UNIVERSITY OF OREGON

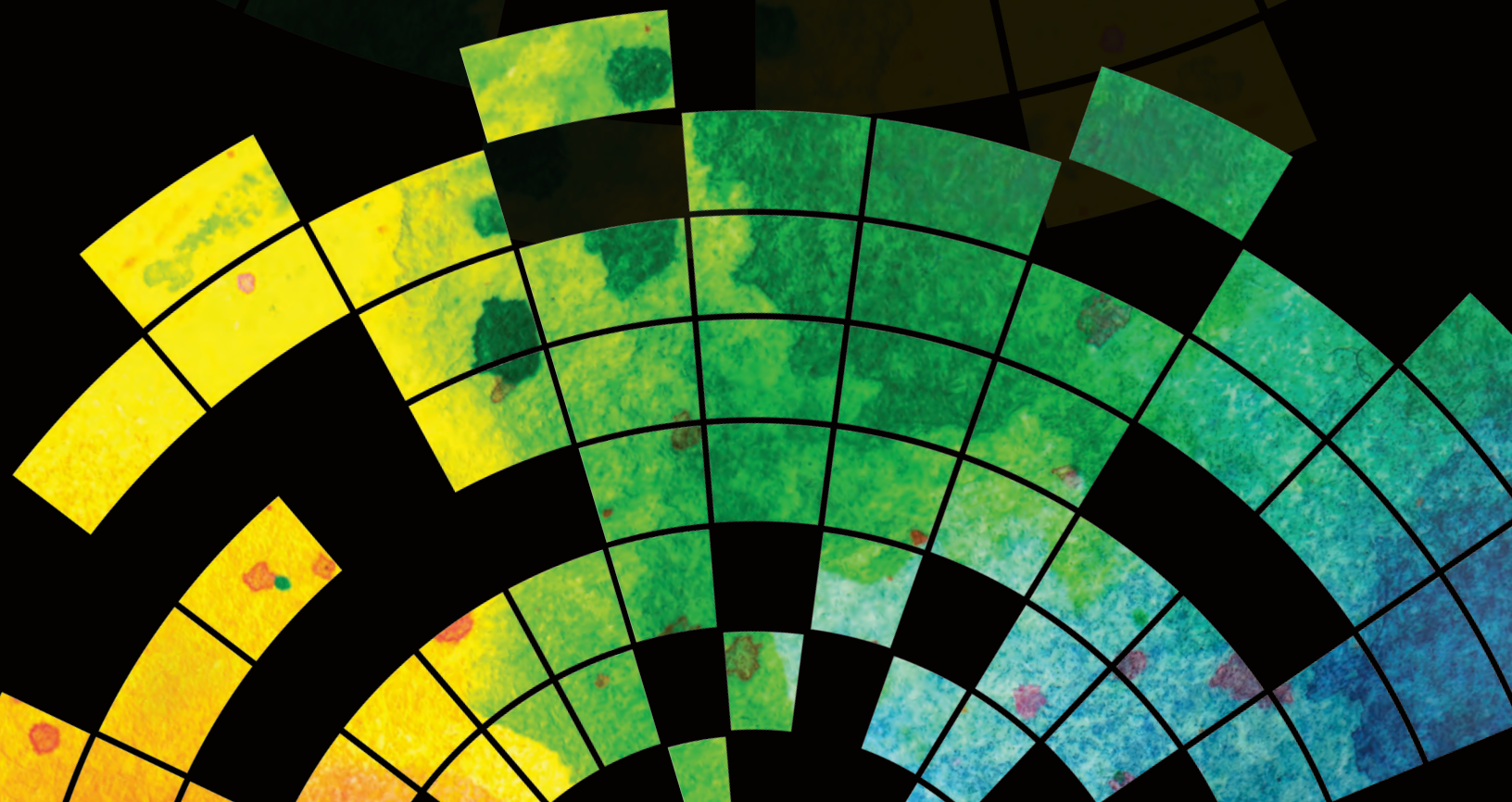
EVENT PROGRAM

2025

UNDERGRADUATE RESEARCH SYMPOSIUM

ARTS • SCIENCES • HUMANITIES • SOCIAL SCIENCES

urds.uoregon.edu/symposium



2025
UNDERGRADUATE RESEARCH SYMPOSIUM

Table of Contents

Reflecting on Fifteen Years: Welcome Letter from Symposium Chair 1

Agenda Overview 5

Keynote Address Speaker Francesca Fontana '17 6

Keynote Address Program 8

Historical Keyboards Early Music Concert Program 9

Asian Studies Research Event 13

Film Screening and Discussion 15

EMU Maps 16

EMU Ballroom Map of Exhibits 19

Acknowledgments 20

Presenter Statistics 28

Symposium Presenters 42

Research Mentors 48

Faculty Research Mentor Awards 66

LAURE Award Call for Submissions 70

OUR Journal Call for Submissions 71

OVPRI Research Revealed 72

Symposium Engagement Survey 73

Presentation Abstracts 75

Reflecting on Fifteen Years

May 22, 2025

Welcome to the 15th Annual Undergraduate Research Symposium!

Over the past 15 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 knew 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 15 years the symposium has celebrated the research, creative work, and experiential learning of 5,254 student presenters, and recognized the mentorship of 3,084 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 520 presenters and 384 research mentors. The record number of 492 presentations this year encompasses students from all eight colleges and schools, the Phil and Penny Knight Campus for Accelerating Scientific Impact, 86 majors and 77 minors. The breadth of participants is further illustrated by the 93 research centers, institutes, and laboratories that hosted undergraduate presenters. A record 344 presenters received funding to support their research and creative work from over 112 different internal and external sources.

This high-water mark is realized by the dedication of the symposium team listening to and learning from students and colleagues across the disciplines about how they "see themselves"

within the space of "research and creative work," and the language and frameworks they use in approaching their work. These relationships have prompted adaptations to the presentation formats to best accommodate all fields and media.

The symposium began with the traditional oral and poster presentation formats and over time has grown 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; gallery walks; and multi-media showcases. The annual feedback survey has also resulted in continuous change and improvement to the registration process. The early years of the symposium adopted a STEM-centric abstract template for participants that proved incongruous with many project descriptions. Presently, the registration offers manifold options for participants from artist, author, and designer statements to more traditional science and social science abstracts.

The symposium has partnered with academic departments, fellowship programs, and individual instructors to integrate curricular and cocurricular initiatives into the event through specialized sessions. Featured examples include the Environmental Leaders Program, the Walter and Nancy Kidd Creative Writing Workshops, the Asian Studies Event, the Center for Science Communication Research, the Climate Change and Indigenous Peoples Initiatives. A first-year student presenter track has also flourished with Academic Residential Community (ARC) and First-Year Interest Group (FIG) seminar instructors.

Faculty are encouraged to organize course-based sessions that showcase the pedagogy of their curriculum along with their students' inquiry-based assignments. Recent examples include Alex Dracobly's HIST 240: War in the Modern World; Theresa May's and Marta Clifford's Native American Theater Arts course and production of *Princess Pocahontas and Blue Spots*; and Joyce Wei-Jo Chen's MUS 391/691 Collegium Musicum.

It is becoming standard practice for institutionally sponsored research experiences for undergraduates (REUs) to stipulate symposium participation as a condition of the award to provide academic, professional, and career development, including the

- Ronald E. McNair Scholars Program
- Center for Undergraduate Research and Engagement's (CURE) Summer Under Research Fellowship (SURF), First-Year Research Experience (FYRE) Fellowship, Small Grants, and Conference Travel Award Programs
- Undergraduate Research Opportunities Program's (UROP) Humanities Undergraduate Research Fellowship (HURF), Hui Undergraduate Research Scholars, Knight Campus Undergraduate Research Scholars, and Vice President for Research and Innovation Research Fellowship (VPRI) Programs
- Oregon Humanities Center's Humanities Undergraduate Program for Archival Studies and Practice (HUAF) Fellowship

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 undergraduates, alumni, donors, and community members into the annual program and as a gateway to the institution. Through a collaboration with the Student Academy to Inspire Learning (SAIL) and Student Orientation Programs, thousands of high school students and teachers have enjoyed a campus visit day with a tailored presentation from the alumni keynote speaker and student panel as well as tours of labs, studios, theaters, and archives. Lane Community College, Umpqua Community College, and Central Oregon Community College students and faculty have also attended and presented at the symposium with specialized transfer student panels and tours of Yasui Hall–home of the Transfer Scholars Residential Community. Alumni advocates have continued to promote the Symposium to UOAA chapters nationally from the DC Ducks and PDX Ducks to the Lane County chapters.

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 in class visits and workshops. This year we are privileged to host 2017 Clark Honors College and School of Journalism and Communication graduate Francesca Fontana, *Wall Street Journal* reporter, host of the *What's News In Markets* weekly podcast, and author of the forthcoming book, *The Family Snitch: A Daughter's Memoir of Truth and Lies*.

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

UNIVERSITY OF OREGON

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 presentation, creative work, film screenings, and poster locations in the EMU and Alan Price Science Learning Commons, as well as presenter names and abstract titles.

May 22

9:00–10:30 a.m. . . . . Concurrent Oral Presentation Sessions

9:00–10:30 a.m. . . . . Works-in-Progress Session 1 (Science Library)

10:40–11:50 a.m. . . . . Works-in-Progress Session 2 (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 Provost Chris Long
- Alumni Keynote by Francesca Fontana '17, School of Journalism and Communication and Clark Honors College

1:30–3:00 p.m. . . . . Concurrent Oral Presentation Sessions

1:30–3:00 p.m. . . . . Works-in-Progress Session 3 (Science Library)

2:30–5:30 p.m. . . . . Music Performances and Presentations (Collier House)

3:15–4:45 p.m. . . . . Concurrent Oral Presentation Sessions

4:30–6:30 p.m. . . . . Poster Session in EMU Ballroom

5:30–7:30 p.m. . . . . Asian Studies Event

6:00–8:00 p.m. . . . . Original Student Film Screenings

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.

Alumni Keynote Speaker

Francesa Fontana '17

"Investigation as Craft: Elevating Creative Nonfiction Through Research and Archival Methods"

Thursday, May 22, 2025, 12:30 p.m., EMU Redwood Auditorium

Also available on the symposium YouTube channel

Francesca Fontana

Francesca Fontana is an award-winning reporter and writer based in New York City.

Francesca has been a reporter for the *Wall Street Journal* since 2018. She also hosts *What's News In Markets*, a weekly podcast. At the *Journal*, she has written personal finance columns and feature stories across a variety of areas that blend first-person narrative and robust reporting. In 2020, Ms. Fontana was awarded a Front Page Award for Specialized Reporting: Personal Service by the Newswomen's Club of New York.

She is working on her first book, *The Family Snitch: A Daughter's Memoir of Truth and Lies*, a deeply reported memoir about her search for the truth about her body-building father's secret criminal past. *The Family Snitch* is an investigation into the stories we tell and those we don't as well as the limits of truth and the perils of seeking it out at all costs. *The Family Snitch* will be published by Steerforth Press in spring 2026.

In 2019, Francesca wrote a cover story for *The Wall Street Journal*'s weekend Review section about her father's criminal case.

Alumni Keynote Speaker

A first-generation college student, Francesca attended the University of Oregon's Clark Honors College (CHC) and the School of Journalism and Communication's (SOJC) honors program. She graduated magna cum laude in 2017, receiving a BA in journalism.

Both her 2019 viral Review cover story and *The Family Snitch* grew out of her CHC and SOJC Honors thesis: Seeking Truth Through Investigative Memoir, which passed with distinction.

Francesca's research was supported by grants from the CHC and SOJC. She was also awarded a 2017 Humanities Undergraduate Research Fellowship by the UO's Undergraduate Research Opportunity Program. She presented her thesis at the 2017 Undergraduate Research Symposium.

Francesca is an alumnus of *The Daily Emerald*, *OR Magazine*, *Flux* magazine, and the SOJC in NYC program. In 2015, she was awarded an internship by the Charles Snowden Excellence in Journalism Program, spending a summer working as a reporter for *The Register-Guard* in Eugene. She returned to the newspaper for several more intern stints before being hired as a staff reporter during her senior year at the UO.

