The ingestion pipeline is fast enough to keep pace with live data, and is self-repairing, automatically handling any gaps, delays, or collection outages. ATLANTIS is dataset-agnostic and self-hostable. To date, the Oregon Networking Research Group (ONRG) has deployed ATLANTIS to analyze over 25 TB of telemetry, uncovering anomalies including obscure protocol usage by external hosts, spikes in unique address counts, and network outages. Visualizations span traffic volume trends, protocol distributions, and novel visualizations of multifractal IP address structure, supporting anomaly detection techniques developed by ONRG. ATLANTIS also serves as the data foundation for a forthcoming ML-based traffic forecasting project, establishing a reproducible pipeline for long-term network measurement research.

Borowsky, Cat

University of Oregon

Mentor(s): Corbett Upton

Virtual

“The Barley Grew Up Out of the Grave”: The Second Line in “Requiem for the Croppies”

Seamus Heaney’s “Requiem for the Croppies” is a sonnet of mourning and celebration, looking back across centuries of Ireland’s ongoing struggle for freedom. Written during the Troubles, Heaney placed his reader into the eyes and heads of Irish fighters who participated in the same struggle for freedom almost 200 years prior to Heaney’s perspective. Tying together multiple generations of freedom fighters, the poem traces the tradition of Irish determination, even in the face of unyielding colonial power. This essay discusses the rhetorical choices the author made to allow the poem to act as its own form of rebellion, placing power not just in the words, but in the poetic form itself.

Boudreau, Tobias

University of Oregon

Mentor(s): Julius McGee, Raoul Liévanos

Oral

Assessing the Role of Imperialism on Energy Regime Development in the Global South

Energy has always been central to the governance of human life—but the relationships governing its extraction, circulation, and distribution have never been neutral. They have consistently reinforced asymmetries of power between colonized peoples and hegemonic actors. This dynamic has grown only more visible with the rise of the so-called “green” energy transition, as capital-intensive infrastructure projects continue extracting valuable resources beneath narratives of apoliticality and mutual benefit. Yet the specific mechanisms through which (neo)colonial actors reproduce energy extractivism remain undertheorized. This research addresses that gap. Through comparative-historical analysis across three distinct political-economic periods, I identify three core mechanisms of (neo)colonial energy capture. This framework (1) challenges the romanticization of localism, grassroots organizing, and green capitalism that obscures critical analysis of renewable transitions; (2) advances a more historically grounded account of energy colonialism; and (3) illuminates how coloniality constrains citizens’ capacity to make democratic energy claims in the Global South. Without this clarity, energy transitions risk not merely failing to democratize access and governance—they risk actively reproducing the extractive logics they claim to supersede.

Boudreau, Tobias

University of Oregon

Mentor(s): Julius McGee, Raoul Liévanos

Poster #075

Assessing the Role of Imperialism on Energy Regime Development in the Global South

Energy Democracy is a political economy theory which only fully emerged in academic literature within the past decade. Energy democracy links decarbonization projects with changes to who controls energy production and distribution, arguing that the 'decentralized' nature of renewable energy presents significant opportunities for addressing socioeconomic and political inequalities. Despite the discipline's progress, there remains a lack of any real focus on how renewable energy transitions present as many opportunities for reinforcing asymmetrical power relationships as there are for balancing them. In order to address such oversight, this project employs a comparative-historical analysis between Pakistan and Thailand in order to uncover how northern hegemonic powers are moderating the emergence of energy transitions in the Global South. Through such research, this project will (a) place necessary attention on the international geopolitical dimensions shaping energy transitions within countries, (b) correct for misguided romanticisation of green energy, and finally (c) create an opening for non-hegemonic perspectives to be included within energy democracy as the field evolves.

Bourassa, Allison

University of Oregon

Poster #027

The prevalence, outcomes and perceptions of (IPV) amongst multiracial survivors

See Zelaya, Ayanna

Bouton, Jonny

University of Oregon

Mentor(s): Teresa Rapp

Poster #203

Controlled Protein Release from Photoresponsive Hydrogel

Therapeutic proteins orchestrate the signaling cascades governing wound healing as tightly regulated gradients across the inflammatory, proliferative, and remodeling phases of tissue repair. Growth factors, cytokines, and matrix-remodeling enzymes are produced and degraded in precise spatiotemporal patterns; disruption results in stalled healing and chronic non-healing wounds. Exogenous protein supplementation is a logical intervention, but efficacy is limited by delivery vehicle's ability to reproduce the dynamic release

profiles endogenous signaling requires. Ruthenium polypyridyl complexes are valuable tools for use in biomaterials, providing spatiotemporal control of cargo release through photoinitiated ligand substitution. This project developed one such material using Ru(bpy)(tpybzald)(vsulf), dubbed RuTether, which attaches to a hydrazide-modified hyaluronic acid hydrogel (HA-HYD). RuTether's photolabile vinyl sulfone ligand conjugates to a protein cargo, creating a controllable protein delivery platform. TEM1 β -lactamase was selected as model cargo for its well-defined colorimetric reaction with nitrocefin, a chromogenic substrate whose hydrolysis product absorbs at 486nm, enabling detection of released protein. TEM1 was modified with Traut's reagent to convert surface lysines to thiols, which are clicked onto RuTether and released during photosubstitution. Activity was assessed after modification and found largely unchanged compared to unmodified TEM1.

Bowman, Kimberly

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

Painted Horses: Poems about Choices, Family, and Familiarity

In my work, I often explore liminality: boundaries, cemeteries, sidewalks, and home as a feeling. In the Kidd Program, I've written about the relentless passage of time and the choices we make to endure it. Over the past two terms, I was surprised to love the formal poetry I've written; although I still gravitate toward free verse, I am excited to continue exploring poetic forms. In the symposium, I will share both formal and free verse poems, showcasing my newfound fascination with the possibilities found in limitations. I write by beginning with what's familiar—my family, our stories, and places I know well—and unfurl poems from there, speculating on the world at large. I hope my poems inspire listeners to write, read, or have thoughtful conversations with people they love and people they don't know.

Boyd, William

University of Oregon

Mentor(s): Matthias Vogel

Poster #084

Co-Presenter(s): Nathan Chilin

Human Rights Violations Within the UAE and Their Worldwide Effects

Human rights violations within the United Arab Emirates (UAE) have been a persistent concern, not only affecting those receiving abuse but also those protesting it. As discourse surrounding human rights and free speech intensifies worldwide, the UAE is at the forefront of global offenders. These violations within the UAE, and their implications for surrounding countries and the world, raise important discussions regarding a step backward in the treatment of constituents. We utilise data and research from government reports,

international organizations, and reputable news and media outlets, compiling information to mitigate corruption with our facts. Through this research, we have found there to be an undeniable violation of the rights of workers, women, expression, dissent, privacy, fair judiciary, and exploitation. Our synthesis aims to highlight the atrocities occurring within the UAE and their implications on the world and trade.

Brannan, Jessica

University of Oregon

Mentor(s): Yizhao Yang

Poster #013

Co-Presenter(s): Keara Alonso-Lopez

Mapping the Student-Centered Foodscape: A GIS Analysis of Food Access Barriers at the UO

Food insecurity among college students has gained increasing attention, yet research often emphasizes individual factors over the spatial and environmental contexts shaping daily food access. For students, access is shaped by intersecting economic, physical, and temporal constraints embedded in their routines. This study uses GIS to examine how these three dimensions intersect to influence food access among University of Oregon (UO) students. The research employs a mixed-methods approach, including a campus-wide UO survey and focus groups exploring lived experiences of food insecurity. Using GIS, the project maps the UO campus and surrounding food environment. The analysis identifies intersections among economic access (affordability), physical access (distance and transportation), and temporal access (operating hours and student schedules). GIS accessibility analysis and spatial overlays reveal areas where these barriers converge, highlighting gaps in the current food environment and informing potential interventions. By conceptualizing food access through a student-centered foodscape, the approach shifts attention from static inventories of food outlets toward the dynamic ways food resources interact with daily schedules, mobility patterns, and financial constraints. The methodology can be applied by universities and communities seeking to better understand how built environments and institutional arrangements shape student food access.

Bransford, William

University of Oregon

Mentor(s): Daniel Gavin

Poster #115

Assessing Climactic impacts on Northwest Old Growth Forests using Dendrochronological methods

The productivity of old-growth forests in Northwest Washington is largely climate-controlled. By analyzing the tree-ring growth of these stands, we can identify the key factor(s) driving growth. Over the past several hundred years, there have been cycles of drought in the Olympic Mountains, which, in part, have shaped the ecological health and function of the region. Comparing these droughts to tree rings, we can help predict future events. The trees in this study sit on the edge of the snowline, an elevation where small temperature increases greatly diminish the snowpack. They have been growing since before the year 1200, telling us a distinct story of the environmental conditions the tree experienced; the thicker the ring, the better the conditions were that year. We have measured the individual rings and compared the widths to broader climate data, including snow water equivalent, stream gauge height, and monthly precipitation. For data that extends before the 1900s, we have used a computer model called PRISM by Oregon State University to model past climate data. A changing climate may have detrimental effects on these trees. With warmer, drier years occurring more frequently, their productivity could be consequential for carbon sequestration and ecosystem stability. There have been significant scientific gaps in the role of climate for these forests, in particular with relation to snowpack. The loss of these trees could have serious environmental and social repercussions.

Brenden, Ava

University of Oregon

Mentor(s): Nicki Swann, Shahrzad Ayoubipour

Poster #261

The role of Deep Brain Stimulation (DBS) on behavior and electrophysiology during working memory tas

In my lab, we are studying how Deep Brain Stimulation (DBS) impacts both cognitive and motor symptoms in Parkinson's Disease (PD) patients. My research would be an independent offshoot from this initial research in cognition specifically. This is studied in a working memory task with DBS turned on and then off. This data is also compared to age-matched healthy control (HC) participants.

In this project, I plan to study how DBS treatment, targeting subthalamic nucleus (STN) and the globus pallidus interna (GPi), impacts working memory in PD in on and off states. Previous studies indicate that DBS may actually negatively impact cognitive symptoms despite improving motor symptoms (Bucur and Papagno,

2022). I will evaluate this using behavioral data and EEG data in the DBS on and off states. For behavioral data, I will compare the accuracy of the working memory task in both states. To analyze the EEG data, I will look at theta-band power (4-8 Hz), which is linked to cognitive processes and has shown an increased presence during memory retrieval (Herwig et. Al, 2021). So far, we have collected data from 7 PD participants and 10 HC participants. This research would help clarify how DBS impacts the cognitive symptoms associated with PD, which could help physicians better select patients who would benefit from DBS depending on their symptoms. If there are enough PD participants, there may be cognitive implications about GPi versus STN discovered as well.

Bretl, Rhiana

University of Oregon

Mentor(s): Chris Minson, Katie Lucernoni

Poster #244

Heat Acclimation in Female Endurance Athletes

Participation in women's athletics has expanded substantially over the past 50 years; however, female athletes remain underrepresented in heat acclimation research. This gap limits the development of protocols tailored to their physiological needs and training demands. The purpose of this study was to evaluate the viability of an intermittent heat acclimation protocol in trained female athletes that elicits adaptations and is ecologically valid. Twenty-four endurance trained female athletes were block randomized into the control group or the heat acclimation group. Both groups completed baseline measures alongside pre and post intervention heat tolerance tests consisting of 30 minutes of treadmill running at 70% $\dot{V}O_{2\max}$ in an environmental chamber set to 38°C. Over a three-week intervention, the heat group completed active and passive heat exposures integrated with regular training, while the control group completed matched exercise sessions in thermoneutral conditions. Body core temperature, heart rate, sweat rate, and perceptual responses were measured in the heat tolerance tests. No significant changes occurred in the control group. The heat acclimation group showed reductions in peak body core temperature (-0.3°C) and peak heart rate (-6 beats per minute), with increased sweat loss (+0.11L) compared to pre intervention. Perceptual measures showed increased thermal comfort and trended toward reduced perceived exertion in hot conditions during post intervention testing.

Brewer, Sam

University of Oregon

Mentor(s): Kris Seaman

Oral

The Crowning and Deification of Homer in the Archelaos Relief

The Archelaos Relief is a sculpture from the Hellenistic period (323-31 BCE). Despite its Italian excavation in the mid 17th century, the content indicates a Ptolemaic Alexandrian origin. The relief depicts various deities and personifications, including the famous Greek poet Homer, who is being crowned by Chronos (Time) and Oikoumene (The Inhabited World). These two personifications bear the portraits of Ptolemy IV and Arsinoe III, who reigned from around 221-205 BCE. Previous scholarship has analyzed the individual characters on the relief and the Ptolemaic context of its content; however, little research has been done on the reasoning behind why Homer is being crowned. The general argument of most scholars and the frequent title given to the relief is "The Apotheosis of Homer," which attributes Homer's crowning to the deification of the poet. Nevertheless, there is a proposed opposing argument that Homer may already be divine in this scene. By analyzing the crowning customs of the Graeco-Roman world, the similar crowning of Augustus in the Gemma Augustea, and the divine status of the Ptolemies, this paper seeks to provide further insight into the ambiguity of Homer's status in the relief. These analyses, in addition to the varying interpretations of previous scholars, contribute necessary context and perspectives to support both assessments of Homer's crowning, with sufficient evidence advocating for both his active deification and the case where he is already a god.

Brewer, Sam

University of Oregon

Poster #325

What's for Dinner 8400 Years Ago? Botanical and Faunal Analyses of a Hearth from Connley Cave 5, Or

See van Ek, Claudia

Broekhoff, Janneke

University of Oregon

Mentor(s): Tannaz Farsi

Poster #001

Art: A Labor of Love—The Intersection of Art and Labor

The American Dream is a myth, an illusive possibility many chase through hard work and labor. In my sculpture, I used raw OSB wood for the rungs of my ladder to highlight the struggle many face in the pursuit of this dream. The wood is rough and splintery, opposing the idea of a ladder and its utility. The legs are a denim blue, the color of the blue-collar workforce that supports our dwindling industries. They are also simple and sleek, an implication of how many jobs have been automated by machines. This piece is also an exploration of how art is a form of labor. I put every ounce of my physical and mental energy into this project, a transformative experience that made me appreciate the truly tactile nature of sculpture.

I wanted to emphasize the tension between movement and stasis. Though one leg is climbing the ladder, both feet are flat, prohibiting further movement. This represents how stagnant our economy can be; one can work their whole life but never move up the “ladder” and make it rich. Those at the bottom are trapped as the American Dream looms over our heads.

To be consistent with this theme of representing our workforce, I was compelled to paint the legs blue. My other materials were pine wood, OSB, and plaster. The most painstaking part was molding my feet with clay and casting them through a waste mold process. The wooden elements of my sculpture were the most laborious, crafted with heavy-duty machinery, procedurally emphasizing the theme of my piece.

Brooks, Owen

University of Oregon

Mentor(s): Woan Foong Wong, Anca Cristea

Poster #058

The McKinley Tariff of 1890: Sectoral Reallocation and Input-Output Amplification

The McKinley Tariff of 1890 is routinely categorized as one of the largest protectionist bills in U.S. history, yet aggregate tariff rates fell 8%. I quantify the welfare and sectoral price effects of the McKinley Tariff using a Caliendo and Parro (2015) multi-sector general equilibrium model calibrated to 21 sectors, with intermediate cost shares from an 1899 input-output table and production data from the 1890 Census of Manufacturing. The heterogeneous tariff schedule that raised protection on manufactured goods while cutting tariffs on sugar, chemicals, and agriculture produced aggregate welfare effects of +0.304%. Input-output linkages

reveal industries on the statutory duty-free list experienced significant price increases through upstream cost transmission from protected sectors, a result previously invisible to partial equilibrium analysis.

Brown, Jerusha

University of Oregon

Mentor(s): Mariah Kornbluh

Poster #317

The Impact of Immigration Enforcement on Community Well-Being and Resilience

The social issue addressed in this project is immigration enforcement and the impact of Immigration and Customs Enforcement (ICE) policies on individuals and communities. Immigration enforcement practices have become increasingly visible and controversial due to their potential to lead to detention, deportation, and family separation. These policies create fear and uncertainty not only within immigrant communities but also among undocumented individuals and their families, workplaces, and neighborhoods. As a result, immigration enforcement has become an important social issue, influencing the community's overall well-being, trust in institutions, and social stability. While this issue mainly effects undocumented individuals living in the United States, it also affects the community as a whole, friends, family, and partners who are susceptible to the role ICE plays in their lives. This issue also has global implications, as migration patterns, international economic conditions, global conflicts, and policy decisions. Because immigration enforcement is connected to economic, political, and social systems, it affects communities at many different levels of society. Christens (2012) discusses how psychological empowerment can be an important outcome of community development efforts. Psychological empowerment refers to the ways individuals and communities gain greater control over decisions that affect their lives. The article explains that empowerment often develops through part

Brown, Lance

University of Oregon

Mentor(s): Robert Kyr

Creative Work

The Mower To The Glow-Worms

The Mower To The Glow-Worms is a setting of the poem by the same title for Soprano Vocalist & Piano. The poem was written by the 17th-century metaphysical poet Andrew Marvell. This poem is part of a cycle of poems by the author that chronicle the story of the modest field-worker, referred to as 'Damon' in a previous poem. Damon's story is one that, like much metaphysical poetry, touches on themes and explores worlds that extend far beyond the life of the humble mower. In this episode, the mower is caught in the darkness, cutting

grass at night, his only light source the flickering of the glowworm's light, but more importantly, the mower's mind is distracted. He is preoccupied with the unrequited love of Julianna. The surroundings the mower finds himself in reflect the darkness in his mind, they give voice to the direction or light which Damon yearns for. My setting captures the imagery, the and emotions of the text. Each line of the poem is it's own world, my work describes these worlds, and extends their effect beyond the few words of each line.

Brown, Xavier

Portland State University

Mentor(s): Janet Zhang-Lea

Poster #206

The Effect of Visual Feedback Timing During Stance Phase Windows on Peak Propulsive Force

Existing gait biofeedback protocols deliver visual feedback continuously or across broad gait-cycle intervals. No study has compared distinct stance-phase timing windows to determine which most effectively enhances propulsive force. This pilot study investigates how visual biofeedback delivered during early-, mid-, or late-stance windows affects peak propulsive force (PPF) during treadmill walking in healthy adults. Ten participants (ages 18-35) complete a single-session protocol on a force-measuring treadmill at 1.25 m/s. After baseline walking, participants complete three randomized experimental blocks. In each block, a dynamically scaled circle on a monitor reflects real-time propulsive force of the right limb during one stance-phase window: early (0-33%), mid (33-67%), or late (67-100%). We deliver feedback intermittently in a two-minute on, one-minute off, two-minute on sequence, followed by a five-minute retention trial without feedback. We compare normalized PPF across conditions using ground reaction force (GRF) data and apply one-dimensional Statistical Parametric Mapping (SPM) to identify stance-phase regions where horizontal GRF profiles differ between baseline and feedback conditions. Results provide preliminary evidence on optimal feedback timing for enhancing propulsion and inform future gait-retraining protocols for clinical populations with propulsive deficits.

Brucato, Mila

University of Oregon

Mentor(s): Annette Estevez

Poster #187

Investigating the Impact of Genetic Variation on Aging between Natural Isolates of *C. elegans*

One of the central regulators of aging in *C. elegans* is an insulin-like signaling pathway, defined by the DAF-2 receptor and DAF-16/FOXO transcription factor. The activation of DAF-16 has been found to extend

the lifespan of the standard N2 wild-type reference strain. We have found that natural *C. elegans* variants from geographically unique environments differ in their response to the loss of *daf-16* expression. This research utilizes these natural *C. elegans* isolates to investigate how genetic variation influences DAF-16 activity. Under normal growth conditions, DAF-16 is inactive and sequestered in the cytoplasm; however, under stress, it translocates into the nucleus and activates genes that contribute to longevity. By labeling the DAF-16 protein with a fluorescent tag, we can observe changes in the cellular localization of DAF-16 in whole animals or isolated nuclei. Additionally, we can use Fluorescence-Activated Cell Sorting (FACS) to collect these fluorescent-tagged nuclei based on DAF-16 expression levels. Through this approach, we aim to evaluate the genetic variability that drives variation in aging among individuals. This work provides insight into how medical interventions may eventually be tailored to address age-related disorders in diverse human populations.

Bruun, Ella

University of Oregon

Mentor(s): Margaret Trout

Poster #356

Co-Presenter(s): Aria McCarstle, Lily Salimena, Aashi Singhani

Exploring Body Image Pressure and Eating Disorders in Higher Education: University of Oregon's 2025

The University of Oregon (UO) participates in the Healthy Minds Study (HMS), administered by the University of Michigan. UO has participated in the 2017, 2019, 2021, 2023, and 2025 HMS, a survey-based assessment of mental wellness and service use among college students. Since its initial launch in 2007, UO began administering the study biannually in 2017. In 2025, 786 students participated in the survey, and an analysis of HMS data was conducted. UHS partnered with the Health Equity Action Group of the Student Health Advisory Committee (SHAC) to conduct additional analyses regarding students who have indicated risk for an eating disorder and exhibit disordered eating behaviors.

A qualitative review of UO data suggests the need for improved support of students experiencing or at risk of eating disorders. UO students reported higher levels of risk for eating disorders and greater prevalence of disordered eating behaviors compared to national averages. Additionally, since the 2017 HMS, data indicates an increasing number of students reporting behaviors associated with eating disorder risk.

The Health Equity Action Group of the Student Health Advisory Committee recommends UO implement changes to increase access to and availability of physical and mental wellbeing resources to support the success of UO's student population affected by disordered eating.

Burke, Cooper

University of Oregon

Mentor(s): Mattias Vogel

Poster #089

Co-Presenter(s): Jack Weggland

How has far-right philosophy influenced the course of the Russo-Ukrainian War?

Throughout global politics, far-right political philosophies have become increasingly prevalent, and in Eastern Europe, Eurasianism and ultranationalism have become a deadly tool to legitimize wars. An ongoing example of this is the Russo-Ukrainian War, beginning in 2014 with the Russian annexation of Crimea and escalating to a full-scale invasion in 2022. Far-right philosophical-ideological currents have materially shaped the dynamics of the Russo-Ukrainian war by influencing each side's mobilization narratives, escalatory policies, and battlefield morale, intensifying both the military and informational dimensions of the conflict. This project uses a combination of philosophical literature, analytical writing, and commentary from influential far-right figures to examine the influences of these ideologies. Our research has shown that Aleksandr Dugin has had a subliminal influence on the ideological framework the Kremlin has used to justify expansion, and that Ukrainian ultranationalist movements have a significant influence on Ukrainian military propaganda and recruitment. This project showcases the importance of understanding the far-right philosophies influencing both sides of Europe's most destructive conflict since World War II.

Burr, Hope

University of Oregon

Mentor(s): Avi Locke

Poster #332

Water, Sanitation, and Hygiene (WASH) access in a pilot study among people experiencing homelessness

HL Burr, AK Locke, IK Albiani, M Ni Flainn, AL Van Steenis, TJ Cepon-Robins, LJ Weaver, JJ Snodgrass
People experiencing homelessness (PEH) in the United States often face difficulty accessing water, sanitation, and hygiene (WASH) resources. Despite being a global health priority and an integral component of social determinants of health (SDOH), WASH is rarely examined in high-income countries like the United States. Pilot data were collected in Summer 2025 on WASH and intestinal health as part of a mixed methods study in Oregon. Minimally invasive biomarkers, focus group discussions, and a brief survey were conducted among 38 PEH adults aged 21-67 years. According to participant self-report, 73% had used the bathroom outside in the previous month, 34% reported that outdoors is their primary bathroom location, 63% were able to access a shower for bathing once per week or less, 26% relied on service providers as their primary source

of water, and 45% had utilized a river or lake for bathing within the prior month. These findings highlight a critical gap in WASH access for the study participants. For PEH, SDOH play an outsized role in the ability to live, and service providers play an important role in addressing these crises experienced by PEH. This preliminary study demonstrates an urgent need for immediate and targeted interventions to provide safe WASH facilities for PEH in the United States.

Burt, Alo

University of Oregon

Mentor(s): Scott Fitzpatrick

Poster #333

Archeological Research on Sling Stone Projectiles from the Island Nation of Saipan

This project investigates archaeological sling stone projectiles from the island of Saipan through a systematic study of 110 specimens. Each slingstone was measured, weighed, classified by raw material, and evaluated for completeness, weathering, and degree of human modification. After cataloging, numbering, and bagging each artifact, I photographed them from multiple angles to document form and condition. My ongoing analysis focuses on identifying patterns in morphology, material choice, and manufacturing techniques, and situating these findings within the broader scholarship on slingstones in the Mariana Islands. The final research paper will discuss the historical and cultural background of slingstone use in Saipan, outline my analytical methods, interpret the dataset, and compare my results with published archaeological studies. I will also address the limitations inherent in surface-collected assemblages, including fragmentation, weathering, and potential sampling biases. My symposium poster will present representative photographs, quantitative graphs, and key interpretive insights, offering a comprehensive view of how these artifacts contribute to understanding warfare, craft production, and daily life in the ancient Marianas.

Butler-Corbett, Rye

Lane Community College

Mentor(s): Erika Masaki

Poster #012

Cheap meat? And Why it's Affecting Public Health and Climate

Before meat and animal products even reach the supermarket, methods of production produce highly toxic gas and liquid run-off from animal excrement. Individual proximity to these factory farms is linked to increased risk of diseases like cancer. Moreover, high rates of meat consumption are linked to another myriad of health problems from obesity to respiratory distress.

It is the US government that fiscally incentivizes both the excess production and consumption of animal products. In fact, animal agriculture is very dependent on government subsidies, wherein commodity crops like GMO corn and soy are grown almost exclusively for livestock in factory farms. This artificially reduces the price of meat, making it cheaper per calorie than plant based products.

This report is grounded in the interrelated nature of public health and climate change, using a variety of peer-reviewed sources to examine the impact of animal agriculture on climate and public health. By continuing to ignore the negative externalities of the animal agricultural industry, global temperatures will continue to rise as quality of life deteriorates.

This report uses a variety of peer-reviewed literary sources to explore the impact of animal agriculture on climate and public health. Based on the established literature, it seems plausible that a shift in subsidies would improve economic well-being via resolution of these issues.

Campbell, Cate

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

Poetry by Cate Campbell

The poems I am choosing to present I have written during my time in the The Walter and Nancy Kidd Creative Writing Workshop for Poetry in the 2025-26' academic year. My poetry often includes themes of killer whales, the ocean, Desolation sound, nostalgia, and childhood. I am a dual citizen of the U.S. and Canada, and have been visiting my mom's family's cabin on a small island in Desolation Sound yearly throughout my life. Since I was a child, this has been the most special place on earth to me. I have been captivated by the moss and lush forests as well as the sea and its multitude of inhabitants throughout my entire life. Early on, killer whales were very special to my family and I and we always dreamed of seeing them. Last summer, my mom, sister, and I visited Telegraph Cove on Vancouver Island, B.C., where we spent a week surrounded by killer whales in the most unexpected and touching moments which has greatly impacted my writing throughout this year. This trip influenced my work heavily as I explored the depth of what myself and my family experienced, and what it meant to me. I also tend to focus on memories in my poetry that mingle with nostalgia and yearning to go back to a time that no longer exists. Themes of naivety and innocence intertwine with loss and maturity as I question what it means to grow up. I also enjoy working with rhyme in my poetry and writing in the form of ghazals and sestinas.

Campbell, Sydney

University of Oregon

Mentor(s): Puja Clifford

Poster #063

Balancing Policy and Practice: A Qualitative and Critical Analysis of Oregon's TSEL Policy

As schools and districts across the United States face increasing concerns about student mental health and behavior, schools are being asked to provide more than just subject-matter education to their students. Social and emotional learning (SEL) is a development framework designed to support student development through integrating social, emotional, and cognitive skills into their education. A subset of this, transformative social and emotional learning (TSEL) has arisen to meet student needs more broadly by bringing identity and social justice initiatives into SEL curricula. In 2021, Oregon passed House Bill 2166, which required the creation and implementation of TSEL standards for Oregon's K-12 classrooms and teacher education programs. This study examines the process of translating this legislation to practice and looks critically at the practicality and reality of enforcing educational ideals with policy. Through examining the text of the bill, looking at documentation surrounding the creation of Oregon's TSEL standards, and examining the final standards, this study looks at how Oregon has translated legislation to practice, and how this decision plays into a broader national conversation surrounding the role of SEL in the classroom. Oregon's approach stands out, placing a requirement for SEL into a landscape full of recommendations, and sets the stage for other states to consider the values and challenges of protecting their educational goals within state legislation.

Caplan, Shaina

University of Oregon

Mentor(s): Lillian Aoki

Poster #101

Seagrass Wasting Disease and Productivity in Eelgrass Meadows of the Coos Estuary

The seagrass *Zostera marina* (eelgrass) is a foundational species which provides essential ecosystem services, but is imperiled by seagrass wasting disease (SWD) caused by the pathogenic protist *L. zosterae*. Climate change conditions can increase SWD, which inhibits photosynthesis and reduces growth rates and non-structural carbon (NSC) reserves in eelgrass. As such, this study investigated the effects of SWD on eelgrass productivity by measuring blade growth rates and rhizome NSC concentrations. This study also addresses the lack of information on the effects of SWD at the blade- and shoot-level compared to the meadow-level.

Our study entailed field experiments at eelgrass meadows in Oregon's Coos Estuary. Our methodology included marking eelgrass blades to determine growth rates along with rhizome collection to determine NSC concentrations. NSC concentrations were measured in the laboratory using chemistry techniques, and we assessed the shoot samples for disease metrics.

Preliminary results indicate that older and diseased blades were associated with reduced eelgrass productivity, likely because SWD destroys plant chloroplasts and prevents photosynthesis. Further analysis will be conducted to determine the effects of SWD and rhizome NSC on the eelgrass. Our findings will help inform disease mitigation and restoration efforts in eelgrass meadows in an age of intensifying environmental changes to coastal ecosystems.

Caplan, Shaina

University of Oregon

Mentor(s): Lillian Aoki

Virtual

Seagrass Wasting Disease and Productivity in Eelgrass Meadows of the Coos Estuary

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Caropelo, Leo

University of Oregon

Mentor(s): Michael Moffitt

Poster #048

Medical Monitoring and State Superfund Exposure

Today, one in five Americans live within three miles of a federally designated “Superfund” hazardous waste site. Living near one of these sites naturally creates concern over the possible negative health effects of exposure, but signs of harm can take years to appear. In order to remedy this problem, 15 US states and territories have adopted the controversial legal practice of medical monitoring claims, which allow for the payment of damages for medical testing to those with an increased risk of toxic exposure from negligent conduct. I wanted to explore if a connection exists between a state’s exposure to Superfund sites and the status of medical monitoring in that state. To do this, I selected seven variables to test against the dependent variable of whether a state had adopted medical monitoring. For five of these variables, tests were run to determine correlation. Two non-statistical variables were also considered. Through these tests, no statistically significant results were found; however once two outliers were removed, a statistically significant link was found between medical monitoring approval and the number of Superfund sites in a state. Ultimately, this is a relatively unexplored topic that deserves future consideration, and I’ll be exploring it further for my undergraduate thesis!

Carrott, Beatrix

University of Oregon

Poster #003

The Butterfly House—Prefabricated Multi Paneled Plywood Housing

See Darby, Cocoro

Cecil, James

University of Oregon

Mentor(s): Raj Shekhar, Paul Kempler

Poster #154

Control of nanoscale morphology in magnetite unlocks reactivity for iron electrodeposition

Steel production contributes 8–9% of global CO₂ emissions, motivating research into electrolytic iron deposition as a zero-carbon alternative. The Kempler group investigates reduction pathways of iron oxides in alkaline media, where hematite (α -Fe₂O₃) is typically considered more electrochemically active

than magnetite (Fe_3O_4), though prior studies often neglect particle size and morphology effects. Here, we synthesize magnetite and hematite nanoparticles with controlled size and shape to directly compare their electrochemical behavior. At high current densities, both oxides exhibit comparable faradaic efficiencies but differ in plating morphology during bulk deposition. They also follow distinct reduction mechanisms: magnetite forms a passivating surface layer, whereas hematite does not. These differences were characterized using cyclic voltammetry, rotating ring-disk electrode measurements, in situ Raman spectroscopy, and chronoamperometry, complemented by XRD, SEM, and TEM analyses before and after deposition. To improve the performance of low-grade magnetite ores, we developed a reprecipitation-based synthesis method that tailors nanoscale morphology, increasing faradaic efficiency from 6% to 62% during high-current electrodeposition of blast furnace-grade ore. Ongoing work applies this approach to diverse iron ore feedstocks to identify cost-effective and selective materials for scalable iron electrodeposition.

Chang, Melody

University of Oregon

Mentor(s): Rori Rohlf, Carolina Adam

Poster #194

Tandem Repeats and Adaptive Archaic Introgression in HPRC Individuals

Tandem repeats (TRs) are repeating units of DNA of variable length that undergo frequent mutations, making them important sources of genetic variation. TRs have a range of implications, being linked to gene expression regulation and certain diseases. However, the evolutionary impact of TRs, specifically their role in adaptive variation in humans, is underexplored. One study on the MUC19 gene highlights how archaic introgression may introduce adaptive TR alleles. Individuals in the study were found to have a Denisovan-like haplotype with a large expansion in a coding TR compared to the non-archaic haplotype. The results of the MUC19 study led us to investigate how TR variation may drive adaptive archaic introgression. The availability of long-read sequenced population data and high quality identification of introgressed tracts enables us to explore the joint relationship of TRs and archaic tracts in human adaptation. We used *hmmix* to identify archaic and non-archaic tracts for 20 individuals in the Human Pangenome Reference Consortium. The Tandem Repeat Genotyping Tool was used to genotype TRs in the same individuals. Then, we merged the data to find which TR alleles are on introgressed tracts. We are analyzing how divergence in TR lengths between introgressed and non-introgressed alleles may indicate adaptive introgression. Our results will contribute to our overall understanding of the role of TR variation in human evolution.

Chapman, Brooke

University of Oregon

Poster #027

The prevalence, outcomes and perceptions of (IPV) amongst multiracial survivors

See Zelaya, Ayanna

Chayka, Fedor

University of Oregon

Mentor(s): Matthias Agne, Nathaniel Skeele

Poster #164

Activation energy in sodium ion conductors: a computational investigation

Electrification across many industries creates a strong demand for efficient batteries. Solid-state batteries, that replace the conventional liquid electrolyte with a solid compound, show promise for higher energy density and improved safety. A major challenge with solid-state battery design is the lack of solid electrolyte materials with high ionic conductivity. Tungsten-doped sodium thioantimonate has one of the highest known sodium ionic conductivities, and is thus a good model to investigate the fundamental physics of ion conduction. Here, we use a combination of computational and experimental methods to investigate the pressure dependence of ionic conductivity in this material. We modeled the activation barrier for ionic conductivity (the energy required for an ion to hop between sites) in 2x2x2 supercells at different volumes (correspondence between volume and pressure was calculated from the bulk modulus of the material) using Density Functional Theory. An approach similar to the Nudged Elastic Band method was used: energies of intermediate images (similar to frames in a stop-motion animation of the ion movement) were computed. The energy barrier computed in this way showed reasonable agreement with literature values. We have also synthesized pure and 10% doped sodium thioantimonate, and are starting to perform ionic conductivity measurements on those samples.

Cheng, Brandon

University of Oregon

Mentor(s): Brittany Lyon, Nicki Swann

Poster #258

Dopaminergic Effects on Accuracy and Response Time in Parkinson's Cognitive-Motor Tasks

Parkinson's Disease (PD) is a neurodegenerative disorder characterized by cognitive and motor impairments affecting response time (RT) and accuracy. This study examines how dopaminergic medication influences

RT and accuracy in participants with PD compared to healthy controls (HC). We hypothesized that PD participants would show reduced accuracy and slower RT compared to HC, and that medication would improve performance, though alternative outcomes were considered, given the variability in medication effects. Participants completed an arrow-response task requiring fast, accurate keypress responses to directional arrows. A practice phase established individual timing, followed by four experimental blocks where stimuli were presented to encourage slower versus faster responses. Participants included older adults (60-80) with PD ($n = 9$) and age-matched healthy controls ($n = 11$), both tested in medicated (ON) and unmedicated (OFF) states. Preliminary results indicate that during fast and slow blocks, PD participants exhibited poorer performance in the ON state than in the OFF state, as reflected by reduced accuracy and slower response times. These findings suggest that although dopaminergic medication is known to improve motor symptoms in PD, it can have more complex impacts on motor performance in cognitive-motor tasks, perhaps because medication has a negative effect on cognition. As this is an ongoing study, sample size, variables, and analysis are subject to change.

Chester, Kalel

University of Oregon

Mentor(s): Stephanue Majewski

Poster #138

Searching for Displaced-Vertex Dark Photons: The Limitations of Fast Simulation

The Standard Model of particle physics is one of the most successful theoretical frameworks for describing our universe, but it leaves key questions unanswered, including the nature of dark matter and the existence of hidden sectors. A promising candidate in the search for dark matter is the dark photon, a hypothetical hidden-sector particle, which is most often sought via prompt decays. This project explores an unconventional signature: a long-lived pseudoscalar mediator ϕ produced via Higgs decays, which subsequently decays into photons and dark photons. Because ϕ decays through a loop of heavy dark fermions, its lifetime can be macroscopic, producing displaced decay vertices—a striking signature with a low Standard Model background. To investigate this signature, we simulated the model's kinematics and detector response, focusing on the effects of the ϕ 's displaced decay vertex. Our initial simulations revealed that, while the delayed detector interaction of the photons, caused by the displaced decay vertices of the long-lived ϕ , is accurately calculated, the simplified calorimeter geometry and operation in Delphes are insufficient to reconstruct photon electromagnetic shower profiles and production vertices, which are critical to understanding the model and determining potential experimental sensitivity. These findings highlight the necessity of full-scale detector modeling.

Chilin, Nathan

University of Oregon

Poster #084

Human Rights Violations Within the UAE and Their Worldwide Effects

See Boyd, William

Chmelir, Nicola

University of Oregon

Mentor(s): Carrie McCurdy, Jade Truong

Poster #250

Impact of metformin during pregnancy on fetal and skeletal muscle growth in Rhesus macaques

Gestational diabetes (GD) carries immediate pregnancy and long-term cardiometabolic disease risk for both the mother and the child. Metformin is the most prescribed alternative to insulin for GD treatment but crosses placenta unmetabolized and may have unintended consequences to fetal growth and metabolism. We hypothesize that metformin alters nutrient delivery and fetal use regulating growth. Adult female Rhesus macaques were randomized to metformin (MET) or placebo (PLA) and fed a control (CD) or Western-style diet (WD) until Cesarean section at 0.85 gestation. Fetal or neonatal weight at 7 days was measured (10-14/group). Fetal cross-sectional area (CSA; 6-10/group) was measured in gastrocnemius (GAS) and soleus (SOL) by immunofluorescence and quantified with CellPose and FIJI software. Data were analyzed by a two-way ANOVA. Maternal variables were correlated to fetal growth. Fetal weight was lower in females from MET/CD vs. MET/WD (INT, $p=0.0391$), but not males. Neonatal weight was lower in female MET/CD and PLA/WD vs. PLA/CD (INT, $p=0.0067$). Average CSA was not significantly different by diet or treatment for either muscle. Maternal glucose levels correlated with fetal SOL CSA ($p=0.018$, $r^2=0.5904$) in the MET. In contrast, maternal insulin correlated with fetal GAS CSA in all animals, but driven by PLA ($p=0.0003$, $r^2=0.64$). In healthy pregnancies, metformin alters the relationship between maternal-fetal nutrient supply and fetal muscle growth.

Chowdhury, Sameeha

University of Oregon

Mentor(s): Curtis Phills

Poster #045

Human and AI Judgments of Criminal Defendants

Artificial intelligence (AI) is playing an increasingly important role in complex decision-making processes across multiple domains, including employment, healthcare, and the criminal justice system. However,

concerns have been raised that AI could replicate the racial and gender biases that exist within human decision-making processes. The purpose of this research is to test whether AI-generated legal judgments and mental images of criminal defendants reflect the implicit racial and gender biases embedded within human decision-making. AI and human participants will complete the same legal decision-making experiment. In Phase 1, AI and humans will read a criminal court scenario and provide their judgments on guilt and sentencing. Both will also complete a forced-choice image selection task to create classification images representing their mental representation of the defendant. In Phase 2, AI and a novel group of participants will rate the classification images along various dimensions including perceived race, gender expression, threat, guilt and criminality. We expect that both AI-generated and human legal judgments will exhibit similar levels of racial and gender bias. As such, understanding the extent to which algorithmic systems reproduce human bias is vital to gaining a greater understanding of the harmful impacts of increasing use of AI in legal decision-making processes.

Cicconetti, Carlo

University of Oregon

Mentor(s): Peter Schlachte

Creative Work

The Translators

"The Translators" is a story about two people attempting to save a dying language. I originally intended it as a feel-good tale inspired by the time that Gabriel García Márquez said that he preferred the English translation of 100 Years of Solitude. As beautiful as the sentiment is, my own incredulity and the historical backdrop of American colonialism quickly pushed the story in a darker direction. It turned out the message of "isn't everything so beautiful in English" felt insensitive, simpleminded, and also failed to capture what I find so incredible about the act of translating. The story became about the painful limits of understanding one another, and the one sided nature of conversations that occur under power imbalances. However, in this conflict what became clear was that the tremendous, often thankless efforts we go through to understand others are still worthy of appreciation, despite the inevitable shortcomings.

Ciesla, Findlay

University of Oregon

Mentor(s): Christina Karns

Poster #281

Inter-Rater Reliability of ongoing EEG with Human Identification of Independent Component Artifacts

Scalp-recorded EEG reflects the summation of excitatory and inhibitory post-synaptic potentials in the brain, along with artifacts (e.g. noise from muscles, eyes, or the environment) requiring data-cleaning protocols. The decision-making aspects of the artifact-removal protocol introduce a need to assess inter-rater reliability, a measure of the consistency and agreement between raters, but this is not a standard practice. The most prominent studies of EEG rater-reliability focus on seizure-detection, failing broad generalizability. Our study investigates inter-rater reliability of our artifact-removal protocols on the individualized alpha frequency (IAF), a measure of ongoing brain-oscillations in our studies of meditation and attention. We will test the rater-reliability of the amplitude of the IAF using our current training protocols for artifact removal (i.e. manual removal of large artifacts followed by removal of artifact independent-components, ICA). If our training protocol is sufficient to produce agreement between raters, we expect an intra-class correlation coefficient of .80 or higher. Establishing the reliability of measures of ongoing oscillations would enable examination of moment-to-moment shifts in attention or meditative states, allowing for insights otherwise lost in more static measures like event-related potentials (ERPs) or less ecologically-valid and more expensive methods like fMRI. Reliable protocols also enable longitudinal studies.

Clark, Jessica

University of Oregon

Mentor(s): Corbett Upton

Works in Progress: Lightning Rounds

Mandating Community-Based Crisis Response Teams

Being a newer resident of Eugene, Oregon, I was interested in learning more about our community crisis response team - Crisis Assistance Helping Out On The Streets (CAHOOTS). While the city of Eugene did end their contract with White Bird Clinic in 2025, knowing it still had an active presence in Springfield, as well as being a point of reference across communities and lawmakers around the U.S., I not only wanted to understand more about community-based crisis response teams, but also better understand their efficacy when it comes to assisting houseless individuals, those experiencing mental or health crises, and how pivoting away from police force and criminal intervention can overall benefit the individual needing aid or resources. Utilizing peer-reviewed journals and data, I was able to gather information on how police presence

among these individuals in crises can lead to harm and further entrapment in the cycle of homelessness or mental crisis. CAHOOTS empowered the community of Eugene/Springfield in an inspiring manner, and several communities across the nation have also built up the same strengths and now lean into them, rather than utilizing the criminal or legal system. It is imperative that we as a community, and also among the Family & Human Services field continue to prioritize and push community-based crisis response teams. Unhoused individuals are members of our community, and should be recognized as such.

Clemons, Amber

University of Oregon

Poster #328

Poly-specific Associations in African Monkeys Impacted by Forest Type and Canopy Height

See Grady, Ray

Cleveland, Tucker

University of Oregon

Mentor(s): Deanna Choi, Ashley Walker

Poster #230

The Interaction of Hypertension and the APOE Genotype on Large Artery Stiffness

Late onset Alzheimer's disease (LOAD) is the leading cause of dementia and is driven by both genetic and vascular risk factors. Apolipoprotein E has three isoforms (E2, E3, E4) and plays a critical role in cholesterol metabolism and cerebrovascular function. A recent study showed that E4 is associated with an earlier onset of estropause, marking the termination of the estrous cycle. Additionally, hypertension (HT) induces arterial stiffening and promotes endothelial dysfunction. We elucidated how these factors interact to amplify vascular dysfunction and contribute to LOAD. We studied male and female E3xAPP and E4xAPP mice (12 mo; n=5-8/group). Our control (CT) group was fed a high-fat (HF) diet, and HT groups received either a HF or a HF and low sodium (LS) diet. HT was induced via subcutaneous osmotic pump containing angiotensin II. Vaginal lavage was conducted to determine estrous cycling in female mice. Pulse Wave Velocity (PWV) was conducted pre- and post-surgery to measure arterial stiffening. Vaginal lavage confirmed that female mice across all groups were undergoing estrous cycling. A significant increase in PWV was observed in E3xAPP HT post-surgery compared to pre-surgery E3xAPP HT and post-surgery E4xAPP HT. These findings suggest genotype-dependent vascular response to HT, with E3xAPP mice exhibiting an increase in arterial stiffness, while E4xAPP mice exhibited reduction in PWV, which indicates a preemptive compensatory mechanism to HT and dietary stress.

Cobos, Chloe

University of Oregon

Mentor(s): Ramón Alvarado, Jacob Neal

Oral

Truth as the Daughter of Time: Francis Bacon's Epistemology and its impact on Philosophy of Science

As we approach the 400th anniversary of Sir Francis Bacon's death, a historical and philosophical reassessment of his work is warranted. Bacon's emphasis on inductive reasoning and observation laid foundational groundwork for things like the scientific method—in fact, he is often referenced as the so-called “father” of the scientific method—but his influence extends beyond science to the broader humanistic and institutional project of knowledge production, a topic which philosophy has centered on particularly for the greater part of the 19th and 20th centuries. Philosophers have famously offered challenges to the production of knowledge (i.e. Hume, Popper, Kuhn), yet Bacon's preceding and multidimensional epistemic norms may have anticipated responses to such problems. This paper will examine the lasting impact of Sir Francis Bacon's contributions to the philosophy of knowledge, or epistemology, looking particularly at his proposed epistemic norms. I argue his influence is most evidenced by the mechanism *experientia literata*. Translated as “experience made literate,” or “learned experience,” I divide Bacon's *experientia literata* into three epistemic norms which are still relevant to scientific inquiry today. These are, 1) replicability, 2) social externalism, and 3) temporality.

Coelho, Jackson

University of Oregon

Mentor(s): Phillip Hernandez

Poster #235

Evaluating siRNA-loaded polymeric nanoparticles (PNPs) in THP-1 macrophages

Osteoarthritis (OA) is a painful joint disease driven by progressive tissue degeneration. Inflammation, a primary determinant of OA, is associated with pain and dysfunction. Pro-inflammatory macrophages are central to this response, secreting catabolic factors in the osteoarthritic joint. When considering their phagocytic nature, they are promising targets for therapeutic small interfering RNA (siRNA) delivery mediated by polymeric nanoparticles (PNPs). The objective of this study was to establish methods for transfecting THP-1 macrophages. Imaging showed attachment and morphological changes, indicating differentiation, following phorbol 12-myristate 13-acetate supplementation. To assess cytocompatibility, THP-1 macrophage metabolic activity was measured after treatment with 10, 20, and 30 nM GAPDH siRNA-loaded PNPs for 4-24 hours. No 4-hour treatments reduced activity to below 75% relative to untreated controls, with means from

$80.1 \pm 4.9\%$ to $119.0 \pm 14.0\%$. However, 24-hour treatment with 30 nM siRNA-loaded PNPs reduced metabolic activity to $40.0 \pm 5.9\%$ relative to untreated cells after 24 hours and $16.0 \pm 4.9\%$ after 48 hours. Overall, this work identified a differentiation protocol for THP-1 macrophages and promising dose range of 10 – 20 nM with a 4-hour duration for siRNA-loaded PNP treatment. Current work is quantifying gene silencing after treatment with siRNA-loaded PNPs. Future studies will induce a pro-inflammatory phenotype to study siRNA-loaded PNP internalization.

Cole, Autumn

Siena Heights University

Mentor(s): Trevor Willis

Career Insights and Experiences

McNair Scholars Experience

The McNair Scholars Program has been one of the most impactful experiences of my undergraduate career, shaping my academic and professional growth. As a McNair Scholar, I designed and conducted an independent research project with faculty mentorship, attended professional development workshops, and presented my findings. These experiences helped me grow by pushing me beyond my comfort zone.

Through my research, I gained hands-on experience developing a study, collecting and analyzing data, and thinking critically about results. Presenting my work has strengthened my communication skills, and meeting deadlines while maintaining ethical standards has helped me grow professionally. Beyond research, McNair guided me through the graduate school process, including refining my personal statements, exploring career interests, networking with faculty and professionals, and envisioning the next steps in my academic journey.

For students considering McNair, it offers immersive, hands-on learning while building confidence and a sense of belonging, especially in spaces that feel intimidating. It is valuable for those who are curious about research or pursuing graduate education.

Overall, McNair confirmed my passion for research, gave me critical skills, and inspired me to pursue ambitious academic and career goals. The mentorship, opportunities, and supportive community through McNair have empowered me to grow as a scholar, embrace challenges, and approach my future with confidence.

Cole, Autumn

Siena Heights University

Mentor(s): Jean Dean

Oral

Assessing Pain in Fibromyalgia Patients from a Nurse's Perspective

Fibromyalgia syndrome (FMS) is a chronic condition characterized by widespread musculoskeletal pain, tenderness, and a range of associated symptoms, with no clearly identified cause. It has often been questioned within the medical community due to the absence of objective diagnostic markers, which can delay diagnosis and treatment. This uncertainty may also contribute to less patient-centered care compared to conditions with more visible physical symptoms.

Nurses play a critical role in assessing pain and supporting treatment decisions. This qualitative study explored nurses' familiarity, confidence, and comfort with pain assessment tools used for patients with fibromyalgia, focusing on the numeric pain scale and the widespread pain index. Nine registered nurses from hospitals in Southeastern Michigan were recruited using purposeful sampling. Data were collected through open-ended email surveys and analyzed using concept coding.

Findings indicated that nurses generally understand fibromyalgia as a condition involving chronic, widespread pain affecting multiple areas of the body. While nurses reported confidence in assessing pain, current assessment methods may not fully capture the complexity of fibromyalgia. These results highlight the need for improved education and the use of alternative assessment tools to better support holistic, patient-centered care.

Collins, Kian

University of Oregon

Mentor(s): Esben Schroeder, Helia Megowan

Poster #217

Automated Analysis of Myonuclear Characteristics Relative to Filamin C Expression on Single Fibers

Filamin C is a structural protein intrinsic to muscle cells that plays an important role in the early stages of repair and remodeling following damage. It accumulates at sites of muscle damage and is commonly used as a marker to identify regions of damage within muscle tissue. Myonuclei contribute to myofiber maintenance and remodeling, and their morphology, position, and orientation is expected to shift in response to localized changes in gene expression during damage and repair. Additionally, myonuclei have a subregion called the

nucleolus that is responsible for ribosomal biogenesis and is also highly responsive to damage and stress. The Dreyer Lab recently developed a semi-automated image analysis pipeline for batch quantification of myonuclear morphology and orientation. This project extends that approach by incorporating analysis of Filamin C expression and nucleolar morphology to determine how localized damage influences nearby myonuclear characteristics.

Confenti, Pearstin

University of Oregon

Mentor(s): Monique Demuth, Teresa Rapp

Poster #157

Ruthenium (II) Photocaged CHIR99201 for Rapid WNT Pathway Activation

Stem cell therapies are rapidly evolving in reach and application, particularly in the context of wound healing and regenerative medicine. Temporally precise administration of crucial morphogens is crucial for successful directed stem cell differentiation, posing a significant handling challenge in the scale-up process. A solution lies in the light sensitive chemistry of Ruthenium (II) Photocages (RuCages). RuCages are complexes which can sequester bioactive small molecules for release upon irradiation with visible light. Herein we report the synthesis and characterization of two Ru(bpy)(tpy) photocages for WNT agonist CHIR99021, a common small molecule inhibitor used in stem cell differentiation. Two photocages were tested, Ru(tpy)(bpy)(CHIR) and Ru(tpyCOOH)(bpy)(CHIR). Our data indicates RuCaged CHIR can be administered in inhabited cell culture without losing efficacy or gaining significant cytotoxic penalty. CHIR photouncaging in HEK293 cells and hMSCs saw minimal toxicity resulting from the inactivated RuCage, with IC₅₀ values of $203.3 \pm 6.8 \mu\text{M}$ and $85.2 \pm 10.2 \mu\text{M}$ respectively. Immunocytochemistry, western blotting, and flow cytometry show the expected light-induced turn-on activity of CHIR when YCHIR was administered to plated hMSCs. These successes indicate promising potential for high throughput and temporally precise small molecule differentiation factor release for improved stem cell differentiation protocols, reducing variability and cost using only visible light.

Conrad, Percy

University of Oregon

Mentor(s): gabriella garcia, Mariah Kornbluh

Oral

Co-Presenter(s): J Eversberg

Examining the sociopolitical life of college students online

Social networking applications - like Instagram or Twitter - have quickly established a dominant presence in the lives of kids and teenagers since their rise twenty years ago. According to the Pew Research Center (2025), 76% of people ages 18-29 get at least some of their news from social media, yet few psychological

studies have been conducted about the content youth engage with on these platforms. This project used a multi-step inductive coding process on semi-structured interviews about civic engagement to learn more about the sociopolitical content youth engage with on social media. Participants included N = 32 youth ages 15-24 (M = 20.8, SD = 1.91). Interviews were conducted in 2021 and participants were recruited via messaging board at a large, urban state school in Northern California. The coding process included analyzing N = 20 influencers and their social media posts in 2021 for content related to US political figures, government response to the COVID-19 pandemic, and sociopolitical identities. The depth and partisanship of content was also measured. This study furthers the understanding of the sociopolitical content youth are exposed to online.

Cordero, Emilio

University of Oregon

Mentor(s): Ryan Light

Oral

Fascism

The current literature on Fascism often presents the phenomena by mainly examining one regime with possible hints to others that exist in its sphere of influence. This approach does not highlight the discursive nature of Fascism that is so essential to understanding it. This thesis plans to explore 20th-century fascism through historical institutional analysis looking at the cases of the German Gaue, Italian Syndicate, and Spanish Church. Each of these institutions are placed in the civil sphere, benefitting from voluntary social organizations, but eventually are endowed with state like power. Utilizing Arendt, Tilly, Foucault, and Gramsci, I argue that these para-state apparatuses serve to produce repertoires unique to each regime. These repertoires proliferate among the populations of each regime, sweeping all into the power of the party or state. The benefit of comparing these regimes is that it shows that, while fascist regimes are disparate on their surface, the machinations of the phenomena present similarly within each case. Although the repertoire of a given regime is unique to it, the method of repertoire production through para-state apparatuses located in the civil sphere remains consistent. This line of thought may contribute to a better understanding of comparative studies on fascist regimes, allowing us to continue to think about how the events of the early and middle 20th-century shaped the modern world.

Corsale, Karys

University of Oregon

Mentor(s): Serge Faumont, Shawn Lockery

Poster #183

The Effects of Lysergic Acid Diethylamide (LSD) on Swimming in *Caenorhabditis elegans*

Evidence suggests that psychedelic drugs such as lysergic acid diethylamide (LSD) could treat disorders such as depression, post-traumatic stress disorder, and substance use disorder, yet their mechanisms of action and pharmacology remain unclear. We use the nematode *C. elegans* as a model to study LSD's mode of action, utilizing its well-characterized genome, nervous system, and conserved neurotransmitter pathways to link genes, neurons, and behavior. This study examines LSD's effects on swimming behavior. Prior work in our lab has demonstrated that LSD significantly alters crawling locomotion (impacting speed and reversal frequency), yet effects on swimming are largely unexplored. To investigate this, wild-type N2 adults are incubated for 30 minutes in either 50 μ L of M9 buffer or 50 μ M LSD solution. Individual worms are then transferred to a well plate in 3 μ L solution, where one-minute high-resolution videos are captured to record swimming dynamics. Behavior is analyzed using WormLab software to quantify kinematic parameters, and data are imported into Igor Pro for statistical analysis to identify significant trends in locomotor patterns. We hypothesize that LSD will induce measurable changes in swimming kinematics, providing insight into how the drug modulates motor programs. Future steps of this project will utilize mutant strains to isolate the specific receptors responsible for these changes, contributing to a deeper understanding of the pharmacology of LSD action.

Craddock, Yun

University of Oregon

Mentor(s): Max Tenenbaum, Yupeng Wu

Poster #280

Optimization of Ruthenium Oxide Deposited via Reactive Sputtering

Our understanding of the brain is limited. Thin-film microelectrode arrays are devices that can record and stimulate neuronal activity in neuroscience experiments. A common issue of thin-films is how to maximize charge delivery for neuronal interfacing, given the size constraints of a microelectrode. Iridium oxide, a costly resource, is used to overcome this limitation as a result of its reversible redox reaction within voltage conditions. By depositing it over the electrode surface, it also increases the electrode area for greater charge to be stored. Here we aim to develop a lower cost alternative to iridium oxide: ruthenium oxide. We analyzed the electrochemical performance of ruthenium oxide films deposited with different pressures and gas ratios to determine optimal fabrication parameters. We observed that lower deposition pressure and

a smaller H₂ gas ratio improved charge storage capacity. This study shows a step towards cost-effective thin-film microelectrode arrays by optimizing the fabrication of low-cost, high-performance electroactive materials.

Crandall, Chase

University of Oregon

Poster #329

Change in Behavior in Immigrant Female Bonobos

See Sargent, Sophia

Crook, Rebecca

University of Oregon

Mentor(s): Gabriel Sanchez

Oral

Enculturation at Mission San Juan Bautista: Chronology and Demography 1797-1850

The histories of the twenty-one Spanish missions along the coast of California have been investigated by multidisciplinary groups of scholars, including topics related to Mission labor and living conditions, Spanish expansionism, and cultural and environmental pressures on Native populations. Sacramental records have been used to inform Mission demographics, providing invaluable population data that, compounded with historical scholarship, revealed key contributors to Native enculturation and high rates of mortality. However, these investigations have largely neglected Mission San Juan Bautista, founded in 1797. Through collaborative exploration and standardization of sacramental records associated with Mission San Juan Bautista and extracted from the Early California Population Project (ECP), this study seeks to reconstruct the demographics of San Juan Bautista between 1797 and 1850.

Cruz, Becca

University of Oregon

Mentor(s): Raoul Lievanos

Poster #049

Community, Work, and Interpersonal Influences on Reintegration to Society

My research project, titled Community, Work, and Interpersonal Influences on Reintegration to Society, is an interview-based study that explores the lives of formerly incarcerated individuals and individuals with felony convictions. By using a qualitative method, such as in-depth interviewing, I can explore the nuances of

reintegrating into society and illuminate the importance of community, work, and interpersonal influences. To gain interviews, I am working with the director of Opportunity Oregon. By doing this, I will also explore the differences in reintegration experiences between those who have sought formal assistance versus those who have not. Although my project is still a work in progress, the sample that I have interviewed so far has been predominantly women. If this theme persists, I will gain a unique perspective on the gendered experiences of reintegration and their impacts on mothering. This research is potentially significant when studying incarceration, crime, deviance, and gender because it allows for the lived experience of formerly incarcerated individuals to shape the way we as researchers and a society approach studying such topics. Regardless of the direction that my research takes, I anticipate that I will have significant data that tells the stories of people who have experienced reintegration after incarceration, which highlights the importance of the context surrounding their incarceration or conviction.

Cruz, Evelyn

University of Oregon

Mentor(s): Blanche Wright

Poster #347

A School-Partnered Pilot Study of Entre Dos Mundos: Evaluating Feasibility with Latinx Families

In the U.S., 52% of immigrants are from Latin America and 1 in 5 children speak a non-English language at home (Kramer & Passel, 2025; U.S. Census Bureau, 2025). When resettling into a new country and raising children in a new cultural context, families often experience acculturative stress. At the same time, having cultural strengths such as familismo, emphasizes the importance of strong family relationships and familial support. Entre Dos Mundos (E2M) is an 8-week family group prevention that aims to improve Latinx parent-adolescent relationships and youth mental health by fostering biculturalism (Smokowski & Bacallao, 2005). The current school-partnered study piloted E2M in collaboration with a federal school program that provides educational support to students whose parents are farmworkers or work in related fields. E2M was delivered in Spanish to Latinx immigrant parents ($n = 6$; μ age = 47.3) and adolescents ($n = 5$; μ age = 15 years) living in Oregon, which is considered an emerging immigrant state. This mixed-methods study uses surveys and qualitative family data. T-tests will assess youth-parent differences in acculturation, relationships, and satisfaction. Using thematic analysis (Braun & Clarke, 2014), our results showed improved positive bicultural perspectives, stronger parent-child relationships, and high satisfaction with E2M. The current study addresses gaps on how to disseminate culturally tailored programs in partnership with school programs serving Latinx youth.

Cuddy, Lynell

University of Oregon

Mentor(s): Peter Schlachte

Creative Work

Stargazing

My fiction explores the powerful inner conflict of its characters, focusing on the struggles and emotions that shape who they are. Rather than relying on dramatic twists, I like to center on deeply human experiences - grief, trauma, addiction, depression, and the fragile ties of friendship and family. Through intimate, character-driven moments, I try to show how people confront or avoid their struggles, often recognizing the need for change without fully acting on it. I like to examine how certain situations can shape a character and how they will act because of these situations. This grounded, realistic approach shows the complexity of growth and the weight of unresolved feelings.

The story I will present follows two former friends reconnecting after years apart. Both carry their own burdens of regret which they have to face by seeing each other. One deals with a lingering sense of disconnection from herself and the people in her life despite building the life she thought she desired. The other struggles through addiction recovery and is caught between feelings of remorse and resentment. As they find each other in a moment of need, their shared history and buildup of emotions bubble to the surface through sometimes tense, yet revealing, interactions. The story captures the deep roots of friendship and how even brief encounters can expose the truths we try our hardest to avoid.

Culver, Sarah

University of Oregon

Mentor(s): Sangeetha Ravi Kumar

Career Insights and Experiences

Effect of 17- β estradiol on corneal stromal cells

A well structured collagen arrangement is critical for corneal strength and thickness. Collagen aberrations in the stromal layer can lead to keratoconus, a disease characterized by corneal thinning. Moreover, females who are pregnant or undergoing hormone replacement therapy (HRT) are known to experience increased disease symptoms. Transforming Growth Factor beta-1 (TGF- β 1) is a healing cytokine that can stimulate collagen production. The objective of this study is to determine if an increase in estrogen levels is correlated with a decrease in collagen production. Activated corneal cells were treated with varying amounts of estrogen (1 ng/mL, 5 ng/mL, and 10 ng/mL), and we found that a combination of TGF- β 1 (2 ng/mL) and estrogen (10 ng/mL) significantly decreased collagen content in the cells. The findings from our experiments

indicate that biologically female individuals undergoing HRT or pregnancy with a keratoconus diagnosis are recommended to monitor disease progression as their endogenous estrogen levels are elevated. This would ensure that a progression of the disease associated with an increase in estrogen levels is caught early.

Culver, Sarah

University of Oregon

Mentor(s): Sangeetha Ravi Kumar

Poster #268

Developing in vitro models to study the mechanism of pergolide mesylate in corneal nerve growth

Restoring innervation in corneas damaged by injury, UV exposure and infections is critical for wound healing, restoration of vision, and preventing chronic ocular pain. Corneal nerve damage can cause corneal clouding, ulceration, and loss of vision, leading to neurotrophic keratopathy and blindness. Pergolide mesylate is a dopamine agonist that has been shown to upregulate nerve growth factor (NGF) in mouse models. The objective of this study is to establish an ex-vivo neural model using murine dorsal root ganglion (DRG) explants, and an in-vitro corneal model consisting of human corneal epithelial (hCEC) cells and human corneal fibroblasts (hCF) to elucidate the mechanism of pergolide action in the cornea. The findings from our experiments indicate that NGF is necessary for adherence and dendrite growth in adhered DRGs, and that mitotic inhibitors prevent dendrite growth. Additionally, a ratio of 90/10 and a staggered approach is preferable for a combined hCEC and hCF cell culture.

Curlett, Andrew

University of Oregon

Poster #300

Infant Object Holding Episodes in 1-hour of Daily Life

See Shah, Subrina

Cushman, Clare

University of Oregon

Mentor(s): Judith Raskin, Linda Long

Poster #033

Sally Gearhart: Exploration of Sexuality and Pleasure in “Flossie’s Flashes”

Sally Miller Gearhart was a lesbian, feminist, activist, author, separatist, professor, scholar, and much more. Her lively personality shines through her work even after her passing. Gearhart taught speech in the south,

and was forced to stay in the closet until she moved to San Francisco. There Sally taught at San Francisco State and joined forces with Harvey Milk to advocate for LGBTQ rights, specifically against the Briggs Initiative. Gearhart published many works of science fiction, most notably *The Wanderground*, however her short stories offer a view to the historical context of lesbianism and female sexuality in the 1980s. I used archival, unpublished materials for this project and got a deeper perspective on Sally Gearhart. In this presentation I focus specifically on radical lesbian feminism through science fiction. I focus on the work of Gearhart because her short story “Flossie’s Flashes” offers a lens into radical lesbian feminism in the late 80s. This story utilizes science fiction to depict the power of female pleasure in a time of repression for both lesbians and straight women. The opportunity to see all of the drafts of “Flossies Flashes” offered the opportunity to see what information Gearhart decided was most important to keep for the sake of her storytelling. Studying little known figures from the past, such as Gearhart, offer perspective for how to confront contemporary issues through community, sexuality, and self exploration.

Darby, Cocoro

University of Oregon

Mentor(s): Kyu-Ho Ahn

Poster #003

Co-Presenter(s): Alessandra Martinez, Beatrix Carrott

The Butterfly House—Prefabricated Multi Paneled Plywood Housing

Warmth, restoration, and healing are key qualities that wood possesses. Likewise, the home should always reflect these qualities. In our project, we explore multi-paneled plywood as a building material for prefabricated housing. The engineered panel offers sustainability, cost-effectiveness, and structural strength. A design challenge we faced early on was designing a home without a known site context. Our goal became a space adaptable to any site that provides comfort and sanctuary. Several iterations evolved into a home centered around a core atrium that brings greenery and natural light into the heart of the home. This central green space brings afternoon light into the living room and kitchen, key social areas. Placing sunlight at the heart of the house connects occupants with the outdoors while eliminating the need for large exterior windows, making the design adaptable and modular.