Fun fact: To deliver the keynote at the symposium, Francesca will be returning to Eugene for the first time since the day she graduated in June 2017!

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 Provost
University of Oregon Provost Chris Long

12:35 Introduction of Keynote Speaker
Brent Walth, Associate Professor; Codirector, The Charles Snowden Program for Excellence in Journalism; School of Journalism and Communications

12:40 "Investigation as Craft: Elevating Creative Nonfiction Through Research and Archival Methods"
Keynote Address by Francesca Fontana '17, Biology, School of Journalism and Communications and Clark Honors College

1:00 Discussion and Q&A with Francesca Fontana

1:10 The UO's Research Enterprise
Jenn Pfeifer, Associate Dean, Research and Scholarship, College of Arts and Sciences; Professor of Neuroscience and Psychology

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

Historical Keyboards Early Music Concert

Joyce Wei-Jo Chen, DMA, Assistant Professor, UO School of Music and Dance
Thursday, May 22, 2:30 p.m., Collier House

Keyboard Trio in A major, H. 527 . . . . . Carl Philipp Emanuel (1714–88)
Taewoo Kim, freshman, fortepiano
Zoe Osada, GS, baroque cello
Emma Simmons, alum, baroque violin

Piano sonata No. 8 in A minor, K. 310 . . . . . Wolfgang Amadeus Mozart (1756–91)
Nikita Istratov, freshman, fortepiano

Preludes and Fugue in D major and G major, from the Well-Tempered Clavier II . . . . . Johann Sebastian Bach (1685–1750)
Alfie Ong, sophomore, harpsichord

Sonata for Violin and Obbligato Harpsichord in E major . . . . . Johann Sebastian Bach
Sarah Hoffman and Simon Oh, GS

Concerto for Two Harpsichords, BWV 1061 . . . . . Johann Sebastian Bach
Largo
Fuga

MUS 391/691 Collegium Musicum

Joyce Wei-Jo Chen, DMA, Assistant Professor of Historical Keyboards

Course Description

This course draws inspiration from the emerging interdisciplinary field of zoomusicology–the study of the relationship between animal sounds and human music-making. Focusing especially on birdsong, we will explore how composers across the centuries have represented animal voices, behaviors, and movements in Western art music. From the call of the cuckoo to the fluid melodies of the nightingale, animal sounds have long captured the imagination of musicians and listeners alike.

How do composers translate the natural world into musical language? What techniques and stylistic choices evoke animal presence, gesture, and motion? And what do these musical portrayals reveal about cultural attitudes toward animals, nature, and the boundaries between the human and nonhuman? Through listening, score study, discussion, and historical context, students will gain new insight into the vibrant intersections of music, nature, and imagination.

Overview information

My students and I are excited to present our work at the Undergraduate Research Symposium at Collier House. As a historic building on the UO campus, Collier House has long been a space for performance and musicological research, making it a perfect setting for our animal-themed concert. I am especially grateful for the opportunity to teach this mixed-level course, which has allowed undergraduate and graduate students to collaborate on musical projects, explore musicological research questions, experiment with ideas, and perform together.

Students

Jaclyn Beck, *soprano*
Emilie Catlett, *alto and baroque viola*
Sierra Freeman, *baroque violin*
Madeline Grenier, *natural horn*
Nathan Hollis, *tenor*
Lina Kang, *baroque violin*
Zoe Oda, *baroque violin and baroque cello*
Alfie Ong, *harpsichord*
Andrew Pelto, *natural trumpet*
Jean Ran, *tenor*
Aliyah Saldarriaga, *baroque flute*
Lily Slaton Barker, *baroque violin*
Dorian Stewart, *bass*

Guest coaches

Emma Simmons, *baroque violin* (UO alum)
Holly Roberts, PhD, Associate Director of Programming, Oregon Bach Festival, *baroque violin*

3:30 p.m., Collier House

Natural Trumpet and Horn calls . . . . . From the Les Plus Belles Fanfares de Chasse (1930)
La Biche (The Doe)
Les Animaux en Compagnie (The Pets)
Echos des Pyrenees (Echoes of the Pyrenees)
La Culbete en Foret (The Tumble in the Forest)

Le Grillo (The Cricket) . . . . . Josquin des Prez (d. 1521)

Le chant des oyseaulx . . . . . Clément Janequin (1485–1558)

Sonata Representiva . . . . . Heinrich Ignaz Franz Biber (1644–1704)

"The Goldfinch" Flute Concerto in D major, RV 428 . . . . . Antonio Vivaldi (1678–1741)
Soloist: Aliyah Saldarriaga, baroque flute

Violin Concerto in A major "The Frogs," TWV 51: A4 . . . . . Georg Philipp Telemann (1681–1767)

Soloist: Emma Simmons, baroque violin

Concerto for two violins in D minor, BWV 1043 . . . . . Johann Sebastian Bach (1685–1750)

Vivace

Largo, ma non tanto

Allegro

Asian Studies Research Event

Thursday, May 22, 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. Marly Howell, “Understanding Decorated Earthenware Ceramics during the Pre-Angkor and Angkorian Periods”
2. Caitlin Lloyd, “Iconography and Technological Evolutions in Qing Dynasty Rank Badge Embroidery” (poster)
3. Kyrie Taylor, “Perceptions in Position: Mapping Race and Stereotypes on Campus” (poster)
4. Jaden Wirhol, “Discussions of Democracy in 1920s Japan”
5. Sera Lew, “Women's Creative Adaption to Gender Roles in North and South Korea: A Comparative Analysis”
6. Huixin Gong, “Persistence to Create: Love-Driven Resistance to Patriarchy by Chinese Female Fans”
7. Jisu Lee, “Social Status of Korean in the United States: A Survey”
8. Seira Kitagawa, “Exploring How Self-Identity Shifts by Cross-Cultural Experience"
9. Panel Q&A

Graduate Presentations

1. Arvind Sai Chennupati, “Whose Burden, Whose Future?: Environmental Justice Across Space and Time in South and Southeast Asia”
2. Gretchen Nihill, “Ally Confrontations Online: Confrontation to Prejudice Can Function as Identity Safety Cues on Social Media”
3. Anu Sugathan, “Drawing Justice: Narratives of Resilience and Disruption in Orijit Sen’s River of Stories”
4. Tiffany Thomas, “Eating the Edo Era: Shirakawa-Go, Gifu, Traditional Foodways, and Intangible Heritage”
5. Yui Yamada, “Imagination as Feminist Action: Reading Kawakami Mieko’s Wisteria and Three Women from Girl Studies”
6. Jinsun Yang, “Reimagining Gender Justice in Sports: Non-binary Policy in Korean Queer Women Games”
7. Panel Q&A

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

See you on May 22 for informative presentations, lively discussions, and a celebration of research.

Film Screening and Discussion

Thursday, May 22, 6:00–8:00 p.m., EMU Redwood Auditorium

The Undergraduate Research Symposium is excited to showcase film submissions. Recognizing film as a powerful medium–not only for art and entertainment but also for research and social change–we have included a Film Screening and Discussion session to showcase the breadth and depth of film projects produced by University of Oregon undergraduate students. This session underscores the importance of providing a platform for students to showcase their work and engage with the community.

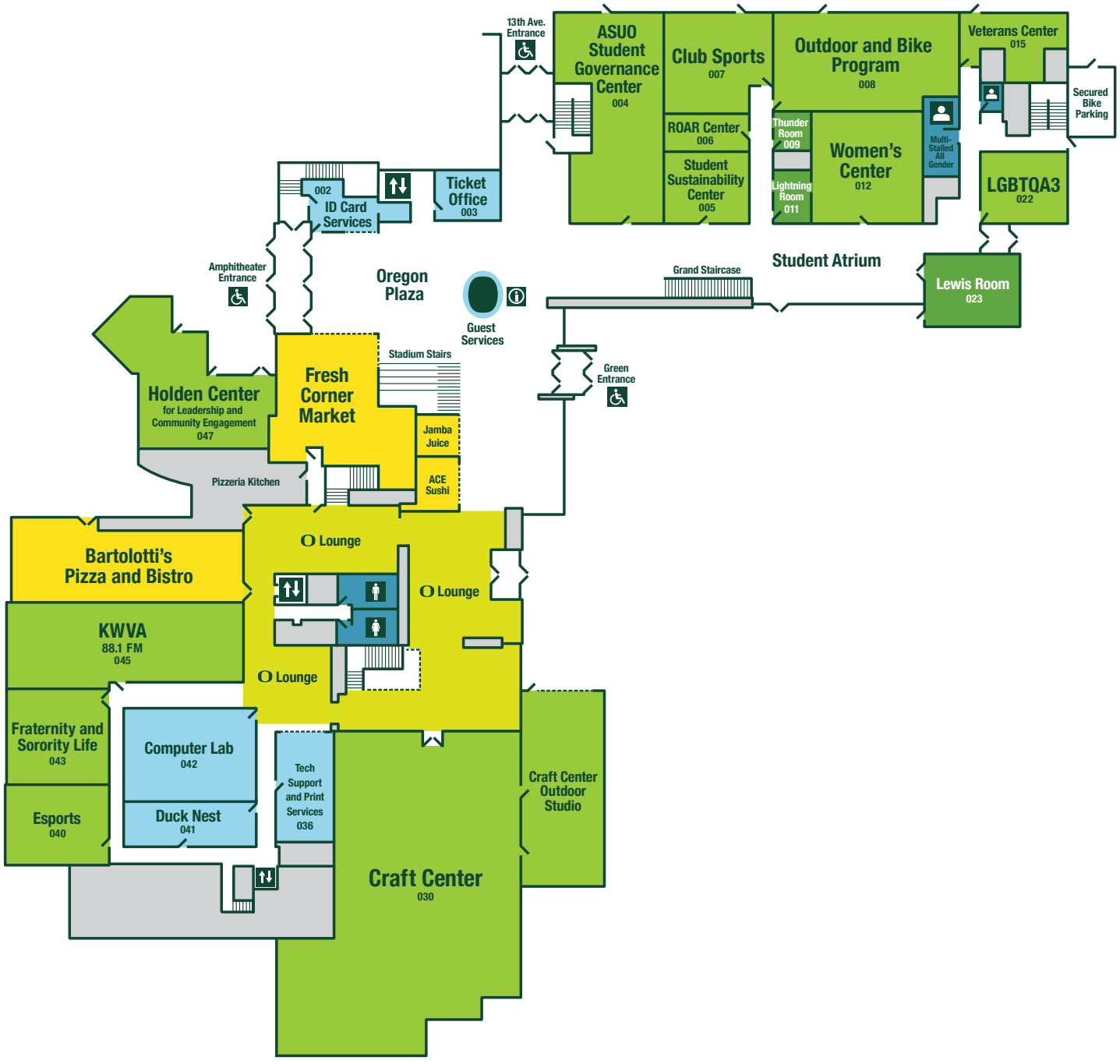
The Filmmaking Awards recognize outstanding contributions in the field, with prizes sponsored by the Undergraduate Research Symposium in partnership with the Cinema Studies Department, Ducks After Dark, and UO Presents. The awards include a grand prize of $300, a second prize of $150, and an audience vote award of $50 that engages the audience in the process.