Our massing features a butterfly roof, emphasizing social spaces with higher ceilings while keeping bedrooms and bathrooms intimate. Organized along a clear datum, the layout follows universal design principles to ensure ADA accessibility while maintaining spatial clarity, warmth, and comfort. Material choices reinforce the transition from a harsh exterior to a restorative interior. Charred wood and darker oak tones define the exterior, contrasting with light, warm interior surfaces. Exposed mass plywood panels enhance the home’s biophilic qualities and contribute to a calming atmosphere.

Darmawi-Hicks, Maya

University of Oregon

Mentor(s): Melissa Redford

Poster #068

From Praat to TalkBank: Converting the CAPIL Corpus to CHAT Format

When we speak, breathing shapes pauses and phrasing in ways we are still working to understand. The Child and Adult Phrasing, Inhalation, and Language (CAPIL) corpus enables the study of this relationship by providing spontaneous speech from children and young adults, with audio recordings paired with Praat TextGrids: files transcribed and annotated for pauses, inhalations, C-units, and experimenter speech. This project converts these TextGrids into the standardized transcription format: Code for the Human Analysis of Transcripts (CHAT) to contribute it to TalkBank, the largest open-access spoken language repository. TextGrids were imported into the Computerized Language Analysis (CLAN) program, TalkBank's integrated analysis and conversion tool. Issues arose when CLAN did not recognize several annotation conventions from the original TextGrids, including disfluency, intonation, and C-unit markers. These were resolved using Praat scripts to remove characters or by adopting alternative CHAT conventions. Doing so resolved most errors but removed prosodic and disfluency information from the data. Solutions for preserving these features are in progress. Retracings and repetition markers remain unresolved, and metadata and audio still need to be input. Once complete, CAPIL will provide open-access, standardized data to support research on the relationship between breathing and speech, and this workflow will serve as a resource for researchers completing similar conversions.

David, Alana

University of Oregon

Mentor(s): Alayna Park, Emily Kondo

Poster #346

Incorporating Familism in Therapy for Latinx Communities

In Latinx culture, familism, or the importance of close familial relationships is highly valued. However, familism is not often incorporated into interventions for Latinx youth with mental health needs, limiting the cultural responsiveness of mental health interventions. Culturally adapting interventions to incorporate familism can make treatments more relevant for Latinx communities and help mitigate ethnic-racial mental health disparities. This project characterized recommended ways to incorporate familism into interventions for Latinx youth and families. Undergraduate research assistants summarized adaptations from eight culturally adapted treatments (CATs) - seven of which included adaptations specifically for incorporating "familism," "family," and/or "parents." Three undergraduate research assistants then analyzed themes in

these cultural adaptations. Common themes in cultural adaptations for incorporating familism included considering parenting values, incorporating cultural background (e.g. aligning therapeutic techniques with families' cultural beliefs and traditions to facilitate more impactful interventions), including family members in interventions, and changing session content to be more relevant for Latinx families (e.g. incorporating requested topics such as role-plays to address family dynamics). This review of CATs provides evidence-based recommendations for increasing cultural relevancy of interventions for Latinx youth and families.

Davis, Kimberley

University of Oregon

Mentor(s): Karen Guillemin, Corey Worledge

Poster #198

Bacterial AimA Modulates Host Inflammation Through Lipocalin-2 Interactions

AimA is a protein secreted by *Aeromonas* bacteria within the intestinal tract of zebrafish. AimA suppresses host inflammation and reduces neutrophil accumulation while increasing *Aeromonas* colonization. The mechanisms by which AimA modulates inflammatory responses remain unknown. AimA was previously shown to have a similar protein structure to a family of Lipocalin proteins, specifically, lipocalin-2 (mLCN2), and the lipocalin type prostaglandin D2 synthase. My study investigates the hypothesis that AimA binds zebrafish lipocalin-2 (zLCN2-1a), which alters neutrophil dynamics and prostaglandin-mediated inflammation.

I used the bacterial two-hybrid assay to investigate AimA-mLCN2 interactions in *E. coli*. I also used the zebrafish fin resection model to assess AimA's modulation of inflammatory responses involving neutrophil recruitment and prostaglandin signaling. I hypothesized that AimA interactions with zLCN2 mediate AimA's anti-inflammatory effects. Data from the fin resection assays have confirmed that AimA decreases the neutrophils at the wound site in wild-type fish, and *zlcN2-1a*^{-/-} zebrafish mimic this result without AimA treatment.

Future studies will examine how AimA modulates prostaglandin-mediated immune responses in the fin resection assay. This project explores the mechanisms of bacterial immune modulation, providing insights into how commensal bacteria can modulate host inflammatory pathways, with potential use for therapeutic strategies for inflammatory diseases.

Davis, Mitchell

University of Oregon

Mentor(s): Julie Hessler

Poster #088

The Distinct Nuance of Ukrainian Nationalism within Soviet Dissent

In this project, I highlight the significant differences between the Ukrainian nationalist movement and the human rights dissent in the USSR from the 1960s to the 1980s, while examining the key timelines, methods, Soviet repression, and outcomes of both movements. Despite some crossover of members, ideals, and strategies, the movements need to be perceived as separate, especially in the context of today's world. Simplifying Ukrainian nationalism as one form of Soviet dissent undermines the long, difficult battle for Ukrainian national sovereignty.

Davis, Rowan

University of Oregon

Mentor(s): Stephanie Majewski, Tim Mathew

Poster #139

Using Artificial Intelligence Tools to Improve Vertexing in Dark Photon Collisions

Experiments at the Large Hadron Collider (LHC) aim to explore a theoretical dark sector of particles which could provide insights into dark matter. My project explores using a boosted decision tree (BDT, a machine learning tool) to improve the efficiency of primary vertex selection in events with dark photons, a theoretical dark sector particle. Events in the ATLAS detector at the LHC have many small collisions between protons but only one primary vertex, which is the highest in energy. To analyze these events, it is necessary to properly identify the location of the primary vertex so that particles in the detector can be tied to the location where they originated. Normally this primary vertex is selected by identifying the highest energy collision, but for interactions that produce undetected particles like the dark photon this method becomes less efficient because some of the primary vertex's energy is not accounted for.

I am exploring how using a BDT trained on simulated data to select the primary vertex could improve the efficiency of selection. To effectively train the BDT I identified which variables are indicative of correctly and incorrectly selected primary vertexes. Using these variables, the BDT can be trained and tested using the simulated data set. Increasing the efficiency of primary vertex selection in this search increases overall efficiency and continues to advance the exploration of theoretical models for dark matter.

Day, Wynter

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

A Collection of Wynter Days

My work focuses on culture and nostalgia, specifically tied to Asian American heritage. It dives into the inevitable loss and trauma that are experienced throughout life. Giving those feelings a voice and an environment to live in and connect with others. Emotions that morph into people and places in a way that transports us somewhere we might have yet to visit.

Dean, Olivia

University of Oregon

Poster #324

Re-animating Research: Cataloguing the Skeletons in our Closet

See Kelly, Emma

Deibert, Hannah

University of Oregon

Mentor(s): Nicki Swann

Poster #262

Social and Behavioral Impacts on Cognitive Performance

There still are many unknowns surrounding the epidemiology of neurocognitive disorders such as Parkinson's and Dementia. Understanding early risk factors of neurocognitive decline are essential for better treatment outcomes and informing future research and healthcare policy. Prior research has found unexpected correlations, such as a history of smoking being associated with lower rates of Parkinson's. To better understand the relationships between social and behavioral activity on cognitive function, I will analyze data collected by the University of Oregon's Swann Lab. The data is from an ongoing NIH-funded study using online data collection of cognitive tasks and validated scales. Reported nicotine usage, GLP-1 usage, sex, depression measures and impulsivity measures, are all potential variables that could impact performance on tasks. Initial findings suggest some relationship between GLP-1 use and performance on Wisconsin card sorting task, primarily used to measure cognitive flexibility. However, data collection is still ongoing. My project aims to determine if certain social and behavioral factors differentiate performance on different motor and cognitive tests.

Delascio, Diego

University of Oregon

Poster #018

Fox Sports Global Fandom Analysis

See Sager, Jackson

Dellarroquelle, Rocio

University of Oregon

Mentor(s): Rachel Weissler

Poster #070

The Spanglish Spectrum: Educator Perception and Linguistic Bias

In an increasingly multilingual society, Spanglish is a frequently occurring feature used by students in educational settings (Reznicek-Parrado, 2015; Semenova, 2018). Educators either embrace the cultural and linguistic productivity of Spanglish, or view it as a barrier to both English and Spanish education. This research dives into the minds of Spanish teachers to see how their perceptions of Spanglish shape their respective classroom environments and student identity. Through a comprehensive survey of Spanish teachers in public schools across Eugene, Oregon, we can analyze how educators identify and react to Spanglish in their classrooms. The survey asked participants to define what Spanglish means to them, document the observations of Spanglish use in their classrooms, and in what contexts they allow Spanglish in classroom activities. Understanding these educator attitudes is vital because teachers' sociolinguistic beliefs can greatly influence classroom norms. This research not only contributes to the literature on second language learning and teaching, but also serves as a mirror for teachers themselves, challenging the "standard-only" narrative (Palmer & Martínez 2013).

Dempsey, Samara

University of Oregon

Mentor(s): Ulrick Casimir

Poster #025

"Promising Young Woman": A Commentary On Current-Day Views of Sexual Assault

"Promising Young Woman" is a film that acts as a commentary of how our society treats and understands rape. The film does so by undermining many of the accepted and false stereotypes present in our society, as supported by the article, "Stop Blaming the Victim: A Meta-Analysis on Rape Myths". The film also highlights the legal and social difficulties in reporting the crime, which is explored in the research paper, "Silenced

Survivors: A Systematic Review of the Barriers to Reporting, Investigating, Prosecuting, and Sentencing of Adult Female Rape and Sexual Assault.”

Many of the stereotypes that surround victims of rape are incredibly harmful and usually act as a way to shift blame onto the victim and away from the male perpetrator; this movie doesn't display this belief, but rather highlights who is truly at fault and the long-lasting impacts on the victim. There are also many barriers that prevent women from reporting the crime, and the cases that are reported hardly ever get investigated or prosecuted. “Promising Young Woman” doesn't hide this reality, but rather presents it plainly and explores the consequences from a lack of justice. Overall, the film “Promising Young Woman” serves as a commentary on our society surrounding rape without catering to previous beliefs; it is attempting to change the false rhetoric that has been held for so long and create real change.

Diaz, Andrew

University of Oregon

Mentor(s): Alex Batelaan, Andy Marcus

Poster #155

Mechanistic Insights into Base Flipping at Model ssDNA-dsDNA Fork Junctions

DNA base flipping is a rare conformational transition in which a nucleobase transiently disengages from the DNA duplex, exposing its Watson-Crick hydrogen-bond donor and acceptor moieties to the aqueous environment. These “flipped-out” bases are recognized by replication and repair proteins, which preferentially act at ssDNA-dsDNA junctions. While base stacking and flipping dynamics have been studied in duplex DNA, less is known near ssDNA-dsDNA junctions.

Here, we use Molecular Dynamics (MD) simulations to map the free-energy landscapes governing base flipping near a ssDNA-dsDNA fork junction, thereby characterizing position-dependent differences in nucleobase stability and dynamics. To sample these rare transitions, we use On-the-Fly Probability Enhanced Sampling (OPES) Explorer with the CPD pseudo-dihedral angle as the collective variable. This approach tracks base orientation relative to the helical axis, resolving stacked, partially flipped, and fully flipped states.

Our simulations show that base flipping becomes progressively less favorable from the junction toward the duplex interior. Bases near the junction exhibit an increased tendency to adopt flipped conformations, whereas those deeper in the duplex remain predominantly stacked. These findings indicate that ssDNA-dsDNA junctions create localized regions of enhanced transient base exposure, with implications for protein recognition during replication and repair.

Distifeno, Emma

University of Oregon

Mentor(s): Melynda Casement, Maya Kosaraju

Poster #341

Examining Cumulative Depression Scores as a Predictor of Risky Behaviors in Adolescents (MoDA)

Depression affects up to 10% of adolescents and has been shown to impair executive functioning, which is linked to increased risk-taking behavior (actions involving harm with possible reward). However, research has not sufficiently examined how behavioral tasks measuring risk-taking decision making in adolescent populations contribute to understanding this relationship. A positive association has been observed between depression and engagement in risky behaviors. Adolescence represents a critical developmental period, and longitudinal studies indicate that high school students who report depressive symptoms show faster increases in substance use over time. These findings highlight the importance of understanding how depression influences risk-taking to better inform prevention and intervention efforts. The Balloon Analogue Risk Task (BART) is a computerized behavioral measure used to assess risk-taking in laboratory settings. Using data from Dr. Casement's Mechanisms of Depression and Anhedonia in Adolescence (MoDA) study (ages 14-18), this study investigates whether performance on the BART is associated with self-reported depressive symptoms measured by the Patient-Reported Outcomes Measurement Information System (PROMIS). It is hypothesized that higher cumulative depressive symptoms will correlate with greater risk-taking on the BART. Findings may improve understanding of depression-related risk and inform targeted interventions for adolescents.

Dodge, Kavi

University of Oregon

Mentor(s): Andrew Lovering

Poster #254

Environmental and Anthropometric effects on Core Temperature Loss in Recreational SCUBA Diving

Cold water immersion during SCUBA diving increases core temperature decline, especially at temperatures below thermoneutral (~30°C), posing risks to diver safety. Prior studies have examined core temperature decline within individual dive sites but none have compared across environments to evaluate how water temperature, suit type, anthropometrics, and sex influence core temperature loss. This study aimed to identify temperature thresholds at which these factors become meaningful to inform site-specific thermal protection protocols. This retrospective meta-analysis synthesized data from four studies of trained SCUBA

divers (n=130) performing dives in warm (~22°C) and cold (~11°C) water wearing wetsuits, semi-dry suits, or drysuits. Core temperature was measured using telemetric pills and normalized by dive time to give rate of core temperature loss ($\Delta T_c/\text{min}$). Independent variables included water temperature, suit type/thickness, sex, and anthropometric factors. Linear regressions and group comparisons were performed. We hypothesized that colder water would increase $\Delta T_c/\text{min}$ and strengthen associations with suit type and anthropometrics. Significant associations between $\Delta T_c/\text{min}$ and anthropometrics, as well as suit type, were observed only in cold water; these were not significant in warm water. These findings suggest anthropometrics and equipment play a greater role in thermoregulation under cold stress. This study was funded by the University of Oregon and the PADI Foundation.

Drummond, Aaron

University of Oregon

Mentor(s): Katya Podkovyroff Lewis, Lucas Silva

Poster #112

Reconstructing Ecosystem Responses to Disturbance and Recovery in Southern Oregon Estuaries

This project investigates how historical land-use change has altered salt marsh ecosystems along the Oregon coast. Working with the Coquille Indian Tribe (CIT)'s Tribal Historic Preservation Office, this study examines ecological shifts associated with Euro-American colonization, agricultural conversion, and marsh restoration. This project analyzes four ~75cm cores from Tom's Creek High Marsh and Frederickson Marsh of the South Slough National Estuarine Research Reserve, and Ni-les'tun Marsh Unit of the Bandon Marsh National Wildlife Refuge. Stable isotope analysis ($\delta^{13}\text{C}$, $\delta^{15}\text{N}$) and elemental composition are used to reconstruct biogeochemical processes while soil particle size distributions provide insight into sedimentation and hydrological conditions.

Understanding salt marsh responses to anthropogenic activities is critical to sustainable land management and climate change adaptation. The Coquille estuary has a long history of Indigenous use, reflected in cultural materials preserved in marsh sediments. The Ni-les'tun marsh, once part of a large tidal wetland along the Coquille River, was heavily modified and degraded starting in the late 1800s. Since restoration began in 2011, the site has become a key model in Oregon.

By reconstructing ecosystem responses to disturbance and recovery, these findings contribute to understanding coastal ecosystem trajectories and inform restoration and management in estuaries across the region.

Drummond, Aaron

University of Oregon

Poster #123

Monitoring Pollinator Habitat Enhancement Seeding Three Years Post-Salvage Harvest

See Ashton, Elisa

Dunfee-Hall, Benjamin

University of Oregon

Mentor(s): Abigail Fine

Oral

Faceshopping: SOPHIE, Disidentification, and the Radical Queer Potential of Pop Music

In this project, I interpret SOPHIE's work through José Esteban Muñoz's theories of disidentification and queer utopia. Muñoz's *Disidentifications* (1999) offered a radical framework for understanding how minoritarian subjects fashioned utopian queer worlds by working "on, with, and against a dominant ideology" through disruptive artistic practices. Muñoz illustrates this through performances such as those of drag artist Vaginal Davis, whose exaggerated femininity both inhabits and mocks dominant cultural scripts. Although queer visibility has made strides since, the neoliberal desire to profit from queer imagery (i.e., rainbow capitalism) challenges whether queerness is disruptive to the dominant culture simply by existing within it. SOPHIE retools disidentification by unapologetically embracing pop/consumerist norms to express her queer identity, while experimenting with visibility in ways that resist neoliberal attempts to exploit queerness. As SOPHIE herself put it when asked about her genre: one word, "advertising."

Through this lens, SOPHIE's fusion of seemingly opposed aesthetics also provides new insight into the burgeoning entanglement of consumer culture, art, and queerness: For SOPHIE, the most potent queer maneuver was to sell the spectacle back wholesale and appropriate it so completely, transforming today's dominant cultural scripts into radical, queer futures.

Dunne, Elizabeth

University of Oregon

Mentor(s): Stephanie Wiley, Raoul Lievanos

Poster #050

Continuities of Control: Examining Prison Conditions at the Mississippi State Penitentiary

Significant sociological works pertaining to crime, punishment, and mass incarceration often neglect to mention how macro-level theories impact the day-to-day conditions inside penal institutions. Examining how theories on punishment and racialized social control manifest in the lived realities for those incarcerated at a specific penal institution helps address this gap by researching how conditions within the Mississippi State Penitentiary (MSP) have changed over time. This study employs a qualitative historical analysis of archival sources, media accounts, legal records, and historical reports to examine how penal ideologies influenced prison conditions at MSP across distinct historical periods. Findings show a shift from a strictly profit-driven institution based on racialized labor in which ensuring the physical capability of its inmates was an economic necessity, to an institution focused on incapacitation and punishment for punishment's sake. By tracing the evolution of conditions and punishment at MSP, this study demonstrates how shifts in penal ideology impact an institution's practices, without necessarily improving the lived conditions of those incarcerated, raising broader questions about the legitimacy and humanity of contemporary penal systems.

Duong, Thu

University of Oregon

Mentor(s): Dare Baldwin

Oral

Environmental Adversity and Infant Visual Working Memory: A Systematic Review

The first two years of life represent a critical window for brain development, yet millions of infants globally face environmental and psychosocial adversities that threaten this trajectory. Visual working memory (VWM), the cognitive ability to actively hold and manipulate visual information, is a foundational skill linked to later intelligence and academic success. But how exactly do early stressors, like poor air quality or rural poverty, impact the neural networks underlying infant VWM? This project conducts a systematic literature review to bridge the fields of global public health and developmental clinical psychology. Using the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework, I systematically search, filter, and evaluate recent behavioral and neuroimaging studies that assess VWM in infants exposed to early adversity. By synthesizing data across diverse global contexts, this review maps the known effects of negative exposures on cognitive trajectories and identifies methodological gaps in how we measure infant cognition

in high-risk environments. While currently in the data synthesis phase, this project aims to highlight the need for standardized neurocognitive assessments in global health research. Ultimately, understanding how early adversity shapes the developing brain is essential for creating targeted public health and clinical interventions, ensuring all children have the cognitive foundation needed to thrive.

Dzeketey, Solange

University of Oregon

Mentor(s): Lyndsay Duffus, Jesse Wilson

Poster #029

Making Sound Decisions: The Communication Decisions of Black Hearing Caregivers of Deaf Children

Two to three out of every one thousand children born in America are born with hearing loss. For the greater than ninety percent of these children born to hearing parents, communication difficulties often emerge. Unlike their Deaf counterparts, hearing caregivers and their deaf children do not immediately share an accessible language. Language deprivation early in a child's life can lead to language delays and social-emotional difficulties later in life, so it is critical that hearing caregivers of deaf children quickly decide how they want to communicate with their child.

This thesis investigated how Black hearing caregivers of deaf children decide how to communicate with their children. Though previous studies have examined how caregivers choose their communication method, these studies have often largely excluded the experiences of those from underrepresented groups. It is important to examine the experiences of marginalized communities to ensure that standard practices consider the unique challenges these groups face that are not common to the dominant group.

This thesis describes (1) how Black hearing caregivers of deaf children choose their method of communication with their child, (2) what the factors influencing these decisions may reveal about this group's unique decision-making process, and (3) how professionals specializing in communication disorders and sciences can work to meet the needs of this group.

East, Alexis

University of Oregon

Mentor(s): Lainey Costa, Dasa Zeithamova

Poster #283

Working memory capacity effects on facilitation and interference of new information

New experiences are interpreted through our existing schemas, and prior knowledge can either facilitate (support) or interfere with (hinder) memory formation. What can predict who will be more resistant to interference or benefit from facilitation? It's plausible that since working memory helps hold incoming and old information, the amount that we can hold may influence the interference or facilitation of incoming information. To assess both facilitation and interference, participants used a grid series learning task. This task requires participants to learn where objects are located in a starting grid, then learn a second set of object-location associations in another. Interference has been demonstrated when objects but not the location shown in the starting grid overlap with those in the second grid, and facilitation when the location but not the objects overlap in the second grid. To assess working memory, we used two well-established working memory tasks (one visual and one verbal). I predict that participants with greater working memory capacity will strengthen facilitation and minimize interference, due to a greater capacity of remembering both old and new information. Preliminary results show that working memory is related to better overall object-location learning in the grid task and better resistance to interference. This research may determine how one can manage competing information and help explain what influences these cognitive differences across individuals.

Eastin, Anna

University of Oregon

Mentor(s): Shannon Hugard, Mike Hahn

Poster #207

Effect of Running Speed and Fatigue on Vertical Center of Mass Displacement

This project investigates how running speed and fatigue influence vertical center of mass (COM) displacement, a biomechanical factor linked to running efficiency and injury risk. Excessive COM displacement has been associated with reduced efficiency and increased likelihood of bone stress injuries, making it important to understand how it changes under different running conditions.

To examine this, recreational runners (ages 18-30) completed treadmill trails at two speeds based on their lactate turnpoint (LTP): 80% (low speed) and 105% (high speed). A fatigued condition was created by having participants run to exhaustion prior to testing. Motion capture technology was used to record movement, and COM displacement was calculated using an inverse dynamics model.

The project aims to determine whether speed or fatigue has a greater influence on COM displacement. Preliminary findings suggest that speed plays a more significant role than fatigue. These insights may help inform training strategies designed to improve running efficiency and reduce injury risk.

Ebbers, Ethan

University of Oregon

Mentor(s): Kristen Rahilly

Poster #094

Co-Presenter(s): Jason Tongue

The Role of Human Picture Analysis on Machine Learning in Alzheimers and Marine Habitat Research

Participatory science uses volunteers to collect data, without the need for participants to have prior knowledge or experience in a specific field. This style of research excels at collecting and analyzing a high volume of data. We will be working with the data sets from the Human Computation Institute project Stall Catchers who uses machine learning based on human findings to research the effect of stalls on Alzheimer's. The other project we will be working with is Kelp Quest hosted by the Seattle Aquarium that catalogues various species and substrate on the Washington sea floor. Our work will emphasize the importance of participatory science in modern research and machine learning. As well as to show that participatory science does not stop at just data collection but can also lead to further independent research.

Ebner, Bella

University of Oregon

Mentor(s): John Christian

Poster #103

Historic Glaciation in the Dungeness Watershed of the Olympic Mountains

The Dungeness Watershed is located on the easternmost side of the Olympic Mountains in Washington. Within this boundary are small alpine glaciers which vary dramatically from their charismatic counterparts further west in the range and are important components for their local ecosystems. Their contributions to downstream irrigation, Chinook Salmon populations, climatic effects, and local landscapes are extremely important, yet their extent is diminishing in a warming climate. Prior to the 1980s, there are poor historical records regarding how climate change has affected this subset of the Olympic Mountains, but temperature records indicate they may have been affected starting over 100 years before. Documentation for this previous extent can be identified on the Earth surface itself, with remnants of eroded rock, striation on the Earth, patches of water, and otherwise disturbed landscapes at lower elevations than current ice presence. The

previously hidden story about the behavior of these small alpine glaciers can be pieced together utilizing landscape data. Reconstruction of past glacier area and elevation was completed utilizing QGIS, LIDAR imagery, historic photographs, modern glacier extent inventories, and aerial photography. The analysis shows a large decline in glacial area with retreat to higher elevations. With the project still ongoing, we are utilizing climatological data from OSU PRISM dataset to calculate local melt rates for this Dungeness Watershed inventory.

Edwards, Kobe

University of Oregon

Poster #098

Exploring Asteroids and Clouds Through Participatory Science

See Jones, Brady

Edwards, Penelope

University of Oregon

Mentor(s): Kristen Rahilly

Poster #100

Co-Presenter(s): Elizabeth Simpson

Investigating Climate Change and Pollinator Interactions Using The Budburst Program

Participatory science allows anyone to contribute and engage in research. This process includes both data collection and analysis. We will be working with the Budburst Program, hosted by the Chicago Botanical Garden. Budburst investigates climate-related impacts on plants and plant-animal relationships. Budburst looks at plant-pollinator relationships through data provided by community scientists. We will be using Budburst to develop our own research questions after interacting with the Budburst Program. We will use Budburst's open data base to answer our questions. Our work will showcase the potential for open source data to be used to answer our own unique research questions.

Elliott, Foster (Bear)

University of Oregon

Poster #328

Poly-specific Associations in African Monkeys Impacted by Forest Type and Canopy Height

See Grady, Ray

Elzanaty, Yasmin

University of Oregon

Mentor(s): Marsha Weisiger

Poster #057

The Bridge to the Living Room: Life Magazine and the Normalization of the Nuclear State, 1945-1955

By developing and then deploying two atomic bombs in Hiroshima and Nagasaki, the United States rewrote the rules of war, a decision that brought a plague of nuclear proliferation upon the entire planet. During the early years of the Cold War when Americans were still making sense of what the atomic bomb meant, the nation's thought leaders sought to shape public opinion around incompatible priorities. Military generals and scientists vied for coverage on the pages of Life magazine, which served as a bridge between high-level policy and the American living room. By tracing the evolution of ideas that Life was willing to platform in the decade between 1945-1955, it is possible to track a calculated tonal shift in propaganda being leveraged upon the public. Although early support for international nuclear governance was robust, these peaceful initiatives were sidelined by a powerful campaign of national militarism. The legacy of early Cold War propaganda is the ultimate normalization of the nuclear state.

Elzeyadi, Faris

University of Oregon

Mentor(s): Cora Ferguson, Gabriella Lindberg

Poster #172

Mapping the Matrix: Staining Protocols to Visualize Col-I, Col-II, and ER-alpha in Cartilage

Osteoarthritis is a chronic condition that affects millions of people each year and is characterized by the slow degradation of articular cartilage. Collagen type I (Col-I) and Collagen type II (Col-II) are biomarkers within the cartilage extracellular matrix that are key indicators of cartilage health and disease progression. Accurately identifying Col-I and Col-II is crucial for evaluating the health of cartilage spheroids and tissues of the knee joint. Osteoarthritis disproportionately affects post-menopausal women when compared to age-matched males. However, sex related differences remain widely under researched. Estradiol has been shown to have protective effects on cartilage however the underlying mechanisms remain largely uncharacterized. Estrogen receptor alpha (ER-alpha) is a receptor protein found throughout the body that plays an important role in estradiol signaling and regulation. Accurately staining and quantifying ER-alpha within cartilage would aid our understanding of the effects of estradiol on the knee joint capsule. In this study we developed and optimized staining protocols to accurately identify and quantify levels of Col-I and

Col-II within cartilage. However, additional experimental repeats need to be performed to accurately identify ER-alpha within cartilage. Further optimization of these protocols is necessary to assess the role of ER-alpha in osteoarthritis disease progression.

Engblom, Isabella

University of Oregon

Mentor(s): John Halliwill, Rauchelle Richey

Poster #239

Polycystic Ovary Syndrome and Cardiovascular Disease Risk: The Role of Alpha-Adrenergic Receptors

Polycystic Ovary Syndrome (PCOS) is associated with cardiovascular disease risk. One potential cause of this may relate to dysfunctional alpha-adrenergic receptors (alpha-AR) on the vasculature. Our purpose was to investigate differences in alpha-AR sensitivity in women without (CON) and with PCOS. We hypothesized that compared to CON, women with PCOS would show increased alpha-AR sensitivity in the skeletal muscle microvasculature. Skeletal muscle microdialysis and the ethanol washout technique were used to test our hypothesis. We collected dialysate during infusions of the alpha-AR agonist norepinephrine (NE) and antagonist phentolamine (PHE) in 7 CON (25 ± 5.9 y) and 4 PCOS (23 ± 3.9 y). A two-way mixed model repeated measures ANOVA was used to make statistical inferences. Data are reported as mean, 95% CI. Baseline blood flow (CON: 24.1 [$1.9, 46.3$]; PCOS: 6.1 , [$-18.7, 30.9$] mL/min/100g, $P = 0.86$) and response to NE (interaction: $P = 0.99$) did not differ between groups. PHE increased blood flow compared to baseline in CON (99.0 [$73.9, 124.2$] mL/min/100g; $P < 0.01$). Interestingly, the increase in blood flow during PHE infusion was not different compared to baseline in PCOS (27.9 [$3.1, 52.7$] mL/min/100g; $P = 0.75$) and the response to PHE was attenuated compared to CON ($P < 0.01$). This lack of increase in skeletal muscle blood flow may indicate dysfunctional alpha-AR in the microvasculature of women with PCOS, which may contribute to the increased cardiovascular disease risk.

Escobedo, Diego

University of Oregon

Mentor(s): Balamarali Ambati, Saumya Keremane

Poster #270

Quantifying Rod Bipolar Cell Dendritic Morphology in Early Retinitis Pigmentosa

Retinitis pigmentosa (RP) is an inherited retinal disease that causes progressive photoreceptor loss and eventual blindness. Although photoreceptor replacement is a promising therapeutic strategy, integration with the recipient retina remains a challenge. Rod bipolar cell (RBC) degeneration may contribute to this challenge, but its dendritic remodeling during RP has not been quantitatively characterized. Our goal is to

map RBC dendritic arbors during early RP progression using the RP mouse model (RhoP23H), combining confocal imaging with quantitative morphological analysis. RBCs were targeted using the Pcp2-Cre mouse line, which express cre recombinase in bipolar cells. Mice were genotyped, retinas dissected, and RBC morphology was characterized using immunofluorescence and analyzed with confocal microscopy. Arbor complexity was quantified using fractal dimension (D). Confocal imaging revealed overlapping RBC arbors, limiting single-cell analysis, while sparse AAV-GFP labeling improved visualization of individual dendritic morphology. Genotyping confirmed expected transgenes, and RhoP23H/P23H-Pcp2Cre mice exhibited rod photoreceptor loss. RBCs were analyzed using PKC α immunolabeling, which showed high coverage across the population but resulted in arbor overlap that limited single-cell resolution. In contrast, intravitreal AAV2.7m8 injection enabled sparse, single-cell labeling, allowing clearer visualization and reliable quantification of individual RBC dendritic morphology.

Escobedo, Liliana

University of Oregon

Mentor(s): Sangeetha Ravi Kumar, Bala Ambati

Poster #269

Therapeutic Potential of Lactoferrin in Human Keratoconus Cornea Cells

Keratoconus (KCN) is a progressive corneal disorder that can lead to blindness, characterized by collagen degeneration, corneal thinning, and conical deformation. Increased levels of gelatinases/matrix metalloproteinases (MMPs) contribute to the pathophysiology of KCN. Lactoferrin (LF), a milk protein present in tear fluid, has been shown to regulate MMPs in mice. This study explores the therapeutic potential of LF to regulate MMP-2, TIMP-1, and TIMP-2 using primary cell cultures from KCN corneas. Primary corneal stromal fibroblasts were cultured from two donor KCN human corneas (KCN1, KCN2). The dose-dependent response of fibroblasts to LF (10 ng/ml–1 mg/ml) was used to determine a working dose (25 μ g/ml). Treatment experiments were carried out in triplicate in both KCN1 and KCN2; the control groups received no treatment (n=3 replicates), and the experimental groups received LF treatment (n=3 replicates). Protein expression (MMP-2, TIMP-1, TIMP-2, GAPDH) was measured by Western blot and quantified/analyzed using ImageJ. Statistical significance was assessed using ANOVA with t-Tests. MMP-2 was significantly decreased (p=0.003) in KCN1 and showed a decrease in KCN2; it was not statistically significant (p=0.053) in LF-treated cells compared to controls. TIMP-1 was downregulated by LF treatment (p=0.045) in KCN1. LF suppressed TIMP-2 expression in both KCN1 (p=0.046) and KCN2 (p=0.025). These results support LF as a potential therapeutic to mitigate KCN progression.

Espino-Marquez, Isabela

University of Oregon

Mentor(s): Corey Wadsley

Poster #257

The Power to Pause: Variation Across Stop Trials Influencing Future Outcomes

The ability to rapidly stop actions is essential for navigating dynamic environments. Using the pause-then-retune framework, action stopping is conceptualized as a two-step process: an initial Pause, reflecting automatic global motor inhibition, followed by a Retune, in which the system selectively resumes or cancels an action. While prior research has examined reactive stopping, less is known about how stopping outcomes influence subsequent behavior. This study investigates how failed stop trials shape future inhibitory control. Using electromyography and force data from a stop-signal task, we examine electrophysiological markers of the pause process following failed stop, successful stop, and go trials. We hypothesize that failed stops alter proactive control, weakening the pause process on subsequent trials. This work aims to advance understanding of adaptive control mechanisms underlying human action stopping.

Eversberg, J

University of Oregon

Examining the sociopolitical life of college students online

See Conrad, Percy

Fauquemberg, Emma

University of Oregon

Poster #271

Mapping Vasopressin and Galanin Circuits Involved in Zebrafish Reproductive Behavior

See Kadovitz, Olivia

Feldman, Ava

University of Oregon

Mentor(s): Kyla Brannigan, Cheyna Warren

Poster #286

Impact of Schemas on False Memory

Schemas help individuals organize and interpret the world around them. Past research has shown that schemas play a role in the creation of false memories, like assuming you saw a cow at a farm, since farms

have cows. False memory is thought to arise when individuals rely on gist rather than specific information, making memories vulnerable to distortion. This study's hypothesis is that schema-driven false memories will be counteracted by prompting the recall of specific details. Participants were shown images of scenes with schema-consistent objects overlaid on them (e.g., a farm with a cow, hay, etc). They were then tested twice on their memory of the objects. First, they were asked to determine if seen objects and other not-seen but schema-consistent objects were originally present in the scene by making old/new judgments. Then, participants were asked to place the same objects in the scene at their original locations. Consistent with prior results, some participants falsely remembered schema-consistent objects, even though they weren't seen previously. As a main measure of interest, we examined the frequency of change in response before and after the location probe. Results indicate that, participants who initially identified unseen schema-consistent objects as old were unable to correct themselves when specifically probed about the objects' locations. The results of this study advance our understanding of the extent to which schema impacts the formation of false memories.

Fengler-Johnson, Peter

University of Oregon

Mentor(s): Carla Gerber, Amy Sibul

Poster #260

Co-Presenter(s): Kara Paterson

Mitigating Metabolic Impairment of Schizophrenia: An ongoing design

Metabolic syndrome is estimated to be twice as prevalent in individuals with schizophrenia compared to the general population. Compromised glucose metabolism is considered a core feature of the disorder, and second generation antipsychotics further compound metabolic risk. Because impaired glucose metabolism is central to schizophrenia pathophysiology, the ketogenic diet has emerged as a logical intervention target. Both psychotic and physical symptoms have shown improvement through ketogenic diet use. Consistent low to moderate intensity aerobic exercise has also demonstrated physical health benefits following a first episode of psychosis. We will conduct open-ended surveys, semistructured interviews, and focus groups with patients, family members, and care providers from first episode coordinated specialty care programs across Oregon. Feedback will shape a ketogenic, anti-inflammatory diet paired with 30 minutes of cardiovascular exercise five times per week at 60-75% of maximum heart rate. Thematic analysis will identify recurring patterns across interviews and inform a finalized pilot intervention design. Our long term goal is a clinically implementable plan built on the perspectives of those it directly impacts.

Ferrence, Emily

University of Oregon

Mentor(s): Joshua Roering

Poster #107

Modeling Debris Flow Inundation Extent using ProDF on Klukwan Fan, AK

Debris flows are fast-moving and destructive landslides composed of mud, rock, and water. They pose a hazard to communities in mountainous regions, such as in southeast Alaska. Hazard assessments typically lack estimates of inundation, or where material will end up. Inundation estimates are crucial for predicting damage to infrastructure, defining evacuation zones, and staging response efforts.

In this case study, we applied the debris flow runout model ProDF to the active debris flow channel above the village of Klukwan in southeast Alaska. We used two-meter-resolution LiDAR data from the Alaska DGGs to generate topography. ProDF uses empirical relationships between debris flow volume, peak flow discharge, and topography to route material down a slope and predict inundation area via estimates of peak flow depth. ProDF models a debris flow as an idealized fluid, reducing model complexity and runtimes.

We initialized ProDF with a range of volumes to simulate a variety of debris flow events and their inundation extents. Our results predict that an increase in debris volume increases the likelihood of flow inundation reaching human settlements and infrastructure. Opportunities for material to avulse out of the main flow channel also increase with volume. Other factors that affect inundation extent include material yield strength and scaling coefficients in the empirical relationships. Our inundation predictions will support rapid debris flow hazard assessment in Alaska.

Fetherston, Stella

University of Oregon

Poster #123

Monitoring Pollinator Habitat Enhancement Seeding Three Years Post-Salvage Harvest

See Ashton, Elisa

Fiber-Munro, Meira

University of Oregon

Mentor(s): McKenna Pace, Ellen Peters

Works in Progress: Lightning Rounds

Communicating the Correlation between Sexual Violence and Cervical Cancer

This project examines how communication in healthcare settings shapes patient understanding of the link between experiences of sexual violence and increased risk of cervical cancer. Although research suggests an indirect relationship through behavioral, psychological, and healthcare access pathways, this connection is rarely communicated clearly, limiting engagement in preventive care such as screening and follow up.

The project combines a literature review with an original research component. First, prior research on health communication, cervical cancer prevention, and trauma informed care is analyzed to identify gaps in how risk information is conveyed. Second, a survey assesses baseline knowledge of cervical cancer risk factors, sources of health information, and understanding of screening practices. Participants are then exposed to different health messages that vary in communication style and framing to evaluate which approaches most effectively improve understanding.

By comparing how individuals interpret risk across messaging strategies, this study identifies more accessible and patient centered ways to communicate complex health information. This work aims to improve understanding and support informed decision making, contributing to more effective and equitable preventive healthcare.

Fischer, Sam

University of Oregon

Mentor(s): Robert Kyr

Creative Work

Crimson Flight

I am presenting a recording of my piece titled "Crimson Flight" for piano, violin and cello. I composed the work for the 2025 Oregon Bach Festival Composers Symposium, where it was played by the Chatter PDX Ensemble from Portland. The inspiration for this piece was a scene from the book that I am currently writing, titled "Across the Universe." In one scene from the book, three of the main characters end up fighting each other after a lengthy argument, which leads to the near death of one of them, and the death of another. The three instruments of the ensemble represent the three characters in this scene as they clash during their argument and fight.

Fish, Sasha

University of Oregon

Mentor(s): Mary Wood

Oral

Reimagining the Jewish Mother: Teaching 20th-Century Jewish Women's Literature

This project examines how Jewish women writers represented motherhood 20th-century American literature. Jewish motherhood is often reduced to satirization and stereotypes within different media forms. However, literature written by Jewish women reveals a much more complex picture. My research asks how these writers engage with traditional expectations while also challenging and redefining them across different historical moments. To explore this question, I analyze three works written by Jewish women: the short stories "The Fat of the Land" by Anzia Yezierska and "Politics" by Grace Paley, and the poem "I Am Woman," by Malka Tussman. My analysis is supported by historical research on each author, the social and cultural conditions of Jewish life in the United States during the 20th century, and the historical contexts of the countries these writers and their families emigrated from. As a future secondary English teacher, this research also informs a pedagogical component. Drawing on my findings, I will design a literature course intended for high school seniors that introduces Jewish women writers of the 20th century. The course uses texts from the early, middle, and late parts of the century to help students connect literature with historical context and explore how gender, religion, and cultural identity shape lived experiences.

Fliesler, Ella

University of Oregon

Mentor(s): Karen Guillemin, Patrick Phillips

Poster #186

Microbiome Derived Protein, BefA, Extends *C. elegans* Lifespan via Conserved Longevity Pathways

Microbes in the gut microenvironment can influence aging through multiple mechanisms, most notably via effector molecules. A novel example of this is the bacterially secreted protein BefA (Beta Cell Expansion Factor A), a membrane-permeabilizing protein derived from the zebrafish gut-microbiome but found widely across bacteria, that induces insulin-producing beta cell proliferation in mice and zebrafish. In this project, we tested BefA's impact on *C. elegans* lifespan and associated molecular pathways to understand its translational effects. *C. elegans* were chosen as a model organism because they are a leading model for microbiome studies, with transparent bodies and short lifespans ideal for examining aging on a molecular level. When nematodes ingest BefA-expressing *E. coli* BL21, it induces physiological effects throughout *C. elegans*, notably a 50% increase in median lifespan and faster developmental timing. Genetic analysis of

known longevity pathways revealed that BefA-mediated lifespan extension requires the transcription factors EOR-1, DAF-16, and ATFS-1, but is independent of SKN-1. However, the increased developmental phenotype is only dependent on EOR-1, suggesting that the lifespan and development pathways are uncoupled. Ultimately, utilizing *C. elegans* as a model organism to understand the full effects of BefA provides a mechanistic link between microbial signals and aging, highlighting the therapeutic potential of microbiome-derived proteins.

Foday, Favour

University of Oregon

Mentor(s): Sanique South, Grace Privett

Oral

Metformin Preconditioning Enhances Therapeutic Potency of hMSCs for Post-Traumatic Osteoarthritis

Posttraumatic osteoarthritis (PTOA) is a degenerative joint disease marked by chronic inflammation and cartilage loss, with current treatments failing to restore tissue or halt progression. Human mesenchymal stromal cells (hMSCs) offer regenerative potential, but donor variability limits their consistency. This study evaluates metformin preconditioning as a strategy to enhance hMSC therapeutic efficacy. We hypothesize that metformin-induced metabolic reprogramming improves hMSC immunomodulatory function and shifts less-therapeutic donors toward a more favorable therapeutic profile. To test this hypothesis, bone marrow-derived hMSCs from 12 donors were cultured in an IL-1 β -induced osteoarthritis microenvironment under four conditions: control, IL-1 β , metformin, and IL-1 β with metformin. Cell viability remained high (~99%) across all groups. Cytokine analysis showed that metformin reduced pro-inflammatory factors (TNF α , MCP-1, VEG-A, G-CSF), particularly in less therapeutic donors. Partial least squares regression (PLSR) analysis demonstrated that these donors shifted toward a more favorable therapeutic profile following treatment, while highly therapeutic donors showed minimal change. These findings demonstrate that metformin selectively enhances the functional quality of less therapeutic hMSC populations, reducing donor variability and improving therapeutic consistency.

Foerster, Sophia

University of Oregon

Mentor(s): Nick Willeett, Cora Ferguson

Poster #233

Evaluating the Chondroprotective Effects of Estrogen on Cartilage Integrity under Inflammation

Osteoarthritis (OA) is a degenerative joint disease driven by chronic inflammation that causes cartilage degeneration. The postmenopausal female population experiences primary OA at a 1.3 higher incidence rate

than age-matched males, implicating sex as a risk factor for OA. The objective of this project is to understand the role of sex-specific hormones such as estrogen in cartilage matrix susceptibility to inflammation-driven degeneration. We hypothesize that estrogen will attenuate glycosaminoglycan (GAG) loss under inflammatory conditions, while leaving the ratio of collagen type II to type I in the matrix unchanged.

Human chondrocytes were harvested from an osteochondral allograft and expanded to passage 3 before use. To engineer healthy cartilage spheroids, 250,000 cells were centrifuged and cultured in hormone-free chondrogenic media under physoxic conditions for 14 days. To study the chondroprotective effects of estrogen, cartilage spheroids underwent a 24hr incubation period with IL-1 β and TNF α (1ng/mL each), with or without supplementation of estrogen (272 pg/mL E2). Brightfield imaging, biochemical assays and histological analysis were used to assess cartilage matrix composition. To evaluate matrix degradation, we collected media following inflammatory exposure. There was significantly less GAG loss in E2-supplemented inflammatory conditions compared to normal inflammatory conditions, indicating E2 had chondroprotective effects in an acute inflammatory environment.

Fortenbaugh, Makena

University of Oregon

Poster #124

Monitoring Native Nursery Crop Enhancement of Douglas-fir Seedlings

See Kevin, Andrew

Foskett, Caroline

University of Oregon

Mentor(s): Malvika Singhal, Marian Hettiaratchi

Oral

Engineered Hydroxyapatite-Binding Fusion Proteins to Improve Localized Delivery of BMP-2

Robust bone repair relies on interactions between numerous cells, proteins, and extracellular matrix molecules (ECM). In critically-sized bone fractures, interactions between cells, proteins and the ECM are disturbed, leading to inhibited expression of osteogenic proteins, such as bone morphogenetic protein-2 (BMP-2). Current treatments such as decellularized bone allograft lack bioactive proteins and cannot mimic critical effects of BMP-2 signaling. To localize BMP-2 within bone allografts and enhance their osteoinductive effects, we developed a fusion protein library containing a domain to bind to hydroxyapatite (HAp), the mineral component of bone allograft, and an affibody engineered to bind specifically to BMP-2. Micro-BCA

assay revealed neither the affibody nor HAp binding domains alone are retained on HAp pellets. However, fusion proteins were all retained on HAp pellet surface. We assessed BMP-2 release from fusion protein-loaded HAp pellets over two weeks where all fusion proteins demonstrated moderate BMP-2 release, suggesting fusion protein-treated pellets limit burst release of BMP-2 compared to untreated pellets. Fusion proteins retained longer on HAp pellets than their binding domains alone, which suggests stabilization of the binding interaction between the binding domain and HAp. In future work, we will evaluate the effect of HAp-binding fusion proteins on BMP-2 delivery and mineralization in an in vivo rat bone injury model treated with bone allograft.

Foster, Coretta

University of Oregon

Mentor(s): Matthias Vogel

Poster #087

Neocolonialism in Africa

What happened in Africa after independence was gained? In an ideal world, that newfound independence would have been respected and appreciated. However, reality has proven that this is not the case. A new age of colonialism has since emerged, titled “neocolonialism”. This concept has been exercised by former colonizers in various aspects, from educational control to puppet governments and more. This project will take a closer look at how former French colonies remain under the control of their former colonizers, specifically in the field of economics. The purpose of this is to highlight the injustices being perpetuated by the French, and how they continue to drain their former colonies of their resources for their own benefit.

Foster, Ian

University of Oregon

Poster #300

Infant Object Holding Episodes in 1-hour of Daily Life

See Shah, Subrina

Fouts, Madeline

University of Oregon

Mentor(s): Ben Hutchinson, Ray Jackson

Poster #282

Image Memorability: Exploring Spatial Recall and Perceptual Processing in a Cued Memory Task

Image memorability refers to the likelihood that a given image will be successfully remembered. People tend to remember and forget the same images across contexts, suggesting that memorability is driven by intrinsic image properties. While most research on memorability is based on recognition tasks, the present study uses a paired audio-visual spatial recall task to investigate whether memorability effects emerge in a more demanding memory task. During the encoding phase, participants hear an object word and see the object appear on the left or right of a fixation cross. At retrieval, they are cued with an object word and must indicate the item's initial location, while flickering stimuli appear bilaterally onscreen. Neural responses to flickering stimuli during retrieval are used to measure the level of ongoing perceptual processing during recall. Because memory and perception rely on overlapping neural resources, recalling a memory comes at a cost to processing perceptual information. This study examines whether memorability effects extend to cued spatial recall and whether recalling memorable images produces greater suppression of perceptual processing. This investigation will advance our understanding of how stimulus properties influence memory and perception, with implications for improving educational resources and developing tools for clinical memory research.

Francis, Lily

University of Oregon

Mentor(s): Diana Libuda, Nicole Kurhanewicz

Oral

Sexually dimorphic PRG-1 aggregate dynamics following heat exposure in live *C. elegans* germlines

The maintenance of fertility in response to stress is critical for organism and population survival in an ever-changing environment. Male fertility is particularly sensitive to elevated temperature, with acute heat exposure causing DNA damage and infertility. However, the underlying mechanisms remain unknown. The PIWI/piRNA pathway, led by Argonaute protein PRG-1, plays a key role in regulating germline genomic integrity, maintaining male fertility, and is heat-sensitive. PRG-1 knockdown enhances heat-induced DNA damage in developing sperm, making it a good candidate for study. Importantly, PRG-1 forms membraneless aggregates which rely on proper shape and location to correctly repress DNA damage in the in the germline. My project

investigates the sex-specific dynamics of heat-shocked PRG-1 aggregates in live *C. elegans* germlines. High-resolution live-imaging microscopy was used to observe real-time PRG-1 aggregate localization and morphology prior-to, during and following heat-shock during gamete development. GFP mutant worms were used to tag both PRG-1 aggregates and DNA damage sites. Characterization of PRG-1 aggregate dynamics in conjunction with the appearance and resolution of DNA damage in response to heat-shock will illuminate differences between the sperm and egg developmental programs, and the conserved mechanisms underlying the heat-induced male infertility.

Frerichs, Bess

University of Oregon

Mentor(s): Kris Kyle, Melissa Redford

Poster #066

Disfluency across development: a structural comparison of ums and silent pauses

In speech, silent pauses (SPs) are associated with both planning and sentence structure. Filled pauses (FPs), words like “um” and “uh,” are also associated with planning and so often co-occur with SPs. But, unlike SPs, FPs also have communicative functions, such as signaling the intent to speak or floor-holding. This suggests that FPs may be distributed differently in spoken language compared to purely SPs. The current study tests this hypothesis using the forthcoming Phrasing, Inhalation, and Language Structure (PILS) corpus, which contains spontaneous narrative speech samples from 30 adults and 30 5-year-olds. A subset of the speech samples (18 adults and 23 children) were transcribed and annotated for syntactic structure, FPs, and SPs, resulting in 589 FPs in adult speech and 227 in child speech. A randomized matching subset of SPs was used for comparison. Logistic regression models predicted FP occurrence relative to SPs from the syntactic contexts of preceding and following words, examined separately for different forward-looking and backward-looking effects. In both child and adult speech, FPs were more likely to precede discourse elements than SPs, consistent with FPs’ communicative functions. Interestingly, adults’ FP and SP placements did not differ otherwise. However, children were more likely to produce FPs than SPs at weak grammatical boundaries. These findings indicate that FPs and SPs occupy partially distinct structural niches, particularly in early childhood.

Gaash, Nitai

University of Oregon

Mentor(s): Hans Dreyer, Helia Megowan

Poster #221

Co-Presenter(s): Gabriel Mancuso

Stimulating Muscle Resilience to Accelerate Recovery from Eccentric Muscle Damage

Muscle resilience—efficient damage recovery—is crucial for health/performance. “Muscle memory” enables previously trained muscles to regain strength and size faster post-atrophy than untrained muscle, attributed to retained myonuclei that accelerate structural recovery. We hypothesize that increasing myonuclei numbers prior to muscle damage will enhance recovery, like planting DNA seeds for regrowth. Low-load blood flow restriction (BFR) exercise at 20-30% 1RM increases satellite cells—precursors to myonuclei—within 8 sessions while promoting strength/mass gains. These satellite cells replicate, form myoblasts, fuse with muscle fibers, and contribute new nuclei. Our goal is using BFR combined with essential amino acids (EAAs) to stimulate myonuclear accretion. We hypothesized that this protocol would lead to faster recovery. Subjects were separated into control and treatment groups. The treatment group received 2 weeks of daily EAA+BFR. Both groups then underwent eccentric exercise with electrical stimulation to induce muscle damage followed by 3 days of knee immobilization. Recovery was assessed at 3, 10, and 30 days post-damage. Damage was quantified in skeletal muscle cross-sections, single myofibers, and longitudinal sections using immunohistochemistry. Measurements at cellular and tissue, levels will assess treatment efficacy in promoting faster, more complete recovery compared to controls, potentially establishing preventative muscle resilience strategies.

Gaash, Nitai

University of Oregon

Mentor(s): Hans Dreyer, Helia Megowan

Poster #222

Co-Presenter(s): Gabriel Mancuso

Utilizing Muscle Resilience to Accelerate Recovery From Eccentric Muscle Damage

Muscle damage disrupts contraction, leading to disuse that may result in muscle atrophy and associated poor health outcomes. Elderly populations are at increased risk due to sarcopenia, or age-related muscle wasting. Muscle resilience describes the ability of previously trained muscle to rapidly recover strength and size following atrophy. This process is driven by myonuclei, which are retained during atrophy. Essential amino acid (EAA) ingestion and resistance training with blood flow restriction (BFR) have both been shown to increase myonuclear accretion. The goal of this study is to utilize a combined EAA and BFR protocol to accelerate recovery from muscle damage, thereby reducing atrophy. We hypothesized that this protocol

would lead to faster recovery. Subjects were separated into control and treatment groups. The treatment group received 2 weeks of daily EAA+BFR. Both groups then underwent a simulated quadriceps muscular injury through eccentric exercise with electrical stimulation, followed by 3 days of knee immobilization. Their recovery was then assessed at 3, 10, and 30 days post-damage. This was quantified through observation of muscle damage biomarkers in skeletal muscle cross-sections, single myofibers, and a pilot examination of longitudinal muscle sections to provide a detailed analysis of damage locations. This study advances understanding of muscle damage attenuation and atrophy reduction in vulnerable populations.

Galliver, Grace

University of Oregon

Mentor(s): Emily Cook, Jeff Diez

Poster #119

Phenotypic plasticity in root traits in response to drought in *Plectritis congesta*

As climate change accelerates, species must rely on migration, local adaptation, or phenotypic plasticity to deal with environmental heterogeneity and climate change, and the capacity for such responses is likely to vary widely among species and populations. Numerous studies have shown species responses to climate change in above ground traits, such as flowering time and water use efficiency, however few studies have studied the response of belowground root traits, which are critical to species survival in future drought climate scenarios. This research uses *Plectritis congesta*, a widely distributed native PNW wildflower, to explore the relative importance of local adaptation & phenotypic plasticity in root traits under drought conditions. To investigate these dynamics, we collected seeds from six environmentally distinct populations across a latitudinal climate gradient, spanning Southern Oregon to Northwest Washington. These sites vary in temperature, precipitation, and soil type—key drivers of root trait selection. Populations were subjected to wet and dry treatments in a common greenhouse experiment and analyzed by WinRhizo image analysis software to determine root functional traits. We found substantial plastic responses within species, and in some cases, populations showed signs of genetic differentiation. Our research highlights the importance of underground traits as critical responses to drought.

Garcia Galvan, Toni

Lane Community College

Building a Behavioral Health Workforce Pipeline: Shared Growth Across Schools and Colleges

See Lachenmeier, Ruby

Gardley, Kiara

University of Oregon

Mentor(s): Ashley Walker, Skylyn Ferguson

Poster #228

The role of APOE4 in neuroinflammation

Apolipoprotein E ϵ 4 (APOE ϵ 4) allele genotype is the primary genetic risk factor for late-onset Alzheimer's Disease (LOAD), yet the interplay between the mechanisms and cognitive decline remains widely unknown and understudied. The study aimed to analyze the neuroinflammatory profile of the APOE ϵ 4 allele in brain images to observe if memory-critical areas experience heightened inflammatory changes compared to non-carriers. To assess neuroinflammation, we used immunohistochemistry of ionized calcium-binding adapter molecule 1 (IBA1) to identify microglia cells, and glial fibrillary acidic protein (GFAP) to identify astrocytes within the hippocampus, thalamus, and entorhinal cortex of the brain. We studied mice of both sexes carrying the humanized amyloid precursor protein with either the APOE ϵ 3 or APOE ϵ 4 allele (n=33, 6 months). While the 4G8 monoclonal antibody was used to assess amyloid-beta accumulation, no significant plaque pathology was observed in our model. Our data is still being analyzed, but we would expect IBA1 and GFAP to be higher in the APOE ϵ 4 genotype as a marker of more neuroinflammation. Enhanced neuroinflammation induced by APOE ϵ 4 could accelerate cognitive deficits associated with LOAD. By understanding the mechanistic differences between the APOE ϵ 3 and APOE ϵ 4 alleles, our research can guide future studies to implement proactive therapies to delay or halt the advancement of LOAD symptoms.

Garland, Jack

University of Oregon

Mentor(s): Melynda Casement, Maya Kosaraju

Poster #306

Anxiety disorder symptoms and risk-taking in adolescents

As rates of diagnosed anxiety disorders amongst adolescents increase over time, it is important to understand how the relationship between anxiety and risk-taking is clinically relevant. Baker and Galvan (2020) argue that anxiety-related risk-avoidance may inhibit adolescent development through limiting exploration and social engagement, while increased risk-taking has been associated with substance abuse, depression, and suicidality. Risk-taking has also been shown to positively correlate with treatment seeking in clinically anxious individuals, suggesting that risk-taking is not uniformly harmful.

Participant data is sourced from the Mechanisms of Depression and Anhedonia in Adolescence (MoDA) study (ages 14-18, N=118). Anxiety symptoms are measured with the Revised Children's Anxiety and Depression Scale short form questionnaire (RCADS-25). Risk-taking is assessed with the Balloon Analogue Risk Task

(BART), where participants earn rewards through risk-taking decisions. Correlational analyses evaluate the association between symptoms of individual anxiety disorders and risk-taking on the BART. Findings from this poster could help characterize patterns of risk-taking in individuals with specific anxiety disorders, potentially leading to targeted interventions aimed at maladaptive risk-taking in individuals at risk.

Garson, Ava

University of Oregon

Mentor(s): Kyu-ho Ahn

Oral

Co-Presenter(s): Anabella Nutcher, Sophie Adams

Modular Duplex

Modular, MPP (mass plywood panel), affordable, accessible housing prototype. This is a duplex housing prototype without a site, designed to fit a large variety of urban lots (100'x50') with street and alleyway access. All structural components consist of MPP panels and mass timber beams. Our guiding principles were connection to nature, privacy, and versatility of space. The duplex shares a plumbing wall and integrates pockets of land outside of the entrances with the staggered massing to create privacy for each unit. The bedrooms are located on opposite sides of each unit while a shared plumbing wall is maintained to contribute to this sense of privacy. The garden area and entrances too, are separated and on opposite sides. Structurally, we have prioritized panel efficiency and stability while still letting in plenty of natural light. Two mass timber beams were added to support the roof, but the rest is all mass plywood panel. We researched several case studies of modular plywood housing including work by the Tallwood Design Institute. The kitchen and bathrooms have been designed to be ADA accessible with the bedroom and living room meeting those same needs while providing variation and customizability in storage arrangement. Going forward, we would like to explore different car port configurations as well as opportunities for expansion and series arrangements.

Gatt, Adrianna

University of Oregon

Mentor(s): Evelyn Cho

Poster #293

Identifying the Common Components of Effective Clinical Supervision

Clinical supervision is considered necessary for mental health care delivery, but there is limited knowledge on what constitutes effective supervision. To address this gap, the current study aims to identify common elements of supervision that improves provider treatment delivery.

We conducted a systematic review to identify effective supervision approaches. Included studies were randomized controlled trials testing clinical supervision approaches for a psychological treatment that targets a mental health problem in a peer-reviewed article in English. Following established distillation procedures, two coders will develop and iteratively refine a codebook of the common elements of effective supervision, then apply the coding system to code the presence of each common elements in the included articles as well as supervision, supervisor, and supervisee characteristics.

We present preliminary study characteristics for a subset (N=10 of 79) of supervision conditions from the 34 articles identified. Supervision was primarily individual (69%), 14-80 minutes, weekly (44%), in-person (44%), and delayed post-session (81%). Supervisors were primarily master's-level (25%) and from psychology (44%). Supervisees were primarily post-training (50%) and from psychology (50%). Final results will yield a taxonomy of the common components of effective clinical supervision, which may inform the development and practice of supervision approaches that enhance the quality of mental health care

Gautam, Harsh

University of Oregon

Mentor(s): James Brau

Poster #143

Bringing Higgs Boson simulations into Visual formats

Since the discovery of the Higgs boson in 2012, future studies of this unique particle's properties have been planned with future colliders. One of such proposed future colliders is the International Linear Collider. The Higgs boson events involve particle showers resulting from high energy electron-positron collisions. Precise measurements of these showers are needed for the measurements. Visualization of simulated showers are provided by the Geant4 software, such as WRL (VRML), XMin/X11, and Qt. We are working on a good visualization of the shower events from the Qt visual format.

Gavaldon, Payton

University of Oregon

Poster #216

Skeletal Muscle Morphology in Old and Young Individuals

See Wolf, Emily

Gay, Grace

University of Oregon

Mentor(s): Rubi Ruopp, Ian Greenhouse

Poster #275

Thalamic GABA and the Organization of Chunked Motor Sequences During Skilled Typing

When typing a familiar word, your fingers often move across the keyboard without conscious planning of each keystroke. What feels effortless reflects the brain's ability to transform deliberate actions into fast, stable sequences by grouping movements into cohesive motor units, a process known as motor chunking. While chunking is a well supported aspect of motor learning, the neurochemical mechanisms that stabilize chunked motor output remain less clearly defined. The thalamus, which relays input from the basal ganglia and cerebellum to the cortex, may regulate motor variability through inhibitory gamma amino-butyric acid- (GABA) ergic signaling. This project examines whether individual differences in thalamic GABA concentration are associated with variability at chunk boundaries during a well learned motor task. Thirty six adults completed a typing task in which they repeatedly typed five letter strings that varied in familiarity. Variability and speed in inter keystroke intervals was analyzed to identify chunk boundaries. Participants then underwent magnetic resonance spectroscopy to measure thalamic GABA concentrations. We hypothesized that higher thalamic GABA concentrations would be associated with reduced variability at chunk boundaries. Understanding how inhibitory signaling contributes to the stability of skilled actions may help clarify how the brain organizes automated motor behavior and could provide insight into motor disorders that disrupt sequence control.

Gehrig, Michael

University of Oregon

Mentor(s): Jasmin Albert, Marissa Lane-Massee

Oral

The Impact of Basalt Dust on Trace Elements within Oregon Hazelnut Orchards

Basalt dust, a byproduct of construction mining in the Pacific Northwest, has recently been utilized by farmers and scientists as a soil amendment to imitate the effects of agricultural lime while also sequestering carbon through enhanced rock weathering (ERW). When weathered, the silicate material reacts with atmospheric carbon to create bicarbonate compounds while also releasing trace elements (TEs) such as manganese and chromium. Although vital, TEs in excess are neurotoxic and carcinogenic, potentially endangering farmers and consumers through inhalation and ingestion. Thus, it is critical to understand TE fluxes from ERW, yet these are currently unknown when pertaining to Oregon basalt dust.

My study analyzed TE concentrations in basalt-amended soil from 2022-2025 as well as leaf and hazelnut kernel tissue samples from 2025 to assess the weathering and accumulation of Ni, Cr, and Mn in multiple

areas of the orchard. All leaf and kernel samples returned with ≤ 0.5 ppm Cr and Ni, with Mn concentrations well below upper intake levels in both control and treatment plots. Soil concentrations displayed no significant difference in TEs between control and treatment plots of any year, however a significant increase of Mn was observed from 2022-2023 and a significant decrease in Cr was observed from 2024-2025, leading to the conclusion that other environmental factors are at play.

Gehrig, Michael

University of Oregon

Mentor(s): Jasmin Albert, Marissa Lane-Massee

Poster #116

Basalt Dust Impacts on Trace Element Concentrations in Oregon Hazelnut Orchards

Basalt dust, a byproduct of construction mining in the Pacific Northwest, has recently been utilized by farmers and scientists as a soil amendment to imitate the effects of agricultural lime while also sequestering carbon through enhanced rock weathering (ERW). When weathered, the silicate material reacts with atmospheric carbon to create bicarbonate compounds while also releasing trace elements (TEs) such as manganese and chromium. Although vital, TEs in excess are neurotoxic and carcinogenic, potentially endangering farmers and consumers through inhalation and ingestion. Thus, it is critical to understand TE fluxes from ERW, yet these are currently unknown when pertaining to Oregon basalt dust.

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Gerbrandt, Sean

University of Oregon

Mentor(s): Matthias Vogel

Poster #080

Co-Presenter(s): James Schofield

South Korean Migration

South Korea has many problems related to declining population. Because of increasing globalization, immigration into South Korea has expanded, which has helped offset the declining population. However, this

influx in immigration has led to policies to benefit immigrants that have led to discriminatory and xenophobic attitudes towards immigrants. We have collected sources from the internet instead of physical sources or doing interviews. The sources that we have collected are either professional papers that are peer reviewed or are excerpts from textbooks which were made by professionals in their respective covered subject matters. The sources that we used were utilized for data, or information on social norms in South Korea. Because of the more conservative values that many citizens of South Korea hold, the mistreatment of these immigrants have become a more prevalent issue within the country. As stated before, however, these immigrants are essential to the future of South Korea's economy, which creates such a massive debate in the country on whether those immigrants have been more positive or negative overall for the country. Because of this debate, we have chosen to research South Korea's relationship with immigration, and the history that has led up to the discussions about immigration that are happening in Korea today. We also researched the potential future of this country, with us ultimately discovering a potential economic collapse.

Gerencer, Silas

University of Oregon

Poster #124

Monitoring Native Nursery Crop Enhancement of Douglas-fir Seedlings

See Kevin, Andrew

Ghavami, Parisa

University of Oregon

Mentor(s): Stephen Frost

Poster #189

Ontogeny of metacarpal proportions in Macaca

Adult metacarpal proportions differentiate different cercopithecoid taxa. This research aims to explore whether metacarpal proportions of juveniles could also be used to distinguish monkey taxa. To this end, we evaluated the null hypothesis: relative lengths of the metacarpals do not change with development from juvenile to adult in macaques. We collected metacarpal lengths, along with other standard measurements, from 76 individuals of various *Macaca* species. As some of the individuals measured did not have known origins, had average lengths that were outliers, or lacked juveniles, we created two analytical groups. One group included all measured individuals (51 adults, 25 juveniles) while the other group excluded those who met the above criteria (34 adults, 17 juveniles). Metacarpal proportions were calculated as the length of MC1 vs. MC2 and MC1 vs. the average length of MC2-5. We tested differences between adults and juveniles within groups using t-tests. We found that there was no significant difference between juvenile and adult

metacarpal proportions (MC1/MC2, MC1/MC2-MC5 inclusive group: $p = 0.63989$, $p = 0.70091$, exclusive group: $p = 0.93102$, $p = 0.9821$). Our study suggests juvenile specimens do not differ from adults in the metacarpal proportions tested here. However, caution is warranted given the cross-sectional nature and limited samples of our study, and further research will be needed before using juvenile digital ratios to distinguish cercopithecoid taxa.

Giandomenico, Ashlee

University of Oregon

Mentor(s): Matthias Vogel

Poster #081

Co-Presenter(s): Hannah Gragg

Nepotism In the Philippines

The entrenchment of nepotism and the concentration of political authority within elite families have contributed to the Philippines' prolonged structural and societal decline. Systemic governmental corruption has facilitated the diversion of public resources away from impoverished regions, exacerbating inequality as political power and wealth remain concentrated among a small ruling class. This corruption-driven human rights crisis predates Philippine independence and is historically rooted in the colonial-era padrino system, which has since evolved into a persistent culture of political dynasties. The continued dominance of dynastic politics is reinforced by deeply embedded traditional norms and limited democratic institutionalization. Although the Civil Service Commission formally identifies nepotism as a constitutional violation, its prevalence remains entrenched and, in some cases, coercively enforced. The 2022 national elections exemplify this continuity, with the election of Ferdinand "Bongbong" Marcos Jr., son of former dictator Ferdinand Marcos, as president, alongside Vice President Sara Duterte, daughter of former president Rodrigo Duterte and a member of a family that has exerted sustained influence over both local and national governance. Despite limited progress in institutional reform, public attitudes toward corruption have increasingly shifted, with growing intolerance and civic advocacy for anti-corruption governance.

Gill-Errada, Zoe

University of Oregon

Mentor(s): Patrick Hunnicutt

Oral

Procedural Justice and Building Support for Environmental Policy in Extractive Communities

Forest management policies, which impact peoples' environments and livelihoods, are often a point of contention in Oregon and elsewhere. Existing research about building support for environmental policy

focuses on messaging and compensations, often overlooking how resistance to environmental policy can result from procedural injustices or perceptions that decision making processes are unfair, biased, or lacking transparency. To investigate the true nature of grievances driving Oregonians to either support or oppose environmental policy, I analyzed over 400 public comments on the Oregon Department of Forestry's Western Oregon State Forests Habitat Conservation Plan. This plan, which proposes preserving state forest land as protected habitat areas and curbing logging operations across 64,000 acres of public lands, has received continuous backlash from historically timber-dependent communities since 2019. Using a qualitative coding approach, I found that many grievances were tied to the themes of process and recognition, i.e. many Oregonians who viewed the plan negatively felt excluded from decision making or did not feel acknowledged as stakeholders in this process. This ongoing research project highlights that many Oregonians are distrusting of policy decision makers, and often view the State as corrupted by opposing interests. Our current findings suggest that changes in the decision making process are needed to get us closer to a productive compromise.

Godino, Lia

University of Oregon

Mentor(s): Hans Dreyer, Helia Megowan

Poster #220

Co-Presenter(s): Mahathi Sridhar

EAA and BFR Treatment to Induce Muscle Resilience Prior to Eccentric Damage

Skeletal muscle is highly adaptable, yet periods of disuse from injury or immobilization can lead to significant atrophy and functional decline. This project investigates how to enhance muscle “memory,” the ability of previously trained muscle to regain size and strength more rapidly after atrophy. At the cellular level, this phenomenon is attributed to myonuclear accretion during training, where added myonuclei persist through disuse and support accelerated recovery. Our central hypothesis is that increasing myonuclei through a two-week preconditioning intervention combining essential amino acid (EAA) supplementation and blood flow restriction (BFR) exercise will improve muscle resilience following damage. Participants completed a two-week EAA+BFR treatment prior to eccentric damage with electrical stimulation and three days of immobilization. Muscle biopsies from the vastus lateralis and blood samples assessed structural changes and inflammation, while strength and biomechanical testing quantified functional recovery. Immunohistochemistry was used to measure myonuclei, satellite cells, and inflammatory markers. We expect EAA+BFR to increase myonuclei number, satellite cell content, and cross-sectional area, resulting in faster and more complete recovery compared to controls. This dual treatment has the potential to boost muscle resilience prior to surgery, shorten recovery times, and help patients return to daily activities sooner.

Godlis, Hannah

University of Oregon

Mentor(s): Jennifer Pfeifer, Madeleine Goldberg

Poster #303

Perceived Social Support and Perceived Stress On Self Esteem In Adolescent Girls Across Puberty

Adolescence is characterized by significant physical, mental, and socioemotional changes, including the pubertal transition and reproductive maturation. This period represents a critical window of vulnerability to mental health disorders (Kessler et al., 2007), particularly in girls at heightened risk for internalizing symptoms such as low self-esteem and high perceived stress (Salk et al., 2017). Social support from friends and family may mitigate declines in self-esteem (Tahir et al., 2015), while elevated stress may exacerbate these trajectories (Moksnes et al., 2010).

The present study examines how perceived social support and stress independently influence the self-esteem development in 174 adolescent girls from the Transition in Adolescent Girls (TAG) parent study across four waves spaced 18 months apart. Social support from friends and family was measured using the Multidimensional Scale of Perceived Social Support (Zimet et al., 1988), self-esteem using the Self-Perception Profile for Adolescents (Harter, 1998), and pubertal development from the Line Drawings (Morris & Udry, 1980) and the Pubertal Development Scale (Petersen et al., 1988). Linear mixed-effects models will assess the independent effects of social support and stress on self-esteem across age and pubertal maturation. Findings will clarify the roles of stress and social support in shaping self-esteem and inform targeted interventions aimed at improving mental health outcomes among adolescent girls.

Gonsier, Sophie

University of Oregon

Poster #122

Quartz Creek Stage 0/8 Restoration Monitoring Project 2026

See Klebes, Aubrey

Goodwill, Amelia

University of Oregon

Mentor(s): Ben Hutchinson, Ray Jackson

Poster #291

Co-Presenter(s): Charles Kerr, Nels Johnson

Effects of Focused Attention Meditation vs. Affirmation Practice on Working Memory

Working memory (WM) is a core cognitive system involved in attention, learning, and goal-directed behavior, yet it is limited in capacity and influenced by attentional control. Brief interventions such as focused attention (FA) meditation and self-affirmation (SA) may enhance WM through distinct mechanisms, including improved attentional regulation or strengthened cognitive self-beliefs. This study examines the effects of FA vs. SA on WM, while exploring differences between individuals with and without self-reported ADHD-related symptoms. Sixty undergraduate participants will be recruited and screened using the Adult ADHD Self-Report Scale (ASRS v1.1). Based on screening, participants will be categorized by ADHD-related symptom status and randomly assigned to FA, SA, or control groups (n=20 each). All participants will complete a baseline Operation Span (O-span) task, followed by a distractor task. Experimental groups will complete an 8-minute guided intervention: either breath-focused meditation or spoken affirmations. The control group will listen to a neutral audio clip. Participants will then complete a second O-span task to assess changes in WM. Both interventions are expected to improve WM relative to control. Participants with ADHD-related symptoms are expected to benefit more from FA, whereas those without symptoms may benefit more from SA. This study aims to better understand how brief cognitive strategies influence WM and improve attention and academic performance.

Graciani, Josmarie

University of Oregon

Mentor(s): Nicki Swann

Poster #259

Different Effects of Dopaminergic Medication and Deep Brain Stimulation on Behavior and EEG in PD

Parkinson's Disease (PD) is a neurodegenerative disorder that affects more than 1.1 million Americans, characterized by motor impairments, including bradykinesia, tremor, rigidity, and balance difficulties. Although dopaminergic medication and deep-brain stimulation (DBS) improve symptoms, access to DBS remains limited for many patients due to the cost, healthcare access, and disparities in diagnosis and treatment. This study looks to examine the separate behavioral and neural effects of the PD medication and DBS implant in individuals with PD. Thirteen patients with moderate disease severity completed the

continuous stop-signal task developed by our lab under different DBS ON/OFF and medication ON/OFF conditions. Behavioral measures for this study include reaction time, movement duration, average speed, accuracy, and stop-signal reaction time (SSRT). The EEG analyses focus on beta and theta activity in right frontal, midfrontal, and left sensorimotor regions. I hypothesize that performance will be worse in patients with no DBS or medication, and their results will improve when either DBS or medication is present. This study aims to better understand the behavioral and cognitive impacts of DBS versus medication on patients with PD.

Grady, Ray

University of Oregon

Mentor(s): Frances White, Sara Cotton

Poster #328

Co-Presenter(s): Amber Clemons, Bear Elliott

Poly-specific Associations in African Monkeys Impacted by Forest Type and Canopy Height

Polyspecific associations among primates are when two or more species maintain proximity and benefit from shared foraging and predator vigilance. Data was collected 7/9/1983 to 4/20/1984 in Lomako Forest, Democratic Republic of the Congo in four forest types: Gilbertiodendron, swamp, climax evergreen, and secondary. Census data was collected on transects totaling 2,927 kilometers on five primate species: black and white colobus (*Colobus angolensis*), red-tailed monkey (*Cercopithecus ascanius*), black-crested mangabey (*Cercocebus atterimus*), wolf's mona monkey (*Cercopithecis wolfii*), and Allen's swamp monkey (*Allenopithecus*) and recorded forest type, height in canopy, and distance to transect. I transcribed fieldnotes into Excel, and calculated density measurements and polyspecific associations. Density was calculated using an optimal detection distance of 20 to 25 meters and total transect length to calculate the area covered. For example, 332 red-tailed monkey groups were seen for an area of 146.36 sq km for a density of 2.27 red-tailed monkeys per sq km. Mangabeys were the most common with a density of 2.856 groups per sq km, and preferred climax evergreen forest at 15-20 m height. Climax evergreen was the preferred forest type for all primates except for Allen's swamp monkey which was only found in swamp forest. *Allenopithecus* was not seen in any polyspecific associations as other primates rarely venture into the swamp forest.

Graham, Marie Claire

University of Oregon

Mentor(s): David Renteria Escobedo

Creative Work

Rootless

“Rootless” follows two nuns in early 16th century Bavaria, Ingrid and Fabiola, and explores themes of purity, sisterhood, independence, and the value of education. I took on this project because I wanted to create a narrative in which a frame narrator with active involvement tells another character’s story. I wanted the narration, which is from the perspective of Ingrid, to exist in the future so that Ingrid has the wisdom of retrospect. However, the story takes place when Ingrid is younger, so she is able to recall the naive manner in which she perceived the events of the story at her young age. Writing “Rootless” allowed me to explore this unique narrative style, using it to enhance the themes of the story and add complexity to Ingrid’s character arc: her initial character arc, which develops from the core events of the story, transforms her into an independent woman capable of making her own decisions. The retrospective narration adds another layer of growth, demonstrating how time passed has expanded Ingrid’s ideas of righteousness, liberty, and happiness, and has instilled in her a reverence for Fabiola that overrides any judgemental ideas she had previously held.

Gullickson, Max

University of Oregon Recent Alumni

Mentor(s): Joanna Merson

Career Insights and Experiences

2025 NACIS Conference

Skills and knowledge obtained from travelling to the 2025 North American Cartographic Information Society conference. Attended a multitude of presentations given by cartographic professionals who work in a plethora of different fields. Discussed developments in cartography currently and trends in geographic information systems going forward.

Gushue, Tessa

University of Oregon

Mentor(s): Scott Fisher, Erin Morrison

Poster #136

Co-Presenter(s): Euan Mahood, Alan Vera

Safe Keeping the Pine Mountain Observatory

The Pine Mountain Observatory (PMO) was established in 1967, serving as a location for astronomical research from its inception. Our project was to create the first digital history of PMO by scanning and compiling two binders of information relating to the history of PMO. Roles were distributed among group members to become efficient and manageable throughout the project. PMO historical files come in various formats including newspaper articles, images, letters from the UO to other entities, and other types of documents gathered from throughout its history. This created challenges for scanning and storing the documents appropriately by year. We compiled them into a digital system consisting of approximately 583 files. Digitally compiling all the PMO history files not only keeps them safe but helps us understand the creation of PMO and the timeline of events of its past. Along with organizing PMO records, we recorded the most meaningful and impactful events in its time.

Guy, Zohar

University of Oregon

Mentor(s): Lauren Forrest

Poster #321

Exploring Appearance-Based Content and Engagement on TikTok

Social media is rife with content related to appearance and dieting. In its early stages, social media exposed users to appearance-based content that users specifically sought out. Newer versions of social media, like TikTok, are powered by algorithms. TikTok specifically offers a “For You” page (FYP), that shows users content picked by the algorithm and provides each user with a unique scrolling experience. While all social media platforms utilize recommendation algorithms, the FYP is widely known as one of the most effective algorithms. Emerging research suggests that the FYP of individuals with eating disorders deliver unusually high amounts of content related to appearance, dieting, and promotion of eating disorder symptoms. However, it is unknown what user engagement behaviors (e.g., liking, commenting, skipping, etc.) inform the algorithmic decisions that deliver appearance-related content to users with eating disorders. Undergraduate women (n=70) provided a 15-minute screen recording of them engaging with their FYP and self-reported their social media attitudes and use, eating habits, and TikTok engagement habits. Screen recording videos were coded for engagement and content type. This study aims to explore how women at low vs. high eating

disorder risk engage with different types of content (e.g., appearance-based vs. non-appearance based) and compare whether the proportion of appearance-related content differs between women at low vs. high risk.

Hackenberg, Avery

University of Oregon

Mentor(s): Brad Wilkins, Mira Schoerberlein

Poster #242

The Impact of Sex Hormone Profile on Oxygen Uptake Kinetics in Female Middle-Distance Runners.

The phase II time constant of oxygen uptake kinetics ($\tau\dot{V}O_2$) reflects the exponential increase in oxygen consumption by the muscles and is a key determinant of performance in middle-distance runners. Our goal was to determine if female sex hormone profile affects $\tau\dot{V}O_2$ in highly trained middle-distance runners. We hypothesized that a high hormone profile result in a longer $\tau\dot{V}O_2$ and decrease time to exhaustion (TTE) relative to a low hormone profile. Twelve highly trained ($\dot{V}O_{2MAX} = 59.4 \pm 6.0 \text{ mL}\cdot\text{kg}^{-1}\cdot\text{min}^{-1}$) female runners completed in four study visits. After a graded treadmill test to determine $\dot{V}O_{2MAX}$ and a familiarization TTE trial, participants completed two experimental visits on a high or low hormone profile day. Treadmill was set at a speed predicted to elicit exhaustion in four minutes. Venous blood draws confirmed female sex hormone concentration. Paired t-tests assessed differences in $\tau\dot{V}O_2$ between hormone profiles and between TTE duration. The relationship between changes in $\tau\dot{V}O_2$ and TTE was evaluated using a Pearson's correlation. Hormone profile did not influence $\tau\dot{V}O_2$ (Low: $29.6 \pm 5.9 \text{ sec}$, High: $30.2 \pm 5.8 \text{ sec}$, $P = 0.6$). Further, $\tau\dot{V}O_2$ does not appear to affect TTE duration (Shortest: $29.4 \pm 6.4 \text{ sec}$, Longest: $30.4 \pm 5.2 \text{ sec}$, $P = 0.43$) independent of hormone profile. There was no association between $\tau\dot{V}O_2$ and TTE ($r = 0.13$, $P = 0.69$). Although highly variable, $\tau\dot{V}O_2$ during a middle-distance time trial does not appear to be influenced by sex hormone profile.

Hagen, Macyn

University of Oregon

Mentor(s): Stephen Frost, Gabrielle Jones

Poster #337

Geometric Morphometric Assessment of Extant and Fossil African Cercopithecoid Mandibles

Paleoanthropological research across African fossil sites has produced an abundance of cercopithecoid mandibles that have the potential to better our knowledge of their taxonomic diversity, but have often proven challenging to identify in the absence of other cranial materials. In this study, we investigate if geometric morphometrics can help identify subcomplete mandibular corpora to specific taxa. We collected a sample of

3D 256 surface models using the Einstar structured light scanner on casts and the Morphosource database, including N=21 fossil mandibles, and a comparative extant sample of N=235. We placed 26 3D landmarks using Stratovan Checkpoint on one side of the corpus. We performed a Generalized Procrustes Analysis in Morphueus and ordinated the resulting coordinates using Principal Components Analysis (PCA) and Linear Discriminate Analysis (LDA) in PAST. PC1 (20.2% total variance) separates colobines with short and wide mandibular arcades at the negative end, from cercopithecines at the positive end. PC2 (12.1% variance) separates Theropithecus and colobines with deeper corpora at the negative end from Mandrillus and Lophocebus at the positive end. LDA more widely separates genera and had a 83.2% correct classification rate. The fossil specimens largely plotted near extant relatives in both analyses, while the fossil colobines appear in the same quadrant as cercopithecines, reflecting the cercopithecine-like morphological affinities of early large colobines.

Hagen, Miles

University of Oregon

Mentor(s): Christina Bollo, Rebecca Lewis

Poster #002

Co-Presenter(s): Megan Henry

Envisioning Middle Housing in Major Oregon Cities

Under the Tinker Hatfield Grant as a part of the Institute for Policy and Research Engagement, this project serves to research, catalogue, visualize and compare newly developed middle housing codes in low density residential zones. Prioritizing three major Oregon cities; Eugene, Bend, and Beaverton, and two housing typologies; townhouses and cottage clusters, each piece of code was discussed and compared through a series of diagrams to help fully understand the potential of middle housing developments. Fighting the 'missing middle,' this research acts as a frontrunner in code research, hoping to ease Oregon's shortfall of 29,522 dwellings. This research builds on analysis done by José Meléndez and Rebecca Lewis that focused on two to four unit dwellings, and through ongoing research, the inventory is expanding to 15 Oregon cities.

Hahn, Acacia

University of Oregon

Mentor(s): Emily Gade, Daniel Tichenor

Oral

Hamas' October 7th Strategies of Provocation & Publicity: Punishment and Legitimacy in Conversation

This research paper seeks to objectively understand the political strategies behind the use of violent attacks in the case of the October 7th, 2023, by Hamas on Israel. Emerging from an understanding terror

as a method of communication, this research hypothesizes three potential central strategies, punishment, provocation & publicity, and legitimacy. This study utilizes a correlational qualitative assessment of news, humanitarian reports and rebel media collected as text-as-data via hand coded methods into a dataset, which was then analyzed to evaluate the hypotheses via a process tracing methodology. Research suggests strong correlation and primacy of a publicity and provocation hypothesis at returning the Palestinian cause to the global agenda and consciousness. Within this broader hypothesis, research finds cooccurrence of punishment and legitimacy strategies; delineated differently depending on the sources of the evidence. This denotes nuanced understanding of terrorism as a method of communication, albeit and extreme one, and highlights the impact of prior perception or conceptual framework of a conflict can shape how it is viewed. Given the salience of the conflict, this research hopes to add normative substance to the political science discourse by engaging with connotations of terrorism as illogically or irrationally motivated and offering objective research on this recent case of violence; and aid future peace initiatives via addressing underlying grievances.

Hajarizadeh, Armaan

University of Oregon

Mentor(s): Nick Pancheri, Robert Guldberg

Oral

Toward Automated Cartilage Quantification: A Deep Learning Approach in Preclinical Tibial Imaging

Anterior cruciate ligament (ACL) injuries are among the most common musculoskeletal injuries and are strongly associated with progressive cartilage degeneration and the development of post-traumatic osteoarthritis. Even following reconstruction, ACL reinjury rates remain substantial, and repeated injury further exacerbates joint instability, inflammation, and cartilage damage. These processes contribute to cartilage thinning, surface irregularities, and long-term functional decline. Preclinical models, particularly rat tibia sections, are widely used to study these changes; however, quantitative assessment of cartilage in histological sagittal images remains time-intensive and subject to observer variability.

To address this, we develop a deep learning-based approach for automated cartilage identification in sagittal tibial images. Using a curated dataset of annotated sections, convolutional neural networks (CNNs), including U-Net based architectures, are trained to segment cartilage regions and enable quantitative analysis. Standardized evaluation metrics such as Dice similarity coefficient and intersection-over-union are used to assess performance. Preliminary results demonstrate feasibility with promising agreement to manual annotations.

This work aims to establish a scalable framework for cartilage quantification in preclinical imaging, improving consistency and enabling higher-throughput analysis of cartilage degeneration following ACL injury and reinjury.

Hajarizadeh, Armaan

University of Oregon

Mentor(s): Suyash Gupta

Oral

Privacy, Distribution, and Diversity: Rethinking Federated Learning for Heterogeneous Data

Federated learning (FL) is a privacy-preserving framework that enables machine learning models to be trained collaboratively across distributed devices without ever collecting raw user data. Rather than sending data to a central server, FL allows each device to train locally and share only model updates, making it well suited for sensitive domains like healthcare and mobile computing.

A persistent challenge in FL is data heterogeneity: in the real world, data across devices rarely follows the same distribution. A hospital in one region may see different patient demographics than one across the country; a phone user's typing habits may look nothing like their neighbor's. This statistical inconsistency causes local models to diverge from one another, destabilizing global model convergence and reducing overall accuracy.

This project develops "DynaMu," a novel algorithm addressing this challenge. Existing approaches like FedProx apply a uniform regularization "leash" to all clients to limit divergence, but this one-size-fits-all strategy ignores meaningful differences across clients. DynaMu instead adapts each client's leash dynamically based on its recent performance, rewarding reliable clients with more freedom and constraining underperforming ones more tightly.

DynaMu achieves higher accuracy and faster convergence than FedProx under heterogeneous conditions, representing a step toward more stable and generalizable federated learning systems.

Hajarizadeh, Auveen

University of Oregon

Mentor(s): Kelly Leguineche, Robert Guldberg

Poster #210

Systemic Immune Profiling to Predict Infection in Patients with Bone Injuries

Fracture-related infection (FRI) is a major complication of severe extremity trauma, affecting up to 50% of patients with open fractures. Early diagnosis remains difficult because clinical signs often appear 6-12 weeks post-operatively, while commonly used biomarkers lack sufficient specificity for early detection. This study evaluated whether systemic immune profiling could identify early immune signatures associated with infection following orthopedic trauma. 11 patients (6 male, 5 female; ages 23-66) with Type I-IIIA open tibia fractures were followed and classified as either radiographically healed or having developed surgical site infection. Peripheral blood samples were collected at pre-operation (Draw 1, D1), discharge (D2), and follow-up visits at 2-4 weeks (D3), 6-8 weeks (D4), and 12-14 weeks (D5). Immune cell populations were quantified using a 15-antibody panel and spectral flow cytometry, with downstream analysis performed in R using multivariate modeling. Patients who developed infection exhibited elevated plasmacytoid dendritic cells and regulatory T cells, along with reduced myeloid populations, suggesting systemic immune dysregulation. sPLS-DA separated infected and healed patients based on circulating immune profiles, demonstrating that early immune signatures may distinguish infection risk prior to clinical symptoms. These findings highlight the potential of systemic immune profiling as a noninvasive approach for early detection of FRI.

Hale, Eli

Umpqua Community College

Mentor(s): Mick Davis

Oral

Exploring Oscillatory Motion Beyond the Standard Damped Harmonic Oscillator Regime

A harmonic oscillator, such as a mass on a spring, with a damping force proportional and opposite to velocity produces an equation of motion with an analytical solution for displacement consisting of harmonic oscillation with exponentially decaying amplitude. Introductions to oscillatory motion often present this “dash-pot” model as an example of damped oscillation; however, many everyday systems do not exhibit damping proportional to velocity, so the standard damped harmonic oscillator equation may not describe their behavior. For example, kinetic friction provides a force opposite velocity but constant in magnitude. The goal of this study is to explore such a system. We ask: Can a mass-on-spring oscillator subject to friction be modeled as a standard damped harmonic oscillator with modified frequency and effective damping? We hypothesized that it could, with the damping constant depending on friction magnitude.

Our setup used a low-friction cart and track, maintaining constant mass while increasing friction via normal force. Spring force was measured and converted to displacement using Hooke's Law. We found that exponential decay does not model this system, refuting our hypothesis. The magnitude of kinetic friction did not affect oscillation frequency, unlike standard damping. We also observed a power-law relation between amplitude decay and friction. Further work will seek an empirical model for this behavior.

Hall, Kam

University of Oregon

Mentor(s): Kate Kelp-Stebbins

Oral

Ink and Insulin: Graphic Medicine for Pediatric Diabetes

Materials used to provide health information to pediatric patients with type 1 diabetes (T1D) are often hard to understand and unengaging since they typically contain dense text, complicated medical terminology, and few diagrams. When patients and their families misunderstand the critical health information presented in these materials, inconsistent treatment and poor health outcomes result. A new method for communicating this critical information is necessary to improve the accessibility of pediatric diabetic education.

The growing field of graphic medicine explores the intersection of comics and healthcare as a means to provide easily digestible and relatable information to patients both in and out of the treatment room. For this project, I use the principles of graphic medicine and current educational handouts as a scaffold to create structured comics to teach pediatric T1D patients about their diagnosis, treatment plan, and how to handle diabetic emergencies. Drawing on extensive, interdisciplinary research, I compose graphic medicine materials that are easy to personalize, engaging, and informative for a variety of age groups. Creating new education materials for pediatric T1D patients can improve their physical and mental health outcomes. Additionally, the creation of these materials allows for future studies on the impact of graphic medicine on pediatric diabetic education.

Hall, Maya

University of Oregon

Mentor(s): Eleanor Paynter

Oral

Riding the Wake: A Black Woman's Survival

How has post-colonialism shaped the lived experiences, perceptions, and constructions of identity and sexuality among Black Diasporic women in the United States and Europe? In what ways do we see historical resistance and exploration of agency against the social, political, and cultural norms, policies, and institutions that perpetuate colonialism and control over Black women's bodies? Through a literature review

and visual analysis, I collect more information on how Black women have been depicted since colonialism and how art and poetry depict Black women across the diaspora. With this research, I reflect not only on my experience as a Black woman but also on Black women's experiences across the Black diaspora. Though Black women have different lived experiences, there are cultural/social norms, stereotypes, institutions, and policies that continue to enforce control over our bodies, therefore impacting how we engage with the world.

Hall, Yohann

University of Oregon

Mentor(s): Don Daniels

Poster #069

The Emperor's New Constraints

This project presents an exploratory, formal framework for modeling how linguistic constraint functions in group communication. Drawing on concepts from cognitive linguistics and systems theory, it asks: under what conditions does the breakdown of shared constraints—such as mutual exclusivity—lead to self-reinforcing communication failures rather than repair?

The framework uses a stoichiometric-style equation to represent a sequence of analytically distinct linguistic and cognitive states, treating intermediate terms as relational rather than empirical categories. Rather than testing hypotheses experimentally, the project aims to clarify structural dynamics that may underlie persistent miscommunication, escalation, and feedback loops in social groups.

By formalizing these relationships, the project provides a conceptual tool for examining how communication systems stabilize or destabilize once core constraints are no longer mutually recognized.

Hansen, Olivia

University of Oregon

Mentor(s): Faye Young, Marisa King

Poster #358

Exploring Dental Anxiety: A Multidimensional Analysis of Causes, Outcomes, and Therapeutic Treatment

Dental anxiety is a prevalent and multifaceted issue that largely impacts oral health outcomes and overall well-being. This thesis explores the causes, consequences, and potential treatments to dental anxiety, using psychological, physiological, and social perspectives. Contributing factors include past traumatic experiences, fear of pain, and loss of control in dental environments. These factors often lead to avoidance

behaviors, resulting in delayed or neglected dental care. The consequences of dental anxiety are beyond oral health, leading to dental disease, treatment difficulty, and high healthcare costs. Additionally, dental anxiety can worsen various mental health challenges, reinforcing cycles of fear and avoidance. This research analyzes current strategies for managing dental anxiety, such as behavior interventions, patient-provider communication, sedation techniques, and advancements in dental technology to improve patient comfort. The effectiveness and limitations of these approaches are critically evaluated to identify gaps in care. Ultimately, this thesis creates a thorough and patient-focused discussion for addressing dental anxiety, encouraging prevention, early intervention, and improved provider-patient relationships. By better understanding and addressing dental anxiety, the dental field can improve access to care, patient experiences, and long-term oral health.

Hardwick, Sara

University of Oregon

Poster #123

Monitoring Pollinator Habitat Enhancement Seeding Three Years Post-Salvage Harvest

See Ashton, Elisa

Harris, Elle

University of Oregon

Poster #078

Slowing Down Fashion in Latin America

See Wesley, Emma

Harris, Joseph

Umpqua Community College

Mentor(s): Paul Dalton

Oral

Overcoming CAD Limitations in Additive and Subtractive Manufacturing

Automated manufacturing processes are broadly categorized as additive or subtractive. Additive manufacturing (AM) builds layer-by-layer, while subtractive manufacturing (SM) removes material from a solid block. Both rely heavily on computer-aided design (CAD) software to create, analyze, and optimize models. Melt electrowriting (MEW) is a specialized AM process using a controlled electrical field to deposit fine molten polymer fibers. MEW produces dense, ordered scaffolds with micrometer-scale features for tissue engineering.

However, these structures create a major challenge: they are difficult to visualize and share using conventional CAD. Traditional software like Fusion 360 represents geometry using boundary representation; when scaffolds contain thousands of fibers, the vertex-heavy models become very hard to render or manipulate. This slows progress by creating barriers to design optimization and the dissemination of research to colleagues and funding agencies.

This presentation introduces a workflow using implicit modeling to produce high-fidelity 3D models that are colored, cross-sectioned, and embedded in media while maintaining small file sizes. I have demonstrated that this workflow's impact goes beyond MEW by applying it to wood-based subtractive manufacturing to design and machine complex, large-scale structures previously impossible to render. Future work aims to simulate fiber sag between crossover points to better reflect the physical reality of MEW prints.

Harris-Clippinger, Emma

University of Oregon

Mentor(s): Eric McClellan, Victoria Roberts

Poster #227

Heterogenous Pulmonary Artery Remodeling In a Fetal Sheep Model of Hypoplastic Left Heart Syndrome

The objective of this research is to create a model of the congenital heart disease, hypoplastic left heart syndrome (HLHS), and evaluate changes in vascular wall thickness of pulmonary arteries in a mid-late gestation fetal sheep model of left ventricle inflow obstruction. This research is important because strained heart and lung vessels is a major driver of morbidity and early mortality in this population of patients. Our lab has developed a large animal model of HLHS using a balloon to obstruct inflow in the left ventricle of the heart. The aim is to fill the knowledge gap in the impact of obstructed flow through the left atrium and associated pulmonary venous hypertension on pulmonary vascular wall thickness. 5 experimental and 4 control fetuses were operated on at 115 days gestational age with a deflated balloon catheter. Balloons in experimental fetuses were gradually inflated each day until aortic flow was eliminated and the balloons remained inflated for 2 weeks. Intact single lungs were preserved from control and experimental fetuses. We then examined the pulmonary arteries of the lungs. They were categorized by external diameter and the percent wall thickness of each vessel was calculated. We can conclude that balloon inflation in a sheep model of HLHS is associated with blood vessels in the lungs thickening, but not in the same way or in the same places. These findings suggest this can result from chronic left ventricular inflow obstruction.

Harrison, Tabitha

University of Oregon

Mentor(s): Sarah Hodges, Elliott Doyle

Poster #320

Fictional Media and Identity Development: How Queer People Interact with Fictional Characters

Coming to terms with one's queer identity is often challenging, but something as simple as engagement with fictional media might aid in self-understanding. The current study examines two primary research questions regarding how LGBTQ+ people interact with fictional media and fictional characters in ways related to identity navigation: 1) Do LGBTQ+ and cisgender-heterosexual (i.e., cishet) participants judge immoral actions differently when performed by queer vs non-queer fictional characters? 2) During times of uncertainty, are cishet participants more likely to gravitate towards fictional characters whose gender matches their own than sexual minority (LGBA+) people are? Results showed that queer participants judged immoral actions of queer characters more leniently than cishet participants did. There was no difference between straight and LGBA+ participants' likelihood to gravitate towards fictional characters of their same gender, but there was an interaction effect between sexuality and gender.

Hart Smith, Maia

University of Oregon

Mentor(s): Bernadette Calafell

Poster #074

Mammy Marine

This project explores the intersections of colonization, capitalism, labor, and environmental harm, centering the ocean as both a site of extraction and care. Prior to European colonization, Indigenous, African, and Latin communities sustained reciprocal relationships with ocean ecosystems, acting as stewards rather than exploiters. Colonization disrupted these systems, replacing them with capitalist structures that prioritize profit over sustainability, leading to pollution, overwork, and the dumping of waste into marginalized coastal regions.

The burden of repair, both environmental and social, has disproportionately fallen on women, particularly women of color. This dynamic reflects historical roles shaped by slavery and colonial hierarchies, including the enduring "Mammy" archetype: a figure expected to nurture, labor, and endure without recognition or rest. This stereotype continues to inform how care work, including environmental stewardship, is undervalued and feminized.

Through an abstract and interdisciplinary approach, this project examines how these layered histories manifest today. It questions who is expected to clean, who is allowed to exploit, and how systems of power obscure responsibility. By connecting ocean pollution to histories of racialized and gendered labor, the work highlights the invisible weight carried by marginalized communities while challenging viewers to reconsider their relationship to both the environment and each other.

Haryanto, Greyson

University of Oregon

Mentor(s): Jesse Wilson

Poster #054

Immigration and Crime: Is There a Relationship?

The argument that immigrants pose a risk to national security is often used to justify punitive immigration policy, detention, deportations, and violence towards immigrants. However, no positive immigration-crime relationship has been found to date. In fact, data have shown that immigrants are less likely to be incarcerated or commit crimes than US-born individuals. This project expands on existing research by analyzing data between 1990 and 2023 (newly including data after 2020) from Alabama, Arizona, California, Oregon, and Texas. These states were selected because they have widely varying political stances, immigrant population sizes, and crime rates. Crime rate data were collected for offenses immigrants are often accused of: aggravated assault, burglary, homicide, and rape. Multiple regression analysis found a non-significant negative relationship between immigrant populations and state crime rates. The only significant relationship observed was between year and crime, as crime rate decreased over the time-series. These findings provide further evidence that political rhetoric connecting immigrants to increased crime is deceptive. Widespread misinformation perpetuates negative stereotypes, fueling discrimination, structural and interpersonal violence, and unjust detainment, incarceration, and deportation. For the wellbeing of our friends, families, neighbors, and fellow human beings, it is imperative that we challenge misinformation about immigration.

Hatsey, Saliem

University of Oregon

Poster #251

The use of Biomechanics for a Course-Based Research Experience in a Large Class

See Wu, Julia

Hauke, Kris

University of Oregon

Poster #324

Re-animating Research: Cataloguing the Skeletons in our Closet

See Kelly, Emma

Hawk, Chayton

Lane Community College

Mentor(s): Kimberley Phillips Parzuchowski

Works in Progress: Lightning Rounds

A Literature Review of Historical Veteran Suicide Trends and AI-Informed Intervention Strategies

Background: While suicide is often defined as the intentional ending of one's life, in the context of the United States Veteran, it represents a complex failure of transition, support, and early intervention. Currently, Veterans face a suicide risk 1.5 times higher than the general population. With over 6,400 Veteran lives lost annually, there is an urgent need to transform prevention strategies beyond traditional clinical models.

Objective: This project provides a comprehensive literature review focusing on two primary areas: an analysis of historical Veteran suicide data and an evaluation of cutting-edge research regarding the use of Artificial Intelligence (AI) to identify high-risk individuals.

Methods: By synthesizing existing longitudinal studies and recent pilot programs involving machine learning algorithms, this review examines how predictive modeling can bridge the gap between reactive treatment and proactive intervention.

Conclusion and Personal Inquiry: Beyond the synthesized data, this research serves as a foundational step for the author's long-term inquiry into the "translation" of academic knowledge into practical, peer-led mental health applications. The project explores the vital role of the Veteran-researcher in ending this epidemic, leveraging lived experience to turn theoretical AI insights into life-saving clinical practice.

Hawk, Madelin

University of Oregon

Mentor(s): Erin Beck, Emily Gade

Poster #077

The Limits of Plastic Memory: Reframing Authoritarian Periods in Chile and Argentina

As far-right ideologies tend to revere the past, embrace military strength, and respect authority, one must ask how present day far-right actors reconcile with past abuses of overly empowered military authority. This research sought to answer the question: What factors shape, if and how, the way present day right-wing leaders frame violent authoritarian periods in their countries' histories? It uses Chile and Argentina as examples, as both countries experienced 20th century dictatorships characterized by political suppression and state-sponsored violence. Both states have subsequently seen a recent emergence of the extreme right, with political actors who have been critiqued for justifying those regimes. This project examines the ways in which collective memory may create restrictions on the rhetoric used by actors to reframe periods of authoritarianism. It hypothesizes that historical reframing is not indefinitely possible, and that the use of positive rhetorical framing is limited by pre-existing social narratives and historical realities. This study examines language used by political actors surrounding past authoritarian regimes, comparing instances of positive, denialist, and negative framing. It concludes that while memory is plastic, its malleability is dependent on whether collective memory structures allow for positive reframing to take place. This is significant for future research on collective memory, rhetorical choice, and the importance of history education.

Heilfron, Kiana

University of Oregon

Mentor(s): Andie Pruett

Creative Work

Echoings of Grief Through a Natural Landscape

My poetry collection: Echoings of Grief Through a Natural Landscape started as an interest in the workings of grief and memory. I was interested in how the conjoined effort of present grief and past memories comes together to illuminate both parts, becoming a unified whole. I was interested in a heart held heavy in the hands at present, feeling only that weight through the unique gift of memory. Echoings of Grief Through a Natural Landscape lets us consider the joy it is to feel present feelings of grief more vividly when considering the past. This collection lets us consider the value of memory, that thing that stretches time and space through feeling; lets us consider the "gift of mourning".

Heim, Charlie

University of Oregon

Mentor(s): Sam Hopkins

Poster #130

Dentary From Mokelumne Fossil Site in California, Extends the Range of *Liodontia furlongi*

Aplodontiid rodents, known today from a single living species, are nonetheless among the better-known groups of rodents in the fossil record. The genus *Liodontia* specifically is known from western Montana, Eastern Oregon and Northern Nevada. In December of 2022, a small right dentary containing all four cheek teeth was found in the Mokelumne Fossil Site, a previously undescribed locality in central-eastern California. This jaw was morphologically consistent with the it belonged to the Aplodontiidae family and furthermore with an aplodontiine. A closer look at the tooth morphology showed that it was a species of *Liodontia*, specifically *Liodontia furlongi*. This was determined by comparing the tooth morphology of the lower fourth premolar and first through third molars from the Mokelumne specimen with isolated teeth and jaws from the species *Liodontia furlongi* and *Liodontia alexandrae*, the only two species that are close in age to the site age indicated by the other fossils of the Mokelumne site. The size of the teeth, their crown height, and the shape of the occlusal outlines are consistent with the assignment to *L. furlongi*. There are no known specimens of *Liodontia furlongi* previously known from this site in central-eastern California, which would extend the geographic range of *L. furlongi* southwards by a significant amount, and given other stratigraphic evidence, may be one of the earliest occurrences of this species.

Hendler, Arianna

University of Oregon

Mentor(s): Brad Wilkins, Kristina Binder

Poster #248

The Relationship Between Fitness and the Human Gut Microbiome

Exercise training may be associated with increased gut microbial diversity and higher abundance of beneficial gut microbes in humans. We hypothesized that higher aerobic fitness would correlate with increased gut microbial diversity in men and women. Twenty-seven healthy participants (men $n = 12$, women $n = 15$) participated in this study. Aerobic fitness was determined by maximal oxygen uptake ($\text{VO}_2 \text{ max}$) via a ramp protocol on a cycle ergometer, and maximal metabolic steady state (MMSS) estimated from muscle oxygen saturation via near-infrared spectroscopy (NIRS). Participants provided a fecal sample within 48 hours of the MMSS assessment. Fecal microbiome composition was determined using 16S ribosomal RNA sequencing. A PERMANOVA test assessed differences in beta diversity (Bray-Curtis Analysis) and Pearson

correlations compared alpha diversity (Shannon Index) to VO_2 max and MMSS. Fitness described 7% of the variance in beta diversity (PERMANOVA: $F = 1.89$, $p = 0.022$). Across all participants, alpha diversity was correlated with VO_2 max ($R = 0.22$, $p = 0.26$) and MMSS ($R = 0.3$, $p = 0.13$), though neither were statistically significant. In men, alpha diversity was strongly correlated with VO_2 max ($R = 0.62$, $p = 0.037$) and MMSS ($R = 0.72$, $p = 0.011$). However, alpha diversity was not correlated with VO_2 max ($R = 0.064$, $p = 0.82$) or MMSS ($R = 0.089$, $p = 0.75$) in women. These findings highlight a potential sex difference in gut microbiome alpha diversity in relation to fitness.

Henry, Megan

University of Oregon

Poster #002

Envisioning Middle Housing in Major Oregon Cities

See Hagen, Miles

Hentschel, Fenn

University of Oregon

Mentor(s): Paul Dassonville, Ernie Brannon

Poster #287

Assessing binocular rivalry as an objective metric for quantifying phantasic abilities

The ability to form mental images (phantasia) differs from person to person, with some people able to imagine lifelike images (hyperphantasics) and others unable to form mental images at all (aphantasics). The VVIQ has been used to quantify imagery vividness but is potentially prone to participant bias due to its subjective nature. To avoid the problems of a self-report questionnaire, Chang and Pearson (2018) explored the perceptual effects of mental imagery on binocular rivalry, in which the two eyes are shown different but overlapping images - observers typically report seeing only one image. When observers were asked to preimagine one of the images, observers with typical phantasia were primed to report seeing the imagined image, but aphantasics were not. This finding, however, is still dependent on a subjective response. To provide an objective measure, Bouyer et al. (2025) presented a probe in one image and asked observers to report its location. Their findings seemed to contradict those of Chang and Pearson. However, the long duration of Bouyer's trials may have delayed the presentation of their probes until after the imagery priming effects had subsided. The present, ongoing study aims to eliminate this potential confound by presenting earlier objective probes. Results of the study will be discussed in the context of the complex nature of the binocular rivalry priming, and its suitability for quantifying phantasic abilities.

Hernandez-Ramos, Brandon

University of Oregon

Mentor(s): Lan Chen

Poster #151

Incorporating a Fullerene-like Electron Acceptor Into the Cycloparaphenylene Backbone

Due to their unique size-dependent electronic and photophysical properties, cycloparaphenylenes (CPPs) have garnered significant attention. One emphasis of CPP chemistry is the incorporation of electronic acceptors, such as benzothiadiazole, fluorenone, and cyclopenta-fused polycyclic aromatic hydrocarbons (CP-PAH), into the CPP backbone. These electron-acceptor units are valuable as they facilitate redox reactions, enable energy transfer, and serve as excellent n-type materials. However, CPPs containing CP-PAHs remain rare, and no reported examples have featured an externally fused CP-PAH, even though such motifs may be stronger electron acceptors than internally fused analogues. To bridge this gap, we are investigating the synthesis of CPPs containing cyclopenta[hi]aceanthrylene (CPA). CPA is an attractive target because it is a fragment of C70 fullerene that preserves fullerene-like electron-accepting character but is easier to chemically modify. Specifically, CPA can be orthogonally functionalized at the 2,7- or 4,9-positions. Currently, we have synthesized and characterized 4,9-CPA[7]CPP through ¹H and ¹³C NMR spectroscopy, mass spectrometry, and UV-Vis spectroscopy. Looking ahead, we want to synthesize 2,7-CPA[7]CPP to compare it with 4,9-CPA[7]CPP and investigate how substitution patterns affect their redox and photophysical properties.

Hickok, Blair

University of Oregon

Mentor(s): Rebecca Lewis

Poster #010

The Path to Eviction: The Impact of Rising Rental Costs and Policy Shifts on Fixed-Income Households

Oregon renters in fixed-income households face an increasing affordability gap with rental inflation. This study analyzes the relationship between Cost-of-Living Adjustments, rising rental costs, housing policy shifts, and eviction filings in the years before and after COVID. Existing research indicates that fixed-income households are disproportionately susceptible to housing instability due to a widening affordability gap. This gap is compounded by the lack of affordable and accessible housing options. Continuing with a mixed-methods approach, this study analyzes historical data to perform a quantitative county-by-county analysis segmented into three time periods: pre-, during, and post-COVID. This segmentation assesses fluctuations in eviction filings to determine their correlation with temporal shifts in housing policy. Specifically, to evaluate

the impact of the activation and subsequent expiration of COVID-era renter protections. This study identifies which protections could shield renters from the impact of increasing rental costs. Ultimately, this research provides policymakers with evidence-based insights into how renter protections can be implemented to mitigate eviction filings for fixed-income households.

Higgs, Vivian

University of Oregon

Poster #137

Investigating Late-time Radio Brightening of Tidal Disruption Events

See Neuner, Grace

Himmelman, Ben

University of Oregon

Poster #319

Pre and Post-Strike Changes in Gendered Experiences

See Kyriazis, Kalliope

Hiple, Marina

University of Oregon

Poster #135

A Creative Perspective on Pine Mountain Observatory

See Miller, Spud

Hixson, Dominic

University of Oregon

Mentor(s): Darren Johnson, Andrew Lee

Poster #153

Leveraging pnictogen-assisted self-assembly of symmetrical dithiols within host macrocycles

Dynamic covalent chemistry (DCC) is at the forefront of many different synthetic methods projects, one of the main interests being macrocycle supramolecular chemistry. Within the realm of DCC lies a subfield known as host-guest chemistry, a field that seeks to complex molecules together using either covalent or non-covalent templates. An offshoot or rather, application of template-based host-guest interactions is the

field of mechanically-interlocked molecules or MIMs. In this project, the interplay between these fields will be explored through the modality of disulfide macrocycle self-assembly as a comparatively facile route to an [n]-catenane via a pseudorotaxane precursor.

Hobdy, Mackenzie

University of Oregon

Mentor(s): Victoria De Rose, Christopher Griffin

Poster #171

Co-Presenter(s): Leon Krueger, Helena Tyberg

Biological Stability of Pt(IV) Compounds: Solvent Effects of DMSO on Ligand Displacement

Platinum-based chemotherapeutics are widely used to treat a range of cancers, but their severe side effects have driven interest in more promising alternatives. Platinum(IV) compounds are currently being evaluated as a more inert and stable alternative to traditional Platinum(II) chemotherapeutics, such as cisplatin. Dimethyl sulfoxide (DMSO), a solvent commonly used for Platinum compounds in biological experiments, has been shown to inactivate Pt(II) compounds, especially cisplatin, by altering the structures of their complexes. However, the effects of DMSO on Pt(IV) compounds remain poorly understood. In this work, we investigate whether Pt(IV) compounds undergo DMSO coordination and how these interactions affect their biological reactivity. Solvent-induced structural or functional changes may compromise the reliability of experimental data, potentially misrepresenting the compounds' actual biological efficacy. This study examines the effects of DMSO on three Pt(IV) compounds with the cisplatin scaffold. We evaluate the impact of DMSO coordination through both biological activity and chemical characterization, studying the DNA damage response and cytotoxicity alongside structural changes detected by ^{195}Pt NMR spectroscopy. By combining these approaches, this study links the compounds' chemistry to their cellular effects. These results will inform best practices in experimental design and improve the reliability of Pt(IV)-based research.

Hoffwood, Vega

University of Oregon

Mentor(s): Judith Raiskin, Linda Long

Poster #032

Jane Grant: Advocating for a Woman's Name and Her Identity

Jane Grant, co-founder of the New Yorker Magazine and the Lucy Stone League, dedicated much of her life to advocating for the right and choice for women to keep their last name in marriage. Historically, women have been required to take their husband's name under an old English common law called coverture, which forbade

women from having legal identity and property. This custom was brought over to the U.S and continued until advocates of the first wave of feminism challenged this tradition which resulted in laws like the New York State Married Women's Property Act of 1847. This research examines the Jane Grant Papers at the University of Oregon Special Collections Archives to understand why she advocated for the right of women to keep their own name in marriage. By examining correspondences with federal officials and acquaintances, legal documents pertaining to her marriage, and an article she wrote in the American Mercury, I conclude that Jane Grant advocated and co-founded the Lucy Stone League because she believed that a name is a symbol of legal and individual personhood. By advocating for women to choose to keep their name in marriage, she resisted historical precedents that were set in place to keep women from having a legal identity. Beyond legal issues, Jane Grant also advocated for the assertion of women having a personal social identity separate that of their husbands.

Holman, Conor

University of Oregon

Mentor(s): Alex Denton, Mike Hahn

Poster #241

Impact Of Whole-Body Mechanics On ACL Injury Risks in Female Soccer Athletes

Anterior Cruciate Ligament (ACL) tears are an extremely common and serious injury in female soccer athletes, who experience these injuries at a rate 2.79 times higher than their male counterparts. ACL injury risk factors at the knee level have been widely studied, however studying how whole-body center of mass movement effect ACL injury risk in female soccer athletes during real playing environment has not. It was hypothesized that an increase in whole-body center of mass movement will increase the risk of ACL injury.

Eight competitive female soccer athletes completed unanticipated lateral cuts targeting 120° from an approach at 80% perceived maximum velocity on an outdoor artificial grass surface before and after a fatigue protocol with cleated footwear. A multi-axial inertial measurement unit was placed approximately on the sacrum to estimate whole-body movement (200 Hz, Casio, Computer Co., LTD, Tokyo, Japan). Bivariate correlations were examined between rotational whole-body center of mass and ACL injury risk knee mechanics during the cutting stance.

A significant difference was found between peak knee flexion angle and peak whole-body rotational position post-fatigue ($p < 0.01$). Additionally, there was no significant difference between peak whole-body rotational position or velocity between pre- and post-fatigue ($p > 0.05$). These finding indicates that a greater rotational position allows for greater peak knee flexion, thus protecting athletes against ACL injury.

Howard, Benni

University of Oregon

Mentor(s): Dan Tichenor, Ellen Fitzpatrick

Poster #055

Complicating the Progressive Narrative: Immigrant Due Process Rights in the Ninth Circuit Court of Appeals

This thesis looks at three cases that have appeared in the Ninth Circuit Court of Appeals between 2017 and 2025. These cases address due process in immigrant removal proceedings through processes including (1) consideration of the cost of bond hearings; (2) right to counsel in reasonable fear hearings, which serve as one of the few arguments against an order of expedited removal; and (3) governmental responsibility to provide adequate notice of removal proceedings. All selected cases highlight the ways in which the Ninth Circuit Court fails to effectively affirm immigrant due process rights through their dockets due to lack precedential value, enforceability of implementation, limited scope, and vulnerability to Supreme Court opinion. These cases complicate the narrative of the Ninth Circuit Court as a progressive beacon of immigrant due process protections.

Through a close reading of primary material, including the original language of *Hernandez v. Sessions* (9th Cir. 2017), *Zuniga v Barr* (9th Cir. 2019), *Singh v Garland* (9th Cir. 2024), as well as analysis and synthesis of secondary sources including law journal essays and publications, I demonstrate the political and legal significance of the Ninth Circuit Court's rulings and tell the story of eroding immigrant due process on the West Coast in a time of conflict between higher and lower courts and amidst a culture of anti-immigrant sentiment.

Howard, Ellie

University of Oregon

Mentor(s): Tuong Vu, Daniel Buck

Oral

Chips on the Table: Examining the Semiconductor Industry in the context of Geopolitics

Our world runs on semiconductors. From everyday electronics to advanced computing and renewable energy, modern life depends on these chips—and Taiwan sits at the center of this system. Producing over 90 percent of the world's most advanced chips, Taiwan occupies a uniquely position between the United States and China. This project asks a central question: How does semiconductor interdependence among these three actors shape geopolitical stability and strategic behavior in the Taiwan Strait?

Using a qualitative literature review, the study synthesizes government positions, industry perspectives, and business commentary to understand how each actor interprets the risks and benefits of this interdependence. This approach highlights not only national differences but also tensions between official narratives, business incentives, and expert assessments.

In brief, my findings suggest that despite rising military pressure, supply-chain disruptions, and global efforts to “de-risk,” the semiconductor ecosystem remains deeply interconnected. Rather than serving as a trigger for conflict, Taiwan’s semiconductor dominance appears to function as a stabilizing force—creating high economic and strategic costs for any attempt to disrupt the status quo. The project concludes that semiconductors are more likely to deter aggression than to incentivize it, offering insight into why technological interdependence continues to shape cross-strait stability.

Howell, Marly

University of Oregon

Mentor(s): Alison Carter

Oral

A Comprehensive Study of Decorated Earthenware Ceramics in Pre-Angkor and Angkorian Periods

This study explores the variation of decorations on Khmer earthenware ceramics during the Pre-Angkor (6-8TH centuries CE) and Angkor (9-15th centuries CE) periods from the Prasat Baset site, including data from all trenches, in Battambang province, Cambodia. Whereas the stoneware decorations have undergone numerous studies, the low-fired earthenware (the majority of the ceramics assemblage) remains understudied. Across trenches decorated ceramics were found in vast amounts, perhaps indicating that painted and other decorations stemmed from this location. Across time periods there are patterns in decorations indicating traditions passed down overtime; however, change in decorations over centuries may offer insight into changing politics, migration, and practices. Understanding decoration variation over time may help us understand culture during Pre-Angkor and Angkorian times. Sherds were sorted using a typology based on sand temper and surface treatment, then further categorized by surface treatment to consider decoration variation over time. Results indicate that paintedware decreases prevalence and Angkorian motifs emerge during Angkorian times. They also indicate how Pre-Angkorian ceramics had greater decoration variation versus the more neutral decorations seen during the Angkorian period. Decorations appeared to correlate temper types which raise additional questions to the purpose of temper variation, design variation and loss of certain decorations overtime.

Hsu, Hiram

University of Oregon

Mentor(s): Alethea Steingisser, Carolyn Fish

Poster #083

Black Rain: Bombings on Japanese Civilians in World War II

This map addresses a tragic, controversial, yet neglected topic. As the cartographer, I wanted to reveal this hidden history and give it the acknowledgement that it deserves. If people do not remember the night of March 9th, 1945, history may be repeated. I feel personally connected with this event as an American with Japanese heritage. Thus, this map was made to honor those who perished that night, and to speak what they would have said.

The main data is from mission records from the United States Air Force. The data was cleaned to remove missions at places other than mainland Japan and adjusted to match modern city names. The data is displayed via proportional symbols because they provide a more spatially accurate representation than graduated symbols. Graphics of sparks, flames, smoke, and charcoal were included for a more visceral viewing experience and strong emotional response. The graph and various statistics were designed to present the magnitude of the bombings. The graph compares the Tokyo firebombing with famous non-military catastrophes to make the scale of death more tangible for viewers unfamiliar with war history. Quotes were also included to show the different perspectives of those involved. They move the story from cold statistics to a survivor's suffering. I hope that the viewers of this map will remember this painful side of history, lament the wartime atrocities against civilians, and prevent urban firebombings from happening again.

Hudson, Hanna

University of Oregon

Mentor(s): Jen Michel

Poster #272

Investigating Stim1a Localization at Electrical Synapses in Zebrafish via CRISPR-Mediated V5-Tagging

Neurons communicate through two types of connections called synapses: chemical synapses, which are well understood at the molecular level, and electrical synapses, which are far less studied. Electrical synapses function through gap junction channels formed by proteins called Connexins, allowing direct and rapid signal transfer between neurons. Surrounding these channels is a dense protein region known as the Electrical Synapse Density (ESD), whose molecular composition remains largely unknown but is thought to contain regulators of electrical synapse formation and function. To identify candidate ESD proteins, the Miller

Lab used a proximity-based proteomic approach in zebrafish, revealing hundreds of Connexin-associated proteins. Among these candidates is Stim1a, a protein known for its role in calcium mobilization. This project uses CRISPR genome editing to insert a V5 tag into the Stim1a gene in zebrafish, allowing us to visualize the protein using fluorescence microscopy and determine whether it localizes near electrical synapses in the Mauthner circuit. Currently, we are testing the efficiency of the CRISPR guide to effectively insert the V5 tag coding sequence. If Stim1a is confirmed to localize at electrical synapses, this could open new questions about how calcium-related processes contribute to synaptic function, with broader implications for neurological conditions such as autism and epilepsy.

Humphries, Sam

University of Oregon

Mentor(s): Shannon Hugard, Mike Hahn

Poster #209

Effects of Relative Peak Vertical Ground Reaction Forces On Bone Adaptation

Introduction: Bone adaptation is stimulated by mechanical loading, as bones structurally remodel in response to the stress placed on them [1]. Bone stress injuries occur as a result of repeated mechanical overloading disrupting the delicate balance between the body's microdamage-induced bone remodeling and repair processes [2]. Previous retrospective work has found that bone strength (failure load in compression per unit area) relative to mechanical loading in the form of mean peak vertical ground reaction forces (vGRF) is significantly lower at the mid-tibia (diaphysis) in runners with previous stress fracture history [3]. However, it is unknown if relative peak vGRF influences tibial bone adaptation. Therefore, the purpose of this study is to prospectively investigate the influence of relative peak vGRF on tibial bone adaptation during marathon training. It is hypothesized that individuals with greater relative peak vGRF will experience greater increases in total volumetric bone mineral density (Tt.vBMD[MH1.1]), which reflects the amount of mineralized bone per unit volume, as a result of marathon training.

Conclusions: Preliminary results indicate a non-significant positive relationship between bone relative peak vGRF and adaptation at the distal tibial metaphysis. Further data collection is ongoing and may further clarify this relationship.

Hutak, Marli

University of Oregon

Mentor(s): Alayna Park, Emily Kondo

Poster #345

Why adapt? Understanding reasons for culturally adapting treatment for Latine youth and families

Most evidence-based mental health treatments were developed and tested in White, middle-class contexts, contributing to disparities seen by the Latine community—which represents about 20% of the U.S. population, but only 3% of participants in mental health treatment studies. These treatments may not align with the needs and values of Latine families who face disproportionate rates of structural inequities, language barriers, and discrimination. This project characterized common reasons for culturally adapting evidence-based treatments to better suit the needs of Latine youth and families. Undergraduate and graduate research assistants summarized adaptation rationales across eight culturally adapted treatments (CATs) described in empirical articles, conceptual papers, and treatment manuals. Preliminary themes across these summaries were analyzed and included consideration for sociocultural and familial context (e.g. cultural values), increasing family engagement with treatment, building rapport between therapists and clients, creating culturally responsive clinical practice (e.g. flexibility for activities/topics), navigating treatment barriers, and increasing treatment acceptability. Consideration of common reasons for culturally adapting mental health treatments is critical for informing in which clinical situations therapists should tailor treatment to improve accessibility, engagement, and effectiveness of treatment for Latine youth and families in the United States.

Istratov, Nikita

University of Oregon

Mentor(s): Alexandre Dossin

Creative Work

Exploring the Piano Music of Sofia Gubaidulina

This research project explored the historical context and stylistic elements of the piano music of Sofia Gubaidulina, focusing on her piece Chaconne (1962). Gubaidulina is a female contemporary classical composer born in 1931. She has an innovative harmonic language and uses traditional musical forms in creative ways. She is one of the great female classical composers who are underrepresented and relatively “unknown” despite the quality of her work.

In classical music, few programmed compositions are written by women. A study in 2021 found that the top 100 orchestras in the world have only 5% of their total programming composed by women. This is true in the

field of solo piano as well. While Gubaidulina's music (especially those pieces written for orchestra) have been becoming more popular in some parts of the world, her music (particularly for solo piano) is rarely performed in the United States. By recording, performing, and bringing attention to it, I expand the body of research on her piano music. I hope to broaden awareness of her great compositions and increase the overall visibility of female classical composers.

James, Sydney

University of Oregon

Mentor(s): Jasmin Albert, Lauren Hallett

Oral

Pollinator Sharing and Community Composition in Degraded Willamette Valley Wetlands

In the Willamette Valley, only 2% of historic wetland prairie landscapes remain, due to intensified post-colonial urbanization, agricultural conversion, drainage and invasive woody vegetation. Plants and pollinators have been largely affected by these altered habitats. To prevent further loss and restore remnant prairie ecosystems, we must preserve and promote effective reproductive systems that can restore biodiverse habitats for native pollinator communities. However, generalised assumptions in restoration efforts that prioritise species abundance may become problematic because of the mutualisms that plants and pollinators form to promote fertilisation and ensure population persistence. To address this gap, I capitalised on data collected in the Hallett and Ponisio labs to investigate how relevant characteristics of different plant communities affect the reproductive abilities of native flowering plants in the Willamette Valley wetland prairie context. I analysed the relationship between reproductive output and pollinator overlap, as well as visitation, species richness and specialization at the network, group, and genus level. Using R, I visualised these results and found no statistical significance. These results indicate that there may be other factors that are more influential on reproductive output in native wildflower populations, and plant-pollinator network characteristics are not important to consider in restoration efforts.

James, Sydney

University of Oregon

Mentor(s): Jasmin Albert, Lauren Hallett

Poster #110

Pollinator Sharing and Community Composition in Degraded Willamette Valley Wetlands

In the Willamette Valley, only 2% of historic wetland prairie landscapes remain, due to intensified post-colonial urbanization, agricultural conversion, drainage and invasive woody vegetation. Plants and pollinators have been largely affected by these altered habitats. To prevent further loss and restore remnant prairie

ecosystems, we must preserve and promote effective reproductive systems that can restore biodiverse habitats for native pollinator communities. However, generalised assumptions in restoration efforts that prioritise species abundance may become problematic because of the mutualisms that plants and pollinators form to promote fertilisation and ensure population persistence. To address this gap, I capitalised on data collected in the Hallett and Ponisio labs to investigate how relevant characteristics of different plant communities affect the reproductive abilities of native flowering plants in the Willamette Valley wetland prairie context. I analysed the relationship between reproductive output and pollinator overlap, as well as visitation, species richness and specialization at the network, group, and genus level. Using R, I visualised these results and found no statistical significance. These results indicate that there may be other factors that are more influential on reproductive output in native wildflower populations, and plant-pollinator network characteristics are not important to consider in restoration efforts.

Jeffries, Blake

University of Oregon

Mentor(s): Christina Karns

Poster #297

Effects of the Strength of Grateful Expression in Gratitude Journaling on Trait Gratitude and Stress

There is an ongoing crisis of stress and mental health in the United States, and we need accessible practices to ease this burden. A simple way to improve personal mental health is through gratitude journaling. Research shows that gratitude journaling improves mental and physical health (McCullough et al., 2002), including stress.

Recent work indicates that expressing gratitude through actions uniquely contributes to well being (Wong et al. 2025). However, studies have not systematically evaluated which aspects of grateful expression in extended journaling are most important for positive outcomes (such as increased trait gratitude and reduced stress). Our sample of 33 participants were randomly assigned to a daily gratitude or neutral journaling condition for 3 weeks, which interacted with pre-test gratitude to increase trait gratitude (Karns et al. 2017). Here we rate the strength of gratitude in each entry to determine whether grateful expression increases trait gratitude and reduces stress after the journaling period relative to baseline. Hypothesis: Grateful expression will predict increases in trait gratitude and reductions in stress relative to pre-test scores, increases that will be largest for low-trait-gratitude individuals assigned to the gratitude journaling condition. This information will assist in developing specialized journaling prompts to target areas of concern.

Jenkins, Lexi

University of Oregon

Poster #091

Relationship Between External Load Metrics and Goals Scored by Attackers on Oregon Women's Lacrosse

See Lippa, Charlotte

Jimenez, Noah

University of Oregon

Mentor(s): Audrey Lucero

Works in Progress: Lightning Rounds

What Would Happen to the U.S. Economy if Immigrants Were Removed from the Equation?

My research will examine how the United States economy would be affected if immigrants were removed from the labor force and broader economic system by focusing on employment, tax contributions, and the sustainability of Social Security. Immigrants play a significant role in the U.S. job market by filling essential positions across many industries. Additionally, immigrants contribute billions of dollars annually in federal, state, and local taxes, which support public services and social programs. One critical area of impact is Social Security, where many immigrants contribute payroll taxes that help fund benefits for retirees and other recipients. By analyzing employment data, tax contributions, and demographic trends, my research will explore how the removal of immigrant workers could lead to labor shortages, reduced tax revenue, and increased strain on programs like Social Security, ultimately affecting the stability and growth of the U.S. economy.

Johnson, Nels

University of Oregon

Poster #291

Effects of Focused Attention Meditation vs. Affirmation Practice on Working Memory

See Goodwill, Amelia

Jones, Brady

University of Oregon

Mentor(s): Kristen Rahilly

Poster #098

Co-Presenter(s): Kobe Edwards

Exploring Asteroids and Clouds Through Participatory Science

Participatory science is research conducted by volunteers, including volunteers without prior knowledge of the research subject. This kind of science acts as a low-barrier entry point for anyone to get involved in the scientific process. We will be working with two participatory science programs, the first being The Daily Minor Planet Program, whose goal is to identify new asteroids. We will also work with the NASA Global Learning and Observations to Benefit the Environment (GLOBE) Program. Their goal is to allow volunteers to submit cloud observations from the ground. We will be developing research questions using data from both The Daily Minor Planet and GLOBE. Our work will demonstrate how research can be conducted effectively with participatory expertise and how data collected by citizens can be utilized.

Jones, Bryce

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #040

Displacement: On Adaptations of Jane Eyre

Despite the ever-expanding body of Jane Eyre adaptations, the novel is incompatible with the temporal conditions of cinematic narrative. According to George Bluestone, the present is the only tense available to film. Transposing a narrative written in the preterit into the cinematic present erases Jane's dual status as narrator and character, preventing the articulation of the novel's feminist politics, which are dependent on Jane's narrative hybridity.

Why Jane Eyre? If my argument is that cinema collapses the temporal complexities of the novel, thus silencing the narrative voice that speaks outside of the story, couldn't almost any novel motivate this analysis? Jane Eyre is specific to this project because it provides us with a way to think about problems of adaptation in more than just technical and grammatical terms. The political work of Jane Eyre is effected through the character/narrator dialectic. Forfeiting that, the film adaptations lose the locus of Jane Eyre's feminist politics.

Joyce, Ireland

University of Oregon

Mentor(s): Ifra Ansari

Poster #175

The Effects of Phosphate Buffer Saline Solution on the conductive polymer PEDOT:PSS.

My project investigated the effects of phosphate-buffered saline (PBS) on PEDOT: PSS during redox reactions via cyclic voltammetry. I focused on three key areas: the impact of ionic concentrations on conductivity, variations in the phosphate buffer within PBS, and the effects of dissolved and non-dissolved oxygen in the solution. I prepared seven electrolytes: six distinct PBS solutions (three with reduced phosphate buffer and three with increased conductivity) and one saline solution. 50 μm gold & RuOx electrodes coated with PEDOT: PSS were used to measure the open-circuit potential for proper connection. Afterward, I performed electrochemical impedance spectroscopy (EIS) at 1 kHz and cyclic voltammetry (CV) at scan rates of 50 mV/s, 5000 mV/s, and 50000 mV/s. Experiments were first conducted in air, then the electrolyte solution was sparged with argon for 5 minutes to remove dissolved oxygen, after which I repeated the experiments. The aim was to understand PBS's effects and identify any damaging effects or underlying causes that may have influenced CV and EIS data. The anticipated outcomes included improved control over experimental variability and insights for enhancing future research designs.