Films To Be Screened

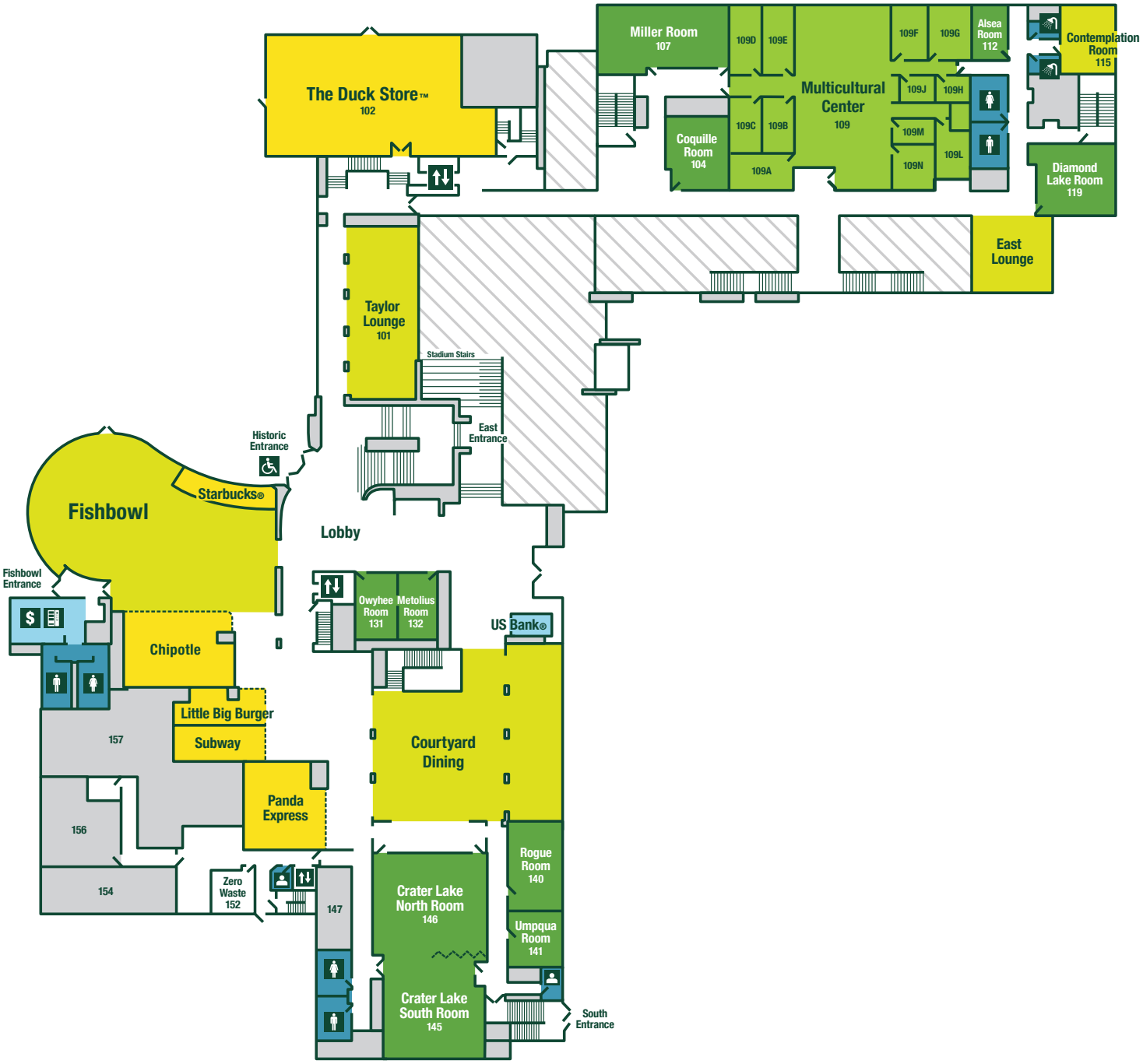
- *Under the Mask* (Jai Pandhoh, 2028)
- *Reignite* (Malia Poblete, 2028)
- *Bien Pretty: A Mexican-American Love Story* (Diego Solorio, 2025)
- *Mind the Gap* (Nick Wright, 2028)
- *Foul Play* (Joseph Swanson, 2026, and Calvin Chmelir, 2026)

Join us for an evening of cinematic exploration, a celebration of students' filmmaking accomplishments, and discussion. Popcorn and soda will be provided!

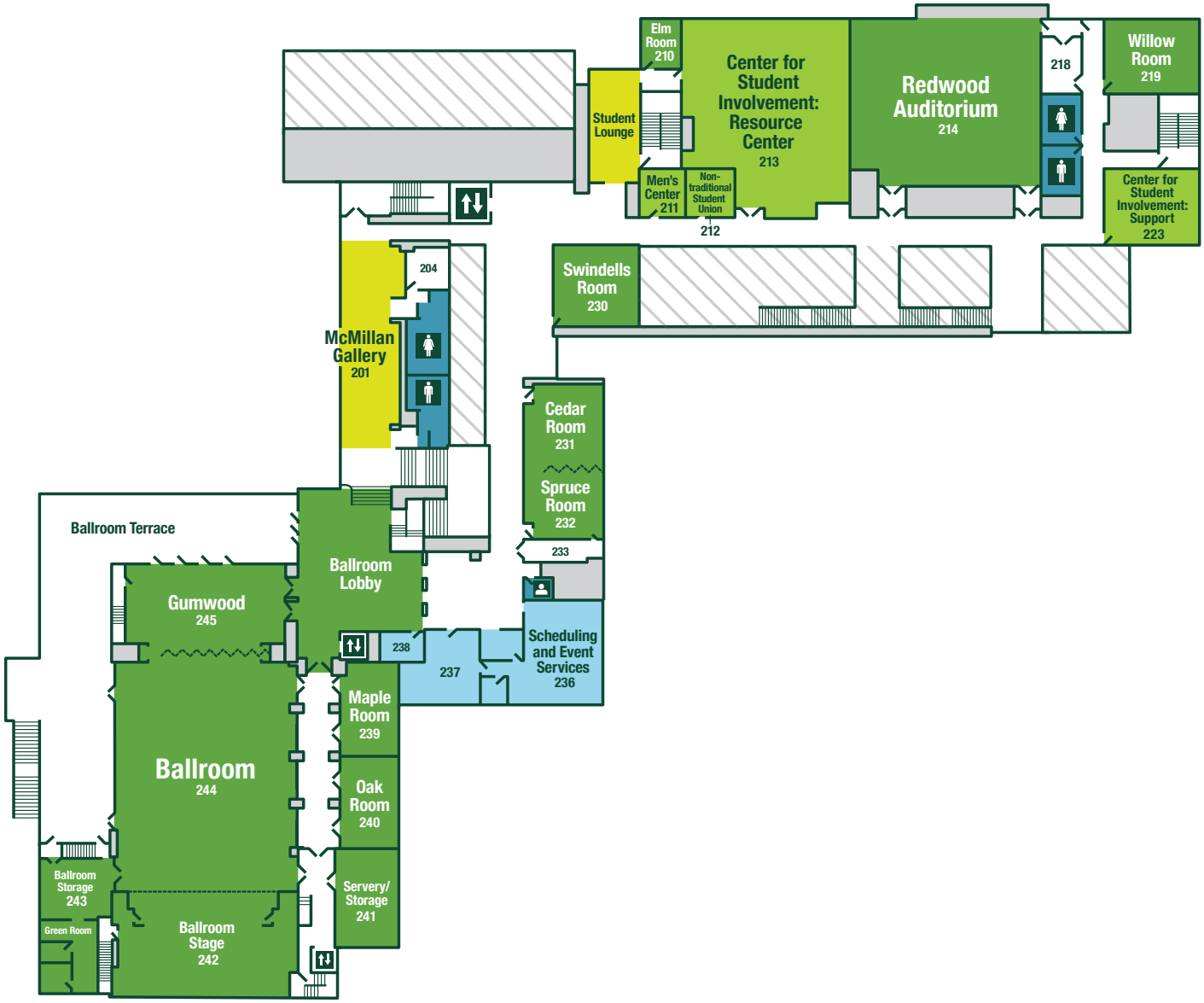
Erb Memorial Union Ground Floor



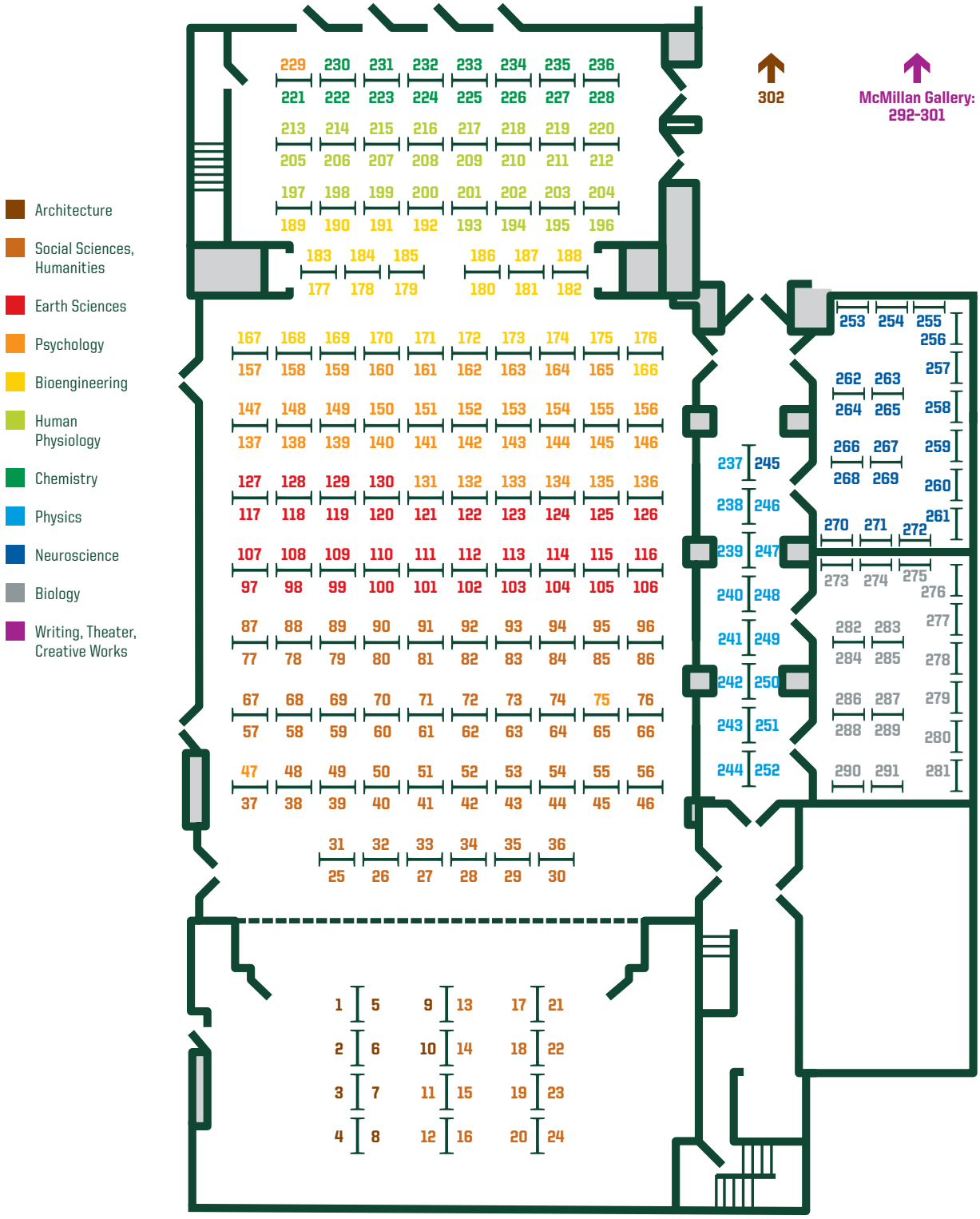
Erb Memorial Union Level One



Erb Memorial Union Level Two



Erb Memorial Union Ballroom



Acknowledgements

Sponsors

Division of Undergraduate Education and Student Success
Center for Undergraduate Research and Engagement
University Housing
College of Design
Department of Residence Life
Lundquist College of Business
Office of the Vice President for Research and Innovation
Robert D. Clark Honors College
Ronald E. McNair Scholars Program
School of Journalism and Communication
Undergraduate Research Opportunities Program
University of Oregon Alumni Association
University of Oregon Libraries
University Advancement

We wish to recognize the University of Oregon Libraries, Lundquist College of Business, and Center for Undergraduate Research and Engagement for cofunding the printing of the 296 presenter posters.

Undergraduate Research Symposium Planning Committee

Kevin Hatfield (Chair)

Assistant Vice Provost for Undergraduate Research and Distinguished Scholarships
Director of the Center for Undergraduate Research and Engagement (CURE)

Lanch McCormick (Co-Chair)

Director of Student Engagement, Undergraduate Research and Distinguished Scholarships, Division of Undergraduate Education and Student Success

Jessica Winders (Co-Chair)

Associate Director of Academic Residential and Research Initiatives, University Housing and Division of Undergraduate Education and Student Success

Eric Alexander

EMU Director, Division of Student Life

Michelle Alexander

Tykeson College and Career Advisor, Tykeson College and Career Advising

Dare Baldwin
Professor, Department of Psychology, Clark Honors College

Chloe Barnett
Undergraduate Engagement and Student Success Librarian, UO Libraries

Jacy Bartlett
Program Coordinator, Center for Undergraduate Research and Engagement and Office of Distinguished Scholarships

Michael Brown
Manager, UO Portland Libraries

Courtney Cox
Assistant Professor, Black Studies, Department of Indigenous, Race and Ethnic Studies

Feather Crawford
Experiential Learning Manager, College of Arts and Sciences

Nancy Cunningham
Associate Vice Provost and University Librarian, Data, Access, Research, and Teaching Services, UO Libraries

Kelley Christensen
Director of Research Communications, Office of the Vice President for Research and Innovation

Paolo Daniele
Director of Professional Development and Career Preparation

Christabelle Dragoo
Director, Ronald E. McNair Scholars Program

Nedzer Erilus
Director of University Housing for Residence Life

Aris Hall
Program Director, Lyllye Reynolds-Parker Black Cultural Center, Office of the Dean of Students

Lucy Rojas Henderson
Experiential Learning Manager, College of Arts and Sciences

Michael Jordan
University of Oregon Alum, PDX Ducks UOAA Chapter Board Member and Chair of the Duck Career Network

Solmaz Mohammadzadeh Kive
Assistant Professor, School of Architecture and Environment, College of Design

Miles Marrow
Director of Housing, University of Oregon Portland

Colin Miller
Graphic Designer, University Housing

Jennifer O'Neal
Assistant Professor and Director of Undergraduate Studies, Department of Indigenous, Race and Ethnic Studies

Kenyon Plummer
Math and Science Learning Specialist, Tutoring and Academic Engagement Center (TAEC)

Karl Reasoner
Senior Program Manager, Undergraduate Research Opportunities Program (UROP), Office of the Vice President of Research and Innovation

Bryan Rebar
Associate Director for the UO Center for STEM Careers through Outreach, Research, and Education (STEM CORE)

Victoria Robinson
Program Coordinator, Academic Residential and Research Initiatives

John Seely
Professor, Special Education and Clinical Sciences, College of Education

Michelle Stuckey
Director of Composition, Department of English

Paul Timmins
Executive Director, University Career Center

Makaal Williams
Coordinator of Identity Based Academic Residential Programs, University Housing and Division of Undergraduate Education and Student Success

McKenzie Winders
Operation Manager, Student Orientation Programs, Division of Student Services and Enrollment Management

Yifang Zhang
Assistant Dean for Career Readiness, College of Arts and Sciences

Lane Community College Members

Blue Crook
Library Associate-Lead; Phi Theta Kappa Advisor

Jennifer Frei
Associate Vice President for Arts and Sciences

Stacey Kiser
Biology Faculty

Kimberly Parzuchowski
Faculty Coordinator, Lane Honors Program

Ce Rosenow
Faculty Coordinator, Lane Honors Program

Central Oregon Community College Members

Sarah Baron
Assistant Professor, Health and Human Performance

Andria Woodell
Professor, Psychology

Diane Pritchard
Director, Careers, Advising, Personal Counseling (CAP) Services

Umpqua Community College

Mick Davis
Associate Professor, Science

Scot Headley
Dean of Instruction

Undergraduate Research Symposium Planning Committee Partners

Ethan Abramowitz
Facilities Services Coordinator; Special Projects, Labor, University Housing

Brittney de Alicante
Executive Assistant, Office of the Vice President for Research and Innovation

DJ Andrews
Assistant Program Director, Center for Student Involvement, EMU

Danny Bailey
Program Manager, Donor Recognition and Reporting, University Advancement

Jeffrey W. Billington
Assistant Dean of Planning and Facilities, College of Design

Daniel Buck
Associate Professor, Asian Studies, Geography, School of Global Studies and Languages

Joyce Chen
Assistant Professor of Historical Keyboards

Mandy Chong
Program Coordinator, Center for Student Involvement, EMU

Tim Christie
Communications Generalist, Office of the Provost

Larissa Ennis
Director, Community Relations and Sponsorships, Government and Community Relations

Israel Escobedo
Event Coordinator, EMU

Taylor Evans
Associate Director, Donor Recognition, University of Advancement

Justin Filip
Program Manager, Donor Recognition and Reporting, University Advancement

Catherine Flynn-Purvis
Institutional Repository Program Manager, UO Libraries

Michaela Hager
Event Services Manager, EMU

Kathryn Hart
Associate Director, Scholarship and Named Faculty Stewardship, University Advancement

Rick Haught
Associate Director, Operations Director, UO Scheduling and Event Services, EMU

Mike Hergenreter
Special Events Manager, University Advancement

Mary Kay Hoffman
Director of Donor Recognition, University Advancement

Saul Hubbard
Director of Communications, Office of the Provost

Chelsea Hunt
Communications Generalist, University Communications

Chris Larsen
Videographer and Photographer, University Communications

Charlie Litchfield
Associate Director of Video and Photography, University Communications

Steve McKenzie
Director of Housing for Facilities Services

Jimmy Murray
Technology Specialist and Student Supervisor, Price Science Commons and Research Library

Bryce Newall
The David and Nancy Petrone Faculty Fellow, Associate Professor, School of Journalism and Communication

Lori Shontz
Professor of Practice, School of Journalism and Communication

Sean Sharp
Manager, User Support Services, College of Design

Jessi Steward
Senior Associate Director for Student Activities and Programs

Brian Trapp
Kidd Program Director and Disability Studies Director

Raine Vieger
Head, Digital Publishing and Pedagogy, UO Libraries

Session Moderators and Volunteers

Jess Chalette
Undergraduate Program Assistant, ASU2

Jasmyne Channel
Associate Director of Residence Life, University Housing

Alexandra Garner
Assistant Director of Residence Life for Conduct, Community Standards, and Crisis Response, University Housing

Nora Myers
Community Director, University Housing

Bridget Nesbitt
University of Oregon Student, Multidisciplinary Science

Rachel Weissler
Assistant Professor, Department of Linguistics and Indigenous, Race, and Ethnic Studies; Co-Faculty Director, Umoja Black Scholars Academic Residential Community

Angela Chong
Vice President for Student Life, Student Life

Sarah Stoeckl
Associate Director, Office of Sustainability; Faculty Director and Coordinator, Environmental Leaders Academic Residential Community

Marta Lu Clifford
Elder in Residence, The Many Nations Longhouse

Ellen Laing
Executive Assistant to the Vice Provost of Undergraduate Education and Student Success

Katie Wolf
Associate Director, Accessible Education Center

Ava Rodgers
University of Oregon Student, Multidisciplinary Science

Meg Montgomery
Academic Advisor, Office of Academic Advising

Maurice Davis
University of Oregon Student

Alice Maytan
University of Oregon Student, Biology

Simran Nevatia
University of Oregon Student, Biology

Cindy Bandow
Bridge Program Coordinator, Center for Multicultural Academic Excellence

Adam Budd
Resident Services Specialist, University Housing

Allie Kammerzell
Community Director, University Housing

Korey Thompson
Care and Conduct Coordinator, University Housing

Tyler Power
Assistant Director of Family Housing and University Apartments, University Housing

Courtney Cox
Assistant Professor, Department of Indigenous, Race, and Ethnic Studies

Amanda Franklin
Assistant Director of Residence Life Resident Services, University Housing

Yifang Zhang
Assistant Dean for Career Readiness, College of Arts and Sciences

Krista Simpler
Academic Residential and Research Initiatives Student Assistant, University Housing

Bryson Beck
Director of Promotions and Student Recruitment, University Housing

Cam Kruckenberg
Academic Residential and Research Initiatives Student Assistant, University Housing

Paul Timmins
Executive Director, University Career Center

Colleen Lewis
Event Coordinator, University Career Center

Carolyn Williams
Peace Corps Representative, University Career Center

Javier Evangelista
Community Director, University Housing

Jennifer Davis
Executive Assistant, HEDCO Institute and the College of Education

Joe Coleman
Director of Business Operations, Undergraduate Education and Student Success

Jiayin Zhou
Career Advisor and Content Lead, Lundquist College of Business

Dave Harris
Lead Utility Electrician, Utilities and Energy

Anthony Aguayo
Community Director, University Housing

Tim Sorg
Senior Instructional Designer, UO Online and the Office of the Provost

Carinah Martinez
Academic Residential and Research Initiatives Student Assistant, University Housing

Madelin Luu
Academic Residential and Research Initiatives Student Assistant, University Housing

Chantelle Russell
Associate Director of Physical Education, PE and Rec

Ella Padden
Special Projects Processing Archivist, Special Collections and University Archives, UO Libraries

Franny Gaede
Scholarly Publishing Librarian, UO Libraries

Abby Johnson
Psychology and Neuroscience Librarian, UO Libraries

Pen Gadling
Resident Services Coordinator, University Housing

Christian Reese
Care and Conduct Coordinator, University Housing

David Koller
Care and Conduct Coordinator, University Housing

Emma Luby
Community Director, University Housing

Arian Nassib
University of Oregon student, Human Physiology and Molecular Biology

Jeffrey Staiger
Humanities Librarian, Knight Library

Katie Higgins
Community Director, University Housing

Amy Hughes Giard
Assistant Vice Provost for First Year and Transition Student Experiences, Undergraduate Education and Student Success First-Year Programs

Garret Highland
Senior Transfer Admissions Counselor, University Admissions

Genifer Snipes
Head, Social Sciences Liaison, UO Libraries

Tina Haynes
Employer Engagement Coordinator, University Career Center

Leah Middlebrook
Director, Oregon Humanities Center

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 fifteen years the Symposium has hosted 5,249 student presenters and 3,084 research mentors.

We are inspired to celebrate the work of 520 presenters and their 384 research mentors at the 15th annual symposium–both new milestones. We also wish to acknowledge the unprecedented number of 104 graduate student mentors this year.

The historic number of 492 presentations this year encompasses students from all eight colleges and schools, the Phil and Penny Knight Campus for Accelerating Scientific Impact, 86 majors and 77 minors.

The breadth and diversity of undergraduate research and creative work is further illustrated by the 93 research centers, institutes, and laboratories that hosted undergraduate presenters. A record 344 presenters received funding to support their research and creative work from over 112 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), First-Year Research Experience (FYRE) Fellowship, Small Grants, and Conference Travel Award Programs

- Undergraduate Research Opportunities Program's (UROP) Humanities Undergraduate Research Fellowship (HURF), Hui Undergraduate Research Scholars, Knight Campus Undergraduate Research Scholars, and Vice President for Research and Innovation Research Fellowship (VPRI) Programs
- 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 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 the Yasui Hall (home of the Transfer Scholars Residential Community) and the facilitation of transfer student meetings with academic departments and faculty.