Kadovitz, Olivia

University of Oregon

Mentor(s): Philip Washbourne, Alexandra Tallafuss

Poster #271

Co-Presenter(s): Emma Fauquembergue

Mapping Vasopressin and Galanin Circuits Involved in Zebrafish Reproductive Behavior

Arginine vasopressin (AVP) is a neuropeptide known to regulate social and reproductive behaviors across vertebrate species, including sexual behavior in zebrafish. Despite growing evidence that links vasopressin signaling to behavioral modulation, the neuroanatomical organization of AVP-expressing neurons and their potential interactions with other neuromodulator systems remain uncharacterized. Galanin is a neuropeptide that is known for its influence on reproductive and motivational behaviors, raising the possibility that overlapping or adjacent AVP and galanin neuronal populations may contribute to the neural circuitry of these behaviors. This study uses immunohistochemistry to label AVP- and galanin-expressing cells in zebrafish whole brains and sections. Fluorescent labeling and confocal microscopy are used to evaluate the spatial organization and overlap of these neuronal populations. By mapping the distribution and relationship of these neuropeptide systems, this improves understanding of the neurobiological substrates underlying

sexually relevant behaviors in zebrafish, while also exploring how environmental pollutants, such as dioxin, may further alter these pathways and impact reproductive behavior. These findings may contribute to broader insights into conserved mechanisms of social and reproductive behavior regulation across other vertebrate species.

Kapadia, Prabhuli

University of Oregon

Mentor(s): Ashley Walker, Deanna Choi

Poster #231

The interaction of APOE genotype and hypertension on cognitive and vasomotor function

Late-Onset Alzheimer's Disease (LOAD) is the most common form of dementia. Two major risk factors of LOAD are the apolipoprotein (APOE) 4 (E4) genotype and hypertension (HT). The gene encoding APOE has three different forms in humans (E2, E3, E4). We aimed to determine if a low salt diet alters the impact of hypertension on cerebral artery endothelial function and stiffness. Mice with genotypes E3xAPP and E4xAPP (12 months; n=6-8) were studied. The control (CT) group was fed a high-fat (HF) diet, and HT groups received either a HF or HF, low-sodium diet (LS). Angiotensin II (Ang II) osmotic pumps were inserted to induce HT. Nest building was used to test for instinctual behavior pre- and post-surgery. Barnes maze was conducted to study spatial awareness and memory. Posterior cerebral arteries (PCA) were used to assess vasomotor function. HT E3xAPP mice had a greater vasodilation to acetylcholine compared to LS E3xAPP mice. Similarly, HT E3xAPP mice had a greater vasoconstriction to Ang II compared to CT and LS E3xAPP and HT E4xAPP mice. For Barnes maze, HT mice spent the same amount of time in both target and other quadrants. Finally, HT E4xAPP had the highest score on nest building. In summary, we found HT in E3xAPP mice led to greater vasomotor function, while HT in E4xAPP retained instinctual behavior. However, HT mice could not retain spatial memory, indicating the effects of blood pressure on memory performance.

Kapelka-Wolpoff, Rose

University of Oregon

Mentor(s): Emily Scott

Virtual

Mary Colter and Hopi Architecture at Grand Canyon National Park

National Park architecture toes a difficult line between museum and theme park, presenting persistent design challenges to architects and planners who must navigate the intersecting goals of education and touristic attraction. Between 1905 and 1935, architect Mary Colter designed six major retail and hospitality

buildings at Grand Canyon National Park, drawing on the architectural styles of the Hopi Tribe in an effort to integrate her work into the surrounding landscape. While previous scholarship on Colter has examined themes of imperialist nostalgia and cultural appropriation within her work, there has been little focus on how Colter's engagement with Hopi culture has shaped current relationships between Hopi Tribe and the National Park Service.

By conducting fieldwork at Grand Canyon National Park, this project analyzes Colter's buildings alongside other park retail spaces, situating them within the broader architectural and interpretive context of the park. I drew on conversations with National Park staff, collaborated with Hopi Cultural Preservation Center to prepare a formal research proposal, and engaged extensively with Hopi and other Indigenous scholarship on displacement, representation, and ownership to understand and incorporate Indigenous perspectives. Using these methods, I examine how Colter's work continues to inform the interpretation of Indigenous art and culture at the park.

Karp, Erin

University of Oregon

Poster #122

Quartz Creek Stage 0/8 Restoration Monitoring Project 2026

See Klebes, Aubrey

Kelly, Emma

University of Oregon

Mentor(s): Frances White

Poster #324

Co-Presenter(s): Kris Hauke, Olivia Dean, Ella Kuhn, Simon Apollo

Re-animating Research: Cataloguing the Skeletons in our Closet

The Primate Osteology lab at the University of Oregon is home to The Grand Collection, an osteological collection of nearly 800 specimens. These specimens are primarily primates, which has resulted in less focus on the non-primate collection. To revitalize interest in this collection, and to improve access for researchers of biological processes such as morphology and pathologies, we updated and expanded the database for 294 non-primate specimens and have improved access to these specimens for researchers by cleaning, identifying, labeling, and organizing. Degreasing to remove the natural oils and fats from the bone is a continuous process necessitated by the leaking of bone marrow over time, and core to the health of osteological collections. Specimens with flesh have the flesh removed (maceration), which can be done using

flesh-eating dermestid beetles, chemicals, heat and/or water. The Primate Osteology Lab's protocols call for hot water maceration (cooking) to preserve the integrity of the bones for research purposes. We macerated 3 individuals, degreased 12, and catalogued a cumulative 17. We identified 12 pathologic specimens and identified the pathologies of 6. Maintenance of osteological collections is essential for research access as without it, bones degrade and specimens are inaccessible. Accurate databases facilitate future research including studies of bone pathologies.

Kelm, Cameron

University of Oregon

Mentor(s): Scott Fisher

Poster #351

Co-Presenter(s): Micah Parker, Graeme Kieran

The Lost Apollo 14 Launch Footage

When the Apollo 14 mission launched in 1971, the University of Oregon's Pine Mountain Observatory (PMO) was one of two facilities tasked with filming the historic launch. Several sources confirm that Pine Mountain did obtain video of the flight towards the Moon, yet our research has uncovered only a few fragments of information on the event. In the Astro ARC, we have been researching this launch and attempting to find any information leading to the original film footage from PMO, as it has seemingly disappeared with time. Through our methods, we were able to find a few small pieces of evidence, namely several individual frames that are most likely from the film found on an archived website and small excerpts from the Bend Bulletin mentioning Pine Mountain, but nothing conclusive. We also contacted several other universities and people that were associated with the original project, but we are still waiting for some responses. It is our hope that we will be able to find this footage so we can work to properly archive this important achievement for PMO.

Kennedy, Ally

University of Oregon

Mentor(s): Peter Schlachte

Creative Work

Secrets that lie in acting

My inspiration for writing this piece is from my lifelong love of Sherlock Holmes. British mystery works are something that I hold close to my heart, and I love the feel of a class mystery. However, I have never attempted to write this genre I hold so dear. So, when I started the Kidd Program in the fall, I wanted to challenge myself to write my own mystery novella.

With this work, I wanted to retain the feel of a classic mystery, but still wanted to add some themes that are less common. Firstly, my main character, Violet, is a female detective who works “unofficially” for the Criminal Investigation Department. In most of these British mysteries, the detective is male, and can do as he so pleases. However, when looking at a female detective who is harshly treated by male officers, who do not respect her solely because of her gender, new themes present themselves.

While writing this piece, I have had the pleasure of learning how to write the Victorian Era Accent and researching London at the turn of the 20th century. I still have a lot to learn, but find myself slowly starting to understand the time period better.

Keogh, Quinn

University of Oregon

Mentor(s): Ulrick Casimir

Oral

The Weaponization of Revenge in Chainsaw Man’s Public Safety Saga

Ideas of governance and its place in society are constantly evolving, and the media we consume every day is a time capsule which reflects the political structures and class struggles of our times. The Marxist literary critique seeks to explore this phenomenon by analyzing the ways in which real world class struggle shapes the stories we create. This paper examines the influence of state ideology in the Public Safety Saga of Tatsuki Fujimoto’s Chainsaw Man to contextualize broader themes of revenge within the narrative. Through synthesis of Marxist theory and literary critiques of the Byronic Hero, Aki Hayakawa’s character arc and his quest to kill the Gun Devil is explored as a deconstruction of the modern anti-hero character to serve as a cautionary tale against the government’s ability to weaponize the revenge drive. This analysis looks to add to the existing body of Marxist literary critiques of modern Shonen manga by challenging our understanding of revenge, its place and purpose in society, and its troubled relationship with the state.

Kerr, Charles

University of Oregon

Mentor(s): David Kerr

Oral

Evaluating Nicotine Retailer Age-Restriction Compliance Efforts Through Underage Consumer Reports

Widespread underage access to nicotine products raises questions about retailers’ compliance with age-restriction laws. In Oregon, underage employees (“minor decoys”) of the Food and Drug Administration assess

retailers' compliance by attempting to purchase nicotine products. However, minor decoys are not allowed to lie about their age, use false ID, or otherwise deceive cashiers. These assessments may be limited if minor decoys and real underage consumers behave differently when buying nicotine.

To examine differences, 100 underage nicotine users from Oregon universities were surveyed regarding their purchasing strategies. Common strategies included using false ID, lying about age, attempting to appear older, and befriending/flirting with cashiers, none of which are permitted in minor decoy operations. Semi-structured interviews of four minor decoys elicited experiences and recommendations for more effective compliance assessments; all decoys reported that compliance assessments do not reflect how real consumers act.

Current compliance assessments are not informed by the most common behaviors that underage purchasers use. Thus, minor decoy operations set a low bar for assessing compliance. Alternatives such as additional cashier training (e.g., in false ID detection) and feedback to retailers without entrapment or legal penalty may be promising.

Kerr, Charles

University of Oregon

Poster #291

Effects of Focused Attention Meditation vs. Affirmation Practice on Working Memory

See Goodwill, Amelia

Kevin, Andrew

University of Oregon

Mentor(s): Peg Buolay, Lauren Berger

Poster #124

Co-Presenter(s): Makena Fortenbaugh, Jessica Mcneil, Louisa Krantz, Silas Gerencer

Monitoring Native Nursery Crop Enhancement of Douglas-fir Seedlings

This monitoring project focuses on post-wildfire forest regeneration at Whitewater Ranch (WWR) in Oregon's McKenzie River watershed. We will build on prior Environmental Leadership Program (ELP) teams' restoration efforts and follow Ponisio Lab protocols to answer the following research question: Can strategic native forb plantings reduce invasive and competing species abundance, improve soil and microsite conditions, and enhance Douglas-fir seedling success? We will conduct a weekly plant census of established survey plots, which will be used to calculate species abundance, community composition, and percent ground cover of

noxious weeds. We will also collect data on Douglas-fir seedling characteristics across study plots. This project evaluates whether native forb establishment can offer dual function as a restoration strategy that supports pollinators while promoting conifer regeneration. Our findings will inform adaptive management at WWR, contribute to long-term research within the Ponisio Lab, and advance applied forest restoration research. The data we collect will provide valuable insights to landowners, forest managers, and conservation practitioners seeking practical, ecologically sound methods for improving Douglas-fir establishment in harvested or fire-affected landscapes.

Kieran, Graeme

University of Oregon

Poster #351

The Lost Apollo 14 Launch Footage

See Kelm, Cameron

Kim, Ester

University of Oregon

Mentor(s): Ellen Peters

Poster #046

Medical Risk Communication and Malpractice Litigation Intentions

Medical malpractice often results from failures in patient-physician communication, contributing to increased litigation and widespread use of costly defensive medicine. Science communication research suggests there are benefits of using numbers to communicate risk for understanding and trust. Despite the benefits of providing numbers, physicians prefer to provide verbal risk estimates. However, when adverse events occur, communicating uncertainty—either with verbal estimates or ranges—could protect physicians from loss of trust and blame. The study examined how risk communication methods influence patients' litigation intentions following suspected malpractice.

To test this, we conducted an experiment to evaluate how numeric v. verbal risk communication and how numeric point-estimate v. range risk communication impact medial litigation intentions. We measured blame and intentions to litigate following an adverse outcome. Although the results were not significant, they suggest that the presence of numbers, specifically the precision of numbers, may be important in medical risk communication. Importantly, the patterns of partial significance across certain items suggest that the influence of numbers and precision may be more nuanced than initially hypothesized. This research suggests that risk communication strategies may influence malpractice-related judgments, offering insights into how physicians can communicate effectively to potentially reduce legal risk.

King, Maliki

University of Oregon

Poster #030

Self-Compassion and Body Image Concerns in Sexual and Gender Diverse Adults

See Pieter, Ava

Kingsley, Averie

University of Oregon

Mentor(s): Corbett Upton

Oral

Syntax Fueled Delusion in R.F. Kuang's The Poppy War

Syntax is often overlooked in literary discussions. We often focus on the meaning an author is trying to convey, ignoring the syntactical structures that make up how they are trying to convey it. Style is the foundation of good writing—the kind of writing that readers choose to come back to over and over again. Without it, writing becomes formulaic and uninteresting. This paper examines a single passage from the first book in author R.F. Kuang's twentieth-century China inspired fantasy trilogy, *The Poppy War*, looking at how Kuang uses syntax to craft meaning. This paper focuses on the use of different verb types, varying sentence lengths and structures, and the repetition of words, phrases, and entire sentences by Kuang to convey the internal conflict her main character feels as she attempts to justify her own morally questionable actions. Ideas of delusion, mental unravel, and self-soothing are explored through this analysis of the syntax and grammar that make up Kuang's style—providing insight into what makes her work interesting, engaging, and memorable for readers.

Klawitter, Isabella

University of Oregon

Mentor(s): Ryan Monkman, Brice Kuhl

Poster #289

Co-Presenter(s): Bryanna Prado

The Role of Emotional Appraisal in Differentiating Similar Memories

Interference often occurs between highly similar real-world memories (e.g., repeated social events like family dinners). Emotional significance (e.g., a pleasant vs. unpleasant experience) may help differentiate these similar memories, potentially serving an adaptive function. However, less is known about how emotional appraisal influences this process. In this study, 31 participants encoded and later recalled highly similar pairs of socially ambiguous video clips. During encoding, participants were given positive or negative

words to guide their interpretation of each clip, encouraging them to appraise the same type of event in different emotional ways. We examined memory accuracy across pairs that shared the same emotional framing (positive-positive, negative-negative) and pairs with mixed emotional framing (positive-negative). Additionally, the emotion of participants' typed recall responses were analyzed using sentence decoders and correlated with participants' valence ratings. Findings from this study contribute to understanding how emotion shapes memory organization and highlights the role of language in capturing differences in how similar experiences are remembered.

Klebes, Aubrey

University of Oregon

Mentor(s): Peg Boulay, Mara Salisbury

Poster #122

Co-Presenter(s): Ginger Nunnally, Sophie Gonsier, Olivia Rossi, Erin Karp

Quartz Creek Stage 0/8 Restoration Monitoring Project 2026

The Middle McKenzie Restoration project aims to restore the Quartz Creek floodplain to its historical form as a system of braided channels across a flat valley floor by raising the water table and encouraging meanders. The McKenzie Watershed Council has implemented Stage 0/8 restoration methods in the Quartz Creek restoration area, filling in the channel and adding numerous pieces of wood in order to return the floodplain to an undisturbed, pre-channelized state, encouraging meandering and hydrogeomorphic connectivity. This restoration supports local trout populations and improves habitat suitability for spawning. In 2023, monitoring of Quartz Creek began through a collaboration that included the McKenzie Watershed Council, MRT, EWEB, USFS, private contractors, and the University of Oregon Environmental Leadership Program. The primary monitoring objectives are to assess the effectiveness of previously implemented Stage 0/8 restoration methods. Additional objectives include measuring wood dynamics, including the effects of moderate wood rearrangement, ensuring that material is not lost off site and that the wood structures continue to divert flow into the floodplain and promote pool scour. The Environmental Leadership Program's Floodplain Function team will measure substrate size, water depth, water velocity, and water temperature to track restoration progress. Our goal is to evaluate the restoration efforts' success in diverting flow and sustaining a Stage 0/8 condition.

Kleidosty, Mady

University of Oregon

Mentor(s): Jessica Gamlin

Poster #295

Beyond Brand Love: Exploring Brand Obsession

This project examines the psychological components of brand obsession. It further assesses the role social media usage and marketing play in facilitating brand obsession. This study builds on past literature on brand love, self-expressive brands, social identity theory, and idol worship to hypothesize that brand obsession is driven by strong emotional attachment to the brand, feelings of identity validation, and, finally, a fear of missing out. I collected data from the University of Oregon campus and the Lundquist College of Business Insights Research Lab, in both a pilot study (N = 85) and a main study (N = 282). Pilot data suggests brand obsession is a common experience among this population. My main study showed four primary results. First, I find that people who are obsessed with (vs. love) a brand display more outward excitement about that brand. Second, people who are obsessed with (vs. love) a brand see that brand as aligning better with their own personal values. Finally, regarding social media behavior, people who are obsessed with (vs. love) a brand are also significantly more likely to talk about that brand and share that brand's content on social media. The results of my findings are important within the context of brand marketing on social media, and give managers a sense of what could lead to consumers becoming obsessed with a brand, as well as what social media interactions can suggest about a consumer's relationship with a brand.

Klein, Ember

University of Oregon

Mentor(s): Matthias Vogel

Poster #047

Navigating A Mental Healthcare Desert: Social and Infrastructural Barriers to Behavioral Healthcare

This project delves into the social and infrastructural barriers to behavioral health care access in the Middle East. For the Middle East, long standing cultural attitudes towards mental health have driven a lack of resources for those who need them. Looking at social science research on societal outlooks on mental healthcare and its infrastructure, I will determine the most widespread reasons for not seeking behavioral healthcare and what changes can be made to the systems at large to make them more beneficial to the people of the Middle East. Looking first at social barriers, the most prevalent reasons for not seeking out resources were distrust to those outside of family, lack of knowledge of resources, discrimination, and religious taboo. In the current mental healthcare system, access is only available to metropolitan areas

alongside an overall lack of psychotherapy and medication options, and lack of government support. By addressing and analyzing the behavioral healthcare structure in the Middle East, international healthcare organizations can move forward to help reform the infrastructure to provide care to a region swept by the large-scale trauma of war.

Kocheny, Lauren

University of Oregon

Mentor(s): CJ Pascoe, Raoul Liévanos

Poster #062

A Sociological Understanding of On-Campus Peer-Led Support Groups

This research takes an inductive look into the ways in which participants in peer-led support groups on university campuses, specifically those geared towards recovery, interact with each other. I aim to explore how individuals learn to interact in these supportive environments, as well as how language, norms, and personal identity impact their experiences. To gather data, I distributed a survey on Qualtrics to students participating in collegiate recovery programs throughout the country that are partnered with the Association of Recovery in Higher Education. I then conducted interviews to gain deeper insight into their experiences and will use qualitative coding to identify patterns and results. Because the nature of peer-led support groups is less hierarchical than traditional support groups led by professionals, I anticipate that interpersonal dynamics and environments differ as well. University students are a population that is at a life stage filled with change and that experiences drinking and party culture differently from most other communities. Previous research on peer-led support groups has primarily focused on the efficacy and measurable outcomes of support groups (Pointon-Haas et al. 2024; Pistrang, Barker, and Humphreys 2008), but this research will broaden the understanding of these mutual aid groups and assist in identifying the complex factors that contribute to whether these groups are helpful, and in what ways they allow for recovery and connection.

Kojima, Kaytlyn

University of Oregon

Mentor(s): Marcus Cumberbatch, Curtis Phills

Poster #318

Mental Representations of “American” and “Foreigner”

Although the United States has been described as a melting pot of various racial, ethnic, and cultural groups, the labels “American” and “Foreigner” may conjure different mental representations. These representations may differ in their perceived inferiority, cultural foreignness (Zou & Cheryan, 2017), and skin-tone (Bart-Plange

& Trawalter, 2025). For example, legal documentation-based category labels evoke mental representations that range from lighter to darker-skinned (Martinez et al., 2024). The present study used the reverse correlation paradigm to examine participants' mental representations of "Americans" and "Foreigners". In Phase 1, participants (N=150) will choose between two images and rate them along dimensions of "Americanness" and "Foreignness". Based on participants' choices, we will create classification images representing participants' visualized mental representations of "American" and "Foreigner". In Phase 2, a new set of participants (N=150) will rate the classification images from Phase 1 along a variety of dimensions such as, Foreignness, Americanness, superiority, inferiority, and skin tone. Belonging will also be assessed, and participants will indicate their willingness to invite the person depicted in each classification image to a party, and to work with them on a group project.

We hypothesize that the mental representations of "Foreigner" will be perceived as darker-skinned and less welcome to a party than the "American" classification image.

Konduri, Sumaedha

Tulane University

Mentor(s): Victor Holtcamp

Oral

AIDS Theatre and the Power of the Performing Arts for Public Health Advocacy

AIDS Theatre is an important genre of theatre that was published and performed in the 1980s and 1990s, as a response to the HIV/AIDS crisis in the US. Not only were individual creatives writing plays about AIDS and the effect it had on the queer community, entire organizations were created to provide support for artists with HIV/AIDS. These plays were essential to not only educating the community around HIV/AIDS in a time of significant misinformation, stigma, and discrimination, but also were helping humanize people with HIV/AIDS in a way that was not common in mass media. AIDS Theatre significantly impacted the narrative around HIV/AIDS in the US, and shows us the power of theatre in social change. From a contemporary standpoint, we can look back on the precedent of AIDS Theatre, so we can work to formulate theatre in the future for public health advocacy.

Konduri, Sumaedha

Tulane University

Mentor(s): Amanda Johnson

Poster #024

College Newspaper and Student Activism: Their Roles in Creating College Sexual Culture at Newcomb-Tulane

The Tulane Hullabaloo, a college newspaper, was essential to the development of the student sexual culture at Newcomb and Tulane University from the 1960s - 1980s. The Hullabaloo was a medium for student activism, organization, and expression, which is why it can be used to trace how the sexual culture at Newcomb-Tulane changed alongside the dynamic national views around sex, sexuality, and reproductive healthcare. However, it is through the advertisements for local abortion clinics, the health notices of STI rates on campus, and dates for sex education forums, that the personal lives of students documented in The Hullabaloo, allows for us to gain a more nuanced, complete understanding of the sexual culture of the university. It is through both student activism and student expression in The Hullabaloo that we can understand how the personal lives of students motivated their activism. Looking back on student activism through these three decades of political, sexual, and ideological change, provides insight for contemporary college students on how student activism and college newspapers can be used to combat censorship, create community, and cultivate awareness, especially in states, like Louisiana, with restrictive laws around abortion and sex education.

Kotamarti, Amelia

University of Oregon

Mentor(s): Mike Harms

Poster #204

Sounding the cellular alarm: CD14 licenses the complete activation of Toll-like receptor 4 by S100A9

S100A9 is a host inflammatory protein. While critical for the immune response, its dysregulation has been implicated in multiple inflammation-associated disorders, including Alzheimer's Disease and cancer. S100A9 is known to activate the immune receptor Toll-like receptor 4 (TLR4), but its mechanism of action remains unknown. Instead, much of our knowledge about TLR4's signaling is derived from its canonical ligand, a bacterial molecule called lipopolysaccharide (LPS). To activate TLR4, LPS is first carried by the helper protein CD14 to TLR4, initiating an inflammatory pathway. Next, if CD14 is tethered to the cell membrane, it licenses the internalization of TLR4, allowing LPS to initiate a second inflammatory pathway. I set out to understand the role of CD14 in the activation of TLR4 by S100A9.

Previous research suggests that CD14 does not directly deliver S100A9 to TLR4, but instead only functions as an internalization licensing molecule. To test this hypothesis, I performed quantitative binding assays between CD14 and S100A9. Then, I developed a targeted CRISPR knockout that enables quantification of inflammation from only the internalization-independent pathway of TLR4. My current data is most consistent with the licensing hypothesis, rather than a direct binding interaction. Characterizing the mechanism through which S100A9 activates TLR4 will enable novel therapeutic targets to better serve human health.

Kramper, Mary Kate

University of Oregon

Mentor(s): Katie Lucernoni, Chirs Minson

Poster #245

Heat Acclimation Effects on IL-6, Hepcidin and Iron Homeostasis in Endurance Trained Female Athletes

Iron deficiency is common amongst endurance-trained female athletes and is particularly concerning as iron plays a critical role in energy metabolism, which is essential for optimal performance. Iron homeostasis is regulated by the hormone hepcidin, which functions to inhibit ferroportin, the only known exporter of cellular iron. Elevated hepcidin levels reduce iron availability. Hepcidin production is stimulated by interleukin-6 (IL-6), a cytokine released in response to acute bouts of exercise. Thus, repeated exercise-induced increases in IL-6 may contribute to impaired iron status in athletes. However, non-nutritional approaches to decrease exercise-induced inflammation and its effect on iron regulation remain poorly understood. Heat acclimation is known to blunt IL-6 during acute exercise, which may result in reduced hepcidin production and enhanced iron availability. This study aimed to determine if a three-week heat acclimation protocol could reduce exercise-induced IL-6 concentration to mitigate hepcidin release and improve overall iron status in high-performance athletes.

Krantz, Louisa

University of Oregon

Poster #124

Monitoring Native Nursery Crop Enhancement of Douglas-fir Seedlings

See Kevin, Andrew

Kruckeberg, Cam

University of Oregon

Mentor(s): Stephanie WILEY

Oral

Statistical Analysis of School Climate Perceptions and Discipline Outcomes in St. Louis County

This project aims to examine school level factors that may influence the method of disciplinary practices implemented within twelve schools in St. Louis County, Missouri. Specifically, this study analyzes school climate factors, such as perception of rules and procedural justice, their association with discipline outcomes (punitive vs corrective), and whether variance within schools influences these outcomes. Previously collected survey responses from the University of Missouri-St. Louis Comprehensive School Safety Initiative (UMSL CSSI) were used, examining both the students' and personnel's responses. The CSSI was a longitudinal study, conducted over three years within 12 schools, wielding a total of 4,049 survey responses, including both students and personnel. For this present study, survey data for several school climate variables and school discipline measures were examined, using descriptive statistics, correlations, and t-tests. Though an ongoing study, some preliminary findings have indicated that school collective efficacy is overall the lowest rated school climate measure, and particularly the lowest in majority Black schools. Through some preliminary correlation tests, these variations in school climate don't appear to influence rates of punitive or corrective discipline. This study is still currently ongoing, so no final conclusions can be drawn yet.

Krueger, Leon

University of Oregon

Poster #171

Biological Stability of Pt(IV) Compounds: Solvent Effects of DMSO on Ligand Displacement

See Hobdy, Mackenzie

Kuhn, Ella

University of Oregon

Poster #324

Re-animating Research: Cataloguing the Skeletons in our Closet

See Kelly, Emma

Kunze, Allyson

University of Oregon

Mentor(s): Valerie Sahakian

Poster #105

Submarine Slope Failures and Cascadia Subduction Zone Earthquakes: A Case Study in Peanut Basin

Marine turbidites are a key part of constructing past earthquake records and determining seismic hazards, but current approaches do not directly link turbidites to the shaking that generated them. To learn more about the size and frequency of past earthquakes, we must better identify how ground motion influences slope failure and turbidity current generation. More observations of the relationship between shaking in the Cascadia Subduction Zone (CSZ) and seafloor sediment remobilization are needed to better constrain past earthquake magnitudes. Offshore cores containing sediment strength, age, and turbidite layer data help link past events to the ground shaking that produced them.

We will investigate seafloor imaging and sediment data from Peanut Basin to evaluate how levels of ground shaking may be reflected in the turbidite record from a long core on the basin floor. This includes examining the number of turbidites in the long core and analyzing shallow multicores collected from surrounding slope edges. Strength profiles from the multicores may show conditions needed for slope failure. High-resolution bathymetry will be used to analyze slope gradients at each coring site, and subsurface chirp profiles will help identify evidence of deeper or older slope failures.

These approaches will assess how shaking may be linked to the frequency of turbidites in Peanut Basin, allowing for a more direct connection of turbidite records to earthquake shaking in the CSZ.

Kurihara, Catalina

University of Oregon

Mentor(s): Jose Melendez

Poster #016

Got Games?: The Potential Impacts of Gamified Content on Disaster Preparedness and Awareness

The concept of disaster preparedness can be traced back to early civil defense efforts, which were social organizations designed to protect civilians against armed aggression (Alexander, 2015). Then by the mid-20th century, these efforts evolved into formal governmental planning frameworks (Perry & Lindell, 2003). During this period, the government began formalizing strategies for coordinated emergency

response. As these preparedness systems evolved, so did technology. In this challenge of preparedness, new difficulties emerged in reaching and engaging the public. Traditional preparedness outreach often struggles to capture attention in an increasingly saturated media environment. With the rise of the digital era, gamification has become increasingly useful for psychological outcomes in education (Hamari, et al.). Despite its demonstrated benefits, limited research has explored how gamification can be useful in disaster preparedness and communication. Existing studies (Batu, et al.) have found that there are significant gaps in disaster-related knowledge and training, highlighting the need for interactive and effective learning methods. This research seeks to address this gap by exploring how exposure to gamified disaster preparedness content influences message retention. By evaluating participants through interviews and analyzing a Cascadia CoPes Hub survey, the study aims to determine whether gamified approaches can strengthen understanding and improve disaster preparedness

Kyriazis, Kalliope

University of Oregon

Mentor(s): Gabi Garcia

Poster #319

Co-Presenter(s): Ben Himmelman

Pre and Post-Strike Changes in Gendered Experiences

Our research project is designed to understand the experiences of our fellow student workers before and after the union strike. We are using data collected previously, before the strike, analyzing working conditions for male-identifying students compared to female and gender non-conforming students. We will supplement this with data currently being collected on working conditions post-strike, and we are still examining gender discrepancies. Our goals are as follows:

1. To understand how workers of different gender identities feel treated in the UO workplace.
2. To learn how student workers feel they are being treated after the strike, while still acknowledging gendered differences in the workplace.

Our inspiration for this project comes from our own personal experiences as student workers - after the strike, we feel that the workplace has felt more tense and strict, and we're curious if other departments have grown more firm. We also want to continue to understand gender differences, especially seeing as how harassment was a considerable part of the students' ask in the strike.

We anticipate widespread severity in the workplace growing from a subconscious resentment of students' betrayal of professional staff. We also suspect some resentment from students, seeing as how their hours have been cut, and many student workers were laid off due to increased wages from the strike and the program's right not to rehire students.

Lachenmeier, Ruby

Lane Community College

Mentor(s): Casey Reid

Career Insights and Experiences

Co-Presenter(s): Toni Garcia Galvan, Neha Rimal, Aaliyah Reed

Building a Behavioral Health Workforce Pipeline: Shared Growth Across Schools and Colleges

In 2024, 19.9% of 8th and 11th grade students in Lane County reported unmet emotional or mental health care needs, pointing to a significant gap between youth need and available support. Oregon also continues to face major shortages in its youth behavioral health workforce. Together, these conditions underscore the importance of developing earlier and more intentional pathways into behavioral health careers.

The Behavioral Health Pathway is an interconnected workforce pipeline that brings together high school students from 12 schools across Lane County with Lane Community College and University of Oregon Human Services students in a shared career-connected learning experience. Through coursework, mentorship, internships, student research, and capstone projects, participants explore behavioral health careers while building professional skills and a clearer sense of their future roles in helping professions.

This presentation will share how students across these educational stages learn with and from one another. High school students gain early exposure to behavioral health careers, while LCC and UO students serve as Behavioral Health Pathway Coaches who mentor and support younger students. In turn, the Coaches strengthen their own leadership, communication, and professional skills. Presenters will share experiences of growth, connection, and career development, showing how an interconnected pathway model can support student success while helping build a stronger local behavior

Lai, Kat

University of Oregon

Mentor(s): Brian Ikei

Poster #021

Works in Progress: Lightning Rounds

Null and (A)void: Stress Testing Ephemerality in Social Networks

We're more connected than ever, but how do we have a loneliness epidemic? One possibility relates to online over-connectedness. In the digital realm, group chats hold a paradoxical role as both the savior and perpetrator. Most group chats are formed around inherently temporary contexts, such as class projects

and events, but often outlast their intended purpose. This leads to residual “noise” and social friction in our digital environments. When exploring alternatives, ephemerality came to mind – communication designed to disappear. Early messaging from mainstream platforms suggest that ephemeral design can help users “live in the moment,” while reducing the pressure for perfection online. Extending that idea to group-based interactions, I developed a disposable group chat web-app: create a chat, invite participants via QR code or link, and the entire chat container disappears when the expiration timer goes off. Leading with design, my project combines iterative prototyping with informal interviews, and real-world application in live environments. Overall, my project highlights the value of experimenting with innovative design approaches to connect people in a world that might be too connected.

Lamb, Samuel

University of Oregon

Poster #018

Fox Sports FIFA World Cup Fandom Analysis

See Sager, Jackson

Lamirand, Audrey

University of Oregon

Mentor(s): Jenefer Husman, Matt Graham

Poster #065

Program Salience and Future Thinking in STEM Transfer Students

Community college students transferring into STEM programs often face difficult transitions. Only 16% of students who transfer from two-year institutions complete a four-year STEM degree within six years (Velasco et al., 2024). Mentor-based scholarship programs may support that transition and are associated with differences in how students imagine their futures.

This study explored the relationship between program salience and future thinking in 19 students participating in a mentor-based scholarship program at a four-year R1 university. FTPE and EFT were examined through semi-structured interviews and analyzed using a previously established qualitative coding procedure. Students were categorized into bowl, cup, and cone future profiles. Bowl futures were broad and uncertain, cup futures had direction but remained flexible, and cone futures were highly specific.

A chi-square analysis found a significant relationship between program salience and future profile, $\chi^2(4, N = 19) = 19.86, p < .001$. Cone futures were more common among students who described the program

as central to their stories, while bowl futures were more common among students for whom the program was less central. These findings suggest an association between program salience and the specificity of students' future thinking, with implications for mentoring programs that support STEM transfer students.

Landsman, Gaia

University of Oregon

Mentor(s): Dylan Wood

Oral

Co-Presenter(s): Jenny Le, Isaac Nystrom Rice, Lillian Wesse, Maggie Tegtmeyer

Wood Morphologies - Ultralight Curved Wood Surfaces

Wood Morphologies is a research-design study advancing the application of wood veneer in mass timber construction. The study focuses on Douglas Fir, a regenerative and regionally abundant softwood species in the Pacific Northwest. It challenges traditional timber construction by transforming 1/8" thick veneer into modular, large-spanning, ultralight shell structures that leverage curved geometry to reduce material and increase strength. The process included geometric studies, structural analysis, and fabrication to define an optimal panel geometry. The team prototyped various curved geometries through digital modeling and physical vacuum lamination. The final panel is a cross-pollination of the most structurally efficient properties, leveraging synclastic geometry to distribute forces, corrugation to increase effective depth, and a two-part surface acting as compressive and tensile members in unison. Panels are designed for structural performance, modular adaptability, and accessible human-centric construction. Each panel fits industrial product sizes and can be moved by one person without machinery. The study concluded with four full-scale fabricated panels, interlocking to create a 16-foot span section, suggesting potential for structures exceeding 90 feet. The research demonstrates the success of curvature rather than mass, showing how veneer, a lightweight and inexpensive material, could outperform heavier materials used in mass timber construction.

Langan-Forbes, Abigail

University of Oregon

Poster #097

Investigating biological changes to understand harms to healthy human processes

See McFeron, Allie

Langford, Whitney

University of Oregon

Mentor(s): Benjamin McMorran

Poster #145

Seeing Beyond Intensity: Structure within Phase Reconstruction

Every image tells a story; in microscopy, the story depends on our assumptions. For low atomic number elements (e.g., carbon), phase-sensitive imaging helps enhance the image resolution and contrast. Scanning transmission electron microscope holography (STEMH), a phase contrast imaging technique, uses diffraction and interference of electron wavefronts. Detectors record intensity proportional to the wavefunction modulus squared; phase information can be reconstructed through Fourier-based analysis of the interference signal. The interpretation of reconstructed phase maps depends strongly on assumptions related to measurement, filtering, and spatial correlations. We take a STEMH dataset and compare the outputs from two different analysis workflows: (1) stripe-removal filtering, which suppresses periodic components under an independent-point probabilistic assumption and (2) spectral decomposition framework, preserves global phase relationships within the reconstructed complex field. Aggressive stripe-removal filtering was found to alter or suppress portions of structure, indicating sensitivity to reconstruction assumptions. In the second analysis workflow, the reconstructed phase maps exhibit invariant iso-phase structures which persist under moderate variations in reconstruction parameters. These results indicate that iso-phase lines capture invariant structural features within STEMH datasets and provide a basis for improved interpretation of phase reconstructions.

Laug, Owen

University of Oregon

Poster #134

A Composition of Astronomical Research at Pine Mountain Observatory

See Wittwer, Kylee

Le, Jenny

University of Oregon

Wood Morphologies—Ultralight Curved Wood Surfaces

See Landsman, Gaia

Lengkong, Aleanna

University of Oregon

Mentor(s): Michael Pluth, Marie Kerns

Poster #156

Investigating the Reaction Selectivity of Trisulfides with Thiols

Reactive sulfur species (RSS) play critical roles in various biological processes ranging from cell development to immune responses. Understanding how these sulfur-containing species interact with specific pathways on a chemical level is important because this gives scientists insight into how they can modify reaction pathways and lays the groundwork for biomedical applications of RSS as a therapy. This project aims to determine how thiols react with trisulfides, which is a class of biologically relevant RSS, to release either persulfides or hydrogen sulfide (H₂S). Persulfides are used in vivo to regulate oxidative stress and redox signaling and participate in post-translational modifications that impact different signaling networks. Persulfide can react with thiols to produce H₂S, an important small, biological signaling molecule that is endogenously produced in mammals and plays important roles in physiological functions. Therefore, delivery of persulfide and H₂S in specific biological environments via synthetic donors has become an approach to modulate endogenous levels of these compounds. I will use a pair of fluorescent probes, one to detect persulfide and another for H₂S to investigate the concentration of persulfide and H₂S released by trisulfides. This work will include both in-solution and live cell studies using fluorimetry and fluorescence microscopy, respectively.

Leung, Kyleigh

University of Oregon

Mentor(s): Brad Wilkins, Kristina Binder

Poster #223

Correlations between muscle oxidative capacity and aerobic predictors of performance

Muscle oxidative capacity (MOX) refers to a muscle's ability to utilize oxygen for energy consumption, which is dictated by mitochondrial density and muscle fiber type. Few studies have explored the relationship between MOX and measures of fitness. More specifically, measures of cardiovascular fitness (maximal oxygen uptake, VO₂max) or metabolic fitness (maximal metabolic steady state, MMSS), across a wide range of fitness levels. Therefore, this study aimed to explore the relationship between MOX, VO₂max, and MMSS across a range of fitness. We hypothesized that positive correlations would exist between MOX and both VO₂max and MMSS. Twelve participants (6 women) completed two cycle ergometer laboratory visits. A ramp cycle exercise test determined VO₂max, and MMSS was determined by a 4 staged zero-slope protocol measured via near-infrared spectroscopy (NIRS). MOX was measured through NIRS recordings of muscle oxygenation recovery following repeated intermittent arterial occlusion trials. In all cases, NIRS devices were placed on the rectus femoris.

Our results suggest a strong positive correlation between MOX and VO₂max ($r=0.787$; $p=0.002$), and a strong positive correlation between MOX and MMSS ($r=0.695$; $p=0.012$). Based on these findings, NIRS-derived MOX shows strong associations with measures of fitness (VO₂max) and sustainable exercise intensities (MMSS) across a range of fitness. Data collection is ongoing.

Liao, Xiaoqing

University of Oregon

Mentor(s): Tom Hahn, Siobhan Rockcastle

Poster #004

Co-Presenter(s): Lauren Perez, Corin Matsuzaki

Every Breath You Take, every move you make

Students typically live in compact spaces with limited ventilation. This study assesses the addition of plants as a viable solution for student living conditions in Eugene, that do not adhere to comfortable indoor air quality conditions recommended by the ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers) thermal comfort Standard 55 and Standard 62.1. The following hypothesis leads the case study: On average, in a single bedroom in Justice Bean Hall, the humidity level would be 5% higher, and CO₂ level would be 5 ppm lower after the addition of three Golden Pothos plants in the enclosed living space for two days. The data was collected over the course of five and a half days with equipment tracking temperature, humidity, and CO₂ levels indoors; weather app was used. Some extraneous human variables to room humidity levels were measured throughout the study. Participant mood was also measured to determine the biophilia hypothesis, which hypothesizes humans to be happier if they are closer to nature. This study finds that the addition of three Golden Pothos plants reduces CO₂ levels by 73.32 ppm, and increases relative humidity levels by 1.53%. the findings exceed the humidity and CO₂ levels recommended ranges of 30-60%, and 1000-1200 ppm, respectively, according to ASHRAE Standard 55 and 62.1. The biophilia hypothesis stands to be inconclusive. Overall, the study's results raise concerns for the health wellbeing of U.O. students living on campus.

Lillie, Audrey

University of Oregon

Mentor(s): Kelly Sutherland

Oral

Reproduction and Size Distribution of Pelagic Chaetognatha In the Northern California Current

Chaetognaths are marine gelatinous zooplankton that play a fundamental role in the food web, but whose basic life histories are unknown in many regions of the ocean. This study aimed to fill some of the knowledge

gaps regarding this phylum and their responses to ecological factors by employing statistical testing and comparisons of body sizes and reproductive indices over a sample set of over 3,600 individual specimens collected from cruises in the Northern California Current (NCC). Specifically, we focused on patterns in body size and reproduction between seasons of collection, regions on the continental shelf and off of the shelf break, and among different latitudes from which they were collected. A subset of these individuals was visually identified to the species level, and we investigated patterns regarding abundance, regionality, and seasonality. This study verified seasonal and regional patterns in chaetognath life history that demonstrate these individuals' responsiveness to environmental variability, confirming their use as bioindicators of ecosystem productivity and food web dynamics.

Lincoln, Karis

University of Oregon

Mentor(s): Melanie Spero, Francia Lopez Palomera

Oral

Nutrient Limitation Promotes Antibiotic Tolerance in Anaerobic Pathogens from Chronic Wounds

Chronic non-healing wounds impact around 2% of the U.S. population, with infections being the most frequent and significant complication. Effective wound healing depends on resolving infections; however, existing treatments often fail to eliminate chronic wound infections. The biological mechanisms that enable bacteria to persist despite therapeutic interventions are not well understood. Of note, obligate anaerobes, like *Finnegoldia magna*, rank among the most common and numerous bacterial inhabitants in chronic wounds, and their abundance is linked to poorer clinical outcomes, including limb amputation. This research explores how the host wound environment influences the physiology of anaerobic wound pathogens like *F. magna*, enabling them to survive antibiotic exposure. We hypothesize that nutrient limitation within the wound environment slows bacterial growth, facilitating pathogen survival against antibiotics that target growth-related functions. Indeed, we determined that nutrient-limited cultures of *F. magna* exhibit increased tolerance to antibiotic therapy compared to nutrient-replete cultures. We also determined that nutrient addition can restore responsiveness to antibiotics. These results highlight nutrient manipulation as a promising therapeutic approach to render persistent pathogens more susceptible to antibiotics, which could potentially improve outcomes for chronic wound infections.

Linn, Ava

University of Oregon

Poster #028

A Longitudinal Qualitative Study on Caregiver Burden and Identity in Dementia Care

See Baker, Jaya

Lippa, Charlotte

University of Oregon

Mentor(s): Katie Harbert

Poster #091

Co-Presenter(s): Lexi Jenkins, Audrey Thompson, Kate Shields

Relationship Between External Load Metrics and Goals Scored by Attackers on Oregon Women's Lacrosse

Understanding the relationships between load metrics in games and overall game outcomes is important in creating a greater understanding of factors driving success in women's lacrosse. The relationships between load metrics and game performance in college athletics has been widely studied, though there is a gap with women's lacrosse, especially attackers. This study aimed to establish a pilot procedure to quantify the link between external load metrics of attackers and game outcome for Division I women's lacrosse at the University of Oregon. It was hypothesized that both total distance traveled and maximum velocity reached by attackers in a game would correlate to significantly higher points scored during the game.

The dataset consisted of three attackers on the University of Oregon women's lacrosse team that each played in three games. Data was recorded on maximum velocity (km/h) and total distance covered (meters) by each attacker, and the data was assessed for a relationship between these two external load metrics and goals scored.

Max velocity was correlated with increased goal scoring, while total distance covered showed no significant relationship with goal scoring. Future goals for this study are to expand population size to gain a better understanding of the impact of load metrics and validate the procedure used in the study. Additional metrics may also be studied, to deepen the understanding of factors of attacker performance and connection to game outcome.

Lippert, Luca

University of Oregon

Mentor(s): Calin Plesa

Poster #200

Engineering Novel Ligand Specificity in Chimeric DcuS/EnvZ Histidine Kinases

Bacteria detect and respond to environmental changes using two-component signaling systems composed of a sensor histidine kinase (SHK) and cognate response regulator. Of the 18 million SHK genes putatively identified from bacterial genomes, only a few hundred are well understood. Here, we developed a synthetic two-component signaling system that reports SHK signaling via a standardized fluorescence readout. As a proof-of-concept, we screened a mutagenic library of chimeric DcuS/EnvZ SHKs for altered signaling in response to a DcuS ligand and aspartate, which native DcuS shows no affinity for. Using a fluorescence-activated cell sorting and barcode tracking approach, we quantified the effects of 1,173 mutations across the DcuS domain and 283 single mutations in the ligand binding pocket on chimera signaling outputs. To validate our pipeline, we isolated and characterized mutants with significantly altered signaling phenotypes. In future studies, this framework will enable scalable deorphanization of many currently uncharacterized SHK sensory domains.

Lomeli, Valeria

University of Oregon

Mentor(s): Allison LaSalvia

Poster #161

Co-Presenter(s): Abby Beegle

Oxidative Addition of Chlorosilanes to Palladium

The demand for silicon-based products has surmounted to 7 million metric tons of silicon being produced globally in 2024. Driven by the necessity of efficient and sustainable synthetic methods for complex organosilane synthesis, transition metal-catalyzed hydrosilylation and silyl cross-coupling reactions continue to be an area of great synthetic interest. Carbon-carbon cross-coupling reactions have been a blueprint for silyl cross-coupling reactions; however, silyl cross-coupling relies primarily on iodosilanes, rather than chlorosilanes due to the significant challenge of breaking Si-Cl bonds (109 kcal/mol). Using chlorosilanes for silyl cross-coupling reactions would enable greatly increased sustainability because they are abundant chemical feedstocks produced via the Direct Process (e.g., dimethyldichlorosilane). The Pd(0) complex, $[\text{Pd}(\text{dcpe})]_2$, was subjected to an initial series of chlorosilanes (SiPh_3Cl , SiPh_2Cl_2 , SiPhCl_3 , SiCl_4). Upon successful oxidative addition, series of para-substituted silanes were selected (-CF₃, -OMe, -NMe₂, -tBu, -Me, -NO₂). Silanes and palladium complexes were synthesized, and oxidative addition screening reactions were

completed to determine viability of electron-donating and electron-withdrawing silanes. These reactions were monitored via NMR analysis.

Lopez, Luna

Umpqua Community College

Mentor(s): Mick Davis

Oral

Fluid vs. Granular: Rotational Surface Behavior

This project investigates how steady-state surface profiles form in rotating liquids and granular materials, with the goal of understanding whether these systems behave similarly under uniform rotation. Newtonian liquids are known to form parabolic surface profiles determined by angular speed, container radius, and gravity, with viscosity influencing only the time required to reach equilibrium. In contrast, the behavior of non-Newtonian fluids and granular materials is less predictable and not as well characterized.

We examine three questions: whether liquid surface shapes are truly independent of viscosity, whether granular materials also form parabolic profiles, and whether fluid properties can be adjusted to match the profiles of granular materials. We hypothesized that once steady state is reached, viscosity would not significantly affect liquid surface shape; that granular materials would form parabolic profiles with different fit coefficients; and that adjusting fluid or grain properties could produce matching profiles.

To test these ideas, we measure surface shapes formed under controlled rotation for liquids of varying viscosities and granular materials of different grain sizes. Data collection and analysis are ongoing. Findings will contribute to a deeper understanding of fluid dynamics and granular flow, with potential relevance to physics, engineering, and geophysical modeling.

Lopez Navarrete, Adamaryz

University of Oregon

Mentor(s): Chelsea Nestel

Poster #104

ICE in the Pacific Northwest: A Cartographic Narrative

The project explores the spatial distribution of ICE arrests across the Pacific Northwest in the form of narrative cartography. Oregon, Idaho and Washington all have historic immigration backgrounds and large Latino and immigrant populations in rural counties. Donald Trump's second term has caused justified fear, confusion and unclear understandings of how ICE is operating and who is affected in PNW communities. These story driven maps showcase just how much ICE is apprehending across the PNW under Trump's second administration in comparison to the Biden administration. This helps us see where ICE presence is

the highest, what communities are being affected the most and the general scope of arrest statistics. By using arrest and detention data released by the Data Deportation Project, I was able to analyze and develop a methodology for geolocating arrests for as many data points as possible. This data was translated into a map of the Pacific Northwest and the USA with supporting charts and statistics. Key findings of this project include dramatic increase in arrests during Donald Trump's second term including increase of arrests of people with no criminal background and increase of street arrests. ICE's current actions are actively creating an unsafe and hostile environment putting Latinos and immigrants in vulnerable positions. Tracking this data is vital in ensuring our apprehended community members are being accounted for and furthering the education of current data shifts.

Love, Logan

University of Oregon

Mentor(s): Malek Najjar

Oral

An Examination of LGBTQ Theatre, Dramaturgical Research for Angel in America: Millennium Approaches

An examination of LGBTQ art, storytelling, and performance on the HIV/AIDS crisis in the 1980s, through the dramaturgical analysis of Angels in America, Millennium Approaches. The play by Tony Kushner, described as “a gay fantasia on national themes”, shares the experiences of queer men in New York City during the HIV/ AIDS crisis. This made Kushner’s play one of the strongest representations of the queer experience in modern theatre. Compiling dramaturgical research includes analysis into the play, its author, themes, settings, narrative style, and its portrayal of religion and society through the HIV/ AIDS crisis. This analysis and research allows parallels to be drawn between LGBTQ storytelling and artistic expression, and traces the impact of queer stories on theatre audiences.

Lucero, Jaelyn

University of Oregon

Mentor(s): Ulrick Casimir

Oral

Marxism and Fight Club

This essay asserts that Marxist literary analysis best illuminates the narrative of David Fincher’s 1999 film Fight Club. In order to argue this, I will synthesize the second chapter of Anna Kornbluh’s Marxist Film Theory and Fight Club with the film itself. This will allow me to break down the film in its structural and storytelling elements, and to thereby tie in Marxist analysis. I will assess Kornbluh’s own assertions and add my own commentary on Fincher’s work as it can be applied to Marxist thought. In order to do so - or rather to aid in

the points made by Kornbluh or the film itself - various additional sources will also be applied throughout my paper. A key aspect of Marxist analysis I will utilize within my argument is the Marxist theory of mediation. The mediator within Marxist thought mediates between extremes, yet requires a clashing of those extremes. As I will posit, the character of the Narrator embodies this mediator archetype and the plot points of the narrative itself create this clash of extremes. Additional ideas I will explore will include the prevalence of capitalism and its influence over the conditions and the actions of the Narrator. I will also explore potential opposing positions, and maintain that *Fight Club* is best tackled by a Marxist mode of literary analysis. Approaching this film in this way is crucial, as other literary modes may ignore key aspects of the narrative and prevent an audience from accessing a viable capitalist critique.

Lunnen, Jillian

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #038

Queerness in Gothic Literature

The subject of my research is queerness in gothic literature. My research will aim to explore gothic literature's queer/gender-queer roots, tropes, and homoerotic content. I will be looking at classic works of gothic literature and analyzing the content alongside historical context. I will also use various academic sources (books, papers, etc.) surrounding queerness in literature, the gothic as a genre, and queerness in the nineteenth century, in order to approach this from a scholarly position. I will break down queer representation into categories through literary devices, such as, character identity, description, overall characterization, plot, and historical context.

It should be noted that some queer analysis of popular works, especially Stoker's *Dracula*, have been published and explored. However, these perspectives are often dated and don't represent the entire queer/gender-queer spectrum. Along with my mentor Dr. Mai-Lin Cheng, I hope to fill a gap in gothic and literary studies by providing a modern queer perspective. The results of my research could inform further queer education not only at the UO, but anywhere queerness and literature are studied and discussed.

I am proud to be queer and thus know how essential queer education and research is. My aim is to make queerness in gothic literature more mainstream, as it is a pillar of this genre. Queer and gender-queer people have always existed and representations of our community should not be hidden and/or ignored.

Luscher, Mia

University of Oregon

Mentor(s): Thomas Giachetti, Matthew Polizzotto

Poster #109

Efficacy of Mazama Pumice for 6PPD Filtration

Since the 1970s, the chemical 6PPD has been used as a tire preservation agent. Its presence is vital to the function and longevity of tires. When melted tire wear particles are left on roadways, 6PPD acts as a residue and seeps into the environment. 6PPD is a potent environmental pollutant and has been detected in nearly every natural solid. Evaluating avenues for 6PPD removal is an important step to a healthier environment and has broader impacts for the removal and mitigation of other pollutants like its toxic derivative, 6PPD-quinone.

Other studies found only one successful filtration medium for 6PPD-quinone: a high performance bioretention mix (HPBRM, an engineered soil). Though this method is effective, it focuses on the filtration of 6PPD-q. Other studies successfully filtered graywater and heavy metals using pumice, which is formed when magma containing dissolved water ascends toward the surface and erupts from a volcano. Due to the prevalence of volcanism around the Pacific Northwest, pumice is a cheap, common material that would be relatively easy to implement as a filtration medium.

This experiment evaluated pumice from Crater Lake's ability to filter 6PPD from a solution using column flow experiments. When compared to HPBRM, the pumice size fractions used in this experiment interacted with the 6PPD solution but were not as effective at filtration. More research is needed to understand if a smaller size of pumice would be an effective filter.

Luu, Madeline

University of Oregon

Mentor(s): Hans C Dreyer

Poster #219

Automated Pipeline Method for Serial Image Analysis of Muscle Biopsy Tissues

Manual analysis of skeletal muscle cross sections & single fibers for features such fiber type, area, and spatial/morphological features of nuclei & satellite cells is time consuming and varies based on user. While other groups have automated this analysis with some success, different groups have different parameters, making the transfer of one program to another set of images challenging. Here, we sought to develop two analysis pipelines. Immunohistochemistry was used to quantify myofiber features and images were captured at 20x and preprocessed.

For cross-sections, images are run through our CellProfiler-Cellpose pipeline and individual myofibers, myonuclei, and satellite cells are segmented and saved as masks. Masked images are run through a Python script that interprets results containing cross sectional area, perimeter, myonuclei, satellite cells, and fiber type for each cell. Testing shows agreement between the manual and pipeline analysis and in shorter time; ~10 minutes vs. ~4 hours.

The single fiber workflow combines FIJI-based preprocessing with a custom Python script to process images of individual muscle fibers. Analyses produce per-fiber and biopsy-level summaries, including nuclear position, shape, and 3-D orientation, and spatial patterns of myonuclei along the fiber. These pipelines will allow for the timely and reliable quantification of changes within skeletal muscle cross sections and single fibers between timepoints, treatment groups, and individuals.

MacIsaac, Ella

University of Oregon

Mentor(s): Melissa Redford

Poster #067

Comparing Communication Units and Pause Delimited Utterances as Measurements of Language Development

Mean Length of Utterance (MLU) is a reliable indicator of grammatical complexity and language development. Longer MLUs correspond to more complex speech. In Speech-Language Pathology, MLU is typically defined in respect to Communication Units (C-Units), representing a complete thought. Developmentalists typically define MLU in respect to utterances, or speech between pauses. This study investigates the relationship between C-units and utterances, in order to evaluate the reliability of these MLU definitions. If both C-units and utterances are valid measurements of language development, then MLU should be greater in adult speech than child speech in both measurements.

Data was obtained from the CAPIL Corpus, composed of spontaneous narratives from 30 adults and 30 5-year olds, and annotated for C-Units and utterances. The MLU of C-Units and utterances were measured in words, with samples from 5 children and 5 adults also hand-coded in morphemes (MLUm) to determine preliminary results.

Utterance-based MLUm showed a significant difference between adults and children. When MLU was measured as a C-unit length in this subset of data, no difference was found between the two groups. No significant relationship was found between MLU defined by C-units vs utterances. These findings suggest that only utterance-based MLUm is capturing language development. It is important for SLPs to use a measurement that accurately predicts language development.

Mahood, Euan

University of Oregon

Poster #136

Safe Keeping the Pine Mountain Observatory

See Gushue, Tessa

Malaqui, Wyne Johner

University of Oregon

Mentor(s): Solmaz Kive

Poster #006

Atlas Ku

ATLAS KŪ proposes a men's wellness center named after Atlas, the figure who bears great weight and responsibility, and Kū, the Hawaiian god associated with strength, discipline, and governance, addressing the often unspoken challenges of men's mental health through space, ritual, and community. Designed as a place of restoration rather than a clinical institution, the center prioritizes dignity, safety, and belonging, creating an environment where vulnerability is recognized as a form of strength. Guided therapeutic support is integrated with spatial experiences that promote reflection, balance, and personal growth, including spaces for counseling, mindfulness, physical wellness, and creative expression. Natural light, biophilic materials, and open spatial sequences encourage calm, connection, and introspection, inviting occupants to slow down, breathe, and reconnect with themselves and others. Healing is understood as both an individual and collective process, supported through movement spaces and workshops that foster nourishment, discipline, and connection to nature. Through this holistic approach, ATLAS KŪ challenges stigmas surrounding men's mental health and redefines masculinity as care, responsibility, and resilience, offering a place where men can rebuild confidence, identity, and purpose together.

Mancuso, Gabriel

University of Oregon

Poster #221

Stimulating Muscle Resilience to Accelerate Recovery from Eccentric Muscle Damage

See Gaash, Nitai

Mancuso, Gabriel

University of Oregon

Poster #222

Utilizing Muscle Resilience to Accelerate Recovery From Eccentric Muscle Damage

See Gaash, Nitai

Markey, Mollie

Lane Community College

Mentor(s): Katie Lynch, Kristen Rahilly

Oral

Impacts of the COVID-19 Lockdown on K-12 Environmental Education Nonprofits in Lane County, Oregon

Due to the field of environmental education having a traditional model with a hands-on, immersive, and localized format, the COVID-19 lockdown and related social distancing guidelines created a lot of disruption in the programming and administrative functions of environmental education organizations. In order to investigate how K-12 environmental education nonprofits in Lane County, Oregon adapted to the challenges of the COVID-19 lockdown, we looked at five local nonprofits. We interviewed seven staff/former staff members of these nonprofits and looked at their public websites to collect data about experiences running K-12 environmental education nonprofits during the lockdown. We then developed a framework for a thematic analysis of responses. The lockdown changed how the studied nonprofits could run their programs, with all of them branching into online programming. The lockdown also impacted children's social skills, emotions, and behaviors in a way that environmental education can help. Within the administrative impacts, the lockdown specifically changed the studied nonprofits' workload and burden for staff and volunteers, financial income sources and amounts, and community partnerships with other environmental education nonprofits. We make recommendations for parents/guardians, teachers/administrators, school districts, funding sources, and the Lane County community. It is more important than ever that children experience the benefits of environmental education.

Martinez, Alessandra

University of Oregon

Poster #003

The Butterfly House—Prefabricated Multi Paneled Plywood Housing

See Darby, Cocoro

Massarat, Arya

University of Oregon

Mentor(s): Shannon Hugard, Mike Hahn

Poster #211

Center of Mass Displacement as a Predictor of Bone Adaptation In First-Time Marathon Runners

Bone stress injuries are a common overuse injury among distance runners and are often linked to training load and running mechanics. This study examines whether vertical center of mass (COM) displacement during running predicts changes in tibial bone mineral density (BMD) in first-time marathon runners. Greater COM displacement may increase mechanical loading through higher ground reaction forces and muscle contractions, potentially stimulating bone adaptation. Recreational runners ($n = 6$) completed a 16-week standardized marathon training program. Running biomechanics were assessed at baseline using motion capture, and bone density was measured using high-resolution peripheral quantitative computed tomography (HR-pQCT) at baseline and throughout training. Changes in tibial BMD were analyzed in relation to vertical COM displacement. Preliminary results show a positive but non-significant relationship between COM displacement and changes in tibial BMD ($R^2 = 0.2462$, $p = 0.32$). While not statistically significant, the trend suggests that runners with greater vertical COM displacement may experience increased bone adaptation. These findings highlight COM displacement as a potentially modifiable biomechanical factor that could influence bone health in endurance athletes. Ongoing data collection and analysis with a larger sample size will help clarify this relationship and its implications for injury prevention and training optimization.

Matsuzaki, Corin

University of Oregon

Poster #004

Every Breath You Take, Every Move You Make

See Liao, Xiaoqing

Mayers, Samuel

University of Oregon

Mentor(s): John Postlethwait, Angel Amores

Poster #180

Developmental Growth Differences in arxa Mutant and Wild-Type Zebrafish

Our study aims to investigate how genetic variation influences developmental growth patterns in zebrafish. Specifically, we compare the growth trajectories between wild-type (WT) fish and arxa mutant fish across

developmental stages. The zebrafish were bred under controlled laboratory conditions and sampled at key times in their life cycle. Combined with microscope images and length measurements, we aim to obtain precise measurements of both types at developmental stages.

Growth data were analyzed to identify differences at each developmental stage between genotypes. Our findings suggest that *arxa* mutants will be smaller compared to WT zebrafish, with impacts on developmental progression. These results can contribute to a better understanding of how genetic factors regulate an organism's development.

This work has many implications for understanding the role of genes in development and growth regulation. It can also inform future studies investigating developmental disorders.

McCarstle, Aria

University of Oregon

Poster #356

Exploring Body Image Pressure and Eating Disorders in Higher Education: University of Oregon's 2025

See Bruun, Ella

McClednon, Kaleb

University of Oregon

Mentor(s): Lynn Kahle

Poster #017

House Rules: NIL After the House Settlement

This project examines how the NCAA's House settlement has reshaped the governance of name, image, and likeness (NIL) in college athletics, with particular attention to its implications for equity and market access. The House settlement emerged in response to legal challenges and reshapes the formal framework governing NIL in college athletics amid ongoing uncertainty. Early evidence suggests that the settlement's framework may expand NIL opportunities unevenly, favoring athletes in high-visibility sports while producing limited change in access for the broader student-athlete population. The analysis approaches these changes as an expansion of athlete autonomy, while recognizing that this autonomy remains structured rather than absolute. By examining how autonomy and constraint coexist in the post-settlement NIL framework, the analysis contributes to ongoing scholarly discussion about equity, governance, and market participation in college athletics.

McClendon, Kaleb

University of Oregon

Mentor(s): Lynn Kahle

Virtual

House Rules: NIL After the House Settlement

This project examines how the NCAA's House settlement has reshaped the governance of name, image, and likeness (NIL) in college athletics, with particular attention to its implications for equity and market access. The House settlement emerged in response to legal challenges and reshapes the formal framework governing NIL in college athletics amid ongoing uncertainty. Early evidence suggests that the settlement's framework may expand NIL opportunities unevenly, favoring athletes in high-visibility sports while producing limited change in access for the broader student-athlete population. The analysis approaches these changes as an expansion of athlete autonomy, while recognizing that this autonomy remains structured rather than absolute. By examining how autonomy and constraint coexist in the post-settlement NIL framework, the analysis contributes to ongoing scholarly discussion about equity, governance, and market participation in college athletics.

McCraw, Caisa

University of Oregon

Mentor(s): Josef Dufek, Zack Martin

Poster #121

Development of Particulate Matter Capture Device and Environmental Sensor Package

Air quality is an increasing area of public health concern in Oregon as we face the ever-present threat of volcanic eruptions and devastating summer wildfires. Researchers have made predictive models to attempt to assess health risks from these events by modeling how the turbulent plumes spread, but better data is needed to obtain more accurate predictions. By improving predictions we can measure how far dangerous particulate matter travels from a volcanic plume or pyrocumulonimbus cloud. This can be used to make better evacuation plans and more personalized warnings for those with related health risks.

In order to collect more data and improve models, we designed a particulate matter capturing device that will provide in situ time series data of fallen ash. It will also include a sensor package to track environmental conditions.

The device features a carousel design that will automatically collect ash in a sterile vial at a set time interval. The device will also have sensors providing real time data on temperature, pressure, humidity, methane levels, and a particulate matter counter (PM2.5).

Physically capturing ash particles in a sterile device will allow us to do further analysis on the chemical composition. This can be used to inform health warnings and provide deeper insight into the fundamental physics of how small particles move through the air by consolidation or triboelectrification.

McCreary, Lauren

University of Oregon

Mentor(s): Matthias Vogel

Poster #053

Crime and Crisis: A Comparative Study of Crime Rates in Norway and the U.S.

Crime rates exhibit significant disparities between Norway and the United States, reflecting variations in social structures, law enforcement practices, government policies, and overall conduct, particularly within the criminal justice system. This research explores how the COVID-19 pandemic and each nation's response influenced crime rates and types in Norway and the U.S. from 2020 to 2025. Additionally, it considers various factors such as incarceration and rehabilitation practices, social discourse, and law enforcement strategies. Utilizing comparative statistical data, government reports, and secondary analyses from sources, including Norway's prison system, this project investigates trends in both violent and non-violent crime during and after the pandemic.

Preliminary findings indicate that Norway's focus on rehabilitation, lower incarceration rates, and a robust social safety net are associated with reduced crime levels and lower recidivism, even amid global instability. Conversely, the United States experienced more pronounced fluctuations in crime rates, driven by economic pressures, policing practices, and systemic disparities within the justice system. This research underscores the impact of governmental responses to crises and long-term criminal justice strategies on crime outcomes. Understanding these differences offers valuable insights into how alternative policy approaches can contribute to more effective crime reduction and enhanced public safety.

McCurry, Hannah

University of Oregon

Mentor(s): Kristen Rahilly

Poster #093

Co-Presenter(s): Malia Thacker

The Impacts of Participatory Science on Earth-Related Research

Participatory Science is research where any individual can contribute to the development of the scientific process, which could include data collection, interpretations, or observations. The two Participatory Science programs that we will be working with are NASA Global Learning and Observations to Benefit the Environment

(GLOBE) and the Chicago Botanic Garden Budburst program. The goal of the NASA GLOBE program is for volunteers to take pictures of the sky and ground and connect it to satellite images in order to advance Earth science research. The Budburst program's goal is to focus on collecting data from the environment to illustrate how human interactions and climate change have influenced the natural world. We will be pursuing our own specific research questions using data and other information from the NASA GLOBE and Budburst programs. Our work will show the importance of Participatory Science as a method to increase the overall engagement of science research pertaining to the Earth's environment and climate. Through this process, we will also demonstrate that data collected through volunteers can lead to the development of real science research.

McDowell, Keira

University of Oregon

Mentor(s): Dan Tichenor, Erin Beck

Oral

Modern Imperialism in Puerto Rico: The Fight for Independence in a 21st Century Geopolitical Context

This thesis examines independence-focused social mobilization in Puerto Rico, placing focus on the effects of the Trump administration and other recent legislative developments on collective action. At the heart of this research is the question: Why did past revolutionary efforts fail, and how have recent actions by the U.S. government worked to create a new window of opportunity for revolutionary action? Research was conducted using interviews, archival records, and literature review. Field interviews were short; ~5-minute conversations meant to gain an understanding of citizens' lived experience. Archival research was conducted with the help of the Universidad de Puerto Rico's access to primary source material. Through the lens of class compromise, resource mobilization and political process, 21st Century social mobilization organizations are placed in contrast with those of the 20th Century to highlight differences in internal organization and the external conditions faced by these groups. Findings suggest that some of the shortfalls of 20th Century independence movements are not as prominent in those of today. Combined with an ever-hostile geopolitical climate, this results in greater benefits and lower opportunity cost of action. This analysis and its findings serve as a case study into the nature of social mobilization in a modern colonial society, and highlight strategies integral to the formation and success of social movement organizations in this context.

McFeron, Allie

University of Oregon

Mentor(s): Kristen Rahilly

Poster #097

Co-Presenter(s): Abigail Langan-Forbes

Investigating biological changes to understand harms to healthy human processes

Participatory Science is science that utilizes public participation to bridge the gap between the science and non-science community. We will be working with the Placenta Profiles Program hosted by the Rosalind Franklin Institute and Diamond Light Source, as well as the Stall Catchers Program hosted by the Human Computational Institute. Both these programs have similar goals of understanding abnormal structures that cause pregnancy complications or Alzheimer's, respectively. We will be developing our own unique research questions using data from the Placenta Profiles and Stall Catchers programs. We will share our experiences as users interacting with the programs and effectively analyzing and sorting through data. Our work will showcase the importance of public outreach and engagement in participatory science programs and research. We will also show the feasibility of real science projects referencing public participatory science forums collecting data.

McNamee, Jeffrey

University of Oregon

Mentor(s): Cathy Wong, Laila Nawab

Oral

Aerosol Assisted Chemical Vapor Deposition (AACVD) for High Throughput Screening of Thin Films

High-throughput screening allows researchers to quickly collect large amounts of characterization data immediately after material growth to find the best parameters and conditions for growth. This work takes on the challenge of both depositing and characterizing perovskite thin films – a material with applications in transistors and solar cells – using Aerosol Assisted Chemical Vapor Deposition (AACVD). AACVD has potential for industrial thin film production due to its scalable and economical design, compatible with flexible substrates, ambient pressures, and low temperatures. However, inconsistent film uniformity and reproducibility motivate the automation of the film deposition process. Automated ambient film deposition is a unique solution to the challenges preventing the large-scale industrial production of perovskite thin films. In this work we develop an automated AACVD platform with controlled aerosol delivery and real-time spectroscopic feedback to produce uniform, high quality, and reproducible perovskite thin films. We report high-throughput spectroscopic measurements of these films both in situ during production and the final films.

Mcneill, Jessica

University of Oregon

Poster #124

Monitoring Native Nursery Crop Enhancement on Douglas-fir Seedlings

See Kevin, Andrew

Merten, Keely

University of Oregon

Poster #135

A Creative Perspective on Pine Mountain Observatory

See Miller, Spud

Miller, Spud

University of Oregon

Mentor(s): Scott Fisher

Poster #135

Co-Presenter(s): Cam Solis Mejias, Keely Merten, Marina Hiple, Morgan Yellowtail

A Creative Perspective on Pine Mountain Observatory

The Pine Mountain Observatory (PMO) is well established within the scientific community, but there is a lack of knowledge about the observatory in the public and on the UO campus. This reduces the diversity of those who are interested in the observatory and limits the amount of outreach conducted by the observatory. By raising awareness towards PMO, more public interest will be fostered in the field of astronomy. To do this in a creative way will also launch PMO as an inclusive space for all majors on campus. By helping promote PMO to the campus community, we will present artistic representations of the observatory, including an infographic poster, stickers, and a model of the Boller and Chivens telescope. The stickers will expand outreach during the symposium, while an infographic provides a brief history of the PMO telescopes. Overall, this project was an exercise in merging scientific and creative processes in an astronomical lens.

Milligan, Molly

University of Oregon

Mentor(s): Damien Callahan, Julissa Ortiz-Delatorre

Poster #218

Predicting Whole Muscle Function from Various Methods of Quantifying Muscle Fiber Type Distribution

Human skeletal muscle is composed of 3 distinct muscle fiber types that vary by mechanical and metabolic properties; therefore, the proportion of fiber types plays a large role in whole muscle function. There are various methods to quantify the fiber type distribution, such immunohistochemical (IHC) staining of cross sectioned muscle samples. Another approach relies on electrophoretic separation of proteins via molecular weight, applied to a homogenized sample, an assay known as sodium dodecyl sulphate polyacrylamide electrophoreses (SDS-PAGE). The main distinction is that IHC identifies fiber type on a per-fiber basis, but with a lack of precision based on variance in antibody sensitivity. In comparison, SDS-PAGE is a very precise way of quantifying fiber type.

We compared 3 approaches of assessing MHC composition in human skeletal muscle (IHC, SDS PAGE in homogenates and per-fiber) to assess agreement or disagreement between them and determine which best predicted muscle function. To link fiber type distribution to whole-muscle function, we compared them with voluntary contraction measures from the same volunteers.

Results revealed a moderate, but significant negative correlation ($r = -.472$, $p = 0.013$) between max torque and Type 1 Fiber percent via SDS-PAGE of tissue homogenate. No other associations achieved statistical significance. This suggests that fiber type composition assessed via SDS-PAGE relates more closely to strength outcomes than those assess via IHC.

Mills, Ivy

University of Oregon

Mentor(s): Janet Zhang-Lea

Poster #240

Effect of Pregnancy on Achilles Tendon Stiffness in Women

Hormonal changes during pregnancy can significantly affect the stiffness of tendons and ligaments in women to prepare for childbirth. While reduced stiffness during pregnancy is important for childbirth as it relaxes relevant structures in the pelvis, it may increase the risk of injuries such as tendon ruptures or tears. Tendon stiffness plays a significant role in factors like muscle contraction speed and force. Reduced

stiffness could negatively impact movement and balance. To test stiffness differences, we recruited 1 pregnant participant and 9 women who are not pregnant. An ultrasound probe was attached to record the movement of the muscle-tendon junction (MTJ) between the Achilles tendon and the gastrocnemius during three maximum voluntary isometric contraction (MVIC) trials. We calculated tendon displacement by marking the change in location of the MTJ between resting and MVIC. We calculated the maximum ankle plantarflexion torque using the MVIC's maximum torque value. We estimated tendon stiffness by dividing the maximum torque by the tendon displacement. The current data show an average stiffness of 8.33 Nm/mm for pregnant participants and 11.35 Nm/mm for non-pregnant participants. Participant recruitment is still ongoing, and we plan to recruit 20 women from each group for this study. The findings of this study could help determine if pregnancy-related injuries are due to the added mass of pregnancy or hormonal changes.

Minnix, Grace

University of Oregon

Mentor(s): Daniel Gavin

Poster #114

To Cut or to Burn: A Comparative Analysis of Soil Carbon Dynamics in Floodplain Restoration

Fire has been used since time immemorial by native Oregon people to maintain the landscape, and increasingly as a tool for restoration and wildfire prevention. In areas where burning is not feasible, mowing is often used as a substitute, though the differential impact of these treatments on soil has been rarely documented.

This study compares the effect of mowing and burning on soil carbon dynamics in the South Meadow, a section of the Howard Buford Recreation Area being restored after agricultural use. To compare the treatments, I analyze carbon stocks and turnover rates by measuring soil carbon content across sites using the Loss on Ignition (LOI) method, and microbial respiration rate, a mediator of carbon flux, using Non-dispersive Infrared (NDIR) CO₂ sensors. I address site variation by measuring bulk density, infiltration rate, pH, and nitrogen, potassium and phosphorus (NPK) levels.

Understanding soil carbon dynamics is key to harnessing soil's potential as a carbon sink in the contemporary climate crisis. Current predictive soil carbon models are limited by a lack of field validation or independent time-series data. This is the first study on soil carbon dynamics in the South Meadow, opening the door for long term monitoring of soil health. I seek to address the question of whether mowing acts as a true proxy for ecological burning in floodplain soils, helping to inform management techniques, validate predictive models and improve future restoration strategies.

Mironova, Maria

University of Oregon

Mentor(s): Craig Parsons, Michael Moffitt

Poster #060

Beyond Ecology: A Comparative Analysis of Green Party Strategy with Regard to Mainstream Issues

The present project undertakes the choices made by Green parties in Western Europe in regard to two key mainstream issues: European integration and the welfare state. The research builds upon previous studies of niche party behavior in the region, with particular attention to the evolving definition of a niche party, office-seeking behavior, and issue salience/blurring in the party platform. The study reviews party manifestoes from all national elections between 2015 and 2025, taken from the Comparative Manifesto Project database, with the goal of identifying rhetorical approaches taken by Green parties on mainstream issues. Through a small-n comparative case study analysis (of Green parties in Austria, France, Germany, and Sweden), the project seeks to rebuke the perception of Green parties as single-issue only and to explore their evolving appeal to European voters in the twenty-first century.

Misra, Gayatri

University of Oregon

Mentor(s): Siobhan Rockcastle

Oral

Internal Geometries Through Use: Sensory Spatial Perception in Transition Space

Transitions between spatial variencies are shaped by people who engage with them via thresholds formed by the conversation between transition & human interaction. The research proposes using geometry as a spatial condition produced through repeated user interaction over time as a radical, holistic & inclusive way of interacting with transition spaces. The thesis argues that through use, wear, repair & temporal accumulation, geometry establishes meaningful authority in public & communal environments. Grounded in public spaces within the Indian subcontinent, where everyday environments are shaped by continuous occupation & climatic exposure rather than singular authorship, two ways of engagement emerge: form-based, imposed through design intent & use-based: converge in transition thresholds shaped by people. The research focuses on the transition threshold typology, examining how surface characteristics changing over time: thermal variability, textural difference, material wear dictate sensory experience through internal geometric systems. Methodologically, it uses fieldwork, sensory mapping, photographic, diagrammatic analyses & informal interviews. Internal geometries function as operative spatial infrastructures influencing accessibility, comfort & social organization without imposed hierarchy. This research contributes to architectural & spatial

planning by reframing geometry as a lived & temporal experience centering South Asian practices as models for global context.

Mitchell, Emily

University of Oregon

Mentor(s): Emily Huckstead

Poster #117

Correlation Found Between Clay Content and Carbon Stock in Oregon Hazelnut Orchards

In an age where removing carbon from the atmosphere is important to the earth, soil carbon sequestration is promising as a natural climate solution. Our research is examining how soil texture and carbon stock differ among hazelnut orchards in Oregon's Willamette Valley with different farm management strategies. Through sample collections and texture analysis of different depths and farm environments, we analyzed correlations between clay content and carbon stock for baseline data. Deeper soil yielded a moderate correlation between these elements, suggesting that soil with more clay holds greater amounts of carbon. As this research progresses, we hope to elevate carbon stock in hazelnut orchards by using enhanced rock weathering and conservation cover as soil treatment strategies that may increase carbon stock in soils with both high and low clay content. These preliminary results pave the way to measure expected sequestration increases and in turn offer solutions to help reduce atmospheric carbon concentrations that are contributing to global climate change.

Mitchell-Vargas, Eva

University of Oregon

Mentor(s): Jessica Vasquez Tokos, Chelsea Nestel

Poster #253

Mapping Diabetes Risk and Organophosphate pesticide usage in the central San Joaquin Valley

Organophosphate compounds are commonly used in notable pesticides like malathion, dimethoate and acephate are commonly used on crops ranging from tomatoes and broccoli to most stone fruit. These pesticides are known to have adverse health effects including diabetes (Chung et al., 2021). Health risks scale alongside increased exposure. Therefore, adverse health impacts fall disproportionately on agricultural communities (de-Assis et al., n.d.). Using 2024 data from the California Pesticide information Portal and diabetes incidences from the US Census Bureau, I map exposure to organophosphate pesticides and diabetes incidences within Latino farmworker communities in the Central San Joaquin Valley, California. In my analysis, I identify patterns of risk, hotspots and correlate between organophosphate pesticide use

prevalence and the incidence of diabetes within the exposed communities. Risk is not distributed equally. Thus, I advocate for a deeper analysis of health effects within these structurally vulnerable communities leading to stricter regulation and monitoring of organophosphate pesticides.

Mitlehner, Jen

University of Oregon

Mentor(s): Margaret Sereno, Jake Hooper

Poster #288

DRAW–Depiction, Representation, and Affect in Wellbeing

While traditional talk therapy is effective, direct verbal engagement can be challenging for some groups. Art therapy offers a promising alternative, supporting processes like trauma recovery and depression management. Researchers have also explored whether artwork can reflect psychological traits such as executive functioning. However, few studies examine its potential to assess emotional states, and most focus on children. Relationships between drawing features and emotional experiences are poorly understood. If specific, quantifiable artwork features can indicate affective states, psychotherapy may become more efficient and accessible, chiefly for those with communication barriers. The study investigates whether drawing features can predict negative affect in adults, including symptoms of depression and anxiety.

Participants completed a Draw-A-Person task and self-report measures, including the PANAS and PROMIS Depression and Anxiety scales. Drawings were evaluated using a modified Formal Elements Art Therapy Scale (FEATS), quantifying features like detail, space usage, and realism. Associations between these features and self-reported emotional measures were examined to assess whether drawing characteristics relate to negative affect.

This study evaluates whether observable elements of creative expression can indicate psychological distress in adults, an underrepresented group in art therapy research, and may inform development of accessible, nonverbal assessment tools.

Mohr, Jackson

University of Oregon

Mentor(s): Christina Karns

Poster #265

Stability of alpha oscillations over short and long time intervals while viewing a nature video

Sustaining attention requires effort and is fatiguing; nature may help restore focus. Imagine a stressful day followed by a hike that refreshes and re-energizes. Attentional restoration theory (ART) posits that exposure to natural environments increases neural signatures of relaxation, specifically alpha-band power, an 8-13 Hz EEG frequency (Grassini et al., 2019). Although the relationship between nature-viewing and alpha modulation is well-researched, the stability of the distribution over frontal, occipital, and parietal scalp, reflecting different brain regions, has not been characterized. This is important to establish prior to testing a nature-exposure manipulation to restore attention. Our sample consists of 96 participants who watched a 5-minute ocean video, completed a 45-60 minute task interlude, and then watched a second 5-minute ocean video, with 64-channels of EEG recorded. We will characterize the scalp distribution of alpha-power and the extent it is stable over short duration intervals (within recordings, early vs. late) and long-duration intervals (between recordings, 1 vs. 2) to establish this as a reliable inter-individual measure to use in future experiments. I anticipate scalp distributions of alpha will be stable across time-intervals ($R > .7$) but will be less stable across the longest duration, due to fatigue. This foundation will allow us to plan well-designed and appropriately powered experimental manipulations of nature viewing to restore attention.

Molianr, Emily

University of Oregon

Mentor(s): Robert Kyr

Creative Work

Level Three Evacuation Notice

My piece, titled "Level Three Evacuation Notice," is an energetic, minimalist piano solo based on my own experience with a wildfire near my house. The piece goes through my emotional journey that day, starting off with the calm before I found out about the wildfire to the frantic journey home before finally concluding with relief that the fire being successfully put out.

Monson, Kaydence

University of Oregon

Mentor(s): Melynda Casement

Oral

Sleep as a Potential Moderator of Stressful Life Events on Risky Alcohol Use in Young Adults

Young adults experience disproportionately high rates of risky alcohol use, often in response to stressful life events. Sleep duration and timing may play a critical role in moderating this relationship, yet few studies have directly examined these interactions. This study investigates how sleep patterns influence the link between stress and risky alcohol use in young adults. Specifically, it explores: (1) the relationship between stressful life events and risky alcohol use, (2) the relationship between sleep duration/timing and risky alcohol use, and (3) whether sleep moderates the relationship between stressful life events and risky alcohol use. The hypothesis for this study is that sleep timing and duration moderate the relationship between stressful life events and risky alcohol use, such that those with short and later sleep will engage in more risky alcohol use compared to those with long and early sleep. This study uses data from the ongoing Mechanisms of Risky Alcohol Use in Young Adults (MoRA) study at the Oregon Sleep Lab, currently recruiting participants aged 18-24 in Eugene, Oregon. Measures include the Stress and Adversity Inventory (STRAIN) for stressful life events, the Structured Clinical Interview for DSM-5 Sleep Disorders - Revised (SCISD-R) for sleep behavior, and the Timeline Follow Back (TLFB) for alcohol use. Findings from this study aim to clarify the role of sleep in stress-related alcohol risk and inform sleep-based intervention strategies.

Monson, Kaydence

University of Oregon

Mentor(s): Melynda Casement

Poster #311

Sleep as a Potential Moderator of Stressful Life Events on Risky Alcohol Use in Young Adults

Young adults experience disproportionately high rates of risky alcohol use, often in response to stressful life events. Sleep duration and timing may play a critical role in moderating this relationship, yet few studies have directly examined these interactions. This study investigates how sleep patterns influence the link between stress and risky alcohol use in young adults. Specifically, it explores: (1) the relationship between stressful life events and risky alcohol use, (2) the relationship between sleep duration/timing and risky alcohol use, and (3) whether sleep moderates the relationship between stressful life events and risky alcohol use. The hypothesis for this study is that sleep timing and duration moderate the relationship between stressful life

events and risky alcohol use, such that those with short and later sleep will engage in more risky alcohol use compared to those with long and early sleep. This study uses data from the ongoing Mechanisms of Risky Alcohol Use in Young Adults (MoRA) study at the Oregon Sleep Lab, currently recruiting participants aged 18-24 in Eugene, Oregon. Measures include the Stress and Adversity Inventory (STRAIN) for stressful life events, the Structured Clinical Interview for DSM-5 Sleep Disorders - Revised (SCISD-R) for sleep behavior, and the Timeline Follow Back (TLFB) for alcohol use. Findings from this study aim to clarify the role of sleep in stress-related alcohol risk and inform sleep-based intervention strategies.

Montgomery, Daela

University of Oregon

Mentor(s): Diana Libuda, Hannah Wilson

Oral

H3K9 methylation regulates heat-induced DNA damage during meiosis

The production of sperm and eggs through meiosis is essential for reproduction and the proper passage of genetic information. Across multiple species, including *Caenorhabditis elegans*, heat stress negatively impacts the quality of sperm, causes DNA damage, and results in decreased male fertility. Although heat-induced DNA damage in sperm is found across species, the mechanisms that prevent heat-induced DNA damage in eggs are largely unknown. Recent data shows that H3K9 methylation, a repressive chromatin mark, displays sex-specific localization in *C. elegans* oocytes and spermatocytes. Additionally, heat shock has been found to decrease H3K9 methylation in spermatocytes. H3K9 methylation is established by three histone methyltransferases: SET-32, SET-25, and MET-2. In the absence of these histone methyltransferases, there is increased DNA damage in germ cells and reduced male fertility. Using a *C. elegans* strain lacking all three H3K9 methyltransferases, I am assessing the role of H3K9 methylation in regulating heat-induced DNA damage during *C. elegans* spermatogenesis and oogenesis. To visualize and quantify the amount of damage during spermatogenesis, I am using immunofluorescence staining of the protein RAD-51, which marks sites of DNA double-strand breaks, in both spermatogenesis and oogenesis. Overall, my ongoing research is developing a better understanding of the role of H3K9 methylation in protecting developing sperm from heat-induced DNA damage and male infertility.

Moore, Tate

University of Oregon

Mentor(s): Mira Schoeberlein, Brad Wilkins

Poster #247

The Impact of Endurance Training and Altitude on Hemoglobin Mass in Elite Runners

Hemoglobin mass (Hbmass) is an important determinant of oxygen transport and endurance performance in distance runners. While both endurance training and altitude exposure are commonly used to improve performance, the relative impact of each to changes in Hbmass remains unclear. In this study, we investigated the effects of endurance training and altitude training on Hbmass in elite runners. We hypothesized Hbmass would increase due to both endurance training and altitude training, with greater increases occurring after altitude training. Over two annual training cycles and two altitude training camps, we completed pre and post stimulus Hbmass measurements in thirteen elite runners (8 M / 5 F). Hemoglobin mass was measured via carbon monoxide rebreath protocol. Other hematological variables, including hemoglobin concentration, red blood cell volume, plasma volume, and blood volume, were also measured to further characterize adaptation. Preliminary analyses indicate that the change in Hbmass was larger following endurance training (58 ± 49 g) compared to altitude training (12 ± 23 g), which was also more variable among athletes. Comparisons across training phases suggest that endurance training may contribute more consistently to increases in Hbmass than altitude alone ($P = 0.002$). These findings improve our understanding of hematological adaptation in elite runners and may help inform evidence-based training strategies to optimize endurance performance.

Morgan, Adelyn

University of Oregon

Mentor(s): Victor Salpino, Noah Grinde

Poster #160

Co-Presenter(s): Olivia Bernhard

Bottom-Up Organic Synthesis Approach to Carbon Nano-structures for Novel Material Applications

Cycloparaphenylenes ([n]CPPs) represent a single layer of a carbon nanotube, and the bottom-up synthesis provides control over functional groups and the resulting electronic properties. The addition of strained alkyne groups into the backbone of the [n]CPP allows for biologically applicable 'click chemistry' reactions. The reactivity of these alkynes can be tuned by changing the size of the nanohoop or the electronics of neighboring groups. However, as a consequence of the strained alkyne reactivity, these materials are usually unstable, and by conducting the Cobalt protection of the alkyne, we can access stable and reactive

species. So far we've been able to show that we can successfully protect the [7+1]CPP with the Cobalt group, and we can do 'click reactions' with a controllable turn on in fluorescence. By incorporating [n]CPPs within a mechanically interlocked structure, the unique properties can be enhanced via intercomponent interactions with other functional groups in the system. A synthetic strategy is explored for the interlocked nanohoop structures before their properties are analyzed. The mechanically interlocked architectures can be constructed by utilizing endotopic metal coordination to CPP precursors containing bipyridine (bipy) units and azide-alkyne 'click chemistry'. We will explore the fundamental chemistry behind making novel nanohoop structures and their potential future applications while sharing the experience of working in an organic synthesis lab.

Morgan, Adelyn

University of Oregon

Poster #092

App-based outdoor participatory science programs allow for public contribution to impactful research

See Peters, Samuel

Mori, Midori

University of Oregon

Mentor(s): Frances White, Sara Cotton

Poster #331

Bonobo Urinalysis Biomarker Relationship to Social Stress in Captive Models

Meyer and Hamel have been well cited since 2014 as a model for examining stress in non-human primates via social rank, which can result in higher levels of endocrine or immune dysfunction as a result of the body's deficient coping abilities. In this study, six female bonobos from the Columbus Zoo were selectively observed via a combination of ad libitum and scan sampling in order to determine how the stress of social rank in captive models can impact immune status. However, instead of using an endocrine approach which widely relies on levels of cortisol in order to measure stress, this study utilized urine biomarkers in order to compare the likelihood of infection within the group by comparing the results of URS-14 dipstick testing. The samples were collected by veterinary staff at Columbus zoo and measured in accordance with visual color changes on test pads which tested for fourteen compounds. These compounds included urobilinogen, bilirubin, leukocytes, and ketones— some of which have been correlated to urinary tract health. While leukocytes, salinity, urobilinogen, and magnesium produced significant differences between individuals, it was ultimately ruled that this was most likely not attributed to rank. Instead, pregnancy and postpartum status are more

probable explanations of said differences as opposed to group dynamics, which suggests that hydration and food quality access are less prominent outcomes within dominance hierarchies amongst captive primates.

Morris, Ella

University of Oregon

Mentor(s): Dr. Teresa Rapp, Golnaz Navidi

Poster #173

Photosoftening Hydrogels to Study Fibroblast α -SMA Activation for Fibrosis Resolution

Fibrosis, extreme buildup of fibrous tissue, can cause chronic inflammation and organ dysfunction, affecting people worldwide. Fibrogenesis is widely studied, but fibrosis resolution isn't well understood due to current biomaterials lacking control over mechanical softening. Available systems suffer from limited spatial control and use damaging UV light. My research uses a visible light-responsive hydrogel scaffold made of modified hyaluronic acid with photostable and photosensitive crosslinkers, enabling controlled stiff-to-soft transitions to match physiological tissue remodeling. This project asks whether light-mediated softening influences alpha-smooth muscle actin (α -SMA) activation in fibroblasts, a key biomarker of fibrogenesis. My approach begins with encapsulating fibroblasts within the gel scaffold. Encapsulated cells are then stained so that nuclei, cytoplasm, and α -SMA can be identified via confocal microscopy. Gels are imaged before and after softening to track emergence and possible disappearance of α -SMA expression. Immunocytochemistry and fluorescence intensity analysis quantify results across conditions. I anticipate α -SMA activation will increase upon gel formation and decrease following softening, suggesting tissue resolution pathway. This approach allows scientists to tune softening and mimic dynamic tissue remodeling. Understanding how mechanical cues regulate fibroblast fate could advance therapeutic strategies from fibrosis to regenerative medicine.

Morrison, Erin

University of Oregon

Mentor(s): Charlie Deitz, Carol Paty

Poster #349

Science as Story: The Journey of Europa Clipper Through a True Crime Podcast Lens

This thesis examines how true crime narrative storytelling techniques, particularly those inspired by narrator-driven podcasts like Serial, can enhance public engagement with complex scientific topics. To investigate this use of story and podcasting for science communication, I produced a five-episode podcast series about NASA's Europa Clipper mission and its search for habitable conditions that could support life on Europa, one of Jupiter's four Galilean moons. Using plot devices from true crime and fictional narratives – including personal storytelling, the hero's journey monomyth, suspense, and reflection – I present and

contextualize the story of the ongoing Europa Clipper mission from the lens of my own personal story of traveling to Florida in a hurricane to witness the 2024 launch of the spacecraft. Each podcast episode introduces key scientific information, firsthand accounts from personal interviews with essential mission stakeholders and scientists, my own recorded lived experiences, and naturally suspenseful moments (i.e. cliffhangers) to support audience engagement. The dual narrative structure I employed is a case study of how personal storytelling can serve as an entry point for general audiences to engage with complex science. As science communicators seek new ways to reach science-adverse audiences and make science more accessible, audio storytelling offers a promising approach and a valuable tool for contemporary science communication.

Morrison, Megan

University of Oregon

Poster #028

A Longitudinal Qualitative Study on Caregiver Burden and Identity in Dementia Care

See Baker, Jaya

Munday, Amelie

University of Oregon

Mentor(s): Marjorie Celona

Creative Work

Deadbeat Short Story Reading

My work explores how narrative perspective shapes the emotional and psychological experience of storytelling. Written in an intermediate creative writing course with Marjorie Celona, this short story experiments with second-person narration as a way of dissolving the boundary between reader and character. By addressing the reader as “you”, the narrative creates an immersive perspective that invites the audience to inhabit the protagonist’s thoughts, perceptions, and disorientation. In Deadbeat, this technique is used to portray a drug trip gone wrong, allowing the instability of the experience to unfold from within rather than being observed from a distance. Through this approach, the story examines how point of view can heighten intimacy, unsettle traditional narrative distance, and encourage readers to engage more directly with the character’s internal world.

Munn, Trey

Umpqua Community College

Mentor(s): Mick Davis

Oral

Co-Presenter(s): John Porter Strother

Adhesion Strength of Pine Tar at Different Temperatures

This project investigates the temperature dependence of pine tar adhesion and attempts to identify the optimal temperature for adhesion. Starting with two tar-coated blocks set together, we have measured normal adhesion as the force required to pull the blocks apart and parallel adhesion as the force required to start the blocks sliding. Our experiments for both types of adhesion were performed over a temperature range of 0-50 degrees Celsius. Our hypothesis was that maximum adhesion would occur near 0C. While the 0-5C bin did have the highest mean value of normal adhesion, the results of this test were inconclusive because that highest value was not statistically significant and there was no discernable correlation between temperature and adhesion across the temperature range. However, parallel adhesion does show a clear correlation with temperature across the temperature range. Also, repeated testing of parallel adhesion for different values of normal force indicates that parallel adhesion can be modeled as typical static friction. In this case, the adhesion force is proportional to the normal force, and we define the proportionality constant as the static friction coefficient. According to our hypothesis, the static friction coefficient will be temperature dependent and maximum near 0C. We are currently collecting the data necessary to determine a friction coefficient for each temperature and test this hypothesis.

Nag, Aishiki

University of Oregon

Mentor(s): Daniel Tichenor, Tobin Hansen

Poster #052

Forced Labor in Immigration Detention Centers: An Analysis of Case Law

With the growing dependence on privatized detention centers across the United States, there is an ongoing investigation about the current conditions of such facilities, and the legal obligations that privatized detention centers in the US have towards paying detainee laborers. This work is done under the PBNDS standards, for ICE's Voluntary Work Program (VWP), which as the title suggests, remains voluntary to participate in. Under this program, detainees can work up to 40 hours a week, and are compensated at least one dollar a day for their labor. GEO Group and Core Civic, two of the largest privatized detention companies, have had repeated complaints filed against their misuse of the program, with detainees alleging forced labor practices and coercion of solitary confinement in order to extract their labor.

The paper traces the origins of detainee labor policies to the early 1940s internment era where the one dollar a day standard was first codified under 8 U.S.C. § 1555(d). The historical analysis shows the convergence of criminal and immigrant law – termed “crib migration” – and the rise of the for-profit denationalized industry which have eroded or reimagined current legal statutes to extract cheap labor from a legally vulnerable population. The FIRAC-based analysis of each case identifies the central tensions surrounding the employer-employee relationships, the forced labor provisions under the TVPA, and state minimum wage laws.

Nelson, Karly

University of Oregon

Mentor(s): Alisa Freedman, Rachel DiNitto

Works in Progress: Lightning Rounds

Reweaving Traditions: Kimono, Upcycling, and Cultural Sustainability

This project investigates the evolving role of sewing and tailoring through a focused study of kimono upcycling in Japan. Once deemed essential domestic and artisanal skills, sewing practices have declined with the rise of industrialization and fast fashion. However, renewed interest in sustainability and craftsmanship has led to a resurgence of sewing as both a creative and ethical practice.

While in Japan, this research will examine how traditional garments such as kimono are being repurposed in contemporary contexts. As many kimono fall out of regular use, they present both an environmental challenge and an opportunity for sustainable design through upcycling. This project asks whether upcycling meaningfully reduces textile waste or introduces new forms of consumption.

It also considers the cultural implications of repurposing garments with deep historical meaning, exploring how designers can engage respectfully while balancing innovation with preservation.

By combining historical context, sustainability analysis, and cultural research, this project positions sewing and tailoring as tools for rethinking our relationship to clothing, arguing that thoughtful upcycling can bridge environmental responsibility and cultural respect.

Neubert, Clara

University of Oregon

Mentor(s): Amanda White, Shawn Lockery

Poster #185

The Effect of Psychedelics on Egg-Laying in *C.elegans*

Psychedelic drugs are shown to have potential in being implemented into therapeutic medicine. However, the effects of these drugs are not completely understood. Previous experiments show that lysergic acid diethylamide (LSD) has locomotion effects in the roundworm *C. elegans*. In mammals, LSD is shown to have a high affinity for serotonin receptors, which have roles in locomotion and egg laying in *C.elegans*. This inspired a new study to determine if other psychedelics affect egg laying and which genes might determine if the effect is shown. We created a dose response curve for the psychedelic drugs dimethyltryptamine (DMT), psilocin (PSI), LSD, and 2,5-dimethoxy-4-iodoamphetamine (DOI) for egg-laying effects in nematodes.

Young adult *C.elegans* were placed in a well with either the control solution or a specific drug concentration (10 μ M, 50 μ M or 100 μ M). Preliminary data suggests that LSD influences egg-laying as worms incubated in LSD lay around 10-20 eggs whereas worms incubated in a control solution lay only 0-1 eggs. All other psychedelics showed *C.elegans* laying no eggs in the given concentrations.

The next step in this study is to repeat these experiments with genetic mutants and incubate them with a constant concentration of LSD (50 μ M). Through this study, we can determine which proteins LSD is affecting, allowing for future studies to understand more about how psychedelics work in an organism.

Neuner, Grace

University of Oregon

Mentor(s): Yvette Cendes, Jimmy Lynch

Poster #137

Co-Presenter(s): Vivian Higgs, Brody Schmidt

Investigating Late-time Radio Brightening of Tidal Disruption Events

When a star passes too close to a black hole, it is ripped apart by the tidal forces of the black hole. These events are known as tidal disruption events (TDEs), which expel large amounts of debris, creating emissions visible across the entire electromagnetic spectrum. At late times (100-1000 days) after optical discovery, several TDEs have become radio bright despite no prior radio emission being present. We calibrate measurements from data collected by the VLA (Very Large Array) - an astronomical radio observatory located in New Mexico- to generate images of TDEs. These images are used to find parameters such as their peak flux

and frequencies, which allow us to estimate the radius and energy of the TDE. Using these observations, we can see the TDEs evolving over time, having rebrightening events or eventually fading. By examining a large population of these events and tracking the changing data, we can begin to understand why these TDEs appear to spontaneously re-brighten many days after the initial event.

Nguyen, Bo

University of Oregon

Mentor(s): Carrie McCurdy, Jade Truong

Poster #215

Skeletal muscle metabolism is reduced post SARS-CoV-2 infection in lean and obese Rhesus macaques

Obesity and metabolic disease increase the severity of acute illnesses, including COVID-19. The physiological mechanisms linking preexisting metabolic function to long-term outcomes, including prolonged fatigue and exercise intolerance, after SARS-CoV-2 infection remain unclear. We hypothesized that skeletal muscle respiration would be reduced after SARS-CoV-2 exposure in lean animals and worsened by obesity compared to unexposed controls. Gastrocnemius biopsies were obtained from lean and obese macaques 6 months after infection (EXP) and in unexposed (UNEXP) controls (4/group). Mitochondrial respiration was measured in permeabilized fiber bundles with carbohydrate (CHO) or fatty acid (FA) substrates. Data was analyzed by two-way ANOVA for main effects of obesity and exposure or their interactions. We found Complex I ($p=0.008$) and maximal respiration ($p=0.003$) with CHO were reduced in lean EXP vs. UNEXP. Obesity also reduced maximal ($p=0.04$) and uncoupled ($p=0.02$) respiration with greater declines in EXP vs. UNEXP animals. With FA-linked respiration, there were no differences in oxidative or uncoupled respiration with obesity or prior infection but leak respiration was lower in lean and obese EXP and in obese UNEXP vs. lean UNEXP (Interaction; $p=0.03$). Overall, we find that skeletal muscle metabolism is suppressed months after SARS-CoV-2 infection independent of metabolic health status and may contribute to persistent fatigue associated with long COVID.

Nguyen, Ethan

University of Oregon

Mentor(s): Ramesh Jasti, Gaby Bailey

Poster #152

Donor-Acceptor-Donor Cycloparaphenylenes as Potential Biological Fluorescent Probes

The development of bright, photostable, and fluorescent molecules with large Stokes shifts is important in advancing multiplex imaging, which serves as a powerful technique to detect and observe multiple targets in a single tissue. Cycloparaphenylenes (CPPs) are a unique class of carbon nanomaterials known for their

size-dependent fluorescent emissions, ability to be excited via a single excitation wavelength, and their preparation via bottom-up synthetic methodologies. The bottom-up synthetic methodologies used in the Jasti lab enable us to incorporate different heterocycles and functional groups. A recent project in the Jasti lab investigated a systematic series of seven novel CPPs containing different heterocycle combinations to study their effects on the photophysical properties. A major finding revealed how to tune the emission into the red-emitting region via the incorporation of distinct heterocycles. Therefore, we designed a target CPP containing 1.) heterocycles to red-shift the emission and 2.) a functional handle that would enable us to bioconjugate a biomolecule. Using traditional organic synthesis methods (e.g., Suzuki cross-coupling reactions and lithium halogen exchange reactions), we have synthesized the target molecule, as confirmed by ^1H and ^{13}C NMR. In collaboration with a research lab at OHSU, future directions include conjugation of the target molecule to a biomolecule and experimentation to test the fluorophore in multiplexed imaging.

Nguyen, Kirsten

University of Oregon

Mentor(s): Andrew Lovering

Poster #256

Sleep and the development of total retinal thickness during 28 days of 6° head down tilt bedrest

Spaceflight-Associated Neuro-ocular Syndrome (SANS) is the collection of ophthalmic and neurological findings in astronauts following spaceflight. Scientists are now able to simulate some of the effects of microgravity on Earth via a 6° strict head-down tilt bed rests (HDTBR) study paradigm. Our lab is interested in a potential link between sleep and the development of optic disc edema and retinal thickness increases. We analyzed sleep polysomnography data and total retinal thickness (TRT) changes via optical coherence tomography (OCT) from the control groups in three separate bed rest studies: VaPER, AGBRESA, and SANS-CM. In total there were 31 control participants. Twelve participants had with an apnea hypopnea index (AHI) ≥ 5 , and 19 participants with an AHI < 5 . In those with an AHI ≥ 5 , there was a significant positive association between AHI and change in TRT (Pearson's $r^2=0.60$, $p < 0.05$). In those participants without an AHI ≥ 5 , there was a significant negative association between the coefficient of variability in age predicted slow wave sleep (SWS) and change in TRT (Spearman $r^2=0.23$, $p < 0.05$). We concluded that sleep apnea may contribute the development of, and that variability in SWS may be protective against, increased TRT during HDTBR. Although unknown, these results suggest a potential benefit to having variable SWS, possibly with respect to brain glymphatic and ocular glymphatic clearance and the resulting potential for neuro-ocular acclimatization to HDTBR.

Nichols, Kaylee

Mercer University

Mentor(s): Ha Vo

Poster #214

Multi-Axial Flange For Mercer Universal Prosthesis

Clinical fitting of transtibial prosthesis in underserved regions of Asia (i.e. Vietnam, Cambodia) often relies on standardized “neutral” alignment patented by the Mercer Universal Prosthesis (MUP) device in an effort to reduce costs, minimize time spent on expansive dynamic socket alignment (DSA), and streamline training. However, specialized patient cases exhibiting severe transtibial joint angles often require multi-axis fine-tuning to a patient’s gait beyond current MUP alignment capabilities. The Multi-Axial Flange (MAF) was developed to enhance the MUP’s adjustability, expanding from commercial standards to increase device ROM and axis manipulation. The MAF was designed in SolidWorks and manufactured via Mastercam and CNC machining. It now enables approximately 10° of movement in the frontal and sagittal planes, replicating current conventional DSA capabilities. The MAF was tested to demonstrate functional alignment adjustment up to 10 degrees in frontal and sagittal planes using an inclinometer and the Noraxon 2D Markerless Capture system. It was also examined to see if it would both withstand the equivalent load of long-term prosthetic use at its maximum angular settings and maintain structural integrity past failure, using a Material Testing System. Both tests confirmed that the flange performs up to DSA standards. By introducing an adaptable axis to the MUP, the MAF may significantly expand prosthetic accessibility for patients with complex limb geometries.

Niedergang, Zadie

University of Oregon

Mentor(s): Mark Blaine

Poster #350

Utilizing artistic sequential storytelling to improve science communication

Scientists create distinct sequential art intended to tell a story through illustrative figures. But, as we’ve all seen, sometimes their vision doesn’t align with effective communication methods. The systems of comics analysis lends itself to creating better figures. Have you ever read a paper and had your eye drawn to a particular figure? Or, more commonly, found yourself more confused when you looked at the figures than before? By using the techniques of comics artists, scientists can be more precise and use shared visual language to better communicate their research. Scientists can use the shared language of comics to create better figures. Comic creators are masters of sequential art through the use of panelling, negative space, and the combination of art and written word. Scientists can use these strategies to add clarity to their visual

storytelling. I have compiled resources from comics studies to use as guides for scientists designing their own figures and building a visual style. I draw on the history of scientific illustrators communicating complex motifs, including artists who have turned hard science degrees into creative careers, and traditional comics creators. This project brings together disciplines across the university, including science communication, comics studies, and examples from research labs. Using research-backed best practices and my own illustrations and comics I have put together a guidebook for scientists to use when designing their own figures.

Nielson, Olivia

University of Oregon

Mentor(s): Denicia Aragon, Elliot Berkman

Poster #309

Temporal Distancing and Smoking Urges: A Construal-Level Intervention Approach to Cessation

Smoking remains the leading causes of preventable death, yet existing cessation interventions do not work for everyone, particularly low-income populations, who smoke at disproportionately higher rates. Two commonly used techniques are cognitive reframing, which encourages smokers to reinterpret cravings through unpleasant or realistic scenarios, and values-oriented reflection, which prompts individuals to consider how smoking conflicts with their personal values. While these approaches have shown promise, many smokers continue to struggle. Drawing on construal level theory, the present study examines whether temporal distancing, asking participants to focus on how quitting now would improve their future lives, can be an effective complement or alternative. Using longitudinal self-report data from the Altering Smoking Habits (ASH) study, a 5-year nationwide study of low-income chronic smokers, we analyze how intervention condition affects smoking urges from pre- to post-intervention using a generalized linear model. We hypothesize that the construal-level condition will significantly reduce urges compared with the other two conditions, and that baseline construal-level identity will not significantly predict changes in urges within that condition. The present study seeks to determine if temporal distancing could expand cessation options for those who have found current techniques ineffective and help improve the delivery and outcomes of values-oriented and reframing methods.

Norgren, Reilly

University of Oregon

Mentor(s): David Renteria Escobedo

Creative Work

The Fish Cutter

This short story explores a character who becomes fixated on a mystery they cannot let go, driven to uncover the truth, only to discover something unexpected about themselves in the process. The setting is inspired by the Oregon coast, particularly Astoria's long history of canning and fishing, which helped me shape the story's atmosphere. As my third piece in the KIDD Creative Writing Program, this work shows growth from my earlier stories by incorporating peer feedback, especially in strengthening the setting and creating a more grounded, believable main character. One of my primary goals as a writer for this story was to incorporate strong environmental storytelling and supplementing the narrative with rich setting details that matched the tone of the overall story.

Noteboom, Asa

University of Oregon

Mentor(s): Althea Amaris, Scott Hansen

Poster #169

Mechanisms controlling SHIP1 Localization and Dynamics in Neutrophil Migration

Phosphatidylinositol (PIP) lipids are important second messengers that control the localization of numerous proteins on eukaryotic intracellular membranes. The chemical identity, abundance, and spatial distribution of PIP lipids are regulated by lipid phosphatases and kinases. In human neutrophils, PI(3,4,5)P₃ lipids are transiently created at the cell front to control chemotaxis. SHIP1 is a key phosphatase that negatively regulates PI(3,4,5)P₃ by converting it to PI(3,4)P₂. Using total internal reflection fluorescence microscopy (TIRF-M), we determined that SHIP1 exhibits two distinct modes of membrane localization: (1) dynamic puncta at sites of adhesion and (2) cortical oscillations. SHIP1 puncta colocalize with an adaptor protein Nck1, suggesting formation of signaling condensates, which we hypothesize is recruiting and regulating the activity of proteins like RasGAPs, RIAM1, and integrin adhesion clusters. In contrast, SHIP1 oscillations are regulated by the membrane curvature-sensing protein denoted FBP17. Inhibiting actin polymerization stops SHIP1 oscillations, while inhibiting integrin-mediated adhesion causes SHIP1 puncta to exhibit retrograde flow coupled to the actin cytoskeleton. We propose a dual mechanism by which SHIP1 integrates membrane signals to control immune cell migration.

Nunnally, Ginger

University of Oregon

Poster #122

Quartz Creek Stage 0/8 Restoration Monitoring Project 2026

See Klebes, Aubrey

Nutcher, Anabella

University of Oregon

Modular Duplex

See Garson, Ava

Nystrom Rice, Isaac

University of Oregon

Wood Morphologies - Ultralight Curved Wood Surfaces

See Landsman, Gaia

Damek, Katie

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #041

“Die Braut von Korinth” and its importance in Jane Eyre

For this project, I am studying the connections and conclusions that can be drawn from “Die Braut von Korinth” by Goethe being referenced in Jane Eyre by Charlotte Bronte. This project will aim to analyze and understand the significance of the reference and how it changes how the reader perceives the storyline and the characters. To look closer at this question, I will be examining the effects of including the reference, how it adds to the reader’s understanding of Jane Eyre, Bertha Mason and Mr. Rochester’s characters, how the classical trope of vampires fits into Jane Eyre, and how Jane fits into the role of the female vampire. Mr. Rochester’s reference to Jane as the vampire from Die Braut von Korinth portrays Jane as a character from a gothic romance poem, which shifts the knowledge and understanding of Jane’s character to the reader. To further understand the connections between the characters, I will be looking closely at the relationships between Mr. Rochester and Jane Eyre, Mr. Rochester and Bertha Mason, and between Jane Eyre and Bertha Mason. This helps the reader look at how Mr. Rochester’s character is different, as we see some of his emotions from a perspective other than Jane’s. To accomplish this, I will be utilizing aspects of Goethe’s story

such as love and arranged marriage. The audience should walk away with an understanding of why “Die Braut von Korinth” may have been used as a way to convey and explain the characters’ actions and emotions in Jane Eyre.

Odegaard, Amalie

University of Oregon

Mentor(s): Kristen Rahilly

Poster #022

The Distribution of Green Spaces and Surface Temperatures in Tokyo

The central part of Tokyo has significantly higher surface temperatures than rural areas due to the urban heat island effect, which can be improved by the presence of green spaces. Materials found in urban environments like Tokyo, such as metal, asphalt, concrete, and buildings reradiate much more energy into the atmosphere, increasing surface temperatures and creating an urban heat island (Amindin et al., 2021 and all references therein). To analyze the effects that specific types of greenery have in Tokyo, I used surface temperature satellite imagery (band 10) and the Normalized Difference Vegetation Index (NDVI) satellite imagery from Landsat 9 on June 6, 2025 of two distinct neighborhoods. One has large parks, including the imperial palace, and one has more scattered greenery, such as trees lining the street. I have found that the neighborhood with large green spaces has a lower average surface temperature than the neighborhood with scattered greenery. The neighborhood with large green spaces also has a greater surface area ratio of greenery to urban area. Understanding the most efficient form of greenery to reduce surface temperatures in urban areas can help city planners to increase comfort of residents and combat climate change in cities.

Olds, Charlotte

University of Oregon

Mentor(s): Maya Kasteleiner, Gabriella Lindberg

Poster #202

Virtual

Evaluating Tumor Growth in a Glioblastoma Spheroid Model

Glioblastoma multiforme (GBM) is the most aggressive type of brain cancer, readily infiltrating surrounding tissue. For many cancers, surgeons remove extra tissue, as it can be challenging to determine how far the cancer has spread. However, this approach is not possible in the brain because critical cognitive and motor functions are packed, and damage can cause serious health problems for the patient. As a result, GBM cells often remain even after surgery, with only about 5% of patients surviving beyond five years.

To study GBM, researchers commonly use spheroid models, which are miniature tumor-like structures that replicate the brain environment. In these spheroids, cancer cells grow by multiplying to increase in number (cell proliferation) and by reshaping their environment to expand in tumor size. The timing of these growth processes within spheroid models remains poorly understood, which motivates further characterization.

My project aims to clarify when certain growth patterns occur within spheroids, providing a clearer framework for studying how GBM grows and survives over time. I quantified cell proliferation and tumor environment remodeling over time. In early timepoints, spheroid growth was mainly driven by rapid cell proliferation, while in later timepoints, spheroids increasingly relied on remodeling the surrounding environment. This shift suggests that GBM growth is dynamic as tumors adjust growth strategies over time to support survival and invasion.

Olma, Lydia

University of Oregon

Mentor(s): Leah Wothe, Dare Baldwin

Poster #301

Co-Presenter(s): Isabella Snyder

When Social Media Shapes Eating: Gender Differences in Responses to “What I Eat in a Day” Posts

“What I Eat in a Day” (WIEIAD) posts on social media depict the foods that creators consume, often featuring idealized diets and body shapes. This study examined young adults’ viewing habits, motivations, and perceived impacts, specifically investigating gender differences. A sample of 178 participants (M=19.8 years old) completed an online survey. While overall social media use did not differ significantly by gender—with 55.4% spending two to four hours online daily ($p=.116$)—a major gap in content consumption emerged. Women (89.4%) were significantly more likely to have watched WIEIAD content compared to men (55.6%) ($\chi^2(1)=19.86, p<.001$), identifying women as the primary consumers despite similar total screen time. Participants cited entertainment and meal ideas as primary motivations, followed by nutritional advice and social comparison. While these motivations were consistent across genders ($p > .10$), a significant divide appeared in behavioral impact: women were much more likely to report that WIEIAD posts influenced their actual eating habits ($\chi^2(1)=14.03, p<.001$). This suggests that while both genders watch WIEIADs for similar reasons, women are more susceptible to modifying their behavior in response. Ultimately, these findings highlight WIEIAD post’s influence on eating patterns and gender-specific behavioral responses.

Olson, Jonathan

University of Oregon

Mentor(s): Raymond Frey, Robert Schofield

Poster #146

Characterizing the Interference of Lightning Based Magnetic Fields on LIGO Detectors

In 2015, the Laser Interferometer Gravitational wave Observatory (LIGO) detected gravitational waves from black holes for the first time. A decade on, LIGO is more sensitive than ever, and continues to make frequent gravitational wave detections. The University of Oregon's LIGO group plays an important role in the operation of the detector, as our research centers around distinguishing between astrophysical gravitational waves and earth based sources of noise. Lightning strokes have been identified as a source of correlations in the magnetic field fluctuations at gravitational wave observatories.

In this presentation, I will show the process on how these lightning sources are detected and accounted for, so LIGO can produce clean astrophysical data. The process of identifying these sources involves the use of high sensitivity magnetometers, part of LIGO's Physical Environment Monitoring (PEM) network, as well as Vaisala's global lightning dataset. By utilizing specialized glitch detection software to identify excess power in the magnetometers caused by lightning, a list of events can be compared to the Vaisala dataset. Then, by linking events from each of the two detectors to a single strike, we can build a correlation model which will be vital to the design of the next generation of gravitational wave detectors.

Ong, Alfie

University of Oregon

Mentor(s): Joyce Chen

Creative Work

Echoes of Elegy: Understanding Ravel's Le Tombeau de Couperin Through Performance and Interpretation

The project explores the artistic and cultural significance of Le Tombeau de Couperin (1914-1917), a piano suite composed of six Baroque dances by Maurice Ravel (1875-1937), composed in memory of friends lost during World War I. As suggested in the title, the suite blends his very personal grief with a stylized homage to France's musical past. Yet rather than expressing overt grief, the suite remains elegant and emotionally restrained. This contrast leads to my central research question: How does Ravel reconcile intimate grief with modest musical expression through Baroque stylistic homage and emotional restraint?

This project combines score analysis, performance practice and philosophical interpretation to explore how Ravel's Le Tombeau de Couperin bridges personal grief and historical homage. I will analyze all six

movements of Ravel's suite alongside François Couperin's Concerts Royaux (1714), focusing on ornamentation, dance forms, harmonic language, and contrapuntal textures. All being presented in a lecture-recital with demonstration of both Piano and Harpsichord Performances.

Ong, Cecelia

University of Oregon

Mentor(s): Jessica Aldrich, Robert Guldberg

Poster #213

Bonedots: A Bone-Like Graft Alternative to Enhance Healing in Super-Critical Defects

With approximately 2.2 million bone grafting procedures performed globally each year, bone is the second most transplanted tissue worldwide. As a result, scalable, biologically active graft materials that recapitulate native bone are in critical need. Our group has developed "bonedots," a bone-like microphysiological system that mimic native bone mineral and structure. We hypothesize that bonedots will enhance healing relative to no-graft controls and that adding a sub-therapeutic BMP-2 dose will further improve outcomes.

Bonedots were fabricated by bioprinting 2- μ L hMSC-laden type I collagen microgels and were characterized via Fourier Transform Infrared Spectroscopy (FTIR) (n=4/group) and microCT (VivaCT80) (n = 6/group). Super-critical 6 mm segmental bone defects were created in female Wistar rats, grouped by high (≥ 150 mg HA/cm³) or low (< 150 mg HA/cm³) mineral levels, and with or without a sub-therapeutic BMP-2 dose (2 μ g) (n=5/group). Bone healing outcomes were evaluated with radiographs at 4, 7, and 12 weeks, and ex-vivo microCT analysis (n=5/group) at endpoint.

In super-critical rat femoral defects, bonedots combined with BMP-2 supported bone formation comparable to BMP-2 alone and we therefore expect BMP-2 to be the primary driver of bone regeneration in this model. Overall, bonedots are bone-like and biocompatible, and may support bone regeneration in the presence of an additional osteoinductive cue.

Orozco, Tyler

University of Oregon

Poster #005

I Like Bok Choy and I Cannot Lie, Those Other Vents Can't Deny

See Sipos, Ava

Orser, Collin

University of Oregon

Mentor(s): Renteria Escobedo

Creative Work

The Real Artist

The Real Artist confronts how people are quick to judge rather than understand. Abstract art, for example, is mocked for simplicity despite selling for millions. I used to think similarly before a writing class in my first year of college changed everything.

We read Ulysses by Lord Alfred Tennyson, which I at first hated. The poem is based on the Odyssey, in which Ulysses spends years trying to get home; meanwhile, Tennyson's poem depicts Ulysses departing and leaving his family. I waved it off until it turned out to be the topic for the final paper, where I found out the poem was written shortly after the death of the poet's best friend. Tennyson uses Ulysses to express his grief by having him move forward despite his aging body, refusing to let himself rot away.

It inspired me to change the way I look at art, so I wanted to express that change through my story. In the story, Raphael is an artist who believes abstract art isn't true art. He tries to prove this by exposing Von Flare, a famous abstract artist. He creates a purposely bad art piece, which backfires as Von Flare declares him an artistic genius. Seduced by the promise of wealth and fame in exchange for making more art pieces, Raphael slowly starts to feel like a fraud. Eventually, after meeting real abstract artists, he discovers they do have actual talent. Raphael confesses to Von Flare out of guilt, who reveals that, through his work, he'd been unknowingly expressing his inner feelings.

Pak, Jake

University of Oregon

Mentor(s): Kristin Robinson

Poster #188

Investigating Strain Effects on *C. elegans*' Longevity Pathways

Aging is a complex biological process influenced by genetic variation, contributing to differences in lifespan and susceptibility to age-related disease. Understanding how genetic background influences aging pathways is crucial in advancing aging biology and personalized medicine. In this study, we examined how genetic background and targeted gene mutations influence lifespan using the model organism, *Caenorhabditis elegans*. To determine how genetic background influences longevity, we first compared the base line life expectancy across several *C. elegans* strains. We then performed targeted CRISPR knockdowns within an insulin-like signaling pathway to directly observe its impact on lifespan. Our results revealed significant

strain-dependent effects on lifespan and demonstrated that genetic knockdowns of an insulin-like signaling pathway can both extend and shorten lifespan. These findings highlight that aging outcomes depend on individual responses in combination with genetic modifications. Understanding these aging interactions on a macro scale as well as on the molecular level is essential for developing targeted approaches to extend lifespan and creating potential therapeutic tools.

Palmer, Eleanor

University of Oregon

Mentor(s): Ahmar Zaman, Stephanie Wiley

Poster #051

Punitive Solitary Confinement in Juvenile Facilities

The current research investigated the relationship between solitary confinement and developmental disabilities in juvenile facilities. Specifically we investigated whether Attention-Hyperactivity Inattentive Disorder (ADHD) and Autism Spectrum Disorder (ASD) were associated with the rate and type (Punitive vs. Protective) of solitary confinement for incarcerated juveniles. We hypothesized that 1) Juveniles with ADHD will experience higher rates of punitive solitary confinement, 2) Juveniles with ADHD will experience repeated punitive solitary confinement at higher rates, 3) Juveniles with ASD will experience higher rates of punitive solitary confinement, 4) Juveniles with ASD will experience higher rates of protective solitary confinement, and 5) Juveniles with ASD will experience repeated protective solitary confinement at higher rates. To examine these hypotheses we utilized the public data set National Survey of Youth in Custody, 2018 which surveyed 12,362 adjudicated youth in the United States. Using the survey data we analyzed the prevalence of ADHD and ASD within the population and the rates/type of solitary confinement that those with ADHD or ASD reported. With rates of ASD and ADHD having skyrocketed in the past two decades and research highlighting the inhumane nature and severe negative implications of solitary confinement, it is incredibly important that we understand how these diagnoses can impact the experiences of particularly vulnerable populations.

Pan, Kyra

University of Oregon

Mentor(s): CJ Pascoe, Raoul Liévanos

Poster #019

Baseball and the Making of Men

Whether talking about the past or the present, homophobia, misogyny, and gender performance have not been a scarce sight in baseball. From Pete Rose to Jarren Duran, Major League Baseball (MLB) has made it clear that such behavior will not be meaningfully reprimanded. My research aims to answer the research

question: How do dominant ideologies of hegemonic masculinity, misogyny, and homophobia get reproduced or challenged in collegiate baseball? This will serve to fill gaps in sociological research regarding these ideologies in an understudied population (collegiate baseball players). To answer these questions, I will be carrying out loosely structured interviews with Division I - Division III baseball players. Following analysis of data, this study expects to find that baseball culture and peer interactions in collegiate baseball teams (at this level) reproduce these dominant ideologies. Additionally, it expects to understand how these ideologies are formed within the baseball culture and how that may influence their peer interactions.

Park, Carmen

University of Oregon

Mentor(s): Tao Hou

Works in Progress: Lightning Rounds

Hand Knit Meshing

Hand knitting is a skill that has been passed down for millenia while knitting patterns have followed as the means for creation. A pattern is made through a multi step design process, involving sketching, swatching and mathematical calculations. They have been refined through trial and error, and often build off of existing work in the field. This project presents a computational pipeline for converting arbitrary closed 3D meshes into hand-knitting patterns. To manage the complex parameter space of knitting, the initial focus will be on short-row shaping and double/triple left- and right-leaning increases and decreases. The proposed pipeline operates in three core stages:

- (1) converting an input triangular mesh into a quad-dominant mesh using specified boundary points and rotational symmetry;
- (2) processing this structure into a row- and column-based Reeb graph abstraction;
- (3) translating this graph into a standard knitting instruction set.

The fidelity and practicality of the generated patterns will be validated through a cycle of hand-knitting physical prototypes, which will also serve as an iterative debugging and refinement mechanism for the algorithm.

Parker, Micah

University of Oregon

Poster #351

The Lost Apollo 14 Launch Footage

See Kelm, Cameron

Patel, Hiya

University of Oregon

Mentor(s): Maya Casper

Poster #310

Co-Presenter(s): Emily Smotryski

Sleep Disturbance and Harsh Parenting in Substance Use Disorder Recovery

Prior research has shown that sleep disturbance is associated with impairments in emotional regulation, stress sensitivity, and overall brain function. However, less is known about how these associations operate among parents in recovery from substance use disorders. This study addresses this gap by examining whether sleep disturbance is associated with harsh parenting behavior among parents in this population and exploring whether these associations differ between mothers and fathers. Data were obtained from a sample of parents in SUD recovery who have been abstinent from all drugs excluding nicotine for at least three months (N = 200; 135 female, 65 male). Sleep disturbance was assessed using the PhenX Broadband Psychopathology scale, and parenting behavior was measured using the Iowa Family Interaction Rating Scales. Bivariate regressions were run separately for males and females to examine gender differences. Among females, sleep disturbance was significantly and positively associated with harsh parenting behaviors ($b = 0.33$, $p = 0.03$). In contrast, the association was not statistically significant among males ($b = 0.53$, $p > 0.05$). These findings suggest that sleep disturbance may play a more pronounced role in shaping parenting behaviors among mothers in SUD recovery compared to fathers. Future studies should test gender as a moderator in the link between sleep and caregiving.

Patel, Krishan

University of Oregon

Mentor(s): Wagner Dantas

Poster #249

The Efficacy of Exercise Training in the Context of Sarcopenic Obesity

Sarcopenic Obesity is the dual presence where an individual has both sarcopenia, which can be defined as the loss of muscle mass and or function, along with obesity, which is an excessive accumulation of fat that can impair one's life. My project aims to address how exercise can potentially help improve this condition. The goal of this project is to investigate whether exercise can potentially improve muscle mass and function, improve mitochondrial function, and potentially alter proteins that are involved in both the maintenance of muscle and mitochondrial quality control. This research can eventually lead to the development of better treatments in the future.

Paterson, Kara

University of Oregon

Poster #260

Mitigating Metabolic Impairment of Schizophrenia: An ongoing design

See Fengler-Johnson, Peter

Paul, Esther

University of Oregon

Mentor(s): Evelyn Cho

Poster #305

Decision-Making Guidance in Evidence-Based Treatments for Common Youth Mental Health Concerns

Evidence-based treatments (EBTs) are a key strategy to responding to the youth mental health crisis. Unfortunately, clinicians often make treatment decisions that deviate from EBT protocols in routine practice, which can weaken treatment outcomes. Clearer guidance on these key decision-points may support clinicians to enhance their EBT delivery. This study aims to describe guidance on key decision-points provided in EBTs for the common youth mental health concerns. In this study, we will identify youth anxiety, depression, conduct, and trauma EBTs from peer-reviewed EBT lists. We will identify excerpts that provide guidance on four key decision-points: determining treatment fit, treatment components to deliver, response to poor treatment engagement, and response to poor treatment progress. For each excerpt, we will code the type of guidance provided (i.e., therapeutic action, decision-making process), the decision-makers, individual and contextual factors to consider, and information to guide decisions. We identified (N=99) EBTs and present EBT characteristics for a subset (n=22) for depression (68%) and anxiety (36%). These EBTs were primarily designed for delivery to children (91%), in an individual format (59%), in schools (27%), by psychologists (27%). Final results will describe the process of decision-making prescribed in EBTs for key treatment decision-points, which may guide refinement of clinician trainings and support that enhance EBT deliver to youths and families.

Payne, Alex

University of Oregon

Mentor(s): Stephen Frost, Frances White

Poster #336

Platyrrhine mandibular variation: A 3-dimensional analysis

In extant platyrrhines, features of the mandible express a wide range of morphological variation. Previous analyses on mandibular morphology have successfully differentiated between platyrrhine groups using 3D and 2D morphometric techniques; however, the sample representation and resulting placement of fossil taxa is inconsistent between these studies. In this 3D morphometric analysis, we aim to demonstrate the effectiveness of mandibular morphology in distinguishing platyrrhine groups and helping to allocate fossil taxa. The sample includes 56 3D surface models of platyrrhine mandibles, including 16 extant genera and 4 fossil genera. Thirty-two 3D landmarks were placed in Stratovan Checkpoint. Generalized Procrustes Analysis was performed in Checkpoint and Principal Component Analysis (PCA) was performed in PAST. Extant subfamilies form distinct clusters in PCA; only overlap is between Callitrichines and Cebines. PC1 ranges from Cebuella to Alouatta and appears to represent relative corpus depth and gonial expansion. PC2 ranges from Alouatta to Chiropotes, appearing to represent corpus length and condyle height. Of the fossil taxa, Antillothrix and Stirtonia fall within Atelinae, Xenothrix falls near Callicebinae, and Cebupithecia falls near Aotinae. Results indicate 3D mandibular analysis is effective in differentiating between extant platyrrhine subfamilies, however, placement of fossil taxa is less confident.

Peairson, Jade

University of Oregon

Mentor(s): Kristen Rahilly

Poster #099

Exploring Kelp through Participatory Science

Participatory Science is research that engages members of the public in a variety of scientific processes; including but not limited to data collection, analysis, and interpretation. Kelp Quest Program, hosted by the Seattle Aquarium is a participatory science program that caters to volunteers who will analyze images from a benthic survey by confirming the identity of portions of images collected by an ROV (remote operated vehicle) and analyzed through an identification model. I will be developing my own unique research question using data from the Kelp Quest Program. I will also be reflecting on my own experience participating in the Kelp Quest Program and it's efficacy as a participatory science program. My work will demonstrate the impact of Participatory Science on public engagement with scientific research. I will also illustrate how applied science projects can be developed through data collection with Participatory Science programs.

Pease, Lindsey

University of Oregon

Mentor(s): Peter Schlachte

Creative Work

Physiognomies

Fiction works not to replicate life but to distill it. To pursue meaning, in all the particulars. I have written stories since I was little, and dreamed about a writing workshop as soon as I discovered the concept while binge-watching MFA lectures on Youtube to get through the pandemic. Through the Kidd Creative Writing Program at the University of Oregon, I've had the opportunity to spend the year putting together a collection of four original short stories that each attempt to make their own strives at that pursuit of meaning. My fiction explores ideas of identity, family, distance from life, and complicated interpersonal dynamics. Pieces tend to build themselves out of the everyday, and take footholds visually, as I enjoy writing around a strong, particular image which finds it's own meaningful way into a character's world. I also have spent much of the Kidd Program working to experiment with narrative structure, and the ways which conventional storytelling can be manipulated and rearranged. Over the course of the Kidd Program I've grown to understand myself deeper as a writer and fiction has become ever the more a kind of collection spot for me—a place for imaginings spurred by interdisciplinary interests, works which have inspired me, and all the wonderings and noticings that daily life tends to bring.

Pelayo, Claudia

University of Oregon

Mentor(s): Skylyn Ferguson

Poster #226

Oral

APOE4 Influence on Artery Stiffness and Oxidative Stress

The greatest genetic risk factor for late-onset Alzheimer's disease (AD) is the apolipoprotein E4 (E4) genotype. This genotype is highly associated with AD-associated vascular dysfunction, but the mechanisms linking E4 and vascular dysfunction are unknown. We hypothesized that E4 mice would exhibit greater components of vascular dysfunction compared to E3 mice, with a focus on large artery stiffness and oxidative stress, due to their cascading role in cognitive decline. We studied a six-month-old mouse model with humanized E3 or E4 and amyloid precursor protein knock-in (hAPP). Large artery stiffness was measured using immunofluorescence staining for collagen, elastin, and α -smooth muscle actin. Collagen was further analyzed for cross-linking via a hydroxyproline assay. Oxidative stress was measured via RT-qPCR analysis of Nicotinamide adenine dinucleotide phosphate oxidase 2 (NOX2) and Superoxide dismutase (SOD) isoforms in

cortical tissue. There were no genotype or sex differences observed in aortic stiffness, SOD expression, or collagen cross-links. However, NOX2 expression was significantly elevated in E4 compared with E3 mice ($p < 0.05$). These findings suggest that E4 promotes pro-oxidant enzyme activity in a sex-dependent manner and highlight the need for sex-dependent research in AD.