The symposium and campus partners sponsor 23 presenter awards across the humanities, social sciences, sciences, and arts, distributing over $14,000 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 492
Total presenters 520
Total faculty mentors 384

All Colleges: Major and Minor Programs Represented

Colleges 8
Campuses 2
Majors 86
Minors 77

Institutional Profile

UO–FTFT students 437
UO–Transfer students 62
UO–First Generation 68
ARC students (former and current) 70
Lane Community College students 5
Umpqua Community College students 11
Other 2

Class Standing

First-year (0–44.99 credits) 51 (9%)
Sophomores (45–89.99 credits) 97 (19%)
Juniors (90–134.99 credits) 170 (33%)
Seniors (≥135 credits) 202 (39%)

Presentation Type

Poster 296 (61%)
Oral 117 (24%)
Works in progress 31 (5%)
Creative works 22 (4.5%)
Virtual 21 (4.5%)
Film screening 5 (1%)

Research Area by Presentations

Natural/physical sciences 256 (52%)
Social sciences 171 (35%)
Humanities 41 (8%)
Design 15 (3%)
Fine/performance arts 10 (2%)

UO Major and Minor Programs Represented by College

College of Arts and Sciences

Majors 45

Psychology 61
Human Physiology 54
Neuroscience 37
Biology 34
Environmental Science 24
Environmental Studies 24
English 21
Political Science 20
Anthropology 19
Physics 17
Biochemistry 17
Chemistry 15
Multidisciplinary Science 14
Computer Science 13
Sociology 12
Cinema Studies 9
Comparative Literature 8
Data Science 8
Linguistics 8
Economics 7
History 7
Earth Sciences 6
Global Studies 6
Mathematics 5
Theater Arts 5
General Social Science 4
Geography 4
Marine Biology 4
Spanish 4
Indigenous, Race, and Ethnic Studies 3
Philosophy 3
Pre-Global Studies 3
Classics 2
Native American and Indigenous Studies . . . 2
Spacial Data Science and Technology 2
Women's, Gender, and Sexuality Studies 2
Exploring 1
Asian Studies 1
Chinese 1
Humanities 1
Japanese 1
Religious Studies 1
Romance Languages 1
Scandinavian 1

Minors 54

Chemistry 72
Biology 28
Global Health 28
Creative Writing 17
Psychology 13
Spanish 12
Sociology 9
Mathematics 8
Anthropology 8
Disability Studies 7

Environmental Studies 7
Ethics 7
Philosophy 7
Biochemistry 6
Food Studies 6
Women's, Gender and Sexuality Studies . . . 6
Political Science 5
Arabic Studies 4
Comics and Cartoon Studies 4
Criminology 4
Folklore and Public Culture 4
Earth Sciences 3
History 3
Korean 3
Latinx Studies 3
Theater Arts 3
Computer Science 2
Global Service 2
Economics 2
English 2
Ethnic Studies 2
Japanese 2
Middle East–North African Studies 2
Native American and Indigenous Studies . . . 2
Queer Studies 2
Black Studies 1
Chinese 1
Climate Studies 1
Comparative Literature 1
Digital Humanities 1
East Asian Studies 1
European Studies 1
French 1
French and Francophone Studies 1
Forensic Anthropology 1
Geography 1
German 1
Global Studies 1
Interdisciplinary Cognitive Sciences 1
Judaic Studies 1
Latin 1
Medieval Studies 1
Physics 1
Religious Studies 1
Writing, Public Speaking and Critical Reasoning 1

Robert D. Clark Honors College
Students 141

Phil and Penny Knight Campus for Accelerating Scientific Impact
Minors 2
Bioengineering 22
Brewing Innovation 2

College of Education

Majors 3
Communication Disorders and Sciences 5
Educational Foundations 4
Family Human Services 2

Minors 2
Secondary Education Foundations.....1
Special Education.....1

College of Design

Majors 9
Architecture 13
Planning, Public Policy and Management....4
Interior Architecture.....4
Art 4
Environmental Design 3
Art History 2
Art and Technology 1
Landscape Architecture 1
Pre-Planning, Public Policy
and Management 1

Minors 8
Planning Public Policy and Management ... 8
Art 4
Interior Architecture.....4
Nonprofit Administration 4
Art History 3
Landscape Architecture 3
Architecture 2
Historic Preservation 1

School of Music and Dance

Majors 3
Music 3
Music Performance 4
Dance 2

Minors 3
Music 3
Music Technology.....3
Dance 1

School of Journalism and Communication

Majors 6
Journalism: Advertising 8
Journalism: Public Relations 6
Journalism 7
Game Studies 2
Journalism: Media Studies.....2
Pre-Journalism 1

Minors 2
Science Communication 8
Media Studies.....2

Lundquist College of Business

Majors **2**
Business Administration 6
Pre-Business Administration..... 4

Minors **4**
Business Administration 11
Sustainable Business 8
Sports Business 6
Entrepreneurship 4

School of Law 1

Minor Programs **1**
Legal Studies..... 15

Lane Community College

Majors **9**
Chemistry..... 2
Mechanical Engineering 2
Anthropology..... 1
Art History 1
Biology 1
History 1
Math 1
Journalism 1
Physics 1

Umpqua Community College

Majors **9**
Mechanical Engineering 3
Physics 2
Chemistry..... 2
Physics 2
BIO Resource Research 1
Computer Science 1
Electrical Engineering..... 1
Forestry 1
General Science 1

Research Centers, Institutes and Labs..... 93

Aging and Vascular Physiology Lab 1
Ambati Lab..... 4
Agne Lab..... 1
Ballmer Institute for Children's and Behavioral Health..... 2
Benoit Lab for Therapeutic Biomaterials 1
Bowerman Sports Science Center 5
Brain and Memory Lab 4
Brain Development Lab..... 1
Campus Natural Areas Program 1
Cardiopulmonary and Respiratory Physiology 1
Center for Advanced Materials Characterization in Oregon 1
Center for Big Learning..... 1
Center for Cybersecurity and Privacy 1

Center for High Energy Physics (CHEP) 2
Center for the Study of Women in Society (CSWS) 1
Center for Latino/a and Latin American Studies (CLLAS) 1
Center for Science Communication Research 1
Center for Sustainable Business Practices 2
Center for Translational Neuroscience 2
Cognitive Dynamics Lab 2
Cresko Lab: An Evolutionary Genomics Lab 7
Dassonville Lab 1
Deku Lab 5
Developing Brains in Context Lab 1
Doe Lab 3
Dufek Multiphase Flow Group 1
Diversity and Social Cognition Lab 2
Eisen Lab 1
Environmental Leadership Program 20
European Organization for Nuclear Research (CERN) 3
Exercise and Environmental Physiology Lab 3
Garcia Lab 1
Grimes Lab 1
Guillemin Lab 2
Guldberg Lab 2
Hallett Lab 2
Hansen Lab: Molecular Dissection of Membrane Proximal Signaling 2
Harms Lab: Evolutionary Biochemistry 1
HEDCO Institute for Evidence-Based Educational Practice 1
Hettiaratchi Lab 3
Hosseinzadeh Lab 1
Hutchinson Lab of Cognitive Neuroscience 1
Institute for Fundamental Science 9
Institute of Ecology and Evolution 13
Institute of Molecular Biology 15
Institute of Neuroscience 28
Just Futures Institute 1
Kempler Lab 1
Kuhl Lab 1
Libuda Lab 4
Lindberg Lab 1
Lockery Lab 1
Lowd Group 1
Mascarenhas Lab 1
Materials Science Institute 6
McCormick Lab 7
Memory, Attention, and Individual Differences Lab 1
Mental Health Lab 1
Molecular Metabolism Research Group 1
Motor Skill Lab: Neural Control and Biomechanics 1
Murray Lab: Computational Neuroscience . . . 1
Muscle Cellular Biology Lab 1

Muscle Physiology Lab 1
Ong Lab 2
Oregon Center for Optical, Molecular and Quantum Science 5
Oregon Center for Electrochemistry 2
Oregon Humanities Center 8
Oregon Institute of Marine Biology (OIMB) 4
Oregon Memory Group 6
Oregon Performance Research Lab 3
Oregon Youth Empowerment Project Lab 1
Orthopaedic Biomechanics Lab 1
Palouse Group: Theoretical Soft matter and Biophysics 1
Phil and Penny Knight Campus for Accelerating Scientific Impact 33
Phillips Lab 1
Pine Mountain Observatory 5
Prevention Science Institute 3
Primate Osteology Lab 1
Respiratory Neurophysiology and Plasticity Lab 1
Smear Lab 1
Soil and Water Lab 1
Southeast Asian Archaeology Lab 1
Special Collections and University Archives (SCUA) 5
Stankunas Lab 2
Sustainable Cities Institute 1
Swann Lab: Motor Neuroscience of Health and Disease 2
Sylwestrak Lab 1
University of Oregon Sleep Lab 1
Washbourne Lab 1
Wayne Morse Center 4
Willett Lab 2
Wong Lab: In Situ Spectroscopy of Materials Formation 2
Wu Tsai Human Performance Alliance 2

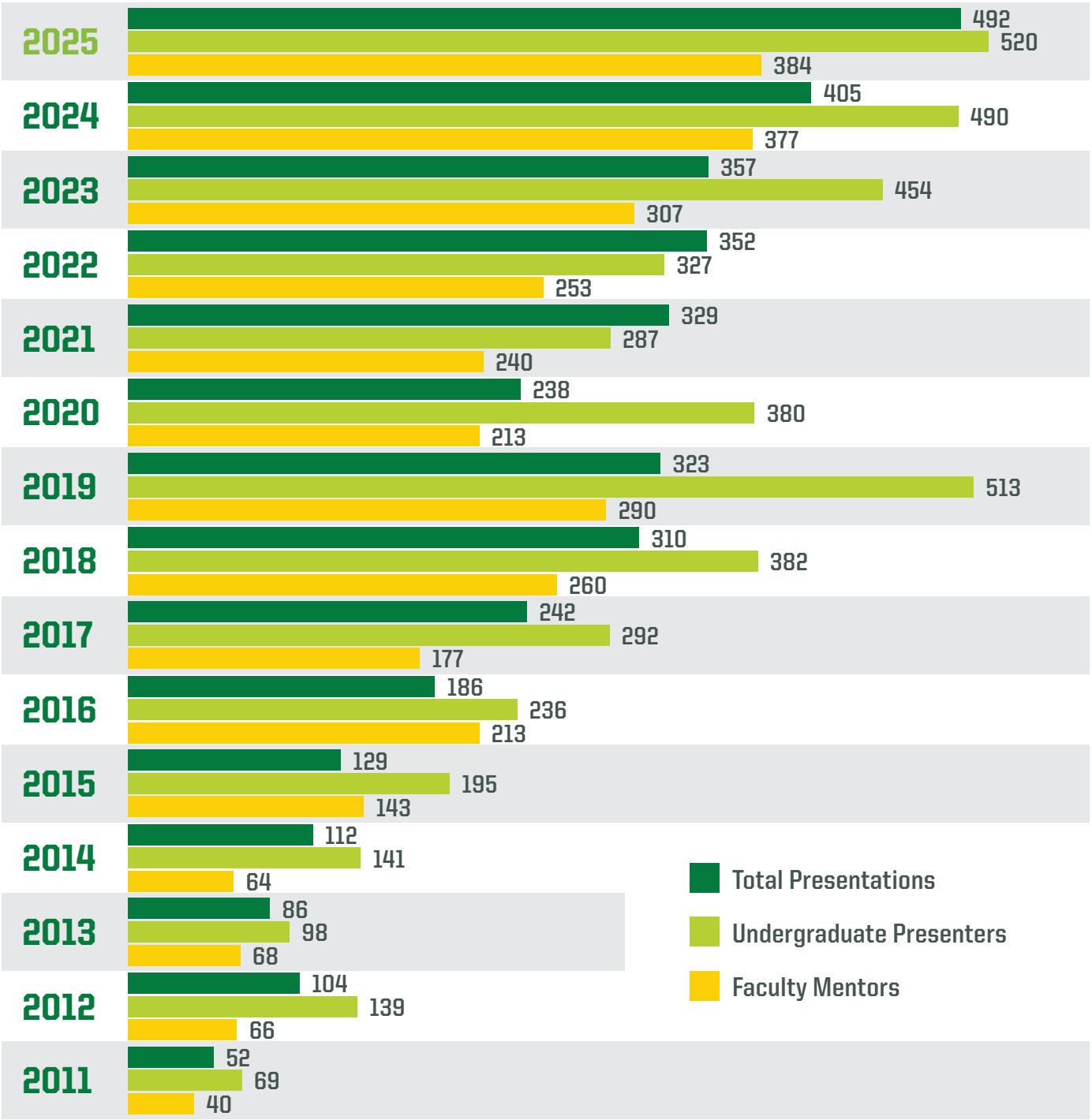
Sponsored/Funded Research and Creative Work Sources (111 Sources, 343 Students)

Andrew Mellon Foundation Climate Change and Environmental Justice Research Award 1
Benoit Labs 1
Baxter Foundation 1
Cascade-Siskiyou National Monument Friends Research Fund 1
Cellular Senescence Network (SenNet) Award (National Institutes of Health/ National Institute on Aging) 1
Center for Global Health Award 1
Center for Science Communication Research Grant (School of Journalism and Communication) 1
Center for Undergraduate Research and Engagement (CURE) Conference Travel Award 6