Perez, Clarissa

University of Oregon

Mentor(s): Alayna Park, Emily Kondo

Poster #343

Common Cultural Adaptations to Mental Health Treatments for Latino Youth and Families

Culturally adapting mental health treatments is crucial for ensuring that interventions resonate with Latino youth and families, who are significantly underrepresented in mental health treatment research. Most evidence-based treatments are typically developed and tested with the white middle-class, which may overlook Latino values and experiences – making families feel misunderstood or judged and exacerbating longstanding ethnic-racial mental health disparities. This project characterized common cultural adaptations featured in the growing number of culturally adapted treatments (CATs) for Latino youth and families. A team of undergraduate research assistants and one graduate student summarized adaptations from eight CATs described across empirical articles, conceptual papers, and treatment manuals. Preliminary themes included modifying treatment content to be culturally relevant, allowing for flexible scheduling to accommodate families' busy lives, providing psychoeducation to enhance families' understanding of mental health concerns, building trust between families and clinicians, and addressing immigration-related stressors. These findings offer empirically tested ideas for culturally adapting treatments for Latino youth and families, which may be particularly useful for providing culturally relevant mental health services and mitigating mental health disparities to ensure these interventions resonate with Latino youth and families.

Perez, Lauren

University of Oregon

Poster #004

Every Breath You Take, every move you make

See Liao, Xiaoqing

Peters, Samuel

University of Oregon

Mentor(s): Kristen Rahilly

Poster #092

Co-Presenter(s): Adelyn Morgan

App-based outdoor participatory science programs allow for public contribution to impactful research

The field of participatory science is a collaborative effort between the general public and scientists. Lowering the barrier of entry into research encourages involvement and increased awareness of current projects. Public engagement in these projects expands data collection and processing ability, increasing the accuracy and efficiency of scientific research. We will be working with the Chicago Botanical Garden's Budburst program, and the NASA Global Learning and Observations to Benefit the Environment (GLOBE) program, which aim to mitigate climate change by understanding its effects on plants and animals, and tracking groundcover and forest health, with the help of widespread participation from individuals. We will provide examples of the participatory science program data collection, and outline the experience of participating in these programs. We will use the data provided by these programs. We will use the data provide by these programs to contribute to our own unique research question. Our work will showcase that poignant research can be conducted through the use of participatory science programs, validating the importance of public contributions to scientific advancement.

Petersen, James

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

Poetry by James Petersen

I have been writing poetry since I took my first Intro to Creative Writing course in community college. But joining the Walter and Nancy Kidd Creative Writing Workshops at UO this school year has been one of the most transformative steps in my writing practice. I've always felt poetry is an effective form for communicating complex ideas and emotions that once felt intangible. But studying craft in a detailed curriculum and engaging in workshops with my peers has given me the tools and the space to work on making my writing most effective. Where as before I was composing completely based on instinct and the way words sounded together, I can now explain those instincts in terms of craft, and make calculated artistic decisions that aid a poems purpose. The Kidd Program has given me the confidence to take what was once a solitary, personal practice, and to wish to do something more with it. I will be presenting poems that use

various forms, and other craft elements to tell stories differently. I am so grateful to have gotten to work alongside my cohort in the Kidd Program this year, and for the opportunity to share my work today.

Peterson, David

University of Oregon

Mentor(s): David Renteria Escobedo

Creative Work

Confession

My main purpose in writing my short story, Confession, was to delve into the literary techniques of the Gothic genre, which dates back to the 18th century, and explore how they could be translated into a more modern and contemporary piece. To achieve a Gothic tone, story structure, and themes, I looked at an array of famous Gothic works such as The Castle of Otranto, Dracula, Frankenstein, A Sicilian Romance, Wuthering Heights, etc, to figure out which kind of literary devices, diction, and character traits are most prominent in traditional Gothic texts. Religion is a standout theme among these pieces, as they were written during a time when Christianity thrived among an English-speaking population, but today, there is growing skepticism regarding religious figures and the morals that they sometimes promote. This shift from the naive faith seen in classic Gothic stories to growing doubt visible in present society was the catalyst for Confession, stemming from my own struggle to understand Christianity in the environment and culture I was raised in.

Peterson, Zane

University of Oregon

Poster #076

Detainments, Regulations, and Restrictions in Venezuela

See Wagner, Addi

Pham, Eric

University of Oregon

Mentor(s): Alanna Melchor, J. Josh Snodgrass

Poster #338

Associations between Hemoglobin Levels and Hand Grip Strength in the Indigenous Shuar of Ecuador.

Hand grip strength is a vital marker of health as it is a predictor of overall muscle mass. There is a known relationship between iron levels and HGS. Anemia, a common blood disorder often caused by a lack of iron preventing the body from producing enough hemoglobin (Hb), is a major health issue in low- and middle-

income countries. Although there is a relatively low prevalence of anemia in the Indigenous Shuar of Ecuador, they are undergoing market integration (MI), which is the process of transition from subsistence-based lifestyles to dependence on market goods, where changes in diet and lifestyle can impact physiology and health. Here, we investigated the relationship of Hb levels and HGS using cross-sectional data collected by the Shuar Health and Life History Project from 619 Shuar participants to further understand how they relate to age, sex, and MI. MI was determined using results from interviews on about market items in households, Hb was measured via finger prick and point-of-care testing, and HGS was measured using a dynamometer. Hb had a significant positive relationship with HGS for males ($p < 0.05$) but not for females. For both males ($p < 0.001$) and females ($p < 0.001$), HGS was lower among older individuals. MI had no significant relationship with HGS. For females, MI was related to higher Hb levels ($p < 0.001$). This study shows that HGS has a stronger relationship with age than MI and Hb levels. This suggests other drivers behind age-related decreasing HGS.

Phillips, Makenna

University of Oregon

Mentor(s): Jose Melendez

Poster #015

Walking to Safety: Tsunami Evacuation Limits in Cannon & Rockaway Beach Oregon

Oregon's Pacific coastline lies adjacent to the Cascadia Subduction Zone (CSZ), a megathrust fault capable of producing magnitude 9.0 earthquakes and basin-wide tsunamis. Tsunami waves may reach coastal communities within 15-20 minutes of initial shaking, leaving a narrow evacuation window that disproportionately threatens socially vulnerable populations with limited mobility.

This project uses GIS-based isochrone mapping and Digital Elevation Models (DEMs) to visualize pedestrian tsunami evacuation under severe time pressure in Rockaway Beach and Cannon Beach, Oregon. Isochrone maps depict time-based access to safety, while DEMs illustrate elevation gain, slope, and terrain complexity that evacuees must navigate to reach high ground.

Grounded in sociological research on disaster vulnerability, the analysis examines how time constraints, terrain, and the built environment shape unequal access to tsunami-safe locations. By comparing two coastal communities with differing topographic and infrastructural conditions, this project highlights how spatial context produces uneven evacuation outcomes. The resulting maps support clearer public understanding of evacuation feasibility and more inclusive preparedness planning for Oregon's coastal communities.

Pieter, Ava

University of Oregon

Mentor(s): Bonnie Schrag

Poster #030

Co-Presenter(s): Maliki King

Self-Compassion and Body Image Concerns in Sexual and Gender Diverse Adults

Body image concerns (BIC) are negative beliefs one holds about their body's weight, shape, and appearance, and are associated with negative psychological and medical complications. Although BIC is observed among all adults with all social identities, sexual and gender diverse (SGD) adults may be at an increased risk due to repeated exposure to experiences of discrimination. Research indicates that self-compassion, or how one responds to themselves with kindness and understanding during times of difficulty, is related to BIC, and may serve as a protective emotion regulation strategy for SGD adults. Our study will evaluate how self-compassion is associated with BIC among SGD adults and within specific SGD subgroups using secondary data analysis from a larger online survey study among 915 SGD adults (Mage=36.7±18.9 years; 38.4% cisgender women; 32.7% cisgender men; 29.0% gender diverse; 44.8% bisexual; 27.9% gay; 20.5% lesbian; 6.8% heterosexual; 30.8% non-Hispanic White; 32.6% Latino/a/x; 21.9% Black; 14.8% Multiracial). Linear regression will be used to test hypotheses among the SGD group and subgroups to explore potential variations in the hypothesized associations. Findings will inform the relationship between self-compassion and BIC among SGD adults and highlight the importance of exploring the unique experiences of SGD groups. This research will inform body image theory and intervention among SGD adults.

Ping, Kaitlynn

University of Oregon

Mentor(s): Damien Callahan, Julissa Ortiz-Delatorre

Poster #252

Sex Differences in Extracellular Matrix Abundance May Influence Tissue Modulus

Laminin (LAM) and collagen (COL) are key components of the skeletal muscle basement membrane and extracellular matrix (ECM), respectively contributing to passive mechanical properties. Aging and resistance training (RT) increase ECM abundance and, along with related changes in muscle fiber size, may alter its relative abundance and enhance muscle stiffness. However, it remains unclear whether ECM distribution influences muscle tissue properties across these groups. Therefore, the objective of this study is to compare LAM and COL abundance in young non-trained (NT), young resistance trained (RT), and older (O) healthy adults, and explore associations with tissue passive modulus.

Muscle biopsies of the vastus lateralis were assessed via immunohistochemistry (IHC) and passive mechanics in fiber bundles. LAM and COL abundance were quantified as proportions of total sample cross-sectional area. Passive mechanics were measured in bundles of ~5-10 fibers using a force transducer and length motor. Modulus was defined by the stress and strain relationship in these assays.

COL and LAM abundance were significantly different between males and females ($p=0.002$ and $p=0.002$, respectively). COL abundance in muscle bundles tended to associate with bundle modulus across all groups ($r^2=0.359$; $p=0.087$). COL may enhance muscle tissue modulus by contributing to increased ECM abundance, though from these data, it is less clear whether this mediates differences in passive modulus between groups

Piranio, Isabella

University of Oregon

Mentor(s): Nicole Martinez, Lauren Ponisio

Poster #111

Understanding the Effects of Wildfire on Plant-Pollinator Communities in the HJ Andrews Forests

Climate change has increased wildfire frequency and severity, exemplified by the 2023 Lookout Fire in the H.J. Andrews Experimental Forest. While severe fires harm ecosystems, moderate fires can promote native vegetation turnover. Post-fire plant recovery is well-studied, but less is known about pollinator responses, especially non-bee pollinators like Syrphidae (flower flies). This study examines post-fire changes in abundance and diversity for native plants and Syrphidae, hypothesizing that both will increase as fire removes non-native vegetation and may create resources for pollinators.

Plant-pollinator data from 2022–2025 were divided into pre- and post-fire groups. Plant species were classified as native or non-native, and diversity and abundance metrics were calculated for both. We determined if observed post-fire differences were statistically significant by comparing them to a shuffled null distribution using a Permutation AB test. We found an increase in native vegetation and Syrphidae abundance post-fire, but not in diversity, suggesting distinct underlying drivers.

These findings suggest that fire promotes native vegetation recovery and increases Syrphidae abundance, though the direct relationship between these two outcomes is not yet fully understood, highlighting the need for further research into how disturbance-driven habitat changes affect non-bee pollinator communities and how this knowledge can inform land management practices such as prescribed burns.

Pirrung, Ryan

University of Oregon

Mentor(s): Susana Marquez Rosales, Raghuveer Parthasarathy

Poster #177

Consequences of sub-inhibitory concentrations of antibiotics on model gut microbiomes in zebrafish

The gut microbiome is a diverse ecosystem that influences its host's overall health. Though it is known that even subinhibitory concentrations of antibiotics can perturb the gut microbiome, the mechanisms underlying these effects and the relationship between the responses of single species and the consequences for multi-species communities remain unclear. Much of our knowledge to date comes from in vitro studies, which may not mirror the complex environment within a living organism. To address this, we have performed a series of experiments using larval zebrafish as a model organism, which allows germ-free derivation and inoculation with well-defined sets of bacterial species as well as live imaging. We consider model gut bacterial communities composed of one to three zebrafish-native bacterial species, which are further exposed to the common antibiotic ciprofloxacin for 24 h. Dissection and plating provide measures of bacterial abundance, and live imaging using light sheet fluorescence microscopy reveals bacterial morphology and spatial organization. We find differences between in vitro and in vivo antibiotic responses, in some cases with inversion of competitive advantages among specific species pairs. Imaging shows correlations with changes in bacterial morphology and behavior, such as reduced motility, that influence the ability to persist in the gut. Our results suggest that in vitro characterizations are not predictive of the responses of gut microbiota to antibiotics.

Podrabsky, Dylan

University of Oregon

Mentor(s): Jo Weaver

Oral

The Production of Visibility: Homelessness, Self-presentation, and Displacement

People experiencing homelessness (PEH), especially unsheltered homelessness, constantly face the violence of displacement which reproduces the precarity of a population becoming increasingly subject to state violence. Drawing upon the lived experience of PEH in a US city with a high rate of unsheltered homelessness, this presentation focuses on the "production of visibility": the ways by which PEH are denied access to the space, resources, and time needed to present themselves in a normative manner. This lack of agency in self-presentation exposes PEH to stigmatization, displacement, and legal violence, thereby making it an active mode by which homelessness is perpetuated.

Polis, Sam

University of Oregon

Mentor(s): Andie Pruett

Creative Work

After the Image, Before the Line

These poems are an observation on art and language as a way of locating beauty. While the poems often begin in observation, they move toward moments where perception becomes embodied, where looking gives way to a more immediate, physical experience of presence.

My creative process combines close attention to image with a more structured, analytical approach to writing. I build my poems through controlled lineation, rhythm, and brevity, and language is often my subject in addition to my medium. I use it as a tool to examine how meaning is constructed while also acknowledging its limits.

These poems offer broader questions about perception and self-expression. What does it mean to translate a visual or sensory experience into language? Where does language fall short, and where does it create new possibilities for presence? By uniting pleasure with intellectual satisfaction and instruction, the highest function of my poems is persuasive delight. I invite readers to consider not only what is seen, but how it is felt, and how both are transformed through the act of writing.

Poteet, Noah

University of Oregon

Poster #123

Monitoring Pollinator Habitat Enhancement Seeding Three Years Post-Salvage Harvest

See Ashton, Elisa

Prado, Bryanna

University of Oregon

Poster #289

The Role of Emotional Appraisal in Differentiating Similar Memories.

See Klawitter, Isabella

Prakash, Nickhil

University of Oregon

Mentor(s): Melanie Spero

Poster #197

Therapeutic potential of chlorate for killing anaerobic bacteria by hijacking the Nar enzyme

Oxygen (O₂) concentrations are often low at infection sites. This is problematic because many antibiotics are ineffective at killing bacteria in low O₂ environments, leading to persistent infections. We have identified chlorate as a novel antimicrobial that kills bacteria under low O₂ conditions. Chlorate is a prodrug that is activated by the bacterial enzyme, Nar. Nar is an anaerobically-induced enzyme that converts nontoxic chlorate to form chlorite, which is toxic to bacteria. I am investigating chlorate's therapeutic potential by testing its toxicity against various pathogens and by determining how chlorate resistance can arise. To test chlorate efficacy against different pathogens, I conducted minimum bactericidal concentration assays, incubating cultures with a range of chlorate concentrations and quantifying pathogen survival. All Nar-containing pathogens were killed by chlorate, including *Pseudomonas aeruginosa*, *Staphylococcus aureus*, *Achromabacter* spp., and *Burkholderia* spp. Next, I aimed to isolate chlorate-resistant mutants by plating *P. aeruginosa* on media containing chlorate. Most isolates that survived treatment were determined not to be chlorate-resistant, but rather survived by entering a nongrowing state. This approach identified one chlorate-resistant isolate, which we predict has a mutation in Nar. Altogether, my findings highlight chlorate's therapeutic potential by demonstrating its limited resistance mechanisms and its ability to kill multiple pathogens.

Price, Maren

University of Oregon

Mentor(s): Phil Washbourne

Poster #179

The Effects of Dioxin and Temperature on Zebrafish Development

This poster examines how dioxin exposure and environmental temperature interact to influence reproductive development and behavior in transgenic *gal4* zebrafish. By leveraging this model system, we assess how chemical pollutants and climate-related stressors jointly disrupt developmental trajectories. Our findings highlight changes in reproductive morphology and behavior that may have downstream consequences for population dynamics, raising important concerns about ecosystem stability given increasing climate change.

Price, Parker

University of Oregon

Mentor(s): Mahala Ruddell

Poster #034

The Thomas Thompson Papers: Correspondence Networks and other Artifacts of the Creative Process

Thomas Thompson was a Portland author and a major contributor in the golden age of the Western genre. He sold short stories to dozens of magazines and wrote several successful novels. In the late fifties, he relocated to Los Angeles to write episodes for several of Hollywood's most popular shows of the era, such as Gunsmoke, Wagon Train, and Bonanza.

Near the end of his career, Thompson gave most of his documents to the Knight Library's Special Collections. Ever since, the boxes have been sitting untouched on a shelf, without finding aids and in unstable conditions. As a Humanities Undergraduate Archival Fellow, I have been given the task of processing these papers. This includes swapping the existing boxes and folders with acid-free replacements, but also the creation of physical and digital finding aids to allow scholars to locate whatever information they might be looking for.

In the Thompson papers, I have been sorting through several decades' worth of correspondence with publishers, agents, and other authors, depicting a vibrant community of creatives sprawling throughout the country. There are also several drafts of each of his novels and many work copies of various short stories, teleplays, and screenplays. I hope this work will prove useful to scholars who might study the social networks underlying the Westerns era of American media, or to those who might wish to examine the drafting process of teleplays in Hollywood during the 50s and 60s.

Prithvi, Pragya

University of Oregon

Poster #005

I Like Bok Choy and I Cannot Lie, Those Other Vents Can't Deny

See Sipos, Ava

Pruitt, Hayden

University of Oregon

Mentor(s): Melissa Lucash

Poster #126

Methods of Spread Prevention and Post-Invasion Restoration for the Emerald Ash Borer in Oregon

The emerald ash borer (EAB, *Agrilus planipennis*) has been shown to have devastating impacts on ash (*Fraxinus* spp.) across the eastern United States since its arrival in 2002. Having now been spotted on the west coast near Forest Grove, Oregon, the implications for Oregon ash (*Fraxinus latifolia*), a keystone species in the Willamette Valley, are severe. This research synthesizes knowledge gained since the beginning stages of EAB infestation in the midwestern U.S. to better understand how Oregon ash will be affected and what methods can be used in Oregon to reduce spread and mitigate harm to riparian ecosystems.

Raggett, Mae

University of Oregon

Mentor(s): Emily Simnitt

Works in Progress: Lightning Rounds

The Gamblers' Dilemma: An Exploration into the University of Oregon

This research paper examines the discourse community of Ace of Ducks, a poker club that communicates through once weekly meetings. This research explores how members of this community use shared goals and intercommunication to support and guide each other and investigates how a self-focused game like poker builds community here at the University of Oregon. There were various research methods including but not limited to, participant observation, interviews and analysis of secondary research. The findings show that the members of this community rely on having a shared goal to improve each other's skill and poker game. Additionally, Ace of Ducks uses a once weekly poker lesson to improve collaboration and skill among its members. These findings demonstrate the significance of how discourse practices help shape the identity and importance of the Ace of Ducks community to its members.

Rajpara, Saisha

University of Oregon

Mentor(s): Margaret Trout

Poster #314

Co-Presenter(s): Sarai Lopez, Ameya Shenoy, Anika Vyas

Racial Disparities in Mental Health Treatment

The University of Oregon (UO) participates in the Healthy Minds Study (HMS), administered by the University of Michigan. UO has participated in the 2017, 2019, 2021, 2023, and 2005 HMS, a survey-based assessment of mental wellness and service use among college students. In 2025, 928 students participated in the survey, and an analysis of the HMS data was conducted. UHS partnered with the Health Equity Action Group of the Student Health Advisory Committee (SHAC) to conduct additional analyses regarding students who face racial disparities in seeking mental health treatment.

A qualitative review of the Health Minds Study (HMS) suggests the need to increase mental health resources for Native American, Asian, Black, Latine, and Pacific Islanders (NABLP) students who have experienced a traumatizing event or require the need to seek help but face barriers based on race. These students often face institutional, systematic, and cultural barriers confiding in both healthcare professionals and their peers. NABLP students are marginalized based on mental health, racial disparities and inaccessibility, suggesting emotional distress.

The Health Equity Action Group of the Student Health Advisory Committee recommends UO implement changes to increase access to mental health and well-being resources to support the success of UO's NABLP student population by engaging in mental health conversations within class, advocating for safe spaces and providing accessible and equitable resources.

Raloff, Shannon

University of Oregon

Mentor(s): Leslie Leve, David DeGarmo

Poster #348

Social support and ACEs as predictors of internalizing symptoms across multiracial households. Associations between racial minority stress and mental health have been established for monoracial populations but are lacking for multiracial communities. Guided by the stress-buffering hypothesis, we tested whether: (1) there were associations between racial minority status (within multiracial households), childhood ACEs, and adolescent internalizing symptoms; and (2) whether positive social support moderated these associations.

We used a US nationwide sample of children adopted at birth (N=561) followed longitudinally, of which 44.9% met criteria for racial minority status within the household (defined as child's racial identity matching with $\leq 50\%$ of their household). Data for this report included the child's racial minority status within the household, childhood ACEs, biological sex, internalizing symptoms (age: 4.5, 15), and social support (age 15). Consistent with hypotheses, structural equation models identified statistically significant direct effects of childhood ACEs ($\beta=1.652$) and adolescent social support ($\beta=-0.788$) on internalizing symptoms (age 15) while controlling for earlier internalizing symptoms and child sex. Racial minority status was not a significant predictor of internalizing symptoms. Results did not support the stress-buffering hypothesis. ACEs were a significant predictor of age 15 internalizing symptoms only for youth who were White or had $>50\%$ of the household sharing their same racial identity. Implications and limitations will be discussed.

Ramasamy, Tarini

University of Oregon

Mentor(s): Dayna Chatman

Oral

Cultural Practice Between Tamil-Indian and Tamil-American Musicians: A Thematic Analysis

At its core, the US music industry is dictated by the relationships between three groups of entities: artists/music creators themselves, the promoters, and the consumers. The traditional model for recorded music relied on a streamlined timeline of recruitment, production, radio placement, and exportation of physical products. However, the introduction of social media platforms and streaming services proliferated a sharp decline in physical sales - ultimately dictating new streams of revenue while simultaneously offering artists self-autonomy regarding promotion. As a result, traditional labels have shifted their focus to be "fully faceted" companies, situated with an understanding of these changing industry dynamics. While technological advancements in the music industry have distinctly shifted revenue streams, these recent changes have also "democratized" the music industry to enable artists from previously unrecognized identities to establish themselves within the larger industry. This study follows a mixed-method comparative case study model, taking a multisite digital ethnographic approach across three media platforms utilized in music promotion to explore the relationship between these platforms, representation of Tamil-American and Tamil-Indian identity, and music marketing.

Ramcharan, L'Nae

University of Oregon

Mentor(s): Matthias Vogel

Poster #086

Co-Presenter(s): Metta Truong

Ethics of Archaeological Excavation in Egypt

Archaeological excavation in Egypt plays a crucial role in understanding ancient civilization and preserving cultural heritage. Egypt has long been a major center for archaeological research due to its well-preserved monuments, tombs, and artifacts, which attract scholars and tourists from around the world. The purpose of this study is to examine the social, archaeological, and economic effects of excavation in Egypt. This research focuses on how excavation contributes to historical knowledge, influences modern society, and impacts the national economy. Using secondary research methods, this study analyzes scholarly articles, legal sources, and ethical discussions related to excavation practices in Egypt.

The results indicate that excavation enhances understanding of ancient Egyptian life and supports tourism and employment, but it also raises ethical concerns regarding the disturbance of tombs and human remains and encourages illegal digging and artifact trafficking. In conclusion, while excavation in Egypt provides significant archaeological and economic benefits, it also creates social and ethical challenges, highlighting the need for responsible research practices and effective regulation.

Ramirez, Bonabelle

University of Oregon

Poster #290

The Relationship of Emotional Language Expression and Gray Matter Morphometry in Healthy Adults

See Vincent, Sarasvati

Ramirez, Mariano

University of Oregon

Mentor(s): James Brau

Oral

Optimization of Higgs Boson Measurements at a Future Particle Collider

The Large Hadron Collider was designed to find the Higgs boson, which was discovered in 2012; following that discovery, the next step was to learn as much as possible about the particle, which is difficult for a “search”

machine. New designs for particle colliders, however, work differently; a so called “Higgs factory” can make more accurate measurements of the Higgs boson.

One proposed Higgs factory design is the International Linear Collider (ILC), which collides electrons and positrons to produce Higgs bosons, improving upon the LHC’s small fraction of signal to total produced events by many orders of magnitude. By doing Monte Carlo simulations which focuses on Higgstrahlung events (where a Higgs boson is produced alongside a Z boson), as well as using machine learning, we study precise measurements of the Higgs boson and look for deviations from the current theory, the Standard Model.

Ramirez, Mariano

University of Oregon

Mentor(s): James Brau

Poster #142

Optimization of Higgs Boson Measurements at a Future Particle Collider

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Ramirez Andrade, Lesli

University of Oregon

Mentor(s): Elizabeth Budd

Poster #011

Virtual

A Narrative Review of Food Insecurity Disparities Among Latinx Communities in the United States

Food insecurity is limited or uncertain access to sufficient and nutritious food and remains a persistent public health concern in the United States. Over 10% of U.S. households have experienced food insecurity, linked to negative mental, physical, and developmental outcomes, including chronic disease, psychological distress, and adverse effects for children. Food insecurity does not affect all populations equally. This narrative literature review examines its impact on rural Latinx populations in the U.S. Findings indicate that economic volatility, transportation challenges, geographic isolation, and limited grocery access result in higher rates for rural households. Latinx households also face disproportionately higher rates due to poverty, low-wage or unstable jobs, barriers to public assistance, immigration-related restrictions, and language difficulties. This review highlights the health effects of food insecurity, structural and economic inequities, obstacles unique to Latinx communities such as limited culturally and linguistically appropriate support, and rural challenges including food deserts and lack of essential amenities. Combining these aspects reveals research gaps and underscores the need for intersectional, context-specific approaches to reduce food insecurity and improve health outcomes.

Ramirez-Peña, Caroline

University of Oregon

Mentor(s): Audrey Lucero

Poster #073

When the State Sacrifices the Public: Captagon Economies and Mexican Cartel Power

Since the War on Drugs campaign was launched in the early 1980s, the illicit drug trade has been a recurring topic of concern within the national security community. Throughout the following decades, much has been discovered about the systems and functions of cartels, including their economic structures, their influence over governmental corruption, and their broader organizational dynamics. Over time, however, the global environment surrounding the illicit drug trade has also evolved, shaped especially by expanding globalization and financial integration. As a result, the illicit drug trade has not only grown in scale but has gradually reshaped how power and authority function within the state itself. This raises a central question: how has the modern evolution of organized narcotics systems affected the governance of the state? More importantly,

what determines whether a state strategically tolerates these criminal monopolies or lacks the capacity to suppress them? This project explores Middle Eastern captagon economics as well as Mexican narco culture and the relationship they hold in association with state governance. Through comparative analysis, this study examines how transnational criminal organizations exploit globalization, financial networks, and political corruption.

Reed, Aaliyah

Lane Community College

Building a Behavioral Health Workforce Pipeline: Shared Growth Across Schools and Colleges

See Lachenmeier, Ruby

Reichardt, Elia

University of Oregon

Mentor(s): Carol Paty

Poster #150

Designing a Theoretical Model for Determining Ionospheric Current Densities

The Earth's ionospheric dynamo region (90-150 km in altitude) is where the collisional physics of the atmosphere and the plasma physics of the magnetosphere become intertwined with one another. The study of this region is notably difficult, as atmospheric density is too low for balloon or aircraft-based observations, but far too high for in-situ satellite observation. The difficulty in conducting research in this region has led to the moniker "ignorosphere", in reference to its lack of understanding. Despite this attitude, understanding this region is of great scientific importance, and provides opportunities for even citizen scientists to make novel discoveries and observations. We present a theoretical model to determine one of the most important unknown aspects of this region: a vertical profile of ionospheric current density.

Reszka, Forest

University of Oregon

Mentor(s): Raoul Liévanos

Oral

Heterosexuality and Citizenship: How Heterosexuality is Used as Social Control

This research investigates the ways in which states use heterosexual social organization as a form of social control and surveillance. While heterosexuality can be most simply defined as attraction to the opposite sex, socially we can observe how heterosexuality works as the hegemonic, state-sanctioned sexuality. With

this context, I procured archival material from between 1900 and 1950 in India to analyze the different ways women negotiate with, and operate under heterosexual society. I looked at legislative material as well as press records in order to paint a clear picture of the rationale on relationships between men and women. My findings show that heterosexual performance is most directly tied to access to citizenship. This means access to property, pensions, welfare, employment, etc. as well as protection from police brutality, social ostracization, and other forms of reactionary violence from the state. Additionally, because of the reproductive exploitation in heterosexual coupling, participation in heterosexuality is used to reinforce oppressive structures like caste, religious segregation, and colonialism.

Ribeiro, River

University of Oregon

Mentor(s): Jane Cramer

Oral

The Fallout of Progress: Nuclear Weapons Development, Public Health, and the Opposition Movement

This project examines the renewed expansion of nuclear weapons production in the United States, focusing on its public health impacts and the resistance from affected communities and advocacy/watchdog organizations. It centers on four major facilities: Los Alamos National Laboratory (NM), Savannah River Site (SC), Lawrence Livermore National Laboratory (CA), and the Kansas City National Security Campus (MO).

Using a combination of literature review, historical analysis of anti-nuclear movements, and evaluation of epidemiological studies, this research investigates the health risks associated with nuclear weapons production. Interviews with members of six activist organizations, Savannah River Site Watch, Rocky Mountain Peace and Justice Center, Hanford Challenge, NukeWatch NM, Physicians for Social Responsibility, and Tri-Valley CAREs, provide insight into contemporary resistance efforts.

This study finds that current nuclear weapons production continues to pose significant environmental and public health risks, while grassroots organizations play a critical role in raising awareness and advocating for affected communities. By highlighting these impacts and responses, this project emphasizes the importance of public health perspectives in debates over nuclear policy and modernization.

Rice, Calvin

University of Oregon

Mentor(s): Robert Kyr, David Crumb

Creative Work

Mindcrank–Dancebreak: A Contemporary String Quartet by Calvin Rice

“Mindcrank–Dancebreak,” for string quartet, was written in response to the current landscape of contemporary music. Many of the most celebrated and popular works feature a style of music meant to explore the boundaries of what contemporary music can offer, without an emphasis on a musical narrative or emotional depth. Furthermore, I was composing for the Mivos Quartet, an ensemble that is renowned for its virtuoso performances in this style. I found myself at a crossroads, caught between outside pressures to compose in a strictly cerebral style and my desire to express emotion through musical storytelling. My solution was to create a piece that combines both of those aspects. My presentation will feature a recording of my piece, which I will contextualize within an overview of contemporary string quartet music. In particular, I will give a brief explanation of the narrative form of my string quartet.

Rice, Lily

University of Oregon

Mentor(s): Bill Cresko

Poster #182

Investigating Developmental Coordination of Cranial Neuromasts and Bone in Threespine Stickleback

A central goal of evolutionary developmental biology is to understand how interactions between developing tissues generate diversity of form and function. In vertebrates, these interactions are exemplified by the integration of sensory systems with the skeleton, such as how eyes are housed within sockets. In fishes, the lateral line system provides a powerful model for this integration. The lateral line consists of mechanosensory organs called neuromasts that develop prior to bone formation and typically become enclosed within bony canals of the skull. This system enables detection of water movement, aiding navigation, prey detection, predator avoidance, and schooling behavior. The lateral line is thought to influence nearby bone remodeling through interactions with osteoblasts and osteoclasts. Threespine stickleback are unusual in that their cranial neuromasts are not enclosed in canals but instead occupy superficial bony pits and grooves, and they possess an increased number of cranial neuromasts. These traits make stickleback a valuable model for studying sensory-skeletal integration. We sampled larvae and juveniles across a developmental time series from hatching through neuromast proliferation and cranial ossification. Using fluorescent dyes to label neuromasts and bone in live animals, we documented their interactions through

development, providing a foundation for future studies of the genetic and developmental mechanisms linking sensory systems to skeletal morphology.

Rico Carvajal, Natalie

University of Oregon

Mentor(s): Kristen Lee, Chris Doe

Oral

The Role of Pdm2 in regulating Drosophila Neuronal Development and Remodeling

During puberty, species undergo brain remodeling, and mistakes during this can lead to disorders like schizophrenia. By using *Drosophila* as a model, we can study these mechanisms. Flies share over 60% of human genes, including transcription factors (TFs) that regulate gene expression. How do TFs ensure that brain remodeling during puberty doesn't result in developmental issues or disease? To answer this question, we use the well-characterized *Drosophila* Mooncrawling Descending Neuron (MDN) since its TFs, morphology, and behavioral output (backward locomotion) are known. We found that MDN expresses the TF Pdm2 and undergoes significant morphological changes during larval life. We hypothesize that Pdm2 expression during the late larval stages is essential for the axonal and dendritic expansion of MDNs, and that its absence leads to reduced neural morphology and altered backward locomotion. Therefore, I knocked down Pdm2 and assayed MDN morphology and behavioral output at different larval timepoints. Knocking down Pdm2 results in less complex MDN morphology, characterized by shorter neurites, and this correlates to decreased backwards motion. To further validate these findings, I will be using the genetic tool TdEOS, a photoconvertible protein, to view morphological changes in real time. *Drosophila* neural morphology and behavioral output offer valuable insights into neurological development across species which can be used to design targeted therapies for neurological disorders.

Rimal, Neha

Non-UO Student

Building a Behavioral Health Workforce Pipeline: Shared Growth Across Schools and Colleges

See Lachenmeier, Ruby

Rinehart, Aiden

University of Oregon

Mentor(s): Alex Denton

Poster #224

Amino Acid Supplementation and Blood Flow Restriction on Recovery Post Eccentric Muscle Damage

Muscle strain injuries are common in sports and occur when a muscle is forced to lengthen under tension, resulting in eccentric muscle damage (EMD), limiting athlete participation and increasing risk of reinjury. Shortening the recovery timeline may be beneficial for athletes returning to sport. Essential amino acid (EAA) supplementation and blood flow restriction (BFR) have been used independently to enhance muscle recovery. The purpose of this study is to investigate the effect of EAA/BFR preconditioning on the recovery of quadricep strength, and plyometric biomechanics following eccentric muscle damage. It was hypothesized that the treatment group would demonstrate greater mechanical recovery at the knee while enhancing athletic performance.

Twelve untrained participants were assigned to a 14-day continuous EAA/BFR treatment or control group and underwent electrically stimulated vastus lateralis eccentric contractions. Biomechanical assessments during unilateral tasks were evaluated using motion capture and standard inverse dynamics, while muscle strength was evaluated using isometric dynamometry.

Preliminary findings suggest the treatment group showed an 11% increase in quadriceps isometric strength following continuous 14-day EAA/BFR preconditioning. If effective, EAA/BFR preconditioning may promote muscle adaptations and biomechanical improvements in quadriceps resilience prior to injury, potentially reducing severity and accelerating recovery when a strain occurs.

Robinson, Ella

University of Oregon

Mentor(s): Judith Raiskin, Linda Long

Poster #031

Tee A. Corinne: How Lesbian Eroticism Paves the Way Towards Parthenogenetic Rebirth

This research presentation investigates Tee A. Corinne's artistic career as a representation of autogenesis and reparenting, harnessing erotic art and therapeutic sexuality to save her own "inner girl-child" from the "blinding fear" of maternal alcoholism and child molestation. Corinne documents her journey towards parthenogenesis—the reproduction of a new identity from a fragmented past.

This project dives deeper into how Corinne utilized erotic art to survive and, later on, heal from a childhood defined by “baudelairean” violence, maternal alcoholism, and child molestation. Central to this study is the “matrilineal wound,” rooted in a mind-boggling mother-child paradox where Corinne’s biological mother, Marjorie, was simultaneously a source of “bounteous” comfort and “blinding” fear.

This research explores Corinne’s “Ecological Alchemy,” a process of appropriating maternal motifs that represented her mother—flowers, petals, and landscapes—to bridge the gap of the mother-child paradox.

Corinne’s “self-rescue” started in childhood isolation, where art served as her primary communication tool for survival. As an adult, she formalized this process through “archetypal reparenting,” using “dual-voice dialogues” to provide her “inner girl-child” the nurturance that her family could not give her.

By analyzing Corinne’s use of solarization and ecological alchemy, I demonstrate how she moved genitals from the “hidden and forbidden” into a visible, communal “daylight.”

Robles Rodriguez, Aleida

University of Oregon

Mentor(s): Matthias Vogel

Poster #072

Comparing Language Disorders Between Children in Mexico and Latinx Children in the United States

Language disorders impact communities around the world, especially in the communication of children. This particular research is part of a larger study that conducted a literary review of three scholarly sources centered on language disorders in Latinx children in the United States and children in Mexico. The focus of this project was to determine what similarities and differences these two underrepresented communities share. It will also discuss inequities shared among both communities, while also investigating what connects these two unique communities together. The findings consist of lower awareness of Developmental Language Disorder in Mexico, while higher levels of awareness in the United States, with the barrier of culturally unresponsive services. This is an important finding because it raises questions about how these communities are impacted by language disorders in different ways based on their country. This project highlights the need for resources in both communities, which calls for better culturally responsive services and higher awareness.

Rodriguez Lopez, Sarai

University of Oregon

Poster #314

Racial Disparities in Mental Health Treatment

See Rajpara, Saisha

Rogers, Elsa

University of Oregon

Mentor(s): Colin Williamson

Oral

Analyzing the Female Android in Fritz Lang's Metropolis (1927)

This project analyzes the cultural and historical significance of the figure of the female android in Fritz Lang's German silent film *Metropolis* (1927). The trope of the female android is prominent in literature and film history, often used to allegorize a society's fears about evolving technologies, how technology impacts our understanding of what it means to be human, and the politics of gender and sexuality. Female androids are everywhere, from Rachael in Ridley Scott's *Blade Runner* (1982) to Olimpia in E.T.A. Hoffmann's 1816 short story *Der Sandmann*. In *Metropolis*, the female android is used to show audiences that, rather than representing progress, modern technology has evolved to have new, more subtle powers over humanity; machines of old could devour the flesh of men, but new technology can consume their minds. The shift in the way that the female android is portrayed reflects Weimar-era Germany's sharp disillusion with technology and humanity's ability to wield it responsibly. Through my analysis of the film in relation to the history of technology, society and national identity in postwar Germany, I show that Lang uses the female android to argue that humanity cannot coexist with the machines it has created. I also argue that thinking about *Metropolis* in this way helps us to better understand its relevance today.

Rogers, Elsa

University of Oregon

Mentor(s): Colin Williamson

Poster #036

Of All Places: Northeastern Oregon on the Silent Screen

This project explores the overlooked history and impacts of silent film production in northeastern Oregon, focusing on films produced in Umatilla and Union counties between 1910 and 1929. Studios and the filmmakers they employed viewed the region as a desirable location shooting destination due to its relative proximity to Los Angeles, its ability to "stand in" for less accessible locations, and, in many cases, its image

as a place where filmmakers could capture the last vestige of the “real” wild west. The reputation of the then-new Pendleton Round-Up played a critical role in the perpetuation of this image of authenticity. Using original research on primary and secondary sources in a variety of archival collections, including the Margaret Herrick Library in Los Angeles, I examine these films in a contemporary context, researching their individual histories, as well as within a larger context of industry history and the Hollywood studio system.

Eastern Oregon is often forgotten when we think about the history of film production in Oregon because attention is typically paid to more well-known films, such as *The Goonies* (1985), filmed in Astoria, Oregon, or National Lampoon’s *Animal House* (1978), which was filmed right here in Eugene. I argue that films such as *City Girl* (1930) and *The Flaming Frontier* (1926) deserve to be a part of conversations about Oregon’s cinematic legacy because of how deeply the people and landscapes of northeastern Oregon are embedded in them.

Rolfe, Eevi

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

A Look Into Memory and the Mind

My work in the Kidd Creative Writing Workshops has shaped my poetry into a more personal and emotionally focused form of expression. I am interested in exploring how memory and formative emotional experiences gradually influence one’s sense of self. My writing often draws on reflection and internal narrative, using vivid imagery to capture moments that feel specific as well as relatable.

Over time I have learned to rely less on strict structure and more on emotional clarity, allowing voice and intention to guide each poem. I am especially drawn to contemporary confessional styles that emphasize vulnerability while still leaving space for interpretation. Through my work I strive to make internal experiences accessible and to transform personal memory into something that can resonate with readers. My experience in the Kidd program has strengthened both my craft and my understanding of how poetry can communicate deep-rooted emotions.

Rose, Alexa

University of Oregon

Mentor(s): Steven Beda

Poster #056

Fighting for the Soul of a Nation: Pierce v. Society of Sisters, Education, and American Democracy

This paper examines early twentieth-century social discourse around democratic principles and American public education in the context of the 1925 Supreme Court case, *Pierce v. Society of Sisters*. A legal battle resulting from opposition towards the passage of the Oregon Compulsory Education Act in 1922, the case brought debate around religion, personal liberties versus national security interests, and the role of the school into the forefront of the American public consciousness. The debates characterized popular conceptualizations of democracy in a post-war era, tensions around religious instructions in schools, and educational reform efforts of the 1920s Klan in the Pacific Northwest. Incorporating social historical analyses, this paper argues the role of *Pierce v. Society of Sisters* in establishing the view of democratic values and public schools as intertwined systems within the social consciousness of the United States that continues to be repurposed in the modern day.

Rose, Lucy

University of Oregon

Mentor(s): Lia Strait

Poster #212

How fracture treatment choices influence healing pathways and bone regeneration

Bone healing is a natural biological process that occurs through two main pathways: intramembranous and endochondral ossification. While intramembranous ossification bypasses the cartilaginous stage of healing, speeding up early bone formation, research shows the slower, 4-stage process of endochondral ossification is likely better for regenerating large defects. This study investigated how biological and mechanical fracture treatments for large bone defects influence these healing mechanisms using qualitative histological analysis.

To evaluate treatment-specific responses, femoral defects were created in female Wistar rats and treated with either varying doses of the bone-producing biologic BMP2 or different mechanical fixation strategies. Findings showed that BMP2 mediated healing was dose dependent. Higher doses accelerated bone formation but led to disorganized bone growth, consistent with intramembranous ossification. Lower doses promoted the formation of early cartilage-like tissue and gradual bone regeneration, reflecting the endochondral repair

pathway. Similarly, fractures stabilized with more flexible fixation demonstrated defect bridging through this cartilage-supported healing pathway. Untreated fractures in both models failed to heal.

These results demonstrate that both biological and mechanical interventions can promote endochondral ossification, highlighting the potential for physicians to guide fracture healing toward a desired mechanism.

Rose, Madeline

University of Oregon

Mentor(s): Dasa Zeithamova

Poster #285

Impact of Intrinsic and Extraneous Cognitive Load on Retention in Associative Pair Learning

Cognitive load, or the amount of mental resources demanded by a task, affects how well we learn and remember. The present study aimed to examine the impact of intrinsic cognitive load, the inherent level of complexity of new information (high vs. low semantic relatedness), and extraneous load, the demands resulting from the way the new information is presented (all lowercase vs. irregular capitalization), on memory retention. Participants studied word pairs that varied in intrinsic load based on semantic relatedness (onion-vegetable vs. onion-galaxy) and extraneous load based on presentation format (onion-vegetable vs. oNIOn-gALaxY). Cued recall was affected by intrinsic load, with semantically related pairs recalled more accurately than unrelated pairs. In contrast, extraneous load did not significantly affect recall, and the interaction between intrinsic and extraneous load was not significant. However, high extraneous load was related to longer response times. These findings suggest that the inherent difficulty of the material played a larger role in retention than the perceptual distraction introduced by the extraneous manipulation. The longer response times suggest that higher extraneous load introduced an additional processing burden, though this effect did not impact accuracy. This aligns with current research indicating that extraneous load may not reliably impair learning unless task demands are high enough for it to meaningfully compete for cognitive resources.

Rosenberg, Leah

University of Oregon

Mentor(s): Malu Borja Lopez

Poster #009

Embracing Narratives; Radiating Resilience.

How can we translate narratives of resilience and endangered language practices into design? “Embracing Narratives; Radiating Resilience” celebrates life and learning by cultivating reciprocal environments and

promoting intergenerational conversation and connection through speculative design and community collaboration.

In collaboration with NILI, “Embracing Narratives; Radiating Resilience” reimagines UO’s Native Quad as a “Center for Language Revitalization and Cultural Preservation.” The project explores themes of both cultural and environmental resilience as well as reclamation of cultural identity. Exploration was conducted through field analysis, interviews, site visits, design studio critique, observation drawing, and more.

As part of the Terminal Architectural Design Studio, “Collaborative Communities,” the project explores design experimentation incorporating indigenous perspectives. “Embracing Narratives; Radiating Resilience,” intends to respect indigenous wisdom, restore intergenerational conversation and sensory expression, and support resiliency through cultural identity and cyclical systems, by welcoming conversation and storytelling, and listening to the community.

The design intends to not only welcome conversation and storytelling but to build reciprocal relationships by considering the life cycles of the sun, water, materials, waste, and energy used on the site and the surrounding community.

Rossi, Olivia

University of Oregon

Poster #122

Quartz Creek Stage 0/8 Restoration Monitoring Project 2026

See Klebes, Aubrey

Rothrock, Emily

University of Oregon

Mentor(s): Deepu Murty

Poster #322

Deathly Curious: Analyzing Morbid Curiosity as a Motivator for Watching Horror Movies

The popularity of horror media is run by the urge to explore our morbid curiosity. Through embracing our morbid curiosity, we are driven to investigate unpleasant topics which knowingly cause fear and disgust. This leads us to engage in activities such as watching horror movies. This study investigates how morbid curiosity influences the motivation for consumption of horror-based stimuli. Participants completed a morbid curiosity questionnaire and a task where they watched clips from horror movies and used button presses to rate how

motivated they were to view movies similar to the clip just shown. Through these tasks, we're able to see a behavioral based explanation as to how an individual's morbid curiosity may impact how motivated they are to engage with similar clips from the shown horror clips. These results reveal a real-time behavioral measure that quantifies the intensity of an individual's motivation due to their morbid curiosity, which explores new conclusions and methods that current research in the field lacks.

Roy-Hart, Mason

University of Oregon

Mentor(s): Rachael Giersch

Poster #181

Revisiting Polycomb Repressive Complex 2 contributions to cell state changes using fin regeneration

Zebrafish rapidly regenerate damaged organs, including entire fins. Regeneration of the fin initiates through de-differentiation of cells at the injury site into a progenitor-like state, forming the "blastema". De-differentiation results from gene expression changes, which may be supported by post-translational modifications. For example, tri-methylation of histone 3 lysine 27 (H3K27me3) by Polycomb Repressive Complex 2 (PRC2) stabilizes cell states via transcriptional repression. We disrupted PRC2's catalytic subunit, *ezh2*, to investigate whether PRC2 supports cell state changes required for regeneration. Surprisingly, PRC2-deficient mutants regenerated largely normally. RNA-Sequencing and CUT&Tag showed only minor changes in gene expression in spite of widespread H3K27me3 loss. Therefore, PRC2-mediated repression seems unessential for fin regeneration. Interestingly, CUT&Tag at 1 day post amputation (dpa) revealed reduced H3K27me3 signal in PRC2-deficient fish compared to uninjured tissue, suggesting H3K27me3 may normally be lost and rapidly re-established during early regeneration. Therefore, we hypothesized bulk demethylation of H3K27 supports de-differentiation. I performed immunofluorescence staining at 12 hpa to test if H3K27me3 is transiently lost during blastema formation. Additional experiments will determine if demethylation occurs at earlier timepoints, affects only a subset of genes, or does not substantially contribute to regenerative dedifferentiation.

Rozendal, Tanner

University of Oregon

Mentor(s): Anita Chari, Shaul Cohen

Oral

Relational Medicine in Carceral Systems: Reframing Incarceration as a Public Health Crisis

Over two million individuals are currently incarcerated in the US, disproportionately impacting racial minorities and economically disadvantaged populations. Individuals entering prisons and jails experience elevated rates of chronic disease, substance use disorders, and mental illness yet most receive inadequate treatment while incarcerated. Upon release, roughly 80% return to their communities with chronic health conditions. These only increase emergency department utilization, homelessness, unemployment, and recidivism. These outcomes extend beyond correctional institutions, creating measurable public health and economic consequences.

This presentation examines incarceration as a systemic failure of healthcare. While isolation practices are associated with increased post-release mortality, Transition Clinic Networks demonstrates relationship-centered, community-based care improves appointment adherence, reduces emergency department use, and lowers incarceration rates.

Building on these findings, I propose a 6-week medical school elective embedded within carceral facilities that includes supervised pre-release clinical care. This model aims to improve chronic disease management, strengthen continuity of care, and train future physicians in relational, trauma-informed medicine. Reframing incarceration as a public health crisis expands the responsibility of healthcare professionals and highlights relationships as foundational to both individual healing and community health.

Rozendal, Tanner

University of Oregon

Mentor(s): David McCormick, Daniel Hulse

Poster #267

Preictal Pupil Dynamics as Non-Invasive Predictors of Absence Seizures

Absence seizures, characterized by sudden, brief lapses in consciousness, are a hallmark of absence epilepsy: a generalized seizure disorder most prevalent in children. Though often subtle, these seizures can occur hundreds of times per day, severely disrupting learning, development, and quality of life. Despite their frequency, absence seizures remain difficult to predict, limiting opportunities for intervention. This

study explores whether pupil dynamics, a reliable and noninvasive indicator of brain state, can predict seizure onset in a mouse model of absence epilepsy. Pupillometry and electrophysiology data was analyzed, identifying 3-5 Hz oscillatory events characteristic of absence seizures. Pupil area fluctuations preceding each seizure (preictal phase) were then examined using custom Python scripts. These features were input into machine learning models to assess the predictive value of pupil dynamics.

Preliminary results demonstrate a consistent pattern of pupil constriction prior to seizure-like oscillations, suggesting that pupillometry may serve as a useful proxy for tracking neuromodulatory network shifts proceeding seizures. These insights open new avenues for noninvasive seizure prediction and may inform early-intervention strategies. Future directions include validating these findings across broader datasets, investigating the role of noradrenergic pathways in seizure generation, and ultimately developing software for wearable seizure-prevention tools.

Rubesh, Danna

University of Oregon

Mentor(s): Smadar Ben-Natan

Poster #085

The Penology of Apartheid: Incarceration as Racial Domination in Israel/Palestine and South Africa

This project aims to explore the role of incarceration in the perpetuation of apartheid regimes by comparing the carceral landscapes of South Africa and Israel/Palestine. Through comparative analysis, I reveal the similarities between the ways in which South Africa, a historical example of apartheid, and Israel, a debated apartheid regime, have utilized incarceration to institutionalize forms of racial discrimination. Each case study first explores the role of legal and carceral institutions in the maintenance of racial domination and then shifts to an investigation of the specific application of these institutions through carceral custody. Both case studies reveal the significant role of secondary security regimes in the enforcement and institutionalization of racialized domination. These regimes serve to establish legal avenues for the utilization of mass detention and discriminatory convictions for the express purpose of maintaining systems of racial suppression and segregation.

Rudy, Elisha

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #039

A Failure of Classification: Edgar Allan Poe and the Logic of Victorian Hierarchy

This project examines how Edgar Allan Poe's *The Man of the Crowd* (1840) critiques the Victorian impulse to classify human identity. The narrator, observing a crowd in industrial London, sorts strangers into rigid social and criminal types. When he encounters an old man who defies categorization, his system – and his sense of self – begins to unravel.

The project asks how Victorian classification systems, shaped by urbanization, pseudoscience, and class ideology, inform representations of identity in Poe's story, and what the story reveals about the consequences of their logic. The analysis draws on Marx and Engels' *Communist Manifesto* to examine classification as an ideological tool of power; Lombroso's *Criminal Man* to contextualize the pseudoscientific belief that deviance is biologically legible; and Williams' *The Country and the City* to ground the argument in the urban conditions that made such anxiety historically possible.

The project argues that the narrator's failure stems not from the crowd's unreadability but from a deeper cultural fear of complexity. By exposing how rigid, binary thinking limits knowledge and reinforces power structures, this analysis reveals that the logic of biological typing – reducing human worth to physical traits – does not simply misrepresent reality. Followed to its conclusion, it produces systemic atrocity. Literature does not merely reflect historical ideologies; it exposes their dangerous internal limits.

Ruhnke, Rose

University of Oregon

Mentor(s): Mattie Burkert

Oral

Theater Thursdays: Spotlighting Restoration Theater History with the Present Day

As Research Assistant to Professor Mattie Burkert, I am part of a team working on the London Stage Database: a searchable collection of theater events from the long eighteenth century (1660-1800). My work has focused on improving outreach through the project's preexisting social media channels, UOBlogs and BlueSky. Specifically, I have piloted a recurring weekly series of blog posts called #TheaterThursday, which highlights an intriguing event from the London Stage "on this day in history." For example, on March 19th, 2026, we would post about the most intriguing event we can find from a March 19th date during the period. Surfacing the extensive, sometimes overwhelming, amount of data contained in the database and condensing

it into an engaging and informative weekly blog post became not only my primary responsibility as Research Assistant, but also my passion project. So far, I have researched, written, and published nine posts of about 450 words each, highlighting topics ranging from women's roles in the playhouse to Shakespearian forgeries. The series promotes engagement by consistently referring users to event pages on the website and makes the database more accessible for users by consistently providing engaging points of entry into theater history. Furthermore, it supports the larger project's aims to promote information literacy by modeling research skills and highlighting vetted external resources users can use to pursue their own research questions.

Ryan, Aiden

University of Oregon

Mentor(s): Stephen Frost, Gabby Jones

Poster #326

Morphological diversity of species in the fossil monkey *Parapapio*: a geometric morphometric approach

Parapapio, an extinct Plio-Pleistocene genus of African cercopithecoid monkey and proposed ancestor to all modern papionins, has received intense taxonomic scrutiny since its description by Jones in 1937. Variation among *Parapapio* crania has resulted in debate regarding the number of species that should be recognized, especially from Sterkfontein and Makapansgat in South Africa. To assess this issue, we performed a 3D geometric morphometric analysis based on 45 landmarks identified on a comparative sample of crania ($n=894$), including all suitable *Parapapio* crania ($n=21$). Data were superimposed by Generalized Procrustes' Analysis with shape variation assessed by Principal Component Analysis. We calculated Procrustes distances between all specimens in the R package Geomorph. Distances were then binned by taxonomic category and compared. We randomly selected 1000 groups of 21 crania from our comparative sample and compared the distances within these samples to those among *Parapapio* specimens as well as within different taxonomic ranks. We found that cranial variation between specimens increases with more distant taxonomic relationships. We also found that cranial variation within *Parapapio* most closely aligns with the variation expected among papionin crania within a genus but among multiple species. Only 1 of 1000 random trials fell within 2SD of the observed *Parapapio* variation. These results support the status of *Parapapio* representing a single genus with at least two species.

Saccio-Devine, Josaphine

University of Oregon

Mentor(s): Frances White, Sara Cotton

Poster #330

Female Dominance in Captive Bonobos

Bonobos display unique behaviors around food and sexual dynamics when compared to other non-human primates as copulation being used to build bonds and social status. This social standing is relevant to their behavior towards tool use and food acquisition such as fishing at a termite mound. The aim of this study was to examine the female dominance hierarchy through the lens of food acquisition and sexual encounters. This project was conducted by watching and analyzing footage of 14 captive bonobos residing at the Columbus Zoo which documented their behavior in the area around a newly installed artificial termite mound. We observed how the presence of the dominant female affected the interactions between all present subjects in regard to who would fish at the mound, who would be displaced, and who would initiate instances of copulation. The goal of this project is to gain more insight into what it means for female bonobos to hold higher positions in the social hierarchy and which aspects of behavior this has the most effect on. Through analyzing 50 hours of footage and coding it for individuals' behavior we will determine the relationship between aggression and submission surrounding food and intercourse when the dominant female bonobo is and is not present at the termite mound.

Sachidhanand, Harini

University of Oregon

Mentor(s): Ellen Fitzpatrick

Poster #354

Environmental Drivers of Dengue Expansion in Brazil: A GIS-Based One Health Approach

This project examines how environmental change shapes the spread of dengue in Brazil. As a climate-sensitive, vector-borne disease, dengue transmission is influenced by temperature, rainfall, and urbanization, which affect mosquito breeding conditions, seasonal transmission cycles, and human exposure. Brazil provides a critical case study due to its high dengue burden, rapid urbanization, and climate variability, as well as the disease's expansion into new regions. This project investigates how climate and urbanization are driving the spatial and temporal expansion of dengue in Brazil. Using GIS-based spatial and temporal analysis, this research maps dengue incidence alongside environmental variables, including temperature and precipitation, to identify how changing conditions correspond with disease risk. It also examines regional and seasonal differences to understand where and when environmental factors most strongly influence transmission, including how rainfall variability and temperature shifts shape mosquito dynamics.

More broadly, this work addresses a key gap in disease models, which often only partially incorporate environmental drivers or fail to fully integrate them with human transmission patterns. Using a One Health framework, this project connects environmental conditions, vector dynamics, and human systems to better capture disease risk and improve early warning systems and prevention strategies in regions increasingly vulnerable to climate-driven disease.

Sager, Jackson

University of Oregon

Mentor(s): Trish Dorman, Noelle Nelson

Poster #018

Co-Presenter(s): Addie Bailey, Diego Delascio, Samuel Lamb

Fox Sports FIFA World Cup Fandom Analysis

Our project focused on analyzing survey data collected from Fox Sports viewers to understand their preferences, behaviors, and overall satisfaction with the network's sports coverage. We cleaned and organized the raw responses, identified key trends, and used descriptive statistics to highlight what viewers value most.

Salimena, Lily

University of Oregon

Poster #356

**Exploring Body Image Pressure and Eating Disorders in Higher Education:
University of Oregon's 2025**

See Bruun, Ella

Salwasser, Kaija

University of Oregon

Mentor(s): Leah Blankenship, Emily Sylwestrak

Poster #276

Using machine learning to track opioid withdrawal-induced social behaviors in mice

Opioid use is growing public health crisis, causing almost 80,000 deaths annually (NIDA 2024). Although many individuals seek treatment, relapse remains a serious barrier to recovery. An often overlooked risk factor of relapse is the negative social effects experienced during both immediate and prolonged withdrawal. Some aspects of social behavior deficits are also present in mice, providing a potential animal model to understand the etiology of these symptoms. Traditional human-annotated behavioral recording limits both

the types of behaviors identified and the temporal precision of the analysis. My project aims to use machine learning to analyze a richer array of behaviors affected by opioid withdrawal. To do this, mice underwent chronic opioid withdrawal and a social behavior assay. Social behaviors were monitored with a high-speed camera and used to train a machine learning model called SLEAP to track the movement and location of the mice in the social experiment videos. The tracking data from SLEAP was then used to make comparisons on changes in social interactions following opioid withdrawal.

Sande, Evan

University of Oregon

Mentor(s): Laura Jeanty, Nathan Young

Poster #149

A Search for Long-Lived Supersymmetric Particles with the ATLAS detector

Supersymmetric (SUSY) hypotheses propose that for every standard model particle, there exists a counterpart with different spin. The existence of these supersymmetric particles could provide a compelling candidate for dark matter, as well as explain the origin of neutrino masses. The ATLAS experiment, as an all-purpose detector, can be used to search for evidence supporting these hypotheses. If long-lived SUSY particles have a 1 nanosecond or longer lifetime, they would be expected to produce tracks and short tracks (tracklets) within the ATLAS detector. These tracks and tracklets deposit ionization energy, which, when combined with momentum, can be used to reconstruct the mass of the particle. We use data from Monte Carlo simulations of the detector and investigate the viability of using mass reconstruction as a method of identifying supersymmetric particles of varying mass and lifetime.

Santaniello, Ronan

University of Oregon

Mentor(s): Zachary DuBois, Dee Jolly

Works in Progress: Lightning Rounds

Race, Gender, Resilience, and Stigma: Experiences of Nonbinary People of Color in the Transgender Resilience and Health Study

Resilience, often defined as the ability to bounce back from stress, has positive effects on mental and physical health. Black feminist scholars, however, have critiqued conceptualizations of resilience as an individual, static trait, interpreted as disconnected from experiences like racism, stigma, and structural inequities. This project aims to employ an intersectional approach to expand and nuance understanding of resilience among marginalized communities by using thematic analysis of baseline in-depth interviews

with 16 nonbinary people of color in the Transgender Resilience and Health Study (PIs: Zachary DuBois and Jae Puckett). The broader project (N=158) aimed to characterize experiences of resilience across varied sociopolitical contexts and included interviews and health measures with transgender and nonbinary (TNB) people living in MI, OR, NE, and TN from Fall 2019 – Spring 2021. Preliminary theme analysis uncovered experiences of posttraumatic growth which is positive mental growth after experiences of adversity, and survival which is a motivation to live and survive in response to adversity. Future analyses will use an intracategorical intersectional approach to explore experiences of race and gender to further understand the interconnectedness of marginalization, adversity, and resilience in the lives of nonbinary people of color in our study. These findings could inform supports for TNB people in the face of extreme political targeting in the United States.

Santoso, Madeline

University of Oregon

Mentor(s): Jesse Wilson

Poster #353

Ready Biodegradability Classification with Self-Organizing Maps

A chemical is labelled ready biodegradable (RB) if 60% of its organic carbon is converted to CO₂ within a specified period, otherwise it is considered not ready biodegradable (NRB) (OECD, 1992). Ready biodegradation is especially useful as a regulatory term, making the determination of different chemicals as RB or NRB especially important in matters of industry. Accepted tests are expensive and time-intensive, creating a need for predictive tools (Kowalczyk et. al, 2014). This project examines the efficacy of a supervised Self Organizing Map (SOM) for the prediction of Ready Biodegradability. The model was trained using chemical information data compiled by the Milano Chemometrics and QSAR Research Group into the QSAR Ready Biodegradability database of 1055 chemicals labelled with 42 molecular descriptors (Mansouri et. al., 2013). The final version of the predictive model was a supervised 7x7 hexagonal toroidal SOM trained over 200 epochs. This model had an accuracy of 58.2%, a precision of 44.6%, and a recall of 58.9%, indicating the SOM fails to successfully predict RB. It is possible that the model's poor performance is due to an inability of the SOM to compensate for several molecular properties representing the same structural information from the training data provided.

Sarason, Natalie

University of Oregon

Mentor(s): Ahmar Zaman, TBA TBA

Poster #304

Detention or Diploma: The Relationship between Juvenile Recidivism and Education

The present study analyzes whether enrollment status significantly influences rates of juvenile recidivism within a year of release. Reducing the rate of juvenile recidivism—reoffending after initial contact—remains a central concern of criminal justice reform. Previous findings have consistently demonstrated a negative relationship between criminal offending and formal education, suggesting that access to education significantly reduces the likelihood of youth justice involvement (Ford & Schroeder, 2010; Van de Weijer et al., 2024). Furthermore, prior research suggests that early justice involvement and a history of family incarceration significantly influence rates of recidivism, especially for youth of color (Baglivio et al., 2015). With this in mind, the current study will build upon the existing body of research by using multiple regression to assess how age of first offense, history of family incarceration, and race/ethnicity moderate the relationship between education and juvenile recidivism. Using archival data collected from a statewide survey of Florida youth (N = 1300) conducted by the Florida Department of Juvenile Justice (FDJJ) from 2015-2018, the current study aims to understand how demographic and social factors impact youth justice outcomes (Wolff, 2023).

Sargent, Sophia

University of Oregon

Mentor(s): Frances White, Sedona Epstein

Poster #329

Co-Presenter(s): Chase Crandall

Change in Behavior in Immigrant Female Bonobos

Bonobos (*Pan paniscus*) show male philopatry, where female immigrants build strong bonds with unrelated females in new groups. In the wild, social patterns of immigrant females are well-documented, but it is uncertain whether transfers of zoo-housed female bonobos from natal to novel groups follow similar social patterns. We compared the social behavior of a young-adult captive female, Belle, in her natal group (San Diego Zoo, 2024) with her social behavior post-institutional transfer (Columbus Zoo, 2025). We found that pre-transfer, within the largest group composition, Belle groomed 2/5 available partners, while post-transfer, she groomed 10/12 available partners. Pre-transfer, Belle spent 1.65% of her time grooming with the unrelated dominant female and 3.95% of her time grooming with a similarly aged sister. Post-transfer, she spent 11.57% of available time grooming with an unrelated dominant female and 14.29% of available time grooming with

a similarly aged fellow immigrant female. Pre-transfer, Belle did not initiate any sociosexual behavior when in the largest group composition. Post-transfer, she initiated 29/61 sociosexual interactions, 14/29 of these targeted towards a dominant female, and 23/32 sociosexual initiations Belle received were from adult males. These results indicate that Belle's transfer may be treated similarly to wild female group transfers, with increased active sociality. This provides support for AZA practices, which encourage naturalistic behavior.

Sastry, Rishi

University of Oregon

Mentor(s): Chundi Xu, Chris Doe

Poster #273

Homeodomain Proteins Partition a Neuronal Class Into Diverse Subtypes

Neuronal diversity is essential for assembling functionally complex circuits. Broad neuronal classes define general function, but specialized subtypes within a class partition information into parallel channels. For example, the retinal ganglion cell class contains over 40 subtypes that encode distinct visual features. However, the mechanisms by which neural progenitors generate diverse subtypes while preserving a shared class identity remain poorly understood. Using the *Drosophila* lamina as a model (one class; five subtypes), we investigated homeodomain transcription factors (HDTFs) as candidate drivers of diversification. We identify the progenitor-derived HDTF *scro* as a pan-lamina factor that establishes class identity and subsequently activates subtype HDTFs (*bsh*, *dve*, and *zfh1*) in newborn neurons, where it partners with them to specify distinct subtypes. Meanwhile, asymmetric cross-repression ensures mutually exclusive subtype identities: *bsh* and *dve* suppress a default *zfh1*⁺ state, and loss of either causes neurons to undergo fate conversion and ectopically acquire *zfh1* identity. However, *zfh1* loss does not trigger reciprocal fate changes. These findings support a model in which a pan-class HDTF establishes shared class identity and activates subtype-specific HDTFs which initiate subtype diversification and enforce it via selective cross-repression. Broadly, this framework suggests how neuronal classes may evolutionarily diversify into increasingly specialized subtypes.

Sattler, Addison

University of Oregon

Mentor(s): Michael Pluth, Keyan Li

Poster #162

Zinc Thiolate Modifications by Reactive Sulfur and Selenium Species through Synthetic Modeling

H₂S and H₂Se play significant roles in biological processes through signaling pathways and interactions with metalloenzymes. Sulfur and selenium contribute both structurally and functionally via interactions with

biological metal active sites. Furthermore, H₂S and H₂Se are stored in the human body as post-translationally modified thiols in the form of persulfides (RSS-) and thioselenides (RSSe-). These reactive species can interact with important biological metal centers including Fe, Zn, and Ni, although implications for these interactions are poorly understood. This work describes our efforts in synthesizing and characterizing model systems, which provides new insights into the implications for RSS- and RSSe- interactions with Zn²⁺ metal centers.