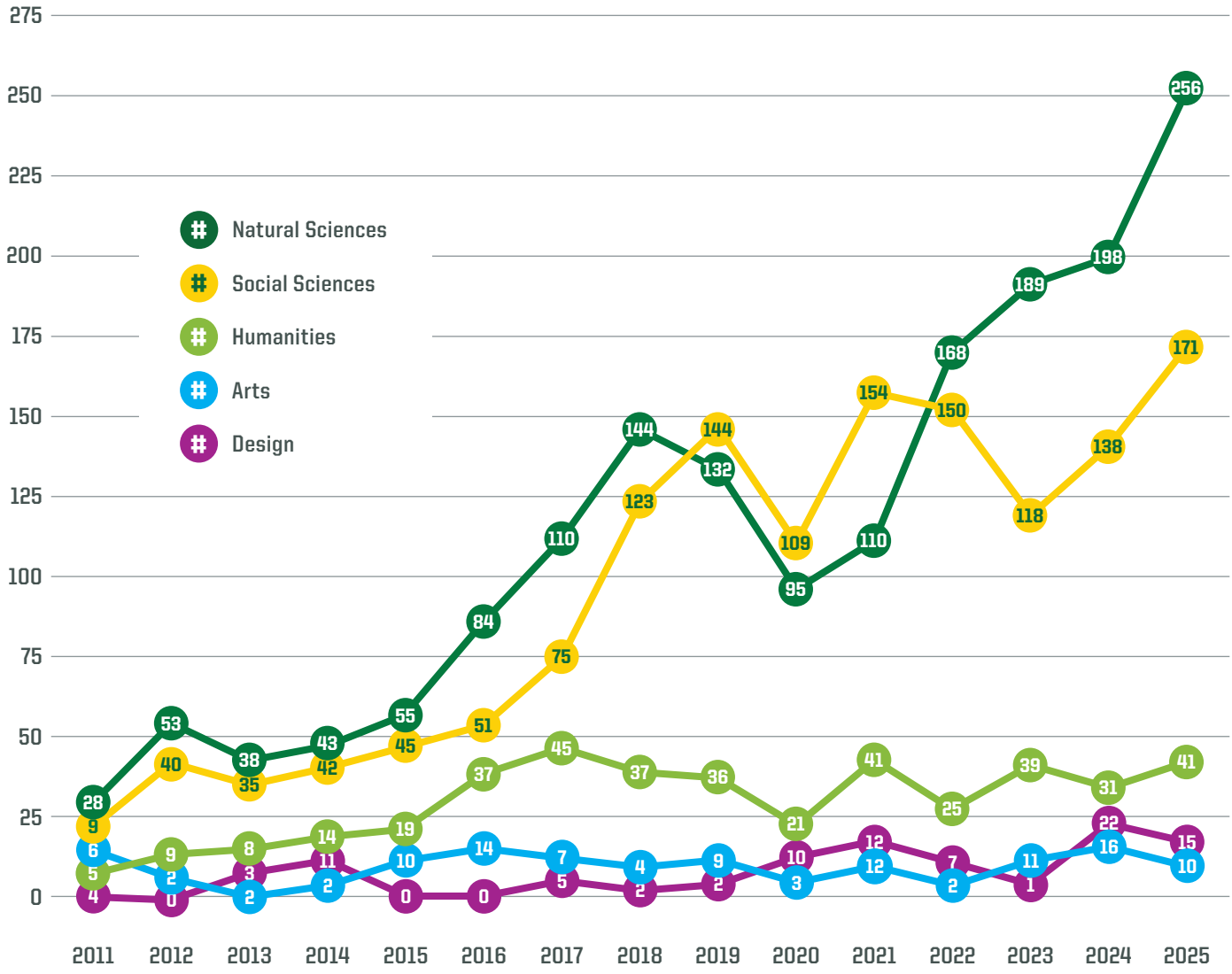
Center for Undergraduate Research and Engagement (CURE) First Year Research Experience Fellowship (FYRE) 5
Center for Undergraduate Research and Engagement (CURE) Small Grants Award 4
Center for Undergraduate Research and Engagement (CURE) Summer Undergraduate Research Fellowship (SURF). 27
City of Eugene Sustainability Commission. . .1
Clark Honors College Frank Herbert Mingle Thesis Award 1
Clark Honors College Mentor Research Program Funds 9
Close Musical Fellowship 1
College of Arts and Sciences Experiential Learning Scholarship. 1
College of Arts and Sciences Scholarship . . 8
DAAD Research Internship for Science and Engineering 1
Diversity Excellence Scholarship 1
DucksRISE Research Fellowship (DRRF) 1
Emergence Benefactors 1
Environmental Leadership Program. 16
Excellence in Human Physiology Fund. 1
Ford Family Foundation Scholarship 1
Francis Doran Endowment Fund 1
Future Ready Oregon Workforce Ready Grant. 1
Harney Basin Wetland Collective 1
HEDCO Institute Undergraduate Scholars Funding 1
High Desert Partnership. 1
Hui Undergraduate Research Scholars Program 15
Human Physiology Undergraduate Research Assistant Stipend 6
Humanities Undergraduate Program for Archival Studies and Practice. 2
Humanities Undergraduate Research Fellowship (HURF). 8
Institute of Neuroscience Employee. 1
International Cultural Service Program (ICSP) Scholarship. 1
Just Futures Institute Environmental Justice Fellowship 2
Kidd Creative Writing Workshops. 8
Latinx Studies Experiential Learning Fellowship 1
L'Oréal For Women in Science 1
M. Petroff Piano Endowment Fund. 1
Malheur National Wildlife Refuge. 1
Mercer Family Foundation Scholarship. 1
Nascene ICSP Alumni Endowment Fund 1
National Institutes of Health (NIH). 4
National Institutes of Health–Postbaccalaureate Research Education Program 1
National Science Foundation (NSF) Research Experience for Undergraduates (REU). 10

Native American and Indigenous Studies Program–Indigenous Innovator Undergraduate Research Award 2
Noyce MASTERIt Scholarship 3
Oregon Health Sciences University (OHSU) . . 2
Oregon Youth Empowerment Project 1
OURS Oregon Undergraduate Researchers in SPUR 2
Paul F. Glenn Foundation for Medical Research 1
PChem Undergraduate Fellowship 2
Peter O'Day Fellowship in Biological Sciences 3
Phil and Penny Knight Campus for Accelerating Scientific Impact Undergraduate Scholars Funding 23
Presidential Undergraduate Research Scholars (PURS) 5
Ronald E. McNair Scholars Program 13
SACNAS at UO Conference Travel Funding Assistance 1
SCORE (Students of Color Opportunities in Research Enrichment) 1
Stamps Scholarship 2
Thomas and Lindsey Marriott Undergraduate Research Support Fund 1
UnderGrEBES (Evolutionary Biology and Ecology Students) Research Award 2
United States Army Research Institute of Environmental Medicine 1
United States Department of Agriculture (USDA) Forest Service 1
United States Department of Agriculture (USDA) National Institute of Food and Agriculture 1
United States Department of Energy 1
United States Geological Survey 1
UO Department of Anthropology 1
UO Department of Chemistry 3
UO Department Earth Sciences 2
UO Department of Geography 1
UO Environmental Studies Program 1
UO Department of Linguistics 1
UO Institute of Cognitive and Decision Sciences 1
UO PREP Bio (National Institutes of Health) 1
UO Presidential Scholarship 2
UO Summit Scholarship 15
UO Sustainability Center 1
UROP (Undergraduate Research Opportunities Program) 29
Vice President for Research and Innovation (VPRI) Undergraduate Fellowship 15
Wayne Morse Scholarship 2
Wu Tsai Human Performance Alliance 6

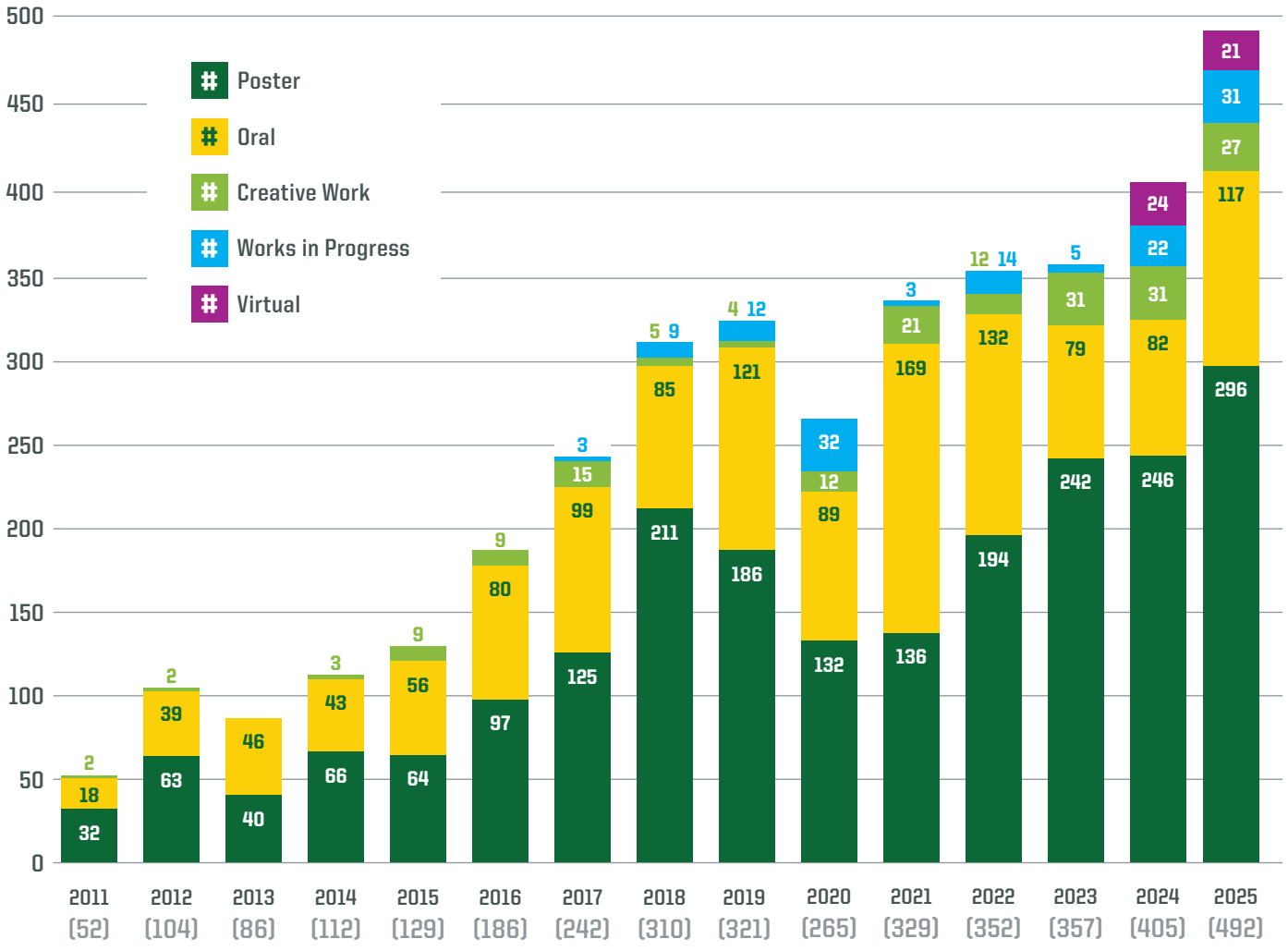
Total Presentations, Presenters, and Faculty Mentors



Total Presentations by Divisional Area



Total Presentations by Type



Symposium Presenters

Visit our **schedule web page** for full symposium schedule.

Elyorbek Abdullin
Andrew Acevedo
Riley Acker
Megan Adamec
Faith Adler
Keira Adsitt
Alex Aeschliman
Bella Albiani
Samantha Albin
Xavier Aldredge
Stephanie Alexander
Emilia Allen
Jayden Allums
Mohammed Alzaben
Liv Anderson
Story Arney
Joshua Atkins
Kaitlyn Augienello
Henry Axon
Lucas Bambaren
Karla Barajas
Erik Barr Zeilon
Elena Barth
Hailey Battrick
Adele Bauer
Emma Baxter
Lucian Beaubrun en famille Diant
Lainie Bell
Isabelle Below
Jack Bentivoglio
Valentine Bentz
Chase Berryman
Sophie Biegel
Page Biersdorff
Liam Biesty
Ryley Bjerke
Olivia Black
Weston Bodle
Andrew Boeckman
William Boggs
Carrie Bohannon
Claire Bokovoy
Vincent Bottaro
Seth Bowden
Seth Boyd
Jake Bradbury
Selena Brave
Helene Brehl
Piper Bringman
Owen Brooks
Persephone Brosseau
Jane Bruckner
Ella Bruun
Lakia Buckwald
Julianne Burdis
Jack Burnett
Nico Burns
Ethan Busi
Haley Cabrera
Sophia Calevi
Sue Carney
Malia Carp
Ella Carr
Adrian Cervantes
Brooklyn Cessna
Ainsley Chang
Kalel Chester
Alyssa Chi

Symposium Presenters

Petra Chinsangaram
Tyler Chisholm
Calvin Chmelir
Ananya Chowdhury
Sameeha Chowdhury
Dylan Clark
Leah Rose Clayton
Jeff Clements
Alana Cole
Aletta Combs
Percy Conrad
Ethan Contreras
Ada Contreras-Vasquez
Madisen Cope
Lainey Costa
Brock Cottle
Kaden Coulter
Maddi Coultrap
Yun Craddock
Chase Crandall
Cordelia Crawford
Sadie Creemer
Madison Crump
Avery Csaszar
Denali Cuevas Ullibarry
Margo Cumming
Cambria Davies
Kimberley Davis
Olivia Dean
Sam Dehmer
Nithi Deivanayagam
Sam DePinto
Camilla Der
Olivia DeVelasco
Andrew Diaz
Olivia Dickinson
Cade Dodge
Kavi Dodge
Christina Dorofeev
Jacob Drum
Diego Duarte
Sejal Dubey
Alex Dunn
Thu Duong
Hana Dussan
Solange Dzeketey
Layla Eby
Cooper Eccles
Jorden Eifert
Jocelyn Eke Garcia
Foster Elliott
Zara Elliott
Faris Elzeyadi
Kashimire Escalante
Liliana Escobedo
Isabela Espino-Marquez
Olivia Estes
Samuel Eubanks
Landin Evans
Bella Facanha
Isabella Fehringer
Ava Feldman
Olivia Ferrell
Peter-George Fillo
Ella Fliesler
Favour Foday
Sophia Foerster
Snow Folpe
Caroline Foskett
Madeline Fouts
Lily Francis
Bess Frerichs
Jess Friedman
Esmee Fuller
Nitai Gaash
Felice Gallegos
Kieran Galvin
Natalie Garcia
Aidan Gardner-Okearny
Peyton Gast
Chago Gause
Harsh Gautam
Michael Gehrig
Emma Giometti

Symposium Presenters

Lia Godino
Jonah Gomez Cabrera
Huixin Gong
Thomas Gonzalez
Audrey Goodman
Josmarie Graciani
Pazi Greenberg
Adam Grossman
Lauren Grover
Skye Grubb
Taylor Gruber
Karlie Guilliot
Quinn Gulka
Maxwell Gullickson
Katelyn Gunther
Rylee Guthrie
Sam Guzman
Auveen Hajarizadeh
Franny Hall
Joseph Harris
Luka Hart
Mariam Hassan
Rory Hays
John Heibel
Chandlor Henderson
Megan Henry
Patrick Henslee
Luke Herder
Brandon Hernandez-Ramos
Camila Hess-Neustadt
Julia Hibbard
Angie Hite
Dora Ho
Corey Hoffman
Gabby Hoffman
Ainsley Hogan
Madeleine Hoke
Zoe Holguin
Noah Horban
Marly Howell
Griffin Hsu
Autumn Hummel
Brian Hung
Louis Hunter
Daniel Hwang
Rivers Hylton
Sebastian Ibanez Sanhueza
Grace Inman
Lazar Isakharov
Nikita Istratov
Nicole Jackson
Jeffrey Jakubenas
Dante James
Sofia James
Talia James
Elenae Jgerenaia
Maya Johnsen
Andrew Johnson
Daniel Johnson
Anwen Jones
Nile Jones
Shanie Jorgenson
Joelle Jorissen
Abbey Kadlec
Olivia Kadovitz
Emma Kaisner
Mara Kebret
Cole Keplinger
Emma Kersgaard
Taewoo Kim
Sydnie King
Seira Kitagawa
Jasmine Klein
Olivia Knudsvig
John Knutson
Cami Kohnke
Kaytlyn Kojima
Ava Komons
Amelia Kotamarti
Kennedy Krajack
Louisa Krantz
Sarah Kraske
Ella Maria Kuhn
Catalina Kurihara

Symposium Presenters

Elena Kuypers
Gillian LaBelle
Kanoa Lanoza
Mia Lauder
Asia Le
Jisu Lee
Jude Lee
Aleanna Lengkong
Casey Lennon-Jones
Kyleigh Leung
Sera Lew
Abby Lewis
Ava Lindon
Hanna Lindstrom
Ava Linn
Charlotte Lippa
Tiana Littlejohn
Makenzie Litty
Caitlin Lloyd
Abiel Locke
Haley Mae Lohf
Ilsi Lopez
Leonardo Lopez
Celine Lopez Padilla
Michelle Lopez Padilla
Logan Love
Sasha Love
August Luna
Madeline Luu
Blu Mackey
Emma Mahady
Gabriel Mancuso
Brin Manoogian
Mollie Markey
Luke Marshall
Zach Marshall
Jenny Martin
Liam Martin
Samantha Martinez
Jimena Martinez Dolores
Noelle Mason
Arya Massarat
Natalie Mathis
Colin Maxwell
Harper McClain
Olivia McDonald
Emma McFarland
Elliot Mclain
Ash McLaren
Charlie McManus
Jeffrey McNamee
Alyssa Medici
Erin Medler
Raquelle Melchert
Silkie Melloul
Fox Melo
Naelea Mendoza Aguilar
Colby Messenger
Gillian Miller
Josh Miller
Masha Mironova
Gayatri Misra
Owen Mitchem
Hannah Mogenson
Jackson Mohr
Tommy Monkarsh
Daela Montgomery
Maddie Moore
Nikolay Morgun
Katy Morris
Alex Morrissette
Dylan Morrissette
Jeana Moyer
Olive Muller
Cinthia Muniz Sanchez
Leo Munks
Jesse Murphy
Kyle Murphy
Sanaz Naterwalla
Kellen Nesbitt
Kelly Newton
Joseph Nguyen
Angela Noah
Claire Nowicki

Symposium Presenters

Shannon O'Connell
Rebecca O'Donnell
Daisy O'Hearn
Gabriel Oh-Keith
Charlotte Olds
Alfie Ong
Miriel Orhai
Tucker Orman
Elena Ortega
Valerie Owusu-Hienno
Jai Pandhoh
Jake Pargeter
Anna Park
Shayna Parker
Variel Pascoal
Krishan Patel
Alex Payne
James Peakes
Gabi Pearse
Andrew Pelto
Tomas Pena Rosales
Clarissa Perez
Giancarlo Perla
Charlie Petrik
Anh-Thi Pham
Malia Poblete
Dylan Podrabsky
Marcus Polk
Maren Price
Micah Primack
Tarini Ramasamy
Mariano Ramirez
Colette Reff
August Reitan
Mateo Reynaud
River Ribeiro
Danielle Richard
Natalie Rico Carvajal
Aiden Rinehart
Harry Robertson
Carter Rosato
Maddy Rose
Payton Rosello
Claire Rosenberger
Tanner Rozendal
Logan Rud
Rose Ruhnke
Logan Russo
Em Ryan
Josie Saccio-Devine
Gabriella Samaniego
Chloe Sanborn
Emily Sapp
Jaisel Sappal
Natalie Sarason
Sophia Sargent
Rishi Sastry
Ashish Sathya
Addison Sattler
Simon Scannell
Esben Schroeder
Emma Schwing
Champe Scoble
Ava Scott
Gabby Shaffer
Hannah Shriver
Adam Shuaib
Cole Siegler
Hannah Siegler
Finn Simmons
Sam Simon
Sabrina Simoni
Alexandre Smith
Brynn Smith
Parker Smith
Phoenix Smith
Tetianna Smith Drysdale
Diego Solorio
Paul Song
Tapley Sorenson
Alanna Sowles
Cherish Sparling
Crystal Spezialy
Owen Spiegel

Symposium Presenters

Andrew Spriggs
Katie Springer
Mahathi Sridhar
Ella Stahl
Zach Stewart
Lydia Struble
Siena Stueland
Emily Sverdrup
Joey Swanson
Morgan Sweeney
Tom Symons
Kat Tabor
Lola Tagwerker
Reed Talus
Mia Tamashiro
Kaitlyn Tambur
Kyrie Taylor
Maycie Thaut
Christina Thomas
Ying Thum
Keegan Tippetts
Maddy Tomich
Zoe Tomlinson
Rodrigo Torrellio
Beckham Torrey-Payne
Oscar Tovar
Baylee Towles
James Townsend
Ryan Tredennick
Sadie Tresnit
Kristina Trinh
Violet Turner
Madeline Urias
Sienna Valdovinos
Mason Vaughn Brown
Jazmin Vieyra
Taggart Vinson
Isabella Viveros
Alexis Vives
Jillian Vogel
Sky Volz
Ryan Walker
Samara Walker
Zach Walton
Sarah Weber
Suzie Weber
Emery Weber-Provost
Chloe Webster
Kass Weeks
Aubrey Welburn
Ava Wessel
Giselle Westerdahl
Ethan Westerhout
Corey Whalen
Zoe Whitcomb
Garrow Whitefield
Miranda Wijaya
Sidney Williams
Waverly Wilson
Jaden Wirhol
Ashton Wolfe
Emily Wood
Kit Wooler
Jack Woolf
Julia Woolf
Nick Wright
Lydia Wright
Andreas Wuthrich
Tallula Wynia
Ayano Yamada
Bella Yannello
Madison Yarbrough
Megan Yellowtail
Sarah Young
Alyssa Zaback
Currie Zafarana
Alex Zambrano
Ri Zarate
Coffee Zieba
Kasey Ziegler
Declan Zupo

Research Mentors

Kieran Abbotts
Graduate Employee, Human Physiology

Matthias Agne
Assistant Professor, Chemistry and Biochemistry

Jasmin Albert
Graduate Student, Institute of Ecology and Evolution

Benjamín Alemán
Associate Professor, Physics

Peter Alilunas
Associate Professor, Cinema Studies

Dr. Michael Allan
Associate Professor, Comparative Literature

Katelyn Alley
PhD Candidate, Chemistry and Biochemistry

Rose Al-Saadi
Doctoral Student, Institute of Ecology and Evolution

Raquel Amador
Doctoral Student, Psychology

Bala Ambati
Research Professor, Bioengineering, Knight Campus

Denicia Aragon
Doctoral Student, Social & Affective Neuroscience Lab

Zena Ariola
Professor, Computer Science

Michael Aronson
Associate Professor, Cinema Studies

Yalda Asmatey
Instructor of Social Sciences, Clark Honors College

Jessica Atencio
PhD Candidate, Human Physiology

Anisha Babu
Doctoral Student, Psychology

Melissa Baese-Berk
Professor, Linguistics

Darren Baker
Professor, Department of Pediatrics and Adolescent Medicine, Mayo Clinic