Scales, Colin

University of Oregon

Mentor(s): Gaby Bailey

Poster #170

Synthesis of Cycloparaphenylene Fluorophores for Multiplexed Biological Imaging

Visualizing cells and human tissues at the molecular scale is a powerful tool for researchers to understand disease states and develop new treatments. A common method for studying human tissues is multiplexed imaging - a powerful technique for detecting and observing multiple targets within a single tissue. Effective fluorophores for multiplexed imaging must be bright, photostable, and have spectrally distinct, narrow emission profiles. In the Jasti lab, we focus on the synthesis of cycloparaphenylenes (CPPs), a type of carbon nanomaterial known for their size-dependent fluorescence emission, high brightness, large Stokes shifts, and bottom-up synthesis. The size-tunable emission of CPPs makes them attractive for multiplexed imaging, as different CPP sizes can be excited using the same wavelength of light and provide distinct fluorescence emissions. Using the bottom-up synthesis of CPPs, we designed a series of molecules with a functional handle capable of performing “click” chemistry, a class of highly efficient, biocompatible reactions. The products of this reaction are then capable of undergoing further reactions, enabling us to stain cells or tissues to visualize biological systems. My goal was to synthesize the target molecule (mT[6]CPP) and characterize it by ¹H and ¹³C NMR to confirm its structure and purity. Once synthesized, the target molecule was sent to our collaborators at OHSU for further experimentation, to evaluate the utility in multiplexed imaging.

Schmidt, Brody

University of Oregon

Poster #137

Investigating Late-time Radio Brightening of Tidal Disruption Events

See Neuner, Grace

Schnebly, Victoria

University of Oregon

Mentor(s): Ashley Linden-Carmichael

Poster #307

Age as a Moderator of Alcohol-Induced Blackouts on Non-Memory Cognitive Ability

Introduction: Prevalence of alcohol-induced blackouts, or inability to remember events due to heavy drinking, is high among young adults, with ~50% reporting a lifetime blackout. Younger individuals' (~ages 18-20) neuroplasticity may mask post-event symptoms of cognitive impairment when compared to effects felt by legal drinking age adults (21+). We examined whether age (21+ years vs. ≤ 20 years) moderates links between blackout drinking and self-reported cognitive functioning indicators. Methods: Participants (N=479; 53% women) ages 18-30 and reported past-year blackout drinking. Participants completed an online survey in Qualtrics Panels. Results: Age significantly moderated the relationship between blackout frequency and non-memory cognitive difficulties ($B=0.57$, $SE=0.27$, $p=.033$), but not memory lapses ($B=0.06$, $SE=0.30$, $p=.833$) or cognitive functioning ($B=-0.19$, $SE=0.30$, $p=.534$). Among those aged 21+, blackout frequency was positively associated with more non-memory cognitive difficulties, $B=0.51$, $SE=0.06$, $p<.001$, but this association was not significant among underage drinkers, $B=-0.07$, $SE=0.26$, $p=.799$.

Discussion: Findings that blackout drinking is significantly linked to non-memory cognitive impairment for older young adults is consistent with the field's theory of compounding neurodegeneration. Stability in underage drinkers' cognition is likely due to a higher capacity for neural compensation rather than lack of harm to the brain.

Schneiger, Jack

University of Oregon

Mentor(s): Daniela Vallega-Neu

Oral

The Notion of Decision in Heidegger and Derrida Through Sophocles' Antigone

Decisions exhibit our priorities and preferences, our commitments and obligations, and our relationships and endeavors. Yet we do not get a say in much of what determines us when we decide. A sense of time and place always situates us, as we are born into specific lineages and geographies, cultures and political climates which we did not choose. Moreover, our decisions often respond to events over which we have no control, and which will make a difference in our lives no matter what we do. Decisions can get out of hand. They can hurt others despite our best intentions or, otherwise, carry consequences that lead us into disaster. To encounter our decisions with an alertness to their destructive potential and delimitations, I turn to the works of Martin

Heidegger and Jacques Derrida for whom these concerns are thematic. For them, decisions are nothing we do but rather something that determines and decides over us. In thinking about decisions in this way, we might ask questions like: How do decisions come to pass? In what ways do we find ourselves transformed in that happening? How can we be responsive in decision in a way that is responsible? I negotiate the differences and similarities between Heidegger's and Derrida's respective answers to these questions through a comparative reading of Sophocles' tragic play, *Antigone*. Through *Antigone*, I propose, we can see each thinker's sense of decision play out on a more intimate stage and grasp what is at stake in their differences.

Schoen, Elizabeth

University of Oregon

Mentor(s): Philip Washbourne

Poster #279

Exploring the Bidirectional Communication: Microbiota and Gut-Brain Axis in Autism Spectrum Disorder

The gut-brain axis is a bidirectional communication system linking the digestive tract and brain through neural, chemical, immune, and microbial signals. This biology thesis examines how disruptions in this axis, especially gut microbiome changes, may contribute to autism spectrum disorder (ASD).

Individuals with ASD often show altered gut microbial composition (dysbiosis) compared to neurotypical people. Animal studies suggest these shifts influence brain development and behavior via the vagus nerve and microbial metabolites like short-chain fatty acids. The central question is: How do gut microbes and the nervous system interact to shape brain function, and what role might they play in ASD?

This project is a systematic literature review of over 20 recent peer-reviewed studies, integrating human observational data and animal models. It synthesizes neural, endocrine, immune, and metabolic pathways and evaluates how microbial metabolites affect brain signaling, along with potential microbiome targeted options such as diet or probiotics.

Though ongoing without original experimental data, the synthesis highlights links between early life gut microbiome and ASD related behaviors, pointing to possible non-invasive interventions.

Schofield, James

University of Oregon

Poster #080

South Korean Migration

See Gerbrandt, Sean

Schroeder, Dylan

University of Oregon

Mentor(s): Jesse Wilson

Poster #355

Tooth Loss, Food Environment, and Poverty in Oregon Counties

Adult dental care is a significant public health issue that is frequently neglected. Few remediation strategies exist. Public medical insurance seldom covers dental care or orthodontics, creating barriers to prevention and early treatment. Modern research links poverty and diet as predictors of oral health, but county-level studies have not compared whether food environment (i.e., the availability, accessibility, and types of food outlets within a given area) or poverty is more closely related to complete tooth loss. This study will answer the question: In Oregon counties, does complete tooth loss among residents aged 65 and older show a stronger association with food environment factors (fast-food and grocery store availability) or with poverty levels? County-level estimates of tooth loss and poverty rates were sourced from CDC PLACES. Fast-food restaurant and grocery store densities per 1,000 county residents were obtained from the USDA Food Environment Atlas. In total, 31 Oregon counties showed poverty rate as the only significant predictor ($\beta = 0.498$, $p < 0.001$). Fast-food density ($p = 0.92$) and grocery store density ($p = 0.61$) were not significant. The model explained 37% of the variation in county-wide tooth loss. The findings suggest food access alone does not translate to poor oral health. Instead, oral health reflects broader structural inequality. Policymakers should focus on expanding dental coverage and addressing poverty to reduce tooth loss among older adults.

Schulte, Grace

University of Oregon

Mentor(s): Kendal Tinney

Poster #201

Testing Variability of *S. aureus* strains infection by various phages in host specific conditions

The rise in antibiotic resistant bacteria is a major concern for health infrastructure, leading to renewed interest in alternative treatments for bacterial infections. One strategy is to use lytic bacteriophage (phage),

viruses that target bacteria to reproduce, ultimately killing the cell. In vitro studies of phage largely rely on nutrient rich media conditions, in contrast to the low nutrient conditions found in vivo. The nose has little available nutrients, yet is often colonized by the pathogen *Staphylococcus aureus*. Infections with *S. aureus* are often hard to treat and a major threat in healthcare, given the persistence of methicillin-resistant *S. aureus*. While *Staphylococcus* species and their phages are widely characterized in nutrient rich conditions, the impact of these interactions with low nutrients is largely unexplored, limiting our understanding. Phage K is a well understood *S. aureus* phage with a broad host recognition mechanism, and research into the ability of Phage K to infect *S. aureus* strains in nasal-like media showed variability in infection rates compared to nutrient-rich media. However, many *Staphylococci* phages with unique host recognition mechanisms are unknown. Phage infection of diverse phage can be determined in nasal-like nutrient media by quantifying bacteria and phage populations, combined with growth curve assays. I determined that variability of phage infection previously seen was not observed with diverse phages regardless of conditions.

Schumann, Mia

University of Oregon

Mentor(s): Dave Sutherland, John Christian

Poster #108

Finite Flow: Glacial Contribution to Streamflow in the Upper Deschutes Watershed

This project examines the glacial contribution to streamflow, a phenomenon that has received little direct study, in the Upper Deschutes watershed, a small, glaciated region in the Cascade Range of Oregon, over three summers (2023-2025). Field measurements were collected and used in a temperature-index model to calculate melt, which was then compared with discharge measurements from several stream gauges in Whychus Creek, a tributary to the Deschutes River. Melt accounted for nearly 40% of streamflow in the summers studied. Melt water supports populations of endangered fish and provides irrigation for a wide range of crops in Deschutes County. Melt water is especially crucial in this region because without it, streamflow will become too low to support fish populations and irrigation needs, especially during the warm, dry summer months when streamflow barely meets the minimum specified by the Deschutes Basin Habitat Conservation Plan (DBHCP). With several glaciers in the Upper Deschutes watershed projected to disappear by 2050, streamflow in Whychus Creek will no longer be sufficient to both maintain the fish health and provide sufficient irrigation. This case study demonstrates that glacial contribution to streamflow is significant enough that water policy must prepare for a Deschutes Basin without ice.

Schweikhard, Samantha

University of Oregon

Mentor(s): Samantha Hopkins, Madeline Ball

Poster #132

Miocene mammalian community structure evolution in response to vegetation change in Nebraska

This project aims to examine the impact of climate and environmental change on mammalian community structure in the Great Plains of North America (NA) across the Oligo-Miocene (29.5-5 Ma). Throughout this interval, there was a major shift in vegetation from forests to grasslands, changing the available food and habitats of the time. This shift is reflected in the body size, diet and locomotion of mammals. Data was collected from the Paleobiology and NOW databases by students in the EARTH 436 class for five localities across Nebraska, each providing data for a different North American Land Mammal Age (NALMA). Each species was then assigned a body size, diet, and locomotor category through literature review and body mass regressions. Results show ecological shifts towards cursorial locomotion, carnivory, and larger body sizes through time, although the assemblages also show signs of collector bias based on the size distribution of taxa within each site. We conclude that these community structure shifts are a result of climatic and vegetation changes. This is because Nebraska was tectonically passive compared to other regions of NA during the Miocene. This project can be used alongside future research to examine how climate and landscape changes affect community structure across various regions of NA, helping us to develop more effective conservation strategies to mitigate the effects of human-mediated climate change.

Scott, Theo

University of Oregon

Mentor(s): Andie Pruett

Creative Work

A Couple of Poems

I tend to write poetry with the idea of creating something, most of the time a world, very vividly in the reader or listener's mind. My mind makes images in pictures, with with very little or no movement, so I enjoy creating vivid pictures with words. I also really enjoy writing about a place where there is either one or a couple of standout things that feel off, unsettling or just don't make sense, in an otherwise normal world. Like a singular cat that has three eyes, or something simple like that.

Seagoe, Tharusha

University of Oregon

Mentor(s): Emily Sylwestrak, Kana Suzuki

Poster #264

Effort encoding in lateral habenula neurons during reward-seeking behavior

Animals predict and assess the value of potential rewards in their environment when deciding whether to pursue them. Accounting for the effort required to obtain rewards in these value estimations is vital for maximizing rewards while conserving energy. However, our understanding of how the brain encodes effort information to estimate subjective reward value and shape effortful reward-seeking is limited. The lateral habenula is a key brain region involved in reward learning. It contains a subpopulation of Tachykinin 1-expressing (LHbTac1) neurons that signal worse-than-expected reward outcomes and scale their activity with the difference between expected and obtained reward value. While LHbTac1 neurons are sensitive to several aspects of reward value, it is unknown how they encode effort. Here we investigated the effects of effort on LHbTac1 signaling in a reward context. Using fiber photometry, we quantified LHbTac1 activity in mice during a reward-seeking task with probabilistic effort costs. LHbTac1 activity increased at effort expenditure, but reward outcome responses were not sensitive to preceding effort costs. Together, these results suggest that LHbTac1 neurons may encode real-time information about effort to inform effort-based decisions, providing insight into how the brain integrates effort and reward information to shape reward-seeking behavior.

Sebree, Megan

University of Oregon

Mentor(s): Sean Grant, Lisa K. Chinn

Oral

From Evidence to Relevance: Meeting Interest-Holder Needs in School-Based Mental Health Research

Educators assess the applicability of research to their student populations when selecting evidence-based interventions, yet the information needed to make these judgments is often inconsistently reported. This presentation draws on a peer-reviewed article I co-authored as a HEDCO Institute Undergraduate Scholar, titled, "Reporting of Student Demographics in School-Based Depression Prevention Trials: The Need for a Core Baseline Set in School Psychology". We reviewed 71 trials on K-12 depression prevention and coded how student demographics were reported. We found substantial variability in both selection and measurement. For example, across studies that reported socioeconomic status, just 2 utilized the same form of demographic reporting. Nearly all trials reported at least one key domain, but none reported all (based on

the PROGRESS framework). Building on this foundation, I place these findings within broader context: that research and practice often operate with misaligned priorities, particularly in what information is produced versus what interest-holders need. At the same time, evidence synthesis is evolving through global efforts like the Evidence Synthesis International Collaboration (ESIC) to standardize and improve the usability of research. In contrast, school-based mental health research remains inconsistent. I propose a core baseline set for demographic reporting aligned with ESIC's goals to improve comparability and better support decision-making in practice.

Sebree, Megan

University of Oregon

Mentor(s): Dare Baldwin, Diana DeWald Daschel

Poster #299

Co-Presenter(s): Cheyenne Tsuang

Pedagogy, Prior Expectations, and Executive Skill Jointly Shape Children's Exploratory Activity

Pedagogy elicits trade-offs in children's learning, enhancing attention to target information while limiting broader exploration - a phenomenon known as the "double-edged sword" of pedagogy. This study examines how verbal pedagogy interacts with prior expectations and executive function (EF) to shape exploratory play.

220 children (3-7 years, M=59 mos, 111 female) visiting a museum were randomly assigned to one of four conditions varying in pedagogy (knowledgeable: "This is how my toy works" vs. naïve: "I wonder how this toy works") and prior expectations (consistent: pressing a button activates a light vs. violation: waving activates it). Children then played with the toy and completed the Head-Toes-Knees-Shoulders EF task. We predicted that naïve pedagogy and expectation violations would increase exploration, especially in combination, and that children with stronger EF would show greater flexibility. Exploration was measured by the number of unique action types beyond the demonstrated action.

Results showed that expectation violations significantly increased exploration, with naïve pedagogy amplifying this effect. EF also played a critical role: pedagogy and expectations influenced exploration only among children with stronger EF, not those with weaker EF. In sum, children's prior expectations and self-regulation determine how they respond to pedagogy. Open-ended pedagogy maximized exploration under violated expectations, particularly for children with higher EF.

Serrano, Christian

University of Oregon

Mentor(s): Melynda Casement

Poster #313

Sleep as a Moderator between the Relationship of Stressful Life Events and Depressive Symptoms

Adolescence is a critical developmental period marked by heightened vulnerability to depressive symptoms and increased exposure to stressful life events. Sleep characteristics, including duration and midpoint, are increasingly recognized as key contributors to emotional regulation and mental health during this stage. However, little research has examined whether sleep functions as a moderating factor in the relationship between life stress and depressive symptoms in adolescents. The present study will use data from the Mechanisms of Depression and Anhedonia (MoDA) study at the University of Oregon (n=89) and investigate whether individual differences in sleep timing and duration buffer or exacerbate the impact of stressful life events on depressive symptomatology. Findings aim to inform prevention efforts by clarifying how sleep may serve as a modifiable target for improving adolescent mental health and sleep hygiene.

Serrano, Christian

University of Oregon

Mentor(s): Melynda Casement

Virtual

Sleep as a Moderator Between the Relationship of Stressful Life Events and Depressive Symptoms

Adolescence is a critical developmental period that can strongly be influenced by exposure to stressful life events, heightened vulnerability to depression, and other mood disorders. Sleep characteristics such as duration and midpoint are increasingly recognized as influential factors in emotional regulation and mental health. This study investigates whether sleep midpoint and duration moderate the relationship between stressful life events and depressive symptoms in adolescents. Using current data from the MoDA project, moderation analyses will be conducted using multiple regression models in R-Studio, testing whether the relationship between life stressors and depressive symptoms varies based on sleep characteristics as a controlling factor. We hypothesize that the association between stressful events and depressive symptoms will be stronger in adolescents with shorter and late sleep midpoints compared to those with longer and earlier sleep midpoints. Additionally, adolescents with longer sleep Understanding these interactions will provide insight into how we conceptualize sleep as a modifying factor in adolescent mental health. Additionally, this research will create and inform future interventions aimed at reducing the burden of depression in the adolescent population.

Seymour, Morgan

University of Oregon

Mentor(s): Kelly Morgan

Creative Work

Poetry by Morgan Seymour

I joined the Walter and Nancy Kidd Creative Writing Workshops in the Fall of 2025, and it has been such a wonderful experience. I have met so many other talented young writers who have challenged me to improve my work. The Kidd curriculum has exposed me to a myriad of poetic devices, structures, and forms, providing me with guidelines that invited me to write beyond the free verse that I had been previously accustomed to. My poetry focuses on sensation and narrative. In each of my creative works I strive to appeal to the senses, whether it is the happy sensation of drinking champagne or the disgusting sensation of being awake during surgery. I find that my work naturally falls into the prose category while keeping images consistent throughout the piece. My poetry has been described as both weird and lovely, but my favorite compliment was that it has a spiraling effect. I take images or narrative and twist them into something new and strange by the end of the poem.

I have dabbled in feminist poetry as well as simple poems about a walk; no matter the subject, my wish is to captivate my reader in the unusual little world I have created. The Kidd program has helped me to hone my wild sense of imagery into a defined and purposeful craft. I am thankful for my experience in the Kidd program, and I intend to continue using the skills I have learned to expand my creative schema.

Shaffer, Gabby

University of Oregon

Mentor(s): Alison Carter

Oral

Pottery from Prasat Baset, Cambodia: A Study Of Earthenware Ceramic Vessels and Rim Forms

This project presents results from a study of earthenware vessels and rim forms dating to the Pre-Angkorian and Angkor periods (6 -15th century CE) from the site of Prasat Baset, Cambodia. This provincial site is unique in having a long occupation history that pre-dated the beginning of the Angkor Empire. Earthenware makes up the majority of the ceramics assemblage and was important for a variety of daily life activities yet has been historically understudied compared to Angkorian stonewares. Earthenware vessels and rims were sorted by composition and decoration, measured, and drawn for comparison within the collection. The frequency and chronological order of these ceramics are analyzed to see temporal patterns. The major findings of this are

that there are 13 distinct types of ceramics, within 6 classes. There is a loss in variation as time goes on, including through the spread of the Angkor Empire to the area. Furthermore, the Late Angkor Period (late 11th through the 14th centuries CE) shows the least amount of variation of the four periods studied in this thesis. These findings contribute to understanding the range of earthenware vessels at Baset, their possible function, and address questions about transitions within households from the Pre-Angkor to Angkor period in provincial Cambodia.

Shah, Subrina

University of Oregon

Mentor(s): Caitlin Fausey, Ally Kuznia

Poster #300

Co-Presenter(s): Lara Bolourchian, Andrew Curlett, Ian Foster

Infant Object Holding Episodes in 1-hour of Daily Life

Infants hold objects for over half of their waking lives and the timing of holding episodes may play an important role in how infants encode, integrate, and remember objects' names (Abney et al., 2025; Frankchak et al., 2024; Herzberg et al., 2022). However, the range of temporal parameters that structure these learning opportunities is underspecified. Extant theorizing also emphasizes "average" experiences rather than grappling with the heterogeneity of infants' own experiences available to drive their learning. The purpose of this study is to examine the temporal structure of object holding in infants' everyday home environments. UO Learning Lab researchers visited 30 families' homes in the Eugene-Springfield area when infants were 12-, 18-, or 24-months old and video-recorded a mother and infant going about their daily lives for an hour (play-project.org). We manually annotated infants' interactions with objects during the hour of play. We will report rates and durations of object holding episodes, along with estimates of temporal clustering over time (Goh & Barabási, 2008). These preliminary analyses will reveal how frequently, for how long, and in what clustering structure infants hold objects in their everyday lives. We will discuss variation in temporal parameters across individual experiences that may impact learning. This work contributes to a growing body of literature prioritizing how individuals' experiences shape learning over time (Samuelson, 2021).

Shah, Subrina

University of Oregon

Poster #095

Utilizing Participatory Science: mitochondria structure in postpartum placenta & Alzheimer's in mice

See Shvartsmann, Jacqui

Shenoy, Ameya

University of Oregon

Poster #314

Racial Disparities in Mental Health Treatment

See Rajpara, Saisha

Sherman, Ian

University of Oregon Recent Alumni

Poster #141

Calibrating and Quantifying Cluster Membership of M52 Using GAIA/PMO Photometry

See Biesty, Liam

Shields, Kate

University of Oregon

Poster #091

Relationship Between External Load Metrics and Goals Scored by Attackers on Oregon Women's Lacrosse

See Lippa, Charlotte

Short, Brian

University of Oregon

Mentor(s): Corbett Upton

Oral

Bioswales The Blueprint for a Green Future

In this research, I investigate the impact of bioswales in urban communities as a tool to reduce temperatures to combat the urban heat island effect, to reduce stormwater runoff, and to reduce chemical content in water supplies. Additionally, I assess the cost and location planning related to bioswales. Bioswales are an important factor to consider when designing urban spaces due to their utility, as well as the natural beauty that they provide to grey urban environments. I approach this topic by analyzing journal articles published within the last 20 years, and reporting my findings.

Shreckengast, Kara

University of Oregon

Mentor(s): Rutger Ceballos

Poster #061

**Racialized Economics and the Transformation of the Republican Identity:
From Bush to Trump**

The transformation of the Republican Party and identity from the Bush presidency, through Obama and all the way to the Trump era is representative of one of the most severe transformations of modern American politics. This paper will ask; how did the interplay of racialized economic inequality and partisanship shape the transformation of the Republican Party's identity from 2004 to 2024, and how did this contribute to the ride of negative, opposition based voting behavior. To answer this question, I will develop an original typology which will distinguish between economic populism and racial resentment politics. I will apply this framework to an analysis of the Republican campaign rhetoric across critical periods; the 2004 Swift Boat campaign, the 2006 immigration debates, the Tea Party movement, Trump's campaigns in 2016 and 2020, and lastly the 2024 election. By combining this information, I will look at how Republican messaging has evolved and how that was able to resonate with voters. Understanding this transformation matters. It is a baseline for the ongoing arguments that center around the future direction of the Republican party. Second, this study contributes a framework that future studies can use to categorize political rhetoric and gain a greater understanding of which narratives drive partisan behavior. Third, it is important to understand how racialized economics leads to negative partisanship and the further implications that has on democratic governance.

Shvartsmann, Jacqui

University of Oregon

Mentor(s): Kristen Rahilly

Poster #095

Co-Presenter(s): Subrina Shah

**Utilizing Participatory Science: mitochondria structure in postpartum placenta &
Alzheimer's in mice**

Involving the general public in scientific research, also known as participatory science, is an important way to involve all people in the scientific community, even if they do not directly relate to them. In our poster, we are exploring the Stahl Catcher experiment, which is hosted by the Human Computation Institute, and the Placenta Profile Program hosted by The Rosalind Franklin Institute and Diamond Light source, to discover potential cures for physiological complications. In terms of Stall Catchers, their main goal is to use mice brains to learn about the causes of Alzheimer's development and prevent them. The Placenta Profile Program

analyzes mitochondria donated by women after their pregnancy to discover how it relates to pregnancy failures and come up with potential solutions. Through different graphs, tests, experiments, and images, we will delve into these two issues to do our part in participatory science, while creating our own research question. Our work will showcase the why's and how's of participatory science to increase engagement in scientific research and invite more people to join the scientific community. Using raw data, we will be able to show that scientific projects can be developed in many different and unique ways.

Silvyn, Riley

University of Oregon

Mentor(s): Kristen Rahilly

Poster #096

Co-Presenter(s): Sophie Anjum

Identifying Blood Flow Through Stall Catchers

Participatory science is research that involves the general public in scientific processes, allowing anyone to participate and contribute. We worked with the Human Computation Institute's Stall Catchers program. This program looks at blood flow in mice's brains in relation to Alzheimer's disease. We will be developing our own unique research questions using data from the Stall Catcher's participatory science program. Our work will show just how important participatory science is as a way to get the greater community engaged in scientific research. We will show that science projects can be developed from this data.

Simon, Sam

University of Oregon

Mentor(s): Lila Wollman, Emily Reeve

Poster #237

Cotinine: A Hidden Mediator of Maternal Nicotine Exposure in Developing Respiratory Circuits

Cotinine is widely used as a biomarker of nicotine due to its longer half-life. Although traditionally viewed as biologically harmless, recent studies suggest that cotinine may exert independent or synergistic effects with nicotine. This project investigates how cotinine and nicotine interact in developmentally nicotine-exposed (DNE) rats to produce circuit-level changes in brainstem regions critical for respiratory control.

Using an ex vivo brainstem-spinal cord (BSSC) preparation, we record electrophysiological activity from cervical phrenic nerve rootlets, which innervate the diaphragm and drive inspiration in vivo. Prenatal nicotine exposure disrupts respiratory neural circuits, including reduced burst amplitude and impaired chemosensory

responsiveness, potentially compromising effective breathing. Preliminary analyses in BSSC preparations revealed enhanced inhibitory modulation in DNE pups exposed to cotinine and nicotine. The current project aims to identify the source of cotinine's modulatory effects on respiratory output, focusing on its actions at nicotinic acetylcholine receptors (nAChRs). Specifically, we examine nAChRs expressed on GABAergic and glycinergic inhibitory interneurons that synapse onto phrenic motor neurons. Pharmacological agents are bath applied to BSSC preparations from DNE pups to determine whether cotinine acts as a modulatory inhibitor of nAChR-mediated signaling in the presence of nicotine.

Simoni, Sabrina

University of Oregon

Mentor(s): Forest Pyle, Rachel Eccleston

Poster #037

Succumbing to Permeation: Gothic Consumption and Romantic Symbiosis in Literature and Cinema

It was in the act of reading *Wuthering Heights* by Emily Brontë for the first time that the seed of this thesis was planted. I immediately found Brontë's writing striking, and I was thus completely pulled into the landscape of both the brutal and the beautiful—where love is found to be an affliction that blurs the boundaries of self in the wake of obsession. There is something confounding yet mesmerizing in the binding of *Wuthering Heights*: both in Heathcliff's desire towards Cathy, but also his yearning to be a part of her, to disintegrate alongside her in death in order to become the indistinguishable. This strange and aching sense of aesthetic consumption brought on my own bout of absorption into this topic matter. In this, I found an overwhelming interest in the concept of consumption, in every meaning of the word.

I additionally spent time working with a Professor of German Literature and Media, Dr. Kenneth Calhoon. The original *Nosferatu* directed by F. W. Murnau was introduced to me through Calhoon's lesson on the cultural shift of Bram Stoker's *Dracula*. The unauthorized "rip-off" of this novel sparked controversy, though the Gothic film still exists today, eventually being adapted into the most recent *Nosferatu*, directed by Robert Eggers in 2024. Eggers' approach to adapting this film was in highlighting key aspects. The horror was amplified, and with that, comes a growing sexual undertone.

Simpler, Krista

University of Oregon

Mentor(s): Maithreyi Gopalan, Megan Ellis

Oral

Culture as a Prevention Model: A Systematic Review to Inform Interventions & Policy in Kodiak, AK

In 2025, 25% of residents in Kodiak, Alaska reported needing access to mental health services within the past year. Additionally, 29% of residents reported binge drinking at least once within the last month and 67% of avoidable emergency department visits were attributed to substance use disorders. With a clear need for substance use and mental health intervention, the Kodiak Area Native Association (KANA) implemented programming which integrates local Alaska Native and American Indian (AN/AI) culture. Culturally-based models have been found to improve the quality and efficacy of prevention programming for AN/AI individuals, in addition to building community-wide resilience and support (Masotti et al., 2023; Palimaru et al., 2024). This study is a systematic review of using culture as a prevention model for mental health and substance use interventions, with the intent to inform a needs assessment and community planning on Kodiak Island. In addition, we use a mixed-methods approach-combining quantitative analysis of the Alaska Youth Risk Behavior Survey between the years of 2011 and 2023, with a qualitative analysis of the most recent 2025 Community Health Needs Assessment completed by the Kodiak Island Medical Center, to assess the current needs of the Kodiak community. Our systematic review and mixed-methods analysis will inform future prevention programming interventions on Kodiak Island, and draw public policy insights for rural communities across the state of Alaska.

Simpson, Elizabeth

University of Oregon

Poster #100

Investigating Climate Change and Pollinator Interactions Using The Budburst Program

See Edwards, Penelope

Sinclair, Lindsay

University of Oregon

Mentor(s): Bryce Newell

Poster #352

What does my data look like?: A privacy experiment on digital data rights and adherence to the law

Privacy has been an important ideal in American history, but with the progression of society and technology, the idea of what privacy means has changed. Some safeguards have been put in place to protect personal digital privacy. One example is the Privacy Act of 1974, which protects US citizens from unwarranted government invasions of privacy regarding personal data collection. The Gramm-Leach-Bliley Act followed as a key piece of financial privacy legislation. Today, states have been left a large amount of control over their own data privacy laws. The California Consumer Privacy Act is a notable one, and gives residents significant control over their personal data and has heavily influenced other states.

With the increasing rise of technology, privacy and data protection is an uncertain area for many consumers. A 2017 study emphasizes the concern and skepticism that many consumers feel regarding the collection of their data (Moraes, 2017). Nir Kshetri explores how big data affects privacy, security, and consumer welfare. This research highlights how large-scale data collection can create benefits for businesses and risks for consumers.

This project aims to examine whether consumer data access rights are meaningfully upheld. It is important to examine the gap between data privacy law as written and data privacy laws as implemented in practice.

Singhani, Aashi

University of Oregon

Poster #356

Exploring Body Image Pressure and Eating Disorders in Higher Education

See Bruun, Ella

Sipos, Ava

University of Oregon

Mentor(s): Tom Hahn, August Stolba

Poster #005

Co-Presenter(s): Tyler Orozco, Pragya Prithvi

I Like Bok Choy and I Cannot Lie, Those Other Vents Can't Deny

Designers have tended to rely on active ventilation systems in kitchens. This paper investigated the effectiveness of two ventilation systems in a standard apartment unit's kitchen in Eugene, Oregon. The study hypothesizes that during the hour it takes to cook, the operating vent hood (active ventilation) will lower humidity levels by 10% from baseline condition for each respective data logger in an apartment kitchen at The Campus Lofts residence building. During the hour it takes to cook, the open widow in the kitchen (passive ventilation) will lower humidity levels by 5% from baseline condition of each respective logger in an apartment kitchen at The Campus Lofts residence building. Cooking experiments were conducted to measure humidity and temperature levels before, during, and after the process within a 10-foot radius of the source using the Onset Hobo MX 1102 logger. The measurements were taken in 30-minute intervals for the front door and living room, and 5-minute intervals for the stove and window. To account for environmental variation, external temperature and humidity levels were recorded. The data from these experiments concluded that the vent hood was more effective at reducing humidity than an open window. This was shown by the vent hood decreasing humidity levels by an average of 2%, while the open window lowered humidity levels by an average of 0.75%. This case study concludes that having a vent hood over a stove top is crucial to controlling humidity levels.

Smith, Alexandre

University of Oregon

Mentor(s): Josef Dufek, Johan Gilchrist

Poster #133

Influence of Pulsation on Volcanic Plume Dynamics

Physical models assume that volcanic plumes erupt in a steady manner, as if you turned on a faucet, left it on for some time, then turned it off. In reality, volcanoes erupt in pulses, discreet and measurable segments of activity, with intervals of time in between. My project builds on the work that Dr Johan Gilchrist and I performed last year, investigating the differences between the various physical models. These models can be inverted to solve for volume flux, the amount of material coming out of the volcano per unit of time. Our experiments are done in such a way that all variables are controlled and we have perfect information about all source conditions, which allows for much more robust experimentation than the natural world can provide,

and creates the ideal environment to answer our questions. This project aims to determine whether or not accuracy of these existing models varies with pulsation rate, if these models are viable at end-member regimes, and how does this impact mass flux calculation that rely on plume spreading data.

Smith, Elsa

University of Oregon

Mentor(s): Kaitlyn Werner

Poster #298

Construal Level, Psychological Flexibility, Planfulness, and Psychological Wellbeing Outcomes

Do individuals that think more broadly have better well-being? Recent research has supported this theory. However, it may not be so simple. Expanding upon prior work, we are interested in planfulness and psychological flexibility as mediators in the connection between construal level and wellbeing factors such as anxiety and depression. This data was pulled from a larger study researching smoking cessation in low income, chronic smokers. Participants completed a series of surveys including measures on construal level (Construal Level Identity Scale), psychological flexibility (Personalized Psychological Flexibility Index) and planfulness (Planfulness Scale, Ludwig & Berkman 2019). Using this data, we found a significant positive correlation between construal level and psychological flexibility. As expected, both planfulness and wellbeing were significantly negatively correlated with both outcomes. No mediation was found between construal, planfulness, and well-being, nor construal, psychological flexibility, and well-being. There was no correlation found between construal and either measure of well-being. These findings suggest that planfulness and psychological flexibility do not play a mediating role. Contrary to previous hypotheses, psychological flexibility and construal were correlated rather than planfulness and construal. A multiple regression analysis including flexibility and planfulness found that solely planfulness was associated with better mental health.

Smith, Makenna

University of Oregon

Mentor(s): Kate Celis Mills

Poster #128

Engagement as Resilience: How Student Sustainability Programs Support Climate Coping and Community

Climate anxiety and climate-related distress are increasingly common among college students. Exposure to climate coursework, media coverage, and uncertainty about environmental futures can contribute to helplessness, grief, and overwhelming feelings. Environmental psychology research suggests that collective

pro-environmental action and community-based sustainability initiatives may increase perceived agency, social connection, and adaptive coping. However, most studies focus on activism broadly or climate anxiety in isolation, with limited attention to how campus sustainability programming supports emotional resilience.

The University of Oregon's Student Sustainability Center (SSC) offers engagement through educational events, peer-led workshops, volunteer roles, and sustainability resources. These spaces may foster hope, community connection, and perceived efficacy, even when climate anxiety is not explicitly addressed. Despite the growth of such programs on campuses, little research has examined whether participation contributes to emotional coping or resilience.

This study examines how engagement in SSC programming relates to students' experiences of climate anxiety, hope, resilience, and community connection. By comparing different levels of involvement and incorporating student perspectives through surveys and focus groups, the study explores how campus sustainability spaces may serve as supportive environments that promote adaptive coping with climate-related stress.

Smith, Parker

University of Oregon

Mentor(s): Christina Karns, Rachana Patel

Poster #302

Chat Cafe: Feasibility of a Peer-Led Emotional Intelligence Intervention at the University of Oregon

Compared to the national average of their peers, University of Oregon students report significantly higher rates of depression and anxiety (Healthy Minds Survey, 2021). Peer-led Interventions that promote positive mental health through Emotional Intelligence (EI) are one emerging solution. EI is the ability to perceive, express, understand, manage, and constructively use emotions. EI is associated with positive outcomes such as increased wellbeing (Parker et al., 2021), positive mood and higher self-esteem (Schutte et al., 2002), and is receptive to intervention (Nelis et al. 2009). Meanwhile, peer education models are likely to be effective in higher education settings due to the high importance placed on peer relationships in undergraduates (Pointon-Haas et al., 2024). Therefore, I developed a peer-led, discussion-based EI intervention (Chat Café-EI) based on the Meyer-Salovey (1997) four branch model of EI. To test the feasibility of Chat Cafe-EI, I implemented the intervention in conjunction with The Duck Nest Wellness Center, University of Oregon's peer-led wellbeing organization to gain a deeper understanding of the successes and limitations of the Chat Cafe model. The data collected demonstrated participants' positive reception of the program, specifically the peer-led aspect, as well as areas in need of growth. In addition, Chat Café-EI is an example of how students, such as myself, can meaningfully contribute to fostering wellbeing on campus.

Smith, Sydney

University of Oregon

Mentor(s): Corbett Upton

Oral

The Physics of Abuse: How Technical Scoring Systems Incentives Child Abuse in Women's Figure Skating

Women's figure skating has been held hostage by a prepubescent peak, while child prodigies reach international dominance by 15 and announce retirement due to devastating injury by their eighteenth birthday. While the International Skating Union raised the minimum age for senior competition from 15 to 17 to curb the peak, this policy shift fails to address the root cause: an underlying technical revolution driven by scoring systems. The technical revolution prioritizes high revolution and high risk components, specifically quadruple jumps and triple axels, which favor smaller bodies, with low mass and low rotational inertia.

Consequently, certain federations have adopted "militarized," high-volume, high-intensity coaching models as a rational response to these scoring guidelines. Currently, the model of achievement mirrors a space race in which every federation and child is reaching for the next athletic breakthrough, regardless of technique or longevity. International scoring systems favor achievement in high-technical and revolutionary components over a woman's artistic ability, placing an expiration date on every athlete. This illustrates the shift away from the founding components of figure skating, including the feminine artistry.

My research paper will analyze how ISU's new age requirement is an insincere solution that ignores the biological mandate set by the physics of scoring systems and the subsequent culture that has developed.

Smotryski, Emily

University of Oregon

Poster #310

Sleep Disturbance and Harsh Parenting in Substance Use Disorder Recovery

See Patel, Hiya

Snyder, Isabella

University of Oregon

Poster #301

When Social Media Shapes Eating: Gender Differences in Responses to “What I Eat in a Day” Posts

See Olma, Lydia

Sobotta, Addison

University of Oregon

Mentor(s): Ellen Fitzpatrick, Kate Mills

Poster #129

Evaluating Framing Effectiveness on Increasing Concern for Climate Change from Climate Opponents

Anthropogenic climate change is one of the most significant threats to the future of our planet. Despite this, US voters ranked global warming as their 17th most important voting issue out of 25 options (Leiserowitz et al, 2025). This study focuses primarily on those who are the least motivated/concerned about the issue of climate change, in an effort to move climate change policy opponents closer to becoming allies. The method used to achieve this is by testing different types of framings centered on the top concerns of this population: illegal immigration, government corruption, the cost of living/economy, and crime. A goal of 180 participants will be recruited from the MTurk platform, consisting of voting-age U.S. adults who meet the study criteria, and randomly assigned to different framing types. Each participant answers questions about their climate change beliefs, reads a passage related to their framing category, and then answers the same questions to measure any changes in their responses. Framings will be evaluated based on the average score changes they produce. The results will help inform public information campaigns aimed at increasing support for climate change mitigation.

Solis Mejias, Cam

University of Oregon

Poster #135

A Creative Perspective on Pine Mountain Observatory

See Miller, Spud

Spanks, Maddie

University of Oregon

Mentor(s): Gabe Sanchez

Poster #335

Morphometric Insights into California Mussel Shell Diversity and Seascape Stewardship Practices

Since time immemorial, *Mytilus californianus*, commonly known as the California mussel, has played and continues to play an important role in the lives of native people along the California coast. Mussels are loaded with nutrients that are critical to sustaining life and are an abundant addition to the diets of native Californians. Previous studies have focused on developing methodologies to estimate the size and nutritional value of mussels using morphometric linear regression. In this paper, I employ morphometrics to gain insights into a previously unrecorded site within Año Nuevo State Park. Through these methods, I interrogate evidence of Indigenous seascape stewardship practices. Over the course of this project, I have analyzed 899 mussel umbo samples using morphometric analysis to provide insight into the site's mussel diversity.

Speyer, Cass

University of Oregon

Mentor(s): Susannah Lawhorn, Melanie Spero

Poster #199

Mechanisms of cell aggregation in the obligate anaerobe and opportunistic pathogen, *Finegoldia magna*

Chronic wounds, which affect 2.5% of the US population, are complicated by bacterial infection. Infected wounds are particularly hard to treat when bacterial pathogens form aggregate biofilms, which resist immune responses and tolerate antibiotics. Hard-to-treat chronic wound infections are also characterized by the presence of obligate anaerobes, which are prevalent and associated with worse healing outcomes. The obligate anaerobe and opportunistic pathogen *Finegoldia magna* is prevalent and abundant in chronic wound infections and forms robust aggregate biofilms. Our lab has shown that this aggregation aids *F. magna* survival. To better understand the genetic basis of *F. magna* aggregation, I used experimental evolution to select for *F. magna* mutants that fail to aggregate. This approach revealed an operon encoding two uncharacterized proteins, which I named AggA and AggB. To confirm the necessity of these genes for aggregation, I used our lab's recently developed genetic tools to delete *aggA* and *aggB* individually as well as the entire *aggA-aggB* operon. When *aggA* or *aggB* is deleted, *F. magna* no longer aggregates, demonstrating these genes are required for aggregation. I also determined that *F. magna* uses different surface proteins to mediate different types of biofilm formation. My discoveries improve our understanding of the mechanisms underpinning bacterial aggregation, which will inform novel treatments for chronic wound infections.

Sridhar, Mahathi

University of Oregon

Poster #220

EAA and BFR Treatment to Induce Muscle Resilience Prior to Eccentric Damage

See Godino, Lia

Srinivasan, Anisha

University of Oregon

Mentor(s): Chanel Meyers, Gretchen Nihill

Poster #284

Will you remember me? The role of gender cues in the Own-Race bias in recognition

What makes a face memorable? Extant research demonstrates that individuals more accurately recognize faces from their own racial group than those outside their group, a phenomenon known as the Own-Race Bias (ORB; Hugenberg et al., 2010). ORB is often explained by perceptual expertise and motivational factors, but less work has examined how additional visual category cues, such as gender cues (e.g., hair), influence facial encoding and recognition.

The current study examines whether gender cues affect recognition accuracy and modulate the ORB effect. Our central hypothesis is that gender cues will influence face recognition and the strength of ORB. Specifically, we predict a race and gender interaction in which Black male faces are recognized more accurately than Black female faces. Based on social dominance theory (SDT; Sidanius & Pratto, 2004), faces associated with higher perceived dominance or threat may receive deeper encoding. Recognition of White male and female faces is expected to remain comparable, as greater perceptual expertise may reduce reliance on gender cues.

Using a signal detection paradigm, participants will look at Black and White male and female faces, followed by a recognition task including both previously seen and new faces. Recognition performance will be assessed using signal detection theory.

This study clarifies how gender cues shape attention and recognition, helping explain why some faces are remembered more easily than others.

Steven, Christopher

University of Oregon

Mentor(s): Reis Dorit

Poster #165

Cysteine-activated hydrogen selenide (H₂Se) delivery from isoselenocyanates

Selenium (Se), an essential micronutrient, is necessary for numerous mammalian biological processes. Selenium deficiency has been associated with cognitive decline, thyroid disorders, immune dysfunction, and certain cancers. In the human body, selenium is metabolized through complex pathways to generate hydrogen selenide (H₂Se), a reactive intermediate that serves as a precursor for selenocysteine and selenoprotein biosynthesis. Despite the biological importance of H₂Se, small-molecule, activatable H₂Se donors remain underexplored.

We developed aryl isoselenocyanates (ISeC-R) as cysteine-activated H₂Se donors with tunable release profiles through the incorporation of electronically distinct substituents. H₂Se release was monitored using a previously reported near-infrared fluorescent probe (NIR-H₂Se). Selectivity studies showed strong fluorescence turn-on with cysteine, whereas other biologically relevant sulfur-containing analytes produced minimal response, indicating high cysteine selectivity. Tunability studies revealed that electron-withdrawing para-substituents enhance H₂Se release. Additionally, live cell imaging using the NIR-H₂Se fluorescent probe confirmed that ISeCs release H₂Se in cellular environments. Overall, ISeCs represent cysteine-selective, tunable, and biologically compatible H₂Se donors, providing a platform for advancing the study of H₂Se biology and delivery in cellular systems.

Stevenson, Makani

University of Oregon

Mentor(s): Matthias Vogel

Poster #082

Language Suppression and Power-Education as a Colonial Tool in 19th Century Hawai'i

In this investigation, I analyze how educational language suppression up to the 1896 "English-Only" policy in Hawai'i was used as a mechanism of assimilation aimed at linguistic—and thus cultural—eradication. I examine how control of language was used to solidify colonial control.

Following Patrick Wolfe's argument that settler colonialism relies on the "elimination of the Native," whether through physical or cultural genocide, I argue that language suppression is a central strategy for dismantling the identity, worldview, and historical consciousness embodied in Indigenous languages.

Language is the manifestation of a people's history, worldview, and identity. Therefore, linguistic elimination, or at least suppression to the point of invisibility to the majority, is essential for the colonial power to exert its control as a dominant culture.

Understanding how education has historically facilitated linguistic and cultural destruction of Hawaiian life, allows us to consider how educational systems can instead support revitalization, decolonization, and the reassertion of cultural sovereignty today.

Stoufer, Elinor

University of Oregon

Mentor(s): Matthias Vogel

Poster #059

Politics & Economics: A Study on the Relationship between the U.S. and China

This research project examines the relationship between political dynamics and economic interactions between the United States and China, focusing on how political conditions shape bilateral trade policies and outcomes. Through a literature review of peer-reviewed research and official government data, the study draws on historical empirical evidence, international political economy frameworks, and case studies such as China's accession to the WTO and the 2018 U.S.-China trade war. The findings indicate a consistent correlation: improved political relations correspond with increases in bilateral trade, whereas political deterioration is associated with trade declines, tariff imposition, and heightened economic tensions. The research also identifies an asymmetry in trade effects: rising Chinese exports to the United States tend to improve political relations, while increases in U.S. exports to China often coincide with political strain. Overall, the project demonstrates that political relations are a critical determinant of U.S.-China trade outcomes and challenges the assumption that economic interdependence automatically promotes cooperation.

Strege, Joshua

University of Oregon

Mentor(s): Matthias Vogel

Poster #090

Co-Presenter(s): Alex Allen

Ukrainian conflict and its effect on European market trends

The war in Ukraine has had a profound impact on the European defense sector, reshaping production capacities, export dynamics, and market strength. Following 2022 with the Invasion of Ukraine and attempted expansion of the Russian federation, security concerns and a new focus on expanding NATO strength has

driven European countries to increase government defense budget/ spending. European defense companies have accelerated manufacturing of arms in order to meet long term growing contracts with EU countries to re-arm Europe and supply stockpile arms to Ukraine. To find accurate and not government affiliated or influenced sources, as well as analyze current stock trends between European defense companies and cross referenced these findings with the Ukraine-Russia war timeline. Results show that there is a direct relationship between the production of munition and ordnance suppliers and the Ukraine-Russia war. This demonstrates how companies that aren't official bureaus of the government can still be interested in corporating with the governments demands as it offers them a client that consumes their product in high volume. Overall, the war has reactivated a dormant-European defense sector from a relatively stable industry into a rapidly and strategically expanding central component of Europe's economic and security architecture.

Strother, John Porter

Umpqua Community College

Adhesion Strength of Pine Tar at Different Temperatures

See Munn, Trey

Stubbert, Henry

University of Oregon

Mentor(s): Gabriella Lindberg, DeShea Chasko

Career Insights and Experiences

Chasing cytotoxicity in modified gelatin hydrogels and learning to think like a researcher

This project began as an effort to improve the cytocompatibility of modified gelatin hydrogels used for cell encapsulation. Early experiments produced inconsistent cell viability, prompting a deeper investigation into the underlying cause. Through iterative testing and process refinement, I identified that residual emulsified particles formed during the chemical modification step were likely contributing to cytotoxic effects within the material.

Rather than treating these outcomes as isolated failures, this work became an exercise in tracing cause and effect across a complex system. Each unexpected result informed the next experimental decision, leading to adjustments in synthesis, purification, and handling techniques. Over time, this process improved both material performance and experimental consistency.

More importantly, this experience reshaped my understanding of research. I learned to approach problems as dynamic systems, to question assumptions at every stage, and to use failure as a source of information rather than a setback. This project ultimately served not only as an investigation into hydrogel cytotoxicity, but as a foundation for developing the mindset required for effective scientific inquiry.

Sucec, Kasey

University of Oregon

Mentor(s): Sam Hopkins, Maddie Ball

Poster #131

Phylogenetic Signal in the Order Carnivora

The order Carnivora, containing many of the modern carnivorous mammals, is comprised of two branches: feliforms and caniforms. These branches exhibit differences in levels of variation. Caniforms seem to exhibit greater evolutionary variability and less phylogenetic constraint than the feliforms, evidenced by the high variation in dog breeds and wild caniforms. Feliforms seem to be less variable over evolutionary time and more phylogenetically constrained. This project examines whether feliforms exhibit more phylogenetic constraint in the limb bones than caniforms, and if this constraint affects the accuracy of mass regressions within the feliform branch. A dataset of both feliform and caniform limb bone lengths was compiled and used to construct mass regressions to determine whether one group had limb bones that were more correlated to body mass, indicating phylogenetic constraint. The results of these regressions indicate that feliform humeral/femoral lengths are more correlated than the caniforms. The two feliform regressions had R^2 values of 0.9671 and 0.9597, respectively. The caniform regressions had lower R^2 values, both showing a value of 0.8492, indicating that there was more variation in the limbs than could be explained just by size. The next phase of research will entail using a phylogenetic analysis of the Carnivoran dataset to construct phylogenetic regressions to determine whether the evolutionary patterns of variation differences hold within these groups.

Sullivan, Bryn

University of Oregon

Mentor(s): Emily Simnitt

Oral

Liminal Spaces and College Culture: The Old Campus Quadrangle at the University of Oregon

The Old Campus Quadrangle is the oldest part of the University of Oregon campus. The relationship between historical preservation and contemporary values is on display in the space. While it may seem subtle at

first glance, the depth of cultural impact in this unassuming scattering of walkways and trees is immense. This paper analyzes the importance of quiet spaces like the Quad to campus community, moving past initial assumptions to explore its broader significance. I examined University Hall and its surroundings, and specifically focused on the value of the entire Old Campus Quadrangle area as a liminal space on campus. Describing the Old Campus Quad as liminal allows for a broader perspective than specifying between physical or intangible transitionality.

Delving into a less commonly discussed part of the University of Oregon campus provided a broad collection of topics to guide the project, from representation on campus to tangible and natural heritage. These subjects became the anchor that solidified the thematic basis of the essay. Research included reviewing archival and non-archival sources, and utilized the Special Collections and University Archives resources. Among these sources was a hundred-year-old scrapbook, which informed the focus on campus culture.

This paper demonstrates the impact that everyday transitional spaces can have on the lives of all those who pass through them, and highlights the power of renewal in upholding institutional morals.

Suriano, Avery

University of Oregon

Mentor(s): Jackie Kuyat, Emily Sylwestrak

Poster #263

Evaluating the Effects of Chronic Stress on Reward Prediction Error Signaling in Mice Over Time

In humans and animals alike, chronic stress can cause lasting deficits on a variety of behaviors. These impacts often present as anxiety, anhedonia, and reduced motivation to seek reward. Several studies have linked behavioral changes to neural activity changes in regions related to reward processing. One key region is the lateral habenula (LHb), which has been found to influence reward-motivated behavior by signaling reward prediction error (RPE): the difference in value between expected and obtained outcomes. LHb neurons increase in activity at worse-than-expected outcomes (negative RPE), and it has been shown that chronic stress attenuates these LHb-derived RPE signals and influences reward-guided behavior (Nuno-Perez et al., 2021); however, the long-term stability of stress-induced attenuation of RPE signals remains unclear. Identifying persistent changes to neural activity may provide insight into how stress causes lasting behavioral changes. To test this, we trained mice on a cued-reward task in which they learned to expect sugar-water rewards, with 10% of trials omitting rewards. We used fiber photometry to record the activity of LHb neurons during negative RPE before and after a chronic stress paradigm. We then validated the paradigm's effectiveness using standard rodent anxiety tests. Overall, results were inconclusive, leading us

to believe there may be other underlying mechanisms to explore in order to determine long-term impacts of chronic stress on RPE in LHb.

Suryanata, Natafira

University of Oregon

Mentor(s): Audrey Klein, Teresa Rapp

Poster #168

Light Sensitive Protein Tether for On-Demand Drug Delivery

Systemic drug delivery lacks specificity and control over the timing and concentration of the drug at the target site. Localized delivery addresses this by administering drugs directly at the desired area, with biocompatible hydrogels serving as injectable or implantable platforms. While affinity-based hydrogel systems provide increased control over protein release rates by temporarily binding them to the hydrogel matrix, this model lacks user control over release, requiring re-engineering to alter release profiles. Herein we introduce a system that maintains the altered release rate of affinity-based systems but provides on-demand release through light-triggered external control. This system uses a photocleavable, heterobifunctional ruthenium tether to covalently bind protein cargo to a hydrogel's polymer matrix. Through a three-step, high-yielding synthesis, we made a ruthenium cross-linker containing both an aldehyde for hydrogel attachment and a vinyl sulfone ligand for protein conjugation. We evaluated ligand kinetics with both cysteine and bovine serum albumin (BSA), confirmed protein activity with added thiols, and demonstrated cargo release upon irradiation. This platform offers a versatile, adaptable approach for targeted protein delivery, offering the control that current systems lack. Future work will leverage this system for triggered sequential release of multiple proteins using modified tethers that selectively respond to different colors of visible light.

Sweet, Shamiyah

University of Oregon

Mentor(s): Andrew Lovering

Poster #236

Effect of Sex Assigned at Birth and Patent Foramen Ovale on Blood Oxygen Affinity and Exercise

Authors: Shamiyah Sweet, Andrew Lovering

Background: Oxygen (O_2) delivery depends on hemoglobin (Hb) affinity, reflected by P50, the partial pressure at which Hb is 50% saturated. Physiological factors such as pH, CO_2 , temperature, and metabolic activity can shift the O_2 -Hb dissociation curve. A Patent Foramen Ovale (PFO), present in ~25% of individuals, may impair

gas exchange via right-to-left shunting, particularly during exercise when shunting can increase. Reduced arterial oxygenation may increase reliance on enhanced peripheral O₂ unloading, potentially reflected by a rightward shift in the O₂-Hb dissociation curve.

Methods: P50 was measured in 74 participants (22 females) using venous blood gases and calculated via the Hill equation. Blood samples were analyzed for Hb saturation, pH, pO₂, and pCO₂. Participants (n=69) were classified as PFO+ (n=37) or PFO- (n=32) using saline contrast ultrasound. Some participants completed VO₂max testing (n=58) or 5K time trials (n=22) to assess performance. Group differences were analyzed using unpaired t-tests, and relationships were evaluated with Pearson correlations (p<0.05).

Results: P50 differed by sex, with females showing a right-shifted curve (p50=25.94) compared to males (p50=24.97), p=0.032. No significant effects of PFO or performance were observed.

Conclusion: Sex differences in Hb oxygen affinity may influence oxygen delivery during exercise.

F

unding: Department of Defense and Partnership for Clean Competition.

Swift, Emily

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #042

Fairy Jane: An Analysis of Fairy Language in Jane Eyre

My research for ENG 457: The Country and The City analyzes fairy terminology in Charlotte Brontë's *Jane Eyre* and its attribution to Jane, in order to understand what it reveals about Jane's character, her femininity, and agency. I explore the multiple definitions of fairies in the Victorian era – as both folkloric creatures and characters for children – and how the comparison to Jane as a fairy of folklore establishes her as a powerful woman who cannot be controlled, and does not fit into traditional expectations of femininity. Outside of textual analysis of *Jane Eyre*, I examine secondary sources that give contextual information on the various definitions of fairies in Victorian literature and culture, including Carol G. Silver's *Strange and Secret Peoples: Fairies and Victorian Consciousness*, and Nicola Bown's *Fairies in Nineteenth-Century Art and Literature*. I build off earlier interpretations of fairy language by Helene Moglen in *Charlotte Brontë: The Self Conceived*, and Sarah R. Wakefield in *Folklore in British Literature: Naming and Narrating in Women's Fiction, 1750-1880*. While other interpretations of fairy language in *Jane Eyre* interpret it as dehumanizing rhetoric that is placed onto Jane, my research sees fairy language as a conscious literary choice that reflects how Jane does not conform to expectations of femininity in the novel.

Swinson, Sara

University of Oregon

Mentor(s): Jen Phillips

Oral

Uncovering a Novel Disease Gene: The Association Between Human Disease and PAPSS1

After a long, fruitless struggle to receive a diagnosis, a young girl with a unique disease symptomology joined forces with the Undiagnosed Disease Network, providing an opportunity to bridge the fields of medicine and research. Established as a participant in the investigation, she underwent in-depth genetic analysis. The workup identified two variants in PAPSS1: a gene with no prior association with human disease. To evaluate the likelihood that genetic changes in PAPSS1 were the cause of the unusual collection of symptoms in this individual, zebrafish models were generated to mirror each mutation found in the participant. Experimentation and observation revealed similarities in symptoms across various systems in the zebrafish, providing preliminary evidence of a causal relationship between PAPSS1 and this specific disease profile. Not only did the fish models express symptoms similar to those seen in the participant, but they also displayed distinct symptoms with increased severity, illuminating the important role of this protein to a broader range of functions throughout the body. This study suggests a key role in development for PAPSS1 and gives insight into the disease patterns associated with its mutation.

Tan, Samantha

University of Oregon

Mentor(s): William Skinner, Ghee Ong

Poster #192

Design of Non-Invasive Magnetoelastic Sensors for Real Time Monitoring of Human Stem Cell Growth

Human mesenchymal stromal cells (hMSCs) are multipotent adult stem cells widely used in regenerative medicine for tissue repair, modulation of immune response, and other therapeutic applications. A success in clinical treatments utilizing these stem cells have created a need in the cell manufacturing industry, where existing technologies for monitoring cell density are generally invasive and destroy or alter the cells sampled. To advance large-scale manufacturing of hMSCs for therapies, maintaining cell quality and tracking critical process parameters in cell growth are imperative. We addressed these challenges by designing and developing a biocompatible, non-invasive, wireless magnetoelastic sensing system for real-time monitoring of adherent hMSCs. Sensors were fabricated from magnetoelastic material sensitive to mechanical loading, and placed in solenoids embedded with neodymium magnets to provide a bias field. Sensor resonance spectra were measured using a network analyzer, enabling detection of changes in mechanical stress

associated with cell growth. Following cell seeding, the system's performance was evaluated for its ability to track cell growth stages and density within a bioreactor environment. Our results demonstrate a linear correlation between shifts in sensor resonance and cell quantity. This approach offers a promising platform for cell culture monitoring, with potential to enhance the scalability of stem cell manufacturing for therapeutic applications.

Tanaka, Emma

University of Oregon

Mentor(s): Andrew Lovering, Igor Gladstone

Poster #225

The effect of sildenafil on pulmonary resistance and exercise performance in adults born preterm

Preterm birth (≤ 32 weeks) results in dysanaptic heart and lung growth that creates persistent cardiopulmonary and respiratory challenges that contribute to reduced exercise performance in adulthood. The purpose of this study was to investigate the effect of a pulmonary vasodilator known as sildenafil on reducing total pulmonary resistance and improving exercise performance in adults born preterm. Previous studies have found that sildenafil is beneficial in reducing and treating pulmonary hypertension, but the impact of sildenafil on the pulmonary circulation and exercise performance in those adults with a history of preterm birth remains unknown. In 14 participants aged 20-24 (7 full term controls (CONT) and 7 preterm born (PRET)) who were matched for age and sex, we conducted a series of time to exhaustion trials during which each subject exercised on a cycle ergometer at 80% of their maximum power output with and without ingestion of 100 mg sildenafil. Ventilatory and metabolic data were collected throughout the duration of each trial. Preliminary analyses indicate that oxygen saturation levels (SpO₂%) decreased significantly at 50% through the trial and at the end of the trial with sildenafil in the PRET individuals compared to the CONT individuals. Despite the sildenafil effect of lowering saturation in the PRET group, there was no significant effect on TTE. Data collection is ongoing and will resume in fall 2026 to collect additional age and sex matched controls.

Taylor, Kayla

University of Oregon

Mentor(s): MacKenzie Christensen, Raoul Lievanos

Poster #035

Depictions of Family Life in Reality Television

How have reality television depictions of family life changed across time? How do depictions of family life differ across traditional and non-traditional family types? To answer these questions, a content analysis

looking at reality television shows was performed to understand how the ideals of the traditional family are portrayed across time. The first season of TLC shows with air dates between 2009 and 2019 were watched, deciphering human interaction to distinguish how individual families create their ideal family. Each family was analyzed on their alignment to traditional ideals. Conclusions on adherence rely on aspects such as race, class, sexuality, values, beliefs, makeup, roles and occupations. Preliminary findings suggest that there is a fluidity and rubber-banding effect across time with how closely families demonstrate traditional ideals. Across the traditional families over the years, families started closer to traditional ideals, then moved further away to the edge of being traditional, before finally going back to traditional ideals. Previous research has been done on the sociology of the family, but sociological research on families in reality television is lacking. This study sought to fill this gap by studying families in an atypical context. While reality television may exaggerate or understate aspects of family life, the adherence to and straying away from traditional ideals can be representative of family life at the time of each show's airing.

Te, Rora

University of Oregon

Mentor(s): David Johnson

Poster #174

Polyethylene Glycol Engineered Hydrogels: Delivery of Muscle Cells

Volumetric muscle loss (VML) is an irrecoverable loss of more than 20% of muscle, leading to structural and functional impairment. Not many biomaterial therapies mimic the natural anisotropy of muscle, but approaches that do, show more promise to accelerate cell-mediated regeneration. To this end, a novel anisotropic poly(ethylene glycol) (PEG) hydrogel was developed to promote myoblast alignment. The hydrogel is comprised of functionalized four-arm 20 kD PEG-maleimide (4.0%) and eight-arm 20 kD PEG-norbornene (0.3%), non-enzymatically degradable thiol-crosslinks, and cell-adhesive ligands. In a two-stage polymerization process, a lightly crosslinked network formed via a Michael addition reaction is stretched to create anisotropy before the final photopolymerization stage between remaining thiols and norbornene groups. We hypothesize that the anisotropic hydrogel will enhance myoblast survival and alignment which will allow mature myofiber formation essential for treatment of muscle injuries. C2C12 myoblasts were encapsulated within the hydrogel during fabrication. Cell viability and morphology were then evaluated using fluorescence imaging. Preliminary results indicate $\geq 70\%$ viability two weeks post-encapsulation. Future studies will investigate alignment and differentiation compared to the use of enzymatically degradable crosslinkers.

Tegtmeyer, Maggie

University of Oregon

Wood Morphologies–Ultralight Curved Wood Surfaces

See Landsman, Gaia

Teopaco, Madison

University of Oregon

Mentor(s): Rachel Jacobson-Salamatian, Sara Weston

Poster #296

The Effects of Code Switching in Public vs. Private Self on Internalizing Symptoms

Language in society is a way of cultural expression for many individuals. Having this identity makes a person feel connected to their cultural group and involved in their group membership. Bilingual individuals participate in code-switching, the practice of modifying one's speech, behavior, or appearance to adapt to different situations or cultural norms. Language-based code-switching is common in daily lives, and understanding the impact language has on internalizing outcomes is what the present study seeks to examine. Many individuals may feel out of place in public spaces, and may speak the host language to fit in with the societal norms. There can be a disconnect between public and private expectations, allowing the individual to adopt alternative language styles. The internalizing symptoms being measured, collective self-esteem and well-being, are two prominent aspects of one's sense of belonging. Individuals who code-switch may feel lost in their individual distinctiveness or may experience identity conflict, unsure of where they fit in. The research project uses the Collective Self Esteem Scale, as well as the SPI Well-Being Likert subscale to examine the relationship between code-switching and internalizing symptoms.

Terry, Emily

University of Oregon

Mentor(s): Michael Coughlan

Poster #340

Middle Fork Obsidian Database: A Tool for Understanding Obsidian Hydration in the Willamette Forest

The U.S. Forest Service's Middle Fork Ranger District is in the southern part of the Willamette National Forest. Used recreationally for hiking and biking, this area is also home to various archaeological sites. These archaeological sites have been investigated for decades, including excavations ranging from the 1970s to the mid-2000s. Thousands of obsidian artifacts have been recovered from these excavations and analyzed for X-ray fluorescence and obsidian hydration. We digitized and curated data for each obsidian artifact into

a database. This database includes variables such as archaeological site, excavation depths/increments, obsidian hydration measurements, and metadata such as the obsidian lab information. Obsidian artifacts help us understand pre-contact Indigenous economies, social networks, hunting and gathering activities, and the timing and intensity of Indigenous land use. Thus far, the database includes data on obsidian artifacts from 47 archaeological sites. Once complete, the database will be made available for future researchers interested in obsidian studies.

Thacker, Malia

University of Oregon

Poster #093

The Impacts of Participatory Science on Earth-Related Research

See McCurry, Hannah

Thilavalli, Prerana

University of Oregon

Mentor(s): Karen Guillemin

Poster #196

Effects of Microbiome-Derived BefA on Mitochondrial Dynamics and Function in Pancreatic Beta Cells

Pancreatic β -cells are the body's sole insulin-producing cells and depend on mitochondrial integrity for proper function, as mitochondrial metabolism directly regulates insulin secretion. Even early alterations in mitochondrial structure can impair insulin release and contribute to the progression of diabetes. This study investigates the effects of BefA, a microbiota-derived protein, on mitochondrial network remodeling in β -cells. INS-1 cells are treated with BefA and compared to untreated controls, as well as FK506 and AICAR, which serve as reference conditions for mitochondrial dysfunction and adaptive remodeling, respectively. Mitochondrial morphology is quantitatively assessed using confocal imaging and computational analysis of network features, including mitochondrial count, connectivity, and fragmentation. Preliminary findings confirm that FK506 induces mitochondrial fragmentation, validating the experimental and analytical approach. Ongoing work focuses on assessing cellular energy dynamics and extending these findings to an in vivo zebrafish model. This study aims to characterize the effects of BefA on mitochondrial organization in β -cells and provide insight into how microbiome-derived factors may influence β -cell health.

Thompson, Audrey

University of Oregon

Poster #091

Relationship Between External Load Metrics and Goals Scored by Attackers on Oregon Women's Lacrosse

See Lippa, Charlotte

Thompson, Laila

University of Oregon

Mentor(s): Matthew Higgins

Poster #277

The Gut-Brain Axis: Neurotransmitter dynamics and Molecular Immune Interactions in Meta-Analysis

The gut-brain axis describes a bidirectional relationship between the enteric nervous system of the gastrointestinal tract and the central nervous system. A substantial body of literature has established robust correlations between gut microbiota composition and neurodevelopmental and psychiatric disorders. Gaps in our understanding of the underlying causal mechanisms remain. A consistent theme emerges across both clinical and preclinical studies: the fundamental “how” and “why” driving these relationships are not entirely understood. This presentation highlights the questions likely to drive future discoveries and research directions. Presented in a scientific poster accompanied by an oral presentation component, this presentation integrates visual representations to enhance conceptual understanding and engage both specialized researchers and broader audiences.

Thompson, Seth

University of Oregon

Mentor(s): David Wacks

Oral

La Biblia de Alba: Proverbs in Medieval Spain and Jewish Biblical Commentary

Moses Arragel was a renowned Jewish scholar living in 15th century Spain. Most notably he was the author of La Biblia de Alba, a translation of the Old Testament into medieval Castilian. However, his work on Old Testament scholarship didn't stop at translation but also included his own commentaries. His commentaries contain many instances of proverbial phrases rather than rabbinic language, usually paraphrasing other major commentators. To draw out my eventual conclusion my mentor, Professor of Spanish David Wacks, provided for me a list of proverbs that appear within La Biblia de Alba. We examined these proverbs in the

context of the primary source and cross referenced them with commentaries from other Jewish scholars to which Arragel would have had access. I supplemented my research with secondary sources regarding the nature and history of proverbs, analysis of proverbs in medieval Spain, and history regarding Jews in medieval Spain.

In La Biblia de Alba, proverbs are used to emphasize or drive home Arragel's main arguments the same way a religious leader would incorporate common wisdom into a sermon. Incorporating proverbs in this way demonstrates Arragel's intention to connect with non-Jewish audiences during a time of rising antisemitism, eventually culminating in the expulsion of the Jews. Arragel's work is an example of genuine interfaith dialogue during a time where religious minorities were often misrepresented and derided.

Tidwell, Alexander

University of Oregon

Mentor(s): Katelyn McDonough, Alison Carter

Poster #339

Assessing LA-ICP-MS for Geochemical Sourcing of Chert from the Blue Mountains and Columbia Plateau

Sourcing obsidian artifacts in Oregon has had a fruitful legacy in archaeological research, shining light on precontact Indigenous trade and travel mobility dynamics throughout the Pacific Northwest. While obsidian is ubiquitous in Northern Great Basin territories, cherts dominate the artifact assemblages of Columbia Plateau cultures. Understanding the distribution of these vital toolstones will likely bear valuable insight into what has been a conspicuous gap in our knowledge regarding early Indigenous populations' interactions with the environment and each other. This project applies laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) to address the challenges of chert artifact provenance research in regions where it would be highly valuable: Oregon's Blue Mountains and the Columbia Plateau. I discuss the sampling methods, the application of LA-ICP-MS technology, and the results which act as the initial steps toward developing a geological chert source database as a resource for future chert artifact provenance research in the region.

Tinio, Olivia

University of Oregon

Mentor(s): Samantha Shune

Poster #357

Assessing the Impact of Paid Leave Oregon on New Fathers' Mental Health and Family Dynamic

Postpartum depression (PPD) is the condition of serious, prolonged depression in new parents that can occur anytime within a year following a child's birth. Research concerning PPD in women has improved in the past few decades, but this condition remains largely underinvestigated in men, despite as many as 25.5% of men being affected by PPD. Studies suggest that there are many contributing factors to the development of PPD in men, including lack of social support, perceived stress, and financial strain.

It has been observed globally that parents who readily have access to postpartum leave, particularly paid leave, have better health outcomes for their families. However, the United States remains only one of a few developed countries that has no federal paid leave policy to protect this vulnerable population.

In 2023, the State of Oregon implemented a new leave policy, Paid Leave Oregon, that allows eligible workers to take up to twelve weeks of paid leave. This study aims to determine whether Paid Leave Oregon has been effective in allowing new fathers to take paid leave during the perinatal period, and if taking paid leave is correlated with mental health in men. Preliminary findings have suggested that the Paid Leave Oregon has been widely used by Oregon fathers since its inception, and that paid leave may be associated with good health outcomes. This research will support new parents and influence policy decisions that will affect how parents navigate their new family.

Tongue, Jason

University of Oregon

Poster #094

The Role of Human Picture Analysis on Machine Learning in Alzheimers and Marine Habitat Research

See Ebbers, Ethan

Torres Granados, Angelina

University of Oregon

Mentor(s): Alayna Park, Tessa Palafu

Poster #344

What Works in the Room: Clinician-Rated Cultural Adaptations for Latine Youth Mental Health Care

Latine families experience unique stressors and protective factors. Yet, evidence-based treatments (EBTs) are often developed with majority populations and may not reflect the experience of Latine families. Culturally adapted treatments involve modifying EBTs to enhance cultural responsiveness and effectiveness, but there is limited guidance on how to adapt. This study examined which cultural adaptations clinicians consider important and feasible to use with Latine families.

In group meetings, 5 youth, 6 caregivers, and 6 clinicians with experience in Latine mental health brainstormed 78 cultural adaptations and rated the importance and feasibility of using each adaptation on a scale of 1-6. A Go-Zone map plotted adaptations based on their average importance and feasibility scores. Adaptations scoring above the average ratings were identified. This study focuses on clinician responses due to their familiarity with the treatment setting.

The mean importance rating across items was 5.04 (SD = .48) and the average feasibility rating was 4.88 (SD = .45). The highest-rated statements were that therapists should celebrate teen progress (Importance = 5.83, Feasibility = 5.67) and provide families with information about signs and symptoms of mental health concerns (Importance = 5.67, Feasibility = 5.83). These cultural adaptations align with foundational counseling skills, suggesting that many clinician-endorsed adaptations overlap with core elements of competent clinical practice.

Trail, Maggie

University of Oregon

Mentor(s): Genevieve Romanowicz, Jessica Aldrich

Poster #176

Vascularized Bone-Like Micro-Organoids Exhibit Distinct Mineral Morphology

Blood vessels are critical for successful osteogenesis within the body during development and after injury. To study this complex mechanism in-vitro, the Guldberg Lab developed a high-throughput method to fabricate bone-like micro-organoids from human mesenchymal stromal cells (hMSCs), with and without rat microvascular fragments (MVs). Previous histology and fourier transform infrared spectroscopy

(FTIR) revealed changes in tissue morphology and mineral character upon the inclusion of MVFs, while microcomputed tomography showed no difference in mineral density between bone-like micro-organoids with and without MVFs. Small-angle x-ray diffraction tensor tomography (SASTT) data obtained using a synchrotron particle accelerator enabled us to visualize differences in crystallinity, alignment, and distribution of mineral at a molecular level. Bone-like micro-organoids containing MVFs had swirling internal mineral orientation compared to those lacking vasculature. This could be indicative of woven bone character, which is consistent with the greater carbonate content observed in samples containing MVFs using FTIR. Mineral crystals in the samples containing MVFs appeared more disordered around their periphery, although they displayed some crystals of a larger size compared to the bone-like micro-organoids without MVFs. These results shed light on the complex nature of in-vitro osteogenesis and the variation introduced when incorporating microvascular fragments.

Trivedi, Shivani

Mercer University

Mentor(s): Suranganie Dharmawardhane, Jessica Colón Gonzalez

Poster #166

Assessing the Antimetastatic Efficacy of Drug Derivatives in HER2+ Breast Cancer

Cancer metastasis causes 90% of cancer deaths, yet currently, there are no effective antimetastatic cancer treatments. The Rac1 protein is significant in metastasis due to its role in cytoskeletal rearrangements and cell migration, making it a promising target for antimetastatic compounds. We first developed a compound, CPV-337, that can inhibit Rac activation with an IC₅₀ of ~55nM, which is much lower than the 1-5μM IC₅₀ values demonstrated by other Rac inhibitors and ~100nM of its parent molecule MBQ-167. By screening CPV-337 derivatives, we have identified PLC-006 and PLC-017 which have increased Rac1 inhibition of ~57% and ~50% at 50nM and a GI₅₀ of ~29nM and ~14nM. They also inhibit cell migration by 17% and 37% compared to CPV-337 at 33%. Whether these compounds inhibit Rac through transcriptional/translational degradation or GDP/GTP exchange will be investigated in future studies. The development of these derivatives is significant to inhibiting previously “undruggable” proteins and presents a potential for a highly effective metastasis treatment.

Trombley, Haley

University of Oregon

Mentor(s): Mai-Lin Cheng

Poster #043

**Into Goblin Country: Reimagining the Fantastical Through Christina Rossetti's
Goblin Market**

I am developing a research style poster for my ENG 457: Country and City class with Professor Cheng. I aim to study Christina Rossetti's use of fairy tale conventions in her poem Goblin Market in order to find out how her poem transcends standard expectations of children's and fantasy literature, because I want my reader to understand Rossetti's unique literary style and the factors that influenced her. I want to identify specific themes in Goblin Market and assess how Rossetti appears to subvert and adhere to them. This will allow me to further identify and analyze the techniques and elements unique to Rossetti's writing. As a result, my primary source for this project is the entirety of the poem with close readings of specific phrases or passages. Additionally, to support my insights, I will incorporate secondary sources that illuminate interpretations of the text rooted in the poem's language and context. One piece of context that will be especially useful is the poem's distinct use of the rural environment. I will use 4 texts to help center my research on topics of Romanticism, genre traits, artistic integrity, and the use of whimsy as a literary device. This project will serve as a way for audiences to consider their own personal understanding of fairy tales and who they are for in addition to exploring the mode of Romantic poetry as multilayered storytelling.

Truong, Metta

University of Oregon

Poster #086

Ethics of Archaeological Excavation in Egypt

See Ramcharan, L'Nae

Tsuang, Cheyenne

University of Oregon

Poster #299

**Pedagogy, Prior Expectations, and Executive Skill Jointly Shape Children's
Exploratory Activity**

See Sebree, Megan

Tunji-Ogunsanya, Oyinkansola

University of Oregon

Mentor(s): Emma Jacobs, Felix Deku

Poster #278

Stability and Adhesion of EIROF and PEDOT Coatings on Microelectrodes for Neural Interfaces

Implantable neural interfaces require microelectrodes that can maintain stable electrical performance over long periods of time. Materials such as electrodeposited iridium oxide films (EIROF) and Poly (3,4-ethylenedioxythiophene) PEDOT are commonly used to improve charge transfer and reduce electrode impedance. The purpose of this study was to evaluate the stability, adhesion, and electrochemical performance of hybrid coating of PEDOT and Iridium Oxide (IROX) on gold microelectrodes. Gold microelectrodes were deposited with different material layers, Au-EIROF-PEDOT, Au-PEDOT-EIROF, Au-PEDOT, and Au-EIROF. Baseline electrochemical characterization was measured using Cyclic Voltammetry (CV) and Electrochemical Impedance Spectroscopy (EIS) to evaluate charge storage behavior and impedance characteristics. Initial fabrication and imaging confirmed deposition of PEDOT and EIROF coatings on gold microelectrodes across the different stackings. Baseline electrochemical measurements were collected to establish reference performance for each electrode structure prior to long-term electrochemical testing. Understanding how PEDOT and EIROF interact in multilayer coatings may help identify electrode architectures that improve adhesion, electrochemical performance, and long-term reliability. These findings will inform future studies evaluating coating durability under extended electrochemical cycling and pulsing conditions for neural interface applications.

Twiggs, Sara

University of Oregon

Mentor(s): Emily Simnitt

Creative Work

Nature as Rhetoric

This is a creative short fiction piece about how we as civic actors can take inspiration from nature and its processes, from plate tectonics to cross-species collaboration, and apply it to the way we engage rhetorically and politically. It takes the reader on a journey to the peaks of the tallest mountains to the deepest depths of the Earth in order to observe and praise the small and the slow. It is heavily inspired by adrienne maree brown's book Emergent Strategy, which similarly promotes strategies of civic engagement based on the workings of the natural world. Though even more influential than brown's theory is her tone. Her writing is near bursting with hope and wonderment, and it's an approach that feels as vulnerable as it does powerful.

Hope is something that never fails to be relevant, but feels especially important in our current political climate. Equally important is compassion, which I draw from Rosi Braidotti and her theories of posthuman interrelationality. Her work casts aside the individualism and anthropocentrism that rules Western culture and instead thinks about the world as a complex network of interactions between individuals, groups, and species. It is this focus on the collective and interrelational that I aim to emulate.

Twitchell, Ollie

University of Oregon

Mentor(s): Jeanette deJong

Career Insights and Experiences

USITT Conference—Conducting Costume Research in an Image-Saturated World

Costume research is foundational to the design process—but how do we practice rigorous, ethical research in a digital landscape saturated with uncensored images? In this presentation, I share my experience presenting at a national conference as an undergraduate costume designer alongside my faculty mentor and a guest faculty member from another university.

Drawing from coursework, production research, and a university-sponsored costume research grant, I reflect on navigating both digital and in-person sources with discernment and accountability. Speaking from a student perspective, I examine how mentorship, archival practice, and classroom training shape responsible research habits.

Twitchell, Ollie

University of Oregon

Mentor(s): Jeanette deJong

Oral

Preserving the Past: Innovations in Costume Storage and Archival Practices

This project focuses on the archival cataloging, preservation, and storage of historical and stage costumes within the University of Oregon Theatre Arts Department. The purpose of this research is to better understand historical women's garment construction and compare those techniques to contemporary stage costume practices. Central to the project is the question: how have costume storage and cataloging practices evolved over time, and how can modern methods improve preservation today? Through close study of historical garments in the department's costume archives, I compare historical and contemporary construction methods, evaluate each garment's condition (determining whether to preserve, restore, discard, or donate), and document the collection through photography and detailed spreadsheets. I also test best-practice storage and cataloging techniques to improve long-term care. This work preserves cultural

and theatrical heritage, promotes sustainability in costume storage, and strengthens future design and production practices. The expected outcome is a fully organized costume catalog accompanied by clear preservation recommendations.

Tyberg, Helena

University of Oregon

Poster #171

Biological Stability of Pt(IV) Compounds: Solvent Effects of DMSO on Ligand Displacement

See Hobdy, Mackenzie

Uehara, Kierstin

University of Oregon

Mentor(s): Katie Lucernoni, Chris Minson

Poster #243

Performance Resilience in Female Endurance Athletes in Relation to Heat Acclimation

Performance resilience, defined as the ability to sustain exercise output under fatigue, is increasingly recognized as a critical determinant of endurance performance. Heat acclimation (HA) elicits cardiovascular, thermoregulatory, and muscular adaptations that may support resilience, yet its impact on resilience is still unexplored. The purpose of this study was to determine whether an intermittent HA intervention could enhance resilience in trained female runners. Twenty-four female endurance runners were randomly assigned to a three-week intermittent HA intervention or control. Resilience was assessed via critical speed in rested and fatigued states, alongside time-to-exhaustion trials and heat tolerance tests, before and after intervention. The HA intervention elicited expected adaptations, including lower core temperature and heart rate, increased sweat rate, and improved perceptual responses. Despite these physiological adaptations, no significant enhancement was observed in critical speed maintenance after fatiguing exercise. These adaptations alone are insufficient to conclusively confer improvements in endurance performance resilience. These findings highlight resilience as a multifactorial trait, suggesting that interventions targeting multiple physiological and metabolic pathways may be necessary to enhance fatigue resistance in endurance trained athletes.

Vagner, Sebastian

University of Oregon

Mentor(s): Frances White, Sara Cotton

Poster #327

Individual and sex related variation in copulatory position among bonobos

Bonobo (*Pan paniscus*) sexual behavior is unique among non-human primates in using a wide variety of copulatory positions whereas most primates only use dorso-ventral copulation. Bonobos copulate in at least three positions: ventro-ventral, dorso-ventral, and latero-ventral. The close evolutionary relationship between humans and bonobos may point to a shared origin for this diversity in copulatory position, although the infrequency with which chimpanzees copulate outside of the dorso-ventral position questions this hypothesis. Female bonobo genitalia are shifted anteriorly relative to chimpanzees, suggesting that bonobos are more adapted for face-to-face copulation. We examined why bonobos copulate in different positions, including what role individual choice plays. 109 hours of behavioral observation of zoo-housed bonobos showed 63 occurrences of ventro-ventral position, 28 occurrences of dorso-ventral position, 12 occurrences of latero-ventral position, and 2 occurrences of rump-rump contact, and found that males and females differed significantly in their frequencies of different positions ($G=8.843$, $df=3$, $p<0.05$). We found that both sexes show different individual frequencies of use of the positions ($G=41.354$, $df=15$, $p<0.001$; $G=38.378$, $df=15$, $p<0.001$). Frequencies were not impacted by rank but were impacted by the copulatory partner's sex ($G=22.017$, $df=3$, $p<0.0001$). These results show the copulatory diversity in bonobos and provide evidence for individual preference.

van Ek, Claudia

University of Oregon

Mentor(s): Katelyn McDonough, Bryan Hockett

Poster #325

Co-Presenter(s): Sam Brewer

What's for Dinner 8400 Years Ago? Botanical and Faunal Analyses of a Hearth from Connley Cave 5, Oregon

Archaeology provides a long-term perspective on dynamic relationships between people and landscapes over deep time. The northern Great Basin contains some of the earliest archaeological evidence of Indigenous lifeways and technologies in the Western Hemisphere. Connley Caves, located within the ancestral homelands of the Klamath, Northern Paiute, and Modoc peoples in central Oregon, preserves a well-stratified archaeological record spanning roughly 13,000 years. The caves reflect changes in lifeways and landscapes over time, including the arrival of some of the earliest well-dated notched projectile points in the region,

which appear during a period of significant environmental change. Despite the importance of these stylistic shifts, relatively little is known about the lives of the people who knapped them. A hearth dated to ~8400 years ago and associated with notched points from Connley Cave 5 provides an opportunity to address the foodways and activities of the people who knapped these points. By analyzing botanical and faunal remains preserved within the hearth, this study reconstructs aspects of diet, seasonality, and local landscape in the northern Great Basin during the Early Holocene.

van Zwol, Annemarijn

University of Oregon

Mentor(s): James Tice

Poster #014

Mapping Rome

The Forma Urbis Romae (“Shape of the City of Rome”) by the Italian archeologist, Rodolfo Lanciani, published in 1901, is a layered map of the city represented in 46 folio sheets. Although the map is outdated in certain aspects, it still conveys comprehensive information about the architecture of Rome, and is used as a reference in archaeology, urban studies, and art history. Therefore, it is the most authoritative map that exists on ancient Rome. Because of early printing limitations the sheets are disjointed making it difficult to synthesize the map as a whole. Our intention is to redress the sheets via digital format to both synthesize the maps, georectify and align it with the most precise surveys of the city and existing cartographic assets. Georectification is done through Adobe Illustrator vector linework, and GIS software. Resource assets used throughout the process include the Nolli map, S.A.R.A. Nistri, Letarouilly, Muratori, and more. Primary insights of the study include an analysis of the layers of history of the city, the accuracy of historic maps, how the city changed and developed over time, and what stayed constant. The re-edition of the Lanciani map intends to be more accessible for users and scholars through digital format, as the original map is as large as a two car garage. The digital reedition creates a thorough encyclopedic geo-database comprised of multi-layered maps that include annotations, patrons, artists, relevant bibliography, and more.

Vanasse, Nora

University of Oregon

Mentor(s): Aubrey Mayer

Poster #190

Controlling Mutation Rate using a Novel Synthetic Genetic CRISPR Circuit

Mutations are the ultimate source of all biological diversity, but experimental evolution studies lack tools to precisely control this fundamental process. Utilizing *C. elegans* as a model system, we have developed

a synthetic genetic circuit to disrupt expression of *msh-6*, a key gene in the mismatch repair pathway, in a tunable manner to control the rate of mutation. This worm strain contains a catalytically dead Cas9 with a degron tag (dCas9::degron) targeted by a single guide RNA (sgRNA) to the *msh-6* promoter to block transcription. We use the auxin induced degradation (AID) system for temporal control of dCas9::degron protein abundance using the plant hormone auxin. When worms are cultured in the absence of auxin, *msh-6* gene expression is disrupted, thus increasing the rate of mutations genome-wide. dCas9 is degraded in the presence of auxin, allowing for *msh-6* expression. We use co-expression of a red fluorescent protein under the control of the *msh-6* promoter (*msh-6p::RFP*) as a visual readout of this regulation. I tested five different sgRNAs for their ability to perturb expression of *msh-6p::RFP*. In the absence of auxin, we see decreased fluorescence in some but not all tested sgRNAs. In the presence of auxin, we see fluorescence levels return to those of the wildtype control line. This system is a powerful and versatile tool as it has the potential to be applied to any gene in any organism, allowing scientists to explore the effects of altering gene expression dosage.

Vazquez, Isadora

University of Oregon

Mentor(s): Tessa Palafu, Alayna Park

Poster #342

Identifying High-Priority Factors in Mental Health Treatment for Latine Youth & Caregivers

Latine families face unique stressors and protective factors that are often overlooked in evidence-based mental health treatments, contributing to ethnic-racial disparities in treatment outcomes. Culturally adapted interventions may help bridge this gap by including the lived experiences of Latine families. This study identifies cultural factors that Latine youth and caregivers view as most important and feasible to incorporate into treatment. During a structured group session, 5 Latine youth and 6 Latine caregivers brainstormed 85 cultural factors to address in treatment with Latine families. Each factor was rated on importance and feasibility using a 1-6 scale. A Go-Zone map was used to plot factors based on their average importance and feasibility scores. Factors scoring above average were identified.

The average importance rating was 4.11 (SD=.63) and the average feasibility rating was 3.77 (SD=.42). The highest rated factors were that parents want in-person therapy services (Importance=5.89, Feasibility=4.80), and that youth may not be honest about mental health problems because they do not want to worry their parents (Importance=5.33, Feasibility=4.50). These findings suggest that highly rated and feasible factors for Latine families in therapy may center on family preferences and relational considerations. Findings will inform the development of a clinical tool to support clinicians in addressing these cultural factors in treatment with Latine families.

Vera, Alan

University of Oregon

Poster #136

Safe Keeping the Pine Mountain Observatory

See Gushue, Tessa

Viden, Anna

University of Oregon

Mentor(s): Dayna Chatman

Career Insights and Experiences

Food, Coolness, and Post-Feminist Self-Improvement: An Examination of Instagram Ads Targeting Women

During times of economic downturn, young people often indulge in small-scale purchasing and online window shopping of material goods to more frugally “treat” themselves (MacDonald & Dildar, 2020). This phenomenon, known as the “lipstick effect,” is primarily driven by women who are heavily targeted by advertisements promising the attainment of an idealized feminine body through purchasing clothes, accessories, and beauty products. As grocery prices have risen, food has become an aesthetic “treat” that advertisers use alongside fashion and beauty products to lure women into consuming. This strategy of incorporating food into ads coincides with a resurgence of hyper-thin beauty ideals, evidenced by the decline in diverse body types in fashion media and the widespread use of weight loss drugs.

Building on Bordo's (2002) framework of hunger as ideology, this study explores how advertising campaigns on Instagram create discourses about women's relationships to food. We specifically examine how food, during the current recession, has taken on the role of both a status symbol and moral medium, shaping discourse around women's bodies and eating. Current advertising campaigns frame eating as an aesthetic and moral practice where women should be passive, effortless, and cool (Holla, 2020). We assert that this framing is in line with the current capitalist post-feminist culture of self-improvement (Coleman, 2011; Gill, 2007), which is a re-branded form of the pursuit of thinness.

Viden, Anna

University of Oregon

Mentor(s): Dayna Chatman

Career Insights and Experiences

Society for Cinema and Media Studies Conference 2026 Undergraduate Research Experience

During times of economic downturn, young people often indulge in small-scale purchasing and online window shopping of material goods to more frugally “treat” themselves (MacDonald & Dildar, 2020). This phenomenon, known as the “lipstick effect,” is primarily driven by women who are heavily targeted by advertisements promising the attainment of an idealized feminine body through purchasing clothes, accessories, and beauty products. As grocery prices have risen, food has become an aesthetic “treat” that advertisers use alongside fashion and beauty products to lure women into consuming. This strategy of incorporating food into ads coincides with a resurgence of hyper-thin beauty ideals, evidenced by the decline in diverse body types in fashion media and the widespread use of weight loss drugs.

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Vincent, Sarasvati

University of Oregon

Mentor(s): Rob Chavez

Poster #290

Co-Presenter(s): Bonabelle Ramirez

The Relationship of Emotional Language Expression and Gray Matter Morphometry in Healthy Adults

Subcortical structures in the human brain often operate outside conscious awareness, yet they play a critical role in information processing and are vital to our experience, response, and regulation of emotion. We investigated how the composition and individual variation of subcortical structures such as the amygdala may influence these factors. We analyzed a set of structural MRI brain data and by utilizing subcortical

segmentation techniques, we were able to isolate and map the participants' specific brain regions of interest. Subjects shared personal narratives and, using a text/natural language processing software, we conducted a sentiment analysis of the ratio of positive and negative words used. Our focus is on underlying emotional content with words as a proxy for emotional sentiment. Using both this automated pipeline and the morphometry of these subcortical structures, including the amygdala, we then compared the ratio of positive to negative words/descriptors and how they correspond to the volume of these structures. This project explores the gray matter morphometry and the relation to sentiment in naturalistic language.

Voigt, Hannah

University of Oregon

Mentor(s): Amy Swanson

Oral

The Downsizing of Dance: Changing Perspectives of Concert and Commercial Dance in Higher Education

My research involves downsizing dance programs in higher education as a reflection of shifting dynamics in concert and commercial dance. These two genres of dance, one referring to works performed on a stage before a stationary audience (concert dance), the other connected to commercial streams of revenue and rising dance trends on social media (commercial dance), are typically considered in opposition to each other. Through examination of Portland State University's shuttering dance program with its emphasis on concert dance, and Loyola Marymount University's flourishing commercial dance program, we can see how perspectives on the value of dance education are changing in real time. Looking at these two programs provokes questions about concert and commercial dance, such as how they're being compared and what this suggests about the reputation of dance within higher education. How does downsizing certain dance programs reveal the increasing intersections of these forms? How does it affect the dancers and the professional dance industries there after? This presentation will also reflect on how this pattern has ramifications and long-term effects on dance around the nation.

Vyas, Anika

University of Oregon

Poster #314

Racial Disparities in Mental Health Treatment

See Rajpara, Saisha

Wade, Violet

University of Oregon

Mentor(s): Matthew Polizzotto

Poster #120

Mapping Hexavalent Chromium Soil Risk in the Klamath Mountain Range

As climate change causes wildfires to grow in size and intensity, secondary hazards associated with fire grow as well. Current research explores how fires affect the presence and mobility of heavy metals in post-wildfire soils and landscapes, but there is a lack of research that integrates existing knowledge with geospatial data to identify regions at risk. This research project explores parts of the Klamath Mountains that have been exposed to risk factors of hexavalent chromium (Cr(VI)) formation, the toxic, carcinogenic form of the element. Cr(VI) forms under high temperatures, which triggers the oxidation of Cr(III), a naturally occurring and important element in soils. As high-intensity summer wildfires persist, regions with high concentrations of Cr(III) in the soil are exposed to these critical conditions more frequently. In this project, I explore the use of remote sensing data to determine the amount of land that has been exposed to these critical conditions in the past 10 years. Using data from the MODIS satellite to infer the burn temperature using the Dozier Bi-Spectral Method and soil data from the USDA's Web Soil Survey, I am developing a hazard map outlining regions at different degrees of risk for the presence of Cr(VI) based on maximum recorded burn temperature, slope position, and time since wildfire. These maps will help build our understanding of the distributions of contaminants, populations at risk, and how wildfires influence public health.

Wagner, Addi

University of Oregon

Mentor(s): Matthias Vogel

Poster #076

Co-Presenter(s): Zane Peterson

Detainments Regulations and Restrictions in Venezuela

This project examines the evolution of historical and contemporary free speech regulations in Venezuela. Historically, the Venezuelan government has had strict and punishing laws surrounding free speech for its citizens. Current events surrounding Venezuela have intensified attention surrounding these regulations within the country. This project aims to evaluate and compare the previous and modern-day restrictions of free speech and analyze how they impact Venezuelan citizens. Drawing on a range of credible online primary and secondary sources, we trace shifts in legal codes and state practices over time. Our research indicates that Venezuela has a record of restrictive laws that have become increasingly repressive, disproportionately targeting journalists, activists, and social media users. This project works to contribute to the broader

discussions of human rights, state communication control, and the essential role of free expression in democratic societies.

Wagner, Madi

University of Oregon

Mentor(s): Ulrick Casimir

Oral

Societal Revenge: A Marxist and Weberian Analysis of Ha Jin's "Saboteur"

This project examines Ha Jin's "Saboteur" through the sociological frameworks of Karl Marx and Max Weber, arguing that the short story's protagonist, Mr. Chiu, deliberately spreads acute hepatitis as a form of societal, rather than personal, revenge. While at a superficial level the narrative appears to depict an individual response to wrongful arrest and police misconduct, a deeper analysis through a sociological lens reveals that Mr. Chiu's revenge is rooted in class conflict, ideological dominance, and institutional power. From a Marxist perspective, the police force functions as the dominant class that imposes its ideology on Mr. Chiu, a member of the subordinate class, through forcing him to sign a self-criticism. Weber's theory further enhances this analysis by emphasizing the role of status in the narrative: the lingering effects of the Cultural Revolution negatively impact the social standing of university staff, such as Mr. Chiu, while increasing the power and authority of the police force. Confined to a cell in the police station, Mr. Chiu is stripped of his agency, highlighting the power imbalance that defines his interactions with the police. Ultimately, Mr. Chiu's decision to infect more than eight hundred civilians represents a calculated act of revenge against a society that enables an unfair justice system, illustrating how social structures can provoke extreme forms of resistance.

Wahlen, Sarah

University of Oregon

Mentor(s): Andrew Marcus, Lulu Enkhbaatar

Poster #147

Evaluating Fluorophore Labeling Effects on LacI - DNA Binding Using Surface Plasmon Resonance

The E. coli lac repressor (LacI) regulates gene expression through sequence-specific binding to operator DNA within the lac operon. The binding of lac repressor to its operator has served as a paradigmatic model system for not only understanding transcription regulation, but also 1D and 3D diffusional sliding/searching mechanism of protein along genomic DNA and sequence-specific recognition mechanisms of protein-DNA complexes in general. Thus, understanding the sequence-selective recognition events of this complex is a

crucial step toward mimicking or modulating gene regulation. Fluorescent DNA labeling is employed to probe this interaction, requiring careful assessment of how label placement within the DNA backbone perturbs the native binding state. Surface Plasmon Resonance (SPR) is a label-free, highly sensitive method for monitoring molecular interactions in real time, enabling the detection of subtle kinetic differences. Kinetic measurements reveal how fluorophore placement affects LacI-operator DNA binding affinity and dynamics, informing the development of optimal labeling strategies for single-molecule spectroscopic measurements. The goal of this project is to establish reliable and reproducible measurements through systematic optimization of running conditions, regeneration solutions, and data-fitting strategies.

Weddle, Sydney

University of Oregon

Mentor(s): Rauchelle Richey, John Halliwill

Poster #238

Beta-adrenergic receptor response is similar in women with and without polycystic ovary syndrome

Polycystic ovary syndrome (PCOS) is an endocrine disorder accompanied by an increased risk of cardiovascular disease. The cause of this risk is unknown but may involve vascular dysfunction of β -adrenergic receptors. We hypothesized that women with PCOS would have an attenuated response to a β -adrenergic agonist (isoproterenol) and antagonist (propranolol) in the cutaneous microvasculature compared to women without PCOS (CON). Eight CON (24 ± 6 y) and four women with PCOS (23 ± 4 y) were instrumented with a cutaneous microdialysis fiber in the right forearm. The fiber was perfused with isoproterenol (β^2 agonist; 200 μ M) followed by propranolol (β^2 antagonist; 1.7 mM). Red blood cell flux was measured via laser Doppler flowmetry and analyzed at baseline, plateau of the agonist, and end of the antagonist infusion. Data are reported as cutaneous vascular conductance (CVC; flux/mean arterial pressure), mean [95% CI]. Baseline CVC did not differ between groups (CON: 0.17 [-0.39, 0.72]; PCOS: 0.14 [-0.54, 0.82] flux/mmHg, $P = 1.00$). Response to agonist (CON: 1.81 [1.35, 2.32]; PCOS: 1.14 [0.50, 1.78] flux/mmHg, $P = 0.51$) and antagonist (CON 0.83 [0.38, 1.28]; PCOS 0.57 [-0.07, 1.21] flux/mmHg $P = 0.98$) also did not differ between groups. Based on these data there is no difference in β^2 -adrenergic receptor sensitivity between CON and women with PCOS indicating that β^2 -adrenergic receptor function may not contribute to increased cardiovascular disease risk in women with PCOS.

Weeks, Kimball

University of Oregon

Mentor(s): Alfredo Burlando

Oral

The Weberian Economy: How Institutional Persistence Shapes Local Entrepreneurship

Why do some places continue to generate new businesses even as their populations stagnate? This paper argues that the answer lies partly in institutional continuity. Using a new church persistence index that combines standardized church densities weighted by cross-year agreement to emphasizes enduring institutional presence, I show that U.S. counties where religious organizations persisted across generations exhibit significantly higher rates of new establishment formation in 2022.

The results are robust to rich historical controls, state fixed effects, and alternative index constructions. Mechanism tests suggest that persistence fostered human capital: it is positively correlated with modern educational attainment, and part of its effect on entrepreneurship is mediated by education. At the same time, institutionally persistent counties tended to experience less population growth, they developed greater entrepreneurial capacity per resident, evidence of development through depth rather than scale. Together, the evidence points to a durable pathway through which embedded local institutions accumulated skills, trust, and networks that still shape the entrepreneurial capacity of communities today.

Weggeland, Jack

University of Oregon

Poster #089

How has far-right philosophy influenced the course of the Russo-Ukrainian War?

See Burke, Cooper

Wesley, Emma

University of Oregon

Mentor(s): Mattias Vogel

Poster #078

Co-Presenter(s): Elle Harris

Slowing Down Fashion in Latin America

This project evaluates the extent to which the fashion sector in Colombia, Chile, Ecuador, and Brazil properly reduce environmental harm and labor inequities associated with fast fashion. Greenwashing is a harmful practice that has emerged and given rise to questions of what is authentically sustainable and effective in

combating current climate change within the modern textile industry. This project defines efficiency using four evaluative criteria: measurable environmental impact reduction, improved labor conditions, equitable compensation structures, and product transparency through certification or third-party verification. Our research will highlight Brazil's biodiversity pledge and conservation plans, Chile's struggle with textile dumping in the Atacama Desert, Columbia's local artisans blending tradition with modern sustainability practices, and similarly, Ecuador's innovations in the fashion industry by using eco-friendly materials and textile production techniques. By analyzing small businesses, co-ops, and local artists' environmental impacts, labor structures, and processes for verifying sustainability, this project assesses whether fashion practices in these countries represent true structural reform or function as a disingenuous "ethical" alternative within textile production and the modern fashion industry. The findings aim to contribute to broader conversations on company transparency, textile overproduction and labor exploitation in fast fashion.

Whitcomb, Zoe

University of Oregon

Mentor(s): Gabriel Sanchez, Rob Cuthrell

Poster #334

Paleoethnobotanical Analysis of an Olivella Shell Bead Production Site from Año Nuevo State Park

In the summer of 2024, members of the Amah Mutsun Tribal Band, the Amah Mutsun Land Trust, California State Parks, and the University of Oregon conducted excavations at a previously unrecorded archaeological site threatened by coastal erosion. The site contained two discrete hearth features with carbonized botanical and faunal remains as well as two fire-affected rock features. In this study, I provide insights into the macrobotanicals recovered from the site through paleoethnobotanical analysis, including wood charcoal analysis. Wood charcoal analysis was conducted at the University of Oregon Center for Advanced Materials Characterization (CAMCOR). Using a Leica DM2500 with a magnification range up to 500x, I examined microscopic features of wood anatomy using transverse and radial sections of the charcoal specimen. The anatomical features observed were cross-referenced using the Central California wood charcoal identification key to identify specimens to the genus level. Through this study, I contextualize past human-environmental interactions and historical baselines with relevancy to archaeology, biology, and ecology.

Whitefield, Garrow

University of Oregon

Mentor(s): Cameron Moore, Danielle Benoit

Poster #167

Engineering Degradable Nanoparticle Drug Delivery Systems through Thioester Backbone Integration

Poly(styrene-*alt*-maleic anhydride)-block-poly(styrene) (PSMA-*b*-PS) micelles are effective drug carriers, but nondegradability can limit clearance and increase persistence. To address this, labile thioester linkages were incorporated into the hydrophobic block by copolymerizing styrene with dibenzo[*c,e*]oxepin-5-thione (DOT), yielding PSMA-*b*-PSDOT. Thioester incorporation is hypothesized to maintain high-performance drug delivery during treatment, while undergoing controlled backbone scission into easily cleavable oligomers within target microenvironments. DOT was selected to introduce degradable backbone breakpoints while preserving aromatic character and drug-loading compatibility.

PSMA-*b*-PSDOT diblock copolymers were synthesized by RAFT polymerization and characterized by NMR and GPC ($M_n = 30$ kDa, $M_w = 33$ kDa, PDI = 1.07). The thioester incorporation was confirmed by a ^{13}C NMR signal at 193 ppm. Preliminary degradation with hexylamine produced an ~30% decrease in M_w after 180 min. Nanoparticles assembled by solvent exchange formed anionic micelles with an average diameter of 80 ± 0.1 nm and zeta potential of -60 ± 0.5 mV, comparable to PSMA-*b*-PS controls.

Continued studies are evaluating degradation under physiologically relevant pH and ROS conditions, as well as cytocompatibility with therapeutic cell types, including macrophages. Overall, this modular platform aims to combine responsive, tunable drug delivery with improved degradability and reduced polymer persistence.

Whitten, Benjamin

University of Oregon

Mentor(s): Andrew Greenfield

Poster #246

The influence of diurnal testosterone fluctuations on exercise performance in well-trained runners

Exogenous testosterone can enhance performance. However, it is unknown if endogenous increases in testosterone similarly enhance performance. Leveraging the natural fluctuation in testosterone levels occurring across the day (i.e., diurnal fluctuations), we investigated the impact of high and low endogenous testosterone levels on exhaustive aerobic exercise performance. Six well-trained male runners ($\text{VO}_{2\text{max}} =$

61 ± 7 mL/kg/min) completed treadmill time-to-exhaustion (TTE) trials at a fixed speed corresponding to ~10% above maximal metabolic steady-state. On separate days, TTE trials were performed during morning and evening hours, corresponding to naturally high and low levels of circulating testosterone, respectively. Blood draws before and after each TTE trial characterized serum testosterone levels between morning and evening hours. Repeated measures ANOVA were used to evaluate total testosterone (TTot) and bioavailable testosterone (TBio) concentrations, and linear regression was used to assess the relationship between changes in testosterone and TTE performance. As expected, TTot and TBio were higher in morning hours than evening hours ($P = 0.03$ and $P = 0.05$, respectively). However, relationships between the change in TTot or TBio and TTE performance were not evident (both $P > 0.05$). These data suggest that acute changes in endogenous testosterone levels due to diurnal fluctuation do not influence TTE performance in well-trained male runners.

Wiegand, Melanie

University of Oregon

Mentor(s): Kayla Nguyen, Malik Hollis

Poster #148

Exploring Chiral Interactions Between Magnetic Skyrmions and Electron Vortex Beams

In this project, I investigate how electron vortex beams—probes carrying orbital angular momentum (OAM)—interact with magnetic skyrmions of differing handedness. Magnetic skyrmions are nanoscale, whirlpool-like spin textures with high topological stability and strong potential for use in spintronics and next-generation data storage. Because skyrmions are intrinsically chiral structures, imaging them with chiral probes may reveal unique interactions—yielding extra information compared with a traditional electron beam.

To explore this possibility, I modeled left- and right-handed skyrmions and simulated the propagation of electron vortex beams with varied OAM across the structures. These simulations emulate the procedure of a scanning transmission electron microscope (STEM), and produce four-dimensional datasets of diffraction patterns. I then applied ptychographic reconstruction to this data to recover the exit wavefunction and analyze changes in the probe's angular momentum after interacting with the skyrmions.

By comparing the results of each beam/skyrmion combination (including a non-vortex control beam), I evaluated the effects of matching and opposing chiralities. Results indicate that chiral interactions produce measurable shifts in the probe's wavefunction. These findings demonstrate the potential of electron vortex beams as probes for magnetic materials, enabling new approaches for imaging and a deeper understanding of nanoscale magnetic structures.

Wijaya, Miranda

University of Oregon

Mentor(s): Jennifer B Phillips, Monte Westerfield

Poster #193

The Kizuna protein functions in photoreceptor development and survival.

Mutations in the KIZUNA (KIZ) gene are linked to rare cases of retinitis pigmentosa (RP), but the underlying causes of photoreceptor degeneration are poorly understood. We generated a null allele of the zebrafish KIZ orthologue to study the molecular pathology of this progressive vision loss. We used CRISPR/Cas9 to create a large deletion abrogating the 5' UTR and early exons. We used immunohistochemistry and other histological assays to examine offspring homozygous for the deletion alongside wild-type siblings at timepoints ranging from 10 days post fertilization (dpf) to 1 year. By 10 dpf, cone outer segment (OS) morphology is disrupted in animals homozygous for the large deletion, with most appearing blunt at the apex rather than tapered as in age-matched wild-type retinas. Homozygous larvae raised in elevated light exhibited mislocalization of cone transducin (GNAT2) with 40% of GNAT2 labeling in the inner segment compared to 55% in wild type. By 1 year, retinas from homozygous animals show severely disrupted OS and inner segment (IS) morphology, disorganization of the photoreceptor layer, and a thinning outer nuclear layer compared to wild-type retinas. This loss of function model of KIZ-related RP exhibits progressive photoreceptor cell defects culminating in degeneration, confirming that KIZ plays an integral role in the maintenance of outer segment morphology and suggesting a mechanism for the observed clinical pathology of individuals with deleterious KIZ variants.

Willette, Elise

University of Oregon

Mentor(s): Matthias Vogel

Poster #079

Co-Presenter(s): Akira Brown

History of Japanese Fashion

Japanese fashion has had a significant transformation over the past century through traditions, modernization and global trades. From the early 20th century, Western influence reconstructed the fashion industry, however with the rise of street fashion movements, Japanese fashion reflects cultural and social change. This project highlights the influential global impacts that Japanese fashion has made on the industry that redirected trends, art and self-expression. Throughout the decades, Japanese fashion has evolved as a form of expressive identity, particularly for the minority and marginalized groups, seeking visibility within a society that traditionally overlooks them. Their exposure to Western fashion introduced new styles and ideas that were reinterpreted and modified into something that is beautifully singular. This project emphasizes the creativity, beauty, and adoration of Japanese fashion.

Williams, Evan

University of Oregon

Mentor(s): Shannon Hugard, Mike Hahn

Poster #208

The Effects of Speed and Fatigue on Peak Vertical Ground Reaction Forces During Running

Vertical ground reaction force is the largest component of surface contact force acting on the body during gait [1]. The purpose of this study is to investigate whether vGRF changes significantly with different speeds or fatigue conditions during running. It is hypothesized that both speed and fatigue state will significantly change peak vGRF during running.

Six healthy, recreational runners (5 males, 1 female, ages 18-30). During the first trial (low-speed, low-fatigue) and third trial (low-speed, high-fatigue) participants ran for 10 minutes at 80% of their lactate turnpoint (LTP). Ground reaction force data were collected at 1000 Hz using a force-instrumented treadmill (Bertec, Columbus, OH). Peak vGRF data were averaged and normalized to body mass in Matlab (Mathworks, Natick, MA). Paired t-tests were used to compare average peak vGRF values between the two speed and fatigue conditions ($\alpha = 0.05$). To assess the effect of speed, we compared vGRF in the low-speed, low-fatigue trial to the high-speed, low-fatigue trial. To assess of fatigue, we compared vGRF in the low-speed, low-fatigue trial to the low-speed, high-fatigue trial. Peak vGRF was significantly different during running at different speeds ($p < 0.05$) but was not affected by fatigue state ($p = 0.45$). Participants were found to have significantly higher vGRF at higher speeds compared to lower speeds.

Wilson, Nex

University of Oregon

Mentor(s): Asako Yonan

Poster #023

Racialized Desire in the Age of Global Mobility: Passport Bros, Sex Tourism, and Asian Women

This paper examines how the contemporary "Passport Bros" phenomenon reshapes and amplifies the racialized sexualization of Asian women within the context of global mobility, digital media, and existing sex tourism economies. Drawing on frameworks of Orientalism and intersectionality, it argues that current transnational dating discourse reproduces long-standing colonial and militarized narratives that construct Asian femininity as submissive, traditional, and desirable in contrast to Western women. Through qualitative discourse analysis of social media content and online communities, alongside historical and political-

economic contextualization, the study traces continuities between imperial-era representations and present-day digital masculinities. It further explores how these narratives intersect with established tourism and prostitution industries in parts of Asia, influencing both expectations and demand within local intimacy economies. While acknowledging the agency of women navigating these structures, the paper highlights how global inequalities, such as currency disparities and mobility privileges, shape perceived desirability and relational dynamics. Ultimately, the study contributes to scholarship on globalization, gender, and race by demonstrating how digital cultures of mobility reconfigure, rather than disrupt, entrenched hierarchies of desire.

Winchester, Shyla

University of Oregon

Mentor(s): Kayla Nguyen

Poster #144

Imaging Phonon Variation Across Neel Transition in Semiconductor NiPS₃

We study phonon variation in two-dimensional materials using multislice electron ptychography applied to ultrafast electron diffraction and 4D-STEM data. Phonons influence key material properties but are challenging to directly observe, motivating indirect reconstruction through atomic-scale imaging.

Structural variations are quantified using atomic displacement, intensity, and FWHM measurements, along with anisotropic Gaussian fitting of atomic peaks. The resulting ellipticity provides a metric for directional lattice distortions linked to phonon activity. By comparing these features across temperatures spanning the Néel transition, this work establishes a real-space approach for probing phonon-magnetism interactions in low-dimensional materials.

Winjum, Ben

University of Oregon

Mentor(s): Serge Faumont

Poster #184

Long-Term Locomotor Effects of LSD in *Caenorhabditis elegans*

Psychedelic drugs have shown promise as treatments for psychiatric disorders such as post-traumatic stress disorder, anxiety, and substance-use disorder. Their effects are often long-lasting, even after a single exposure, possibly because they act as psychoplastogens that promote neuroplasticity. To study these lasting effects, we use the nematode *Caenorhabditis elegans*, a useful model with a well characterized nervous system: all 302 neurons have been mapped, and many neuronal functions are known. Previous work

found that immediately after administration of lysergic acid diethylamide (LSD), *C. elegans* showed reduced locomotion and an increased rate of backward locomotion (reversals). This study asks whether these effects remain significant 24 hours after drug administration. Worms were incubated for 30 minutes in either LSD (50.0 mM) or the control buffer M9, then transferred to nutrient-rich agar plates and allowed to rest for 24 hours. Individual worms were then recorded for 5 minutes, and reversal frequency and speed were analyzed using WormLab software. We will compare forward and reverse speed, and reversal probability between control and treated groups, and perform cluster analysis to detect heterogeneity in responses. If LSD induces persistent behavioral changes, we will map them onto the locomotor neural circuit. These findings may broaden understanding of psychedelic effects on neural function and support *C. elegans* as a model for early-stage psychedelic research.

Winkler, Vivian

University of Oregon

Mentor(s): Piyush Amitabh, Raghuvveer Parthasarathy

Poster #178

Invasion of zebrafish gut microbial communities by a *Vibrio* species with a Type VI Secretion System

Intestinal microbial communities play major roles in the health of their hosts. Competition between bacterial species and bacterial perturbation of the host environment help shape community composition, but the underlying mechanisms remain poorly understood. We consider here a specific bacterial machinery that affects both inter-bacterial and host-microbe interactions: The Type VI Secretion System (T6SS), a syringe-like apparatus found in many species that can inject toxins into adjacent cells. Using zebrafish, a model organism that allows the derivation of germ-free fish and the introduction of specific microbes, and bacteria that include a *Vibrio* strain whose T6SS can attack both bacterial and eukaryotic cells, we examine the effects of *Vibrio* invasion on pre-established gut bacterial communities of varying complexity. Gut dissection and plating quantifies the abundance of bacterial species, and live imaging using light sheet fluorescence microscopy reveals the spatial dynamics of gut bacteria in situ. We find that all initially colonizing species and combinations of species examined were reduced in abundance following inoculation with *Vibrio*, but with differing magnitudes depending on the initial species, the number of species, and the T6SS type of the invader. These observations illuminate the ability of the T6SS to mediate inter-species competition and more generally help reveal factors, such as species diversity, that determine gut microbiome composition and stability.

Wise, Phoebe

University of Oregon

Mentor(s): Innessa Colaiacovo

Poster #020

Oregon Small Business Development Centers

This project presents an overview of the creation of Oregon's Small Business Development Center Network and how its mission and work are perceived by frontline workers who provide direct services to Oregon's businesses. Small Business Development Centers are a nationwide network, run as a partnership between the Small Business Administration and local and state governments, that provide localized assistance to active and aspiring business owners and encourage local economic development. Oregon's Small Business Development Center Network was established in 1983 and currently has 18 centers throughout the state. Through a careful analysis of historical records and reported data, as well as interviews with employees of various centers across the state, we aim to discover what these centers are actually doing to help small businesses in Oregon thrive and whether they are aligned with their stated missions.

Wittwer, Kylee

University of Oregon

Mentor(s): Scott Fisher

Poster #134

Co-Presenter(s): Jaden Pickett, Owen Laug

A Composition of Astronomical Research at Pine Mountain Observatory

The University of Oregon's Pine Mountain Observatory (PMO) has been conducting astronomical research since the 1960's, yet a thorough review of this research has never been carried out. Thus, as a part of the Astro ARC, we have compiled and broadly reviewed a large sample of research papers that utilize data from the observatory. To do this, we searched online databases and journals for papers that mention the observatory or cite its data. Then, we briefly reviewed and catalogued each source, tagging them with details such as topic, number of citations, etc. In total, we reviewed 77 papers, including a majority of the research originating directly from PMO that is available online, as well as a number of papers affiliated with other institutions. These papers cover topics such as binary systems, black holes, galaxies, and more, and several present impactful research in the field. Overall, this project aims to give an understanding of what the observatory has been used for and how it has contributed to the field of astronomy over time.

Wolf, Emily

University of Oregon

Mentor(s): Hans Dreyer, Helia Megowan

Poster #216

Co-Presenter(s): Payton Gavaldon

Skeletal Muscle Morphology in Old and Young Individuals

Skeletal muscle atrophy and resulting loss of physical function due to injury, surgery, or disuse can be debilitating. These losses occur across the age spectrum, but older individuals recover significantly less muscle compared with younger individuals following atrophy. Older adults become more likely to suffer falls and fractures following atrophy, causing a loss of independence with activities of daily living and a decrease in quality of life. The question becomes, are there differences in the structure and functions of skeletal muscle between young and old? This project is a cross-sectional comparison in collaboration with the University of Iowa and the Slocum Center for Orthopedics and Sports Medicine. Our collaborators have sent us muscle biopsies from elderly individuals, and in this project, we compare those elderly samples to young healthy muscle collected from human participants at the UO. We looked to compare these tissues in muscle cross sections as well as in single muscle fibers. We specifically quantified myonuclear and macrophage count, fiber dimensions, and capillary presence, as well as nucleolar differences.

Wolfe, Iris

University of Oregon

Mentor(s): David Meek, Nicole Dahmen

Oral

COP30: A Multi-Country Examination of Youth Climate Leadership and Governance

As the global climate crisis intensifies, the inclusion of youth in formal decision-making has transitioned from a fringe demand to a central pillar of international discourse. However, a gap remains between the symbolic presence of young delegates and their substantive influence on policy. This research investigates the “lived experiences” of youth participants at COP30 in Brazil, specifically examining the institutional pathways and ethical foundations that define their participation. By analyzing the structural mechanisms that enable or hinder access including funding models, accreditation networks, and organizational support this study explores how these “gatekeepers” shape the demographics and efficacy of youth advocacy.

Using semi-structured interviews with delegates from across the globe, the project evaluates how diverse cultural upbringings and local contexts influence individual definitions of intergenerational justice. The unique Amazonian setting of COP30 is explored, specifically how the hosting of the summit in a critical ecological biome shifted discussions of stewardship and Indigenous representation. The research seeks to

identify moments of tangible impact, and shifts in the social atmosphere of negotiations. By documenting these personal trajectories and institutional barriers, this thesis aims to provide a roadmap for the UNFCCC to move beyond tokenism toward a more equitable and effective model of intergenerational environmental governance.

Wolfinbarger, Katherine

University of Oregon

Mentor(s): Rebecca Dorsey, Michael Darin

Poster #113

Unlocking the Umpqua: detrital zircon geochronology and provenance of the Umpqua Group

This project aims to determine the source area(s) of the Umpqua Group, a suite of sedimentary rocks located in the southwestern portion of the Oregon Coast Range. The Umpqua Group was deposited during the Eocene, (~54-49 Ma). Simultaneously, the oceanic plateau Siletzia was colliding with the North American Craton, making the Umpqua Group a syn-collisional unit. The driving research questions are: 1) What was the provenance (source area) of the Early Eocene Umpqua Group during the collision of the Siletz terrane and did this area change through time?; 2) What is the maximum depositional age of the Umpqua Group?; 3) Is there an unconformity (erosional gap in geologic time) at the base of the Camas Valley Formation? To answer these questions methods include sample collection, measurements of detrital zircon uranium-lead isotopic ratios, and statistical modeling using DZmix, DZmds, and DZstats. These methods aim to yield the maximum depositional age of the Umpqua Group allowing for connection to potential source areas with known ages. While the Umpqua Group has been long studied, geochronological advancements in the last 20 years have enabled analysis from a new lens. Overall, this study aims to investigate the broader geologic framework of SW Oregon during the Eocene—a time of intense tectonic construction—employ modern geochronological methods to test previous understandings of the section, and resolve the intricate provenance of the Umpqua Group.

Wong, Lindsay

University of Oregon

Mentor(s): Deanna Choi

Poster #229

Hypertension and the APOE genotype do not affect anxiety or spatial memory

The apolipoprotein E4 (APOE4) genotype is the strongest genetic risk factor for late-onset Alzheimer's disease (LOAD), as individuals carrying this allele exhibit increased amyloid- β (A β) burden and larger

declines in cerebral blood flow. Hypertension is also a major risk factor for LOAD, and previous studies have shown hypertensive APOE4 carriers exhibit worse cognitive function than hypertensive APOE3 carriers. We used zero maze and y-maze cognitive tests to assess the effects of genotype, blood pressure, and dietary salt on cognitive impairment. Male and female mice (12 mo) of APOE3xAPP and APOE4xAPP genotypes were assigned to one of three diet groups: control (CT) with a high-fat diet, hypertension with a high-fat diet (HT), and hypertension with a high-fat, low-salt diet (LS) (n=5-8). In the zero maze, mice were placed in the nearest enclosed quadrant and allowed to explore freely for five minutes. In the y-maze, mice were placed in the nearest arm and allowed to explore freely for eight minutes. For the zero maze, the main effect of quadrant was shown for CT, HT, and LS APOE3xAPP and APOE4xAPP animals ($p < 0.0001$), driven by all groups spending a longer time in the safety quadrant than in the open quadrant. There was no difference between groups for the head dips. No difference was seen between groups in the y-maze when tested for spatial memory. We conclude that hypertension or a low salt diet has no effect on anxiety or spatial memory in APOE3xAPP and APOE4xAPP mice.

Woodward-Ganz, Paris

University of Oregon

Mentor(s): Corbett Upton

Creative Work

inheritance

inheritance is a collection of original poetry about my experience as a transracial adoptee. it speaks about being black, being trans, and the complicated nature of adoption. in addition, it attempts to understand my birthparents, both my mother and my father, as complicated, flawed people that made me who i am today.

Woodward-Ganz, Paris

University of Oregon

Mentor(s): Faith Barter, Courtney Thorsson

Oral

Alternative Reproductions of Race in Suzan-Lori Parks' Venus and Jeremy O. Harris' Slave Play

In Suzan-Lori Parks' Venus and Jeremy O. Harris' Slave Play, Blackness is performed in ways that explicitly highlight gendered dynamics and racial politics. Venus follows the exploitation of Sarah Baartman, also known as the "Venus Hottentot," in 19th century Europe. She was an African woman sexualized due to her body type, leading her to become a fascination of both scientific and erotic proportions. Venus stages itself as a reproduction of her exploitation. Slave Play forces a similar experience, making the audience bear

witness to several sexual scenes between interracial couples as part of an experimental therapy. All these couples engage in raceplay, a kink that forces participants to engage with race, specifically portraying imbalanced power dynamics. This paper analyzes multiple features of both plays, including both the text and the staging, to analyze how they are written and performed in a way that explores the limits and expanses of Black women's sexuality. I argue that these texts are sites where satire and minstrelsy challenges the notion that all depictions of violence against Black bodies onstage are expressions of white sadism; instead, these acts of violence are intentionally staged to force the audience to interrogate their relationship to white supremacy. This paper reads both plays as attempts to reimagine racialized and gendered exploitation, transforming "race" into a visual spectacle from which both the characters and the audience cannot disengage.

Woolman-Schluebier, Sadie

University of Oregon

Mentor(s): Josh Roering, Jean Faye

Oral

Controls on debris flow runout, entrainment, and deposition: Oregon Coast Range

Debris flows are fast-moving landslides that sculpt landscapes, create habitat, and constitute hazards. Because of the Oregon Coast range's mountainous terrain, debris flows are frequent and the primary process of sediment transport and erosion. As debris flows continue down their paths, they increase in volume because they entrain sediment. These patterns of entrainment are controlled by different factors such as past slide behavior, initiation, and slope. Post-event measurements, based on high-resolution digital elevation models and field data, can be used to evaluate these factors, which are critical to debris flow prediction models. In March 2024, a debris flow near Triangle Lake in the Oregon Coast range blocked a road near its initiation point and continued downslope into Greenleaf Creek, creating a temporary dam. Our approach uses drone photogrammetry to generate structure from motion (SfM) point clouds of the March 2024 slide. We applied change detection using this dataset and pre-slide LiDAR data to create digital elevation models of difference (DoD). We then quantified the erosional and depositional zones and their relationship with the slope. Our results found that this landslide was primarily erosional at slope angles $\geq 10^\circ$ and primarily depositional at slope angles $\leq 5^\circ$. We also used the DoD to calculate the volumetric growth of the landslide. Our results show that slide mass entrainment was highest just below the initiation zone and decreased to negligible values

Woolman-Schluebier, Sadie

University of Oregon

Mentor(s): Josh Roering, Jean Faye

Poster #106

Controls on debris flow runout, entrainment, and deposition: Oregon Coast Range

Debris flows are fast-moving landslides that sculpt landscapes, create habitat, and constitute hazards. Because of the Oregon Coast range's mountainous terrain, debris flows are frequent and the primary process of sediment transport and erosion. As debris flows continue down their paths, they increase in volume because they entrain sediment. These patterns of entrainment are controlled by different factors such as past slide behavior, initiation, and slope. Post-event measurements, based on high-resolution digital elevation models and field data, can be used to evaluate these factors, which are critical to debris flow prediction models. In March 2024, a debris flow near Triangle Lake in the Oregon Coast range blocked a road near its initiation point and continued downslope into Greenleaf Creek, creating a temporary dam. Our approach uses drone photogrammetry to generate structure from motion (SfM) point clouds of the March 2024 slide. We applied change detection using this dataset and pre-slide LiDAR data to create digital elevation models of difference (DoD). We then quantified the erosional and depositional zones and their relationship with the slope. Our results found that this landslide was primarily erosional at slope angles $>10^\circ$ and primarily depositional at slope angles $<5^\circ$. We also used the DoD to calculate the volumetric growth of the landslide. Our results show that slide mass entrainment was highest just below the initiation zone and decreased to negligible values

Wu, Julia

University of Oregon

Mentor(s): Andy Karduna, Taylor Wilson

Poster #251

Co-Presenter(s): Saliem Hatsey Saliem Hatsey

The use of Biomechanics for a Course-Based Research Experience in a Large Class

The purpose of this project was to create sustainable long-term, course-based research paradigm that can be improved across terms and become embedded into undergraduate education, allowing students to engage in biomechanics research. As such, students in the class performed all data collection for the experiment detailed below.

Proprioception is a key aspect in motor control and sensing joint position; however, the use of this type of research is limited in classroom settings. The experiment used a joint position sensing app (JPS), where a

smartphone was strapped to the participant's arm. Participants then completed a total of 12 trials at three different target angles (50°, 70°, and 90°), where each angle was repeated four times. Within each trial, audio cues were used to guide the participant's arm to the target angles, defined as the instructed phase. During this phase, a high-pitched tone indicated the arm was above the target angle, a low-pitched tone indicated the arm was below the target angle, while no sound indicated the participant was at the correct target angle. The participant then held the correct angle for two seconds before bringing their arm down to the side. After relaxing, participants entered the repositioning phase by raising their arm to the same target angle as before, but without audio pitch cues. Proprioceptive accuracy was calculated as the difference between the arm angle in the instructed phase minus the arm angle in the repositioning phase.

Xu, Kira

University of Oregon

Mentor(s): Ben Brissette, Chris Doe

Poster #274

Determining the significance of the A18b premotor neuron in *Drosophila* backwards movement

A single extension of a human leg involves a highly complex coordination of over 150,000 motor neurons. The complexity of the human nervous system complicates treatments for neurological movement disorders like Parkinson's, Tourette's, and physical tremors. Fruit flies (*Drosophila melanogaster*) and humans organize their neurons to control behaviors in surprisingly similar ways, making the simpler flies a beneficial model for understanding motor function. In this study, we focus on understanding backwards movement, which is activated by Mooncrawler Descending Neurons (MDNs). We know that the premotor neuron A18b is activated by MDN during backwards movement, but it's still unclear if A18b is important for backwards movement. In a series of optogenetic behavior experiments, we test the necessity of A18b by using genetics to kill A18b to see if animals still crawl backwards after activating MDN. We also test sufficiency of A18b by activating it alone. We directly activate A18b neurons, to see if they cause backwards movement alone. These experiments will reveal the neuronal organization that flies use to exhibit backwards movement. Understanding how these behaviors work in flies can aid scientists and physicians in treating movement disorders.

Yellowtail, Megan

University of Oregon

Mentor(s): Cathy Wong, Racheal Fisher

Poster #158

Measuring Molecular Orientations with a Polarization Dependent Darkfield Microscope

Organic Solar Cells (OSCs) are a promising candidate as solar cells due to their potential for cheaper and more environmentally friendly production. However, OSCs are less efficient than silicon based cells. The morphology of OSC active layers limits the efficiency of charge transfer, a process in which photoexcited electrons produce electricity in OSCs. Charge transfer occurs at the boundary of active layer domains, or groups of molecules with aligned transition dipole moments. Therefore, understanding how the molecules at domain boundaries aggregate while the domain boundary forms can help create more efficient OSCs.

The orientation of molecules within domains can be imaged by varying the polarization of light relative to the transition dipole moments in a domain. Domain boundaries can be isolated by physically blocking out low frequency light with darkfield microscopy, resulting in an image made solely of boundaries. We created a darkfield polarization dependent microscope with spectral capabilities to study the formation of domain boundaries in situ, during their formation. The reflectance spectra provides information about how well ordered molecules are at the domains and at their boundaries.

Using this microscope, we were able to measure images and reflectance spectra of TIPS-Pentacene, a well studied, air stable molecule, while its domains formed in situ with varying polarizations. We fit the pixels in the image to sinusoids to understand its domain formation.

Yellowtail, Morgan

University of Oregon

Poster #135

A Creative Perspective on Pine Mountain Observatory

See Miller, Spud

Young Stallings, Katherine

University of Oregon

Mentor(s): Matt Graham, Jenefer Husman

Poster #064

How Students Perceive Their Future Impacts Their Behavior in the Present.

Research into students' orientation toward the future is called Future Time Perspective (FTP). FTP looks at motivation and how students anticipate goals. Prior research identifies three profiles: (bowl, cup, and cone). Bowl futures are broad or uncertain, cone futures are highly specific, and cup futures fall between the two; they have goals but remain open to changes. This study examined whether this qualitatively developed FTP framework replicates in quantitative survey responses. Using data from 161 college undergraduates in a science course at an R1 university, I used a Latent Profile Analysis to explore the bowl, cup, and cone topography. I hypothesized relationships between self-regulation and the topography. Using measures of career connectedness, academic self-concept, perceived task difficulty, and post-bachelor's futures, I predicted these would map onto the topography. I also examined whether profiles predicted academic behaviors related to self-regulation. The topography mapped onto the data, and three significantly different profiles emerged (bowl, cup, cone). However, the topography did not predict self-regulation. These findings support prior FTP research and the topology, but the results don't show how motivation is derived from FTP. This raises new questions about what motivates students to achieve their career goals.

Zelaya, Ayanna

University of Oregon

Mentor(s): Jessica Marshall

Poster #027

Co-Presenter(s): Brooke Chapman, Allison Bourassa

The prevalence, outcomes and perceptions of (IPV) amongst multiracial survivors.

We analyzed hundreds of articles to screen for findings about intimate partner violence (IPV), which in our criteria was defined as, "intimate partner violence includes, physical violence, sexual violence, stalking and psychological aggression (including coercive tactics) by a current or former intimate partner (i.e., spouse, boyfriend/girlfriend, dating partner, or ongoing sexual partner)"(Brieding et al, 2015 p.11). In this research study our focus was on multiracial individuals that fit into this criteria, these were our findings.

Ziegler, Kasey

University of Oregon

Mentor(s): Vi Baird

Poster #163

Altered connectivity in a 12-ring carbon nanohoop

Carbon nanohoos or CPP's (cycloparaphenylenes) are like beaded bracelets where each bead is a hexagonal hydrocarbon structure and several of them are connected together end to end to form a hoop. These materials have special properties- due to being highly conjugated (several alternating single and double bonds), and sharing a common absorbance of 340 nanometers, regardless of the number of units in the hoop. Another unique property of CPP's is that the HOMO-LUMO energy gap narrows as the ring size decreases, which is opposite from their linear counterparts. These nanohoos are highly fluorescent and have great potential for bio imaging, which makes the research into them highly prevalent. Most of the nanohoos being made in the Jasti lab have all of their hexagonal phenylene units connected to each other with para positioning. However, by changing the bonding position in one or more of those units the molecule's photo physical properties can be altered. In our target molecule, we changed the connectivity in the 12 ring nanohoop so two of the phenylene units were connected in a meta position instead of para. We were eager to see how the altered connectivity would affect the fluorescence and functionality of this molecule. The synthesis and characterization of the 12dimeta carbon nanohoop is the focus of this research project.