Dare Baldwin
Professor of Psychology, Clark Honors College

Matthew Barber
Associate Professor, Biology

Research Mentors

Elaina Barker
Doctoral Student, Political Science

Faith Barter
Assistant Professor, Black Studies, English

Susie Bassham
Senior Research Associate, Institute of Ecology and Evolution

Elizabeth Bates
Doctoral Student, Prevention Science

Diane Baxter
Senior Lecturer, School of Law

Corrine Bayerl
Senior Lecturer, Clark Honors College

Erin Beck
Associate Professor, Latin American Studies, Political Science

Kristina Beggen
Doctoral Student, Environmental Studies

Danielle Benoit
Lorry Lokey Chair, Bioengineering, Knight Campus

Estelle Berger
Doctoral Student, Psychology

Halima Bibi
Graduate Student, Linguistics

Christina Bollo
Assistant Professor, School of Architecture & Environment

Peg Boulay
Senior Instructor, Environmental Studies

Karleigh Bradbury
Doctoral Student, Human Physiology

Derek Brandow
Instructor, School of Journalism and Communication

Kyla Brannigan
Doctoral Student, Psychology

James Brau
Knight Professor of Natural Science, Physics

Lindsay Braun
Associate Professor, History, African Studies

Steven Brence
Distinguished Teaching Professor, Philosophy

Libby Bridges
Graduate Student, Environmental Studies

Kirby Brown
David M. and Nancy L. Petrone Faculty Scholar, Associate Professor, English, Native American Studies

Carl Brozek
Assistant Professor, Chemistry and Biochemistry

Sean Brudney
Graduate Student, Physics

Melissa Brunkan
Associate Professor of Music Education, School of Music and Dance

Research Mentors

Daniel Buck
Associate Professor, Asian Studies, School of Global Studies and Languages

Mattie Burkert
Associate Professor, English, Digital Humanities

Damien Callahan
Assistant Professor, Human Physiology

Killian Campbell
Doctoral Student, Institute of Ecology and Evolution

Anna Carroll
Senior Instructor, English

Alison Carter
Associate Professor, Anthropology

Yvette Cendes
Assistant Professor, Physics

Anita Chari
Associate Professor of Political Science, Clark Honors College

DeShea Chasko
Doctoral Student, Bioengineering, Knight Campus

Christopher Chávez
Carolyn Silva Chambers Distinguished Professor of Advertising, School of Journalism and Communication

Joyce Chen
Assistant Professor of Historical Keyboards, School of Music and Dance

Lan Chen
Graduate Student, Chemistry and Biochemistry

Theresa Cheng
Postdoctoral Research Fellow, Affective Neuroscience and Development Lab, Harvard University

John Christian
Assistant Professor, Geography

Kayla Conde
Graduate Student, Creative Writing

Lissie Connors
Doctoral Student, Earth Sciences

Amanda Cook
Assistant Professor, Chemistry and Biochemistry

Isabella Crame
Doctoral Student, Psychology

Jane Cramer
Associate Professor, Political Science

William Cresko
Lorry Lokey Chair in Science, Institute of Ecology and Evolution

Sheila Crowell
Professor, Psychology

Abby Cullen
Postdoctoral Scholar, Human Physiology

Marcus Cumberbatch
Graduate Student, Psychology

Research Mentors

Jad D'Allura
Professor, Chemistry Department, Southern Oregon University

Wagner Dantas
Assistant Professor, Human Physiology

Paul Dassonville
Associate Professor, Neuroscience, Psychology

Audrey Davenport
Graduate Student, Chemistry and Biochemistry

Mick Davis
Associate Professor, Physics, Umpqua Community College

Felix Deku
Betsy and Greg Hatton Assistant Professor in Neuroengineering, Bioengineering, Knight Campus

Alex Denton
Postdoctoral Scholar, Bioengineering, Knight Campus

Victoria DeRose
Professor, Chemistry and Biochemistry

Laura Desban
Postdoctoral Scholar, Institute of Neurosciene

Jeff Diez
Associate Professor, Institute of Ecology and Evolution

Alex Dillard
PhD Candidate, Chemistry and Biochemistry

Acadia DiNardo
Doctoral Student, Libuda Lab

Chris Doe
Professor, Biology

Alexandre Dossin
Professor of Piano, School of Music and Dance

Jen Doty
Associate Professor, Family and Human Services

Alexander Dracobly
Senior Instructor II, History

Emma Drew
Graduate Research Assistant, Chemistry and Biochemistry

Hans Dreyer
Associate Professor, Human Physiology

Zachary DuBois
Assistant Professor, Anthropology

Nicole Dudukovic
Neuroscience Major Director, Senior Instructor I, Clark Honors College

Josef Dufek
Gwen and Charles Lillis Chair, Professor, Earth Sciences

Sarah Ebert
Assistant Director for Mind-Body and Fitness, Physical Education and Recreation

Rachel Eccleston
Career Instructor, English

Research Mentors

Victoria Ehrlich
Visiting Assistant Professor, Department of the History of Art and Architecture

Judith Eisen
Professor, Biology, Neuroscience

Richard Emlet
Professor, Biology

Lulu Enkhbaatar
Graduate Student, Chemistry and Biochemistry

Sedona Epstein
Graduate Student, Anthropology

Ben Farr
Associate Professor, Physics, Institute of Fundamental Science

Skylyn Ferguson
Graduate Student, Human Physiology

Cora Ferguson
Doctoral Student, Bioengineering, Knight Campus

Scott Fisher
Astronomy Lecturer and Outreach Coordinator, Physics

Rachel Fisher
Graduate Student, Optical Molecular & Quantum Science

Jarod Forer
Doctoral Student, Bioengineering, Knight Campus

Alexandria Fountain
Graduate Student, Creative Writing

Madison Fowler
Doctoral Student, Environmental Studies, English

Rebecca Frederick
Postdoctoral Scholar, Bioengineering, Knight Campus

Alisa Freedman
Professor, School of Global Studies and Languages

David Frey
Doctoral Student, Bioengineering, Knight Campus

Gwen Frishkoff

Mentor, Cognitive and Learning Sciences

Nicole Froidevaux
Postdoctoral Scholar, Ballmer Institute

Stephen Frost
Professor, Anthropology, African Studies

Alycia Galindo
Doctoral Student, Bioengineering, Knight Campus

Aaron Galloway
Associate Professor, Biology, Oregon Institute of Marine Biology

Dennis Galvan
Dean and Vice Provost, Division of Global Engagement, Global Studies

Research Mentors

Zoë Gamell Brown
PhD Candidate, Indigenous, Race, and Ethnic Studies

Gabi Garcia
Graduate Student, Psychology

David Garcia
Assistant Professor, Biology, Institute of Molecular Biology

Ryan Garrett
Graduate Student, Physics

Mariachiara Gasparini
Associate Professor of Chinese Art and Architectural History, Department of the History of Art and Architecture

Brandon Gibson
Graduate Student, Human Physiology

Johan Gilchrist
NSF Postdoctoral Fellow, Earth Sciences

Adam Glass
Instructor, Chemistry and Biochemistry

Jaxen Godfrey
Graduate Student, Physics, Institute of Fundamental Sciences

Avika Gomez-Sharma
Graduate Student, Biology

Dominik Graetz
Graduate Student, Psychology

Sean Grant
Research Associate Professor, HEDCO Institute for Evidence-Based Educational Practice in the College of Education

Sara Graves
Graduate Student, Department of Pediatrics and Adolescent Medicine

Daniel Grimes
Assistant Professor, Biology, Institute of Molecular Biology

Victoria Guazzelli Williamson
Doctoral Student, Psychology, Center for Translational Neuroscience

Marina Guenza
Professor, Chemistry and Biochemistry

Karen Guillemin
Professor, Philip H Knight Chair, Biology, Institute of Molecular Biology

Robert Guldberg
Vice President and Robert and Leona DeArmond Executive Director of Phil and Penny Knight Campus for Accelerating Scientific Impact, Knight Campus

Mike Hahn
Professor of Human Physiology, Director of Bowerman Sports Science Center, Bioengineering, Knight Campus

Research Mentors

Lauren Hallett
Associate Professor, Institute of Ecology and Evolution

John Halliwill
Professor, Human Physiology

Carly Hamilton
Graduate Student, Bioengineering, Knight Campus

Erin Hanna
Associate Professor, Cinema Studies

Scott Hansen
Associate Professor, Chemistry and Biochemistry

Tobin Hansen
Instructor of Social Science, Clark Honors College

Mike Harms
Associae Professor, Chemistry and Biochemistry

Hidetaka Hayashi
PhD Candidate, Human Physiology

Claire Herbert
Associate Professor, Sociology

Nathalia Hernández-Vidal
Assistant Professor, Sociology

Andrea Herrera
Pro Tem Instructor, Women's Gender and Sexuality Studies

Timothy Herrera
Pro Tem Instructor, Anthropology

Marian Hettiaratchi
Assistant Professor, Bioegineering, Knight Campus

Katya Hokanson
Professor of Russian and Comparative Literature, Comparative Literature, Russian East European and Eurasian Studies, School of Global Studies and Languages

Patrick Horve
Graduate Student, Institute of Molecular Biology

Parisa Hosseinzadeh
Assistant Professor, Bioengineering, Knight Campus

Troy Houser
Doctoral Student, Psychology

Jessica Huber
Professor and Department Chair, Communicative Disorders and Sciences, State University of New York at Buffalo

Daniel Hulsey
Postdoctoral Scholar, Institute of Neuroscience

Ben Hutchinson
Assistant Professor, Neuroscience, Psychology

Mailie Hutterer
Associate Professor, History of Art and Architecture

Research Mentors

Adrianne Huxtable
Associate Professor, Human Physiology, Neuroscience

Kaori Idemaru
Professor of Japanese Linguistics, School of Global Studies and Languages

James Imamura
Professor Emeritus, Physics

Ray Jackson
Doctoral Student, Psychology

Chandler James
Assistant Professor, Political Science

Laura Jeanty
Associate Professor, Physics, Institute for Fundamental Science

Daniel Jenkins
Professional, Research Mentor

Dee Jolly
Graduate Student, Anthropology

Vadim Karatayev
NSF Postdoctoral Fellow, Kansas Biological Survey

Andrew Karduna
Professional, Human Physiology

Apoorva Karekal
Graduate Student, Human Physiology

Salil Karipott
Postdoctoral Scholar, Bioengineering, Knight Campus

Christina Karns
Assistant Research Professor, Psychology

Momo Kelley
Graduate Student, Environmental Studies

Kate Kelp-Stebbins
Associate Professor, English, Comics and Cartoon Studies

Paul Kempler
Assistant Professor, Chemistry and Biochemistry

Douglas Killingtree
Graduate Student, Theater Arts and Folklore

Marisa King
Instructor of Natural Sciences, Clark Honors College

Stacey Kiser
Faculty Instructor, Biology, Lane Community College

Solmaz Kive
Assistant Professor, Department of Architecture

Torsten Kjellstrand
Professor of Practice, School of Journalism and Communication

Addison Koneval
Career Instructor, English

Research Mentors

Mariah Kornbluh
Associate Professor, Psychology

Caitlin Kowalski
Postdoctoral Scholar, Biology, Institute of Ecology and Evolution

Nick Kreter
Postdoctoral Scholar, Human Physiology

Brice Kuhl
Professor, Neuroscience, Psychology

Nicole Kurhanewicz
Assistant Research Professor, Biology, Institute of Molecular Biology

Kate Kwasneski
Doctoral Student, Psychology

Scott Landfear
Professor of Molecular Microbiology and Immunology, School of Medicine, Oregon Health Sciences University

Kristen Lee
Postdoctoral Scholar, Institute of Neuroscience

Yeseul Lee
PhD Candidate, Family and Human Services

John Leisure
Visiting Assistant Professor, History

Heather Leonard
Prevention Science Program Director, Family and Human Services

Jun Li
Professor, Director of Center for Cybersecurity and Privacy, Computer Science

Keyan Li
Graduate Student, Chemistry and Biochemistry

Diana Libuda
Associate Professor, Biology

Raoul Liévanos
Associate Professor, Sociology

Gabriella Lindberg
Assistant Professor, Bioegineering, Knight Campus

Shawn Lockery
Professor, Biology, Neuroscience

Linda Long
Senior Librarian, Curator of Manuscripts, Knight Library Special Collections and University Archives

Angela Long
Director Public Health Practices, University Health Services

Ignacio Lopez Buson
Assistant Professor, Landscape Architecture

Andrew Lovering
Professor, Human Physiology

Daniel Lowd
Professor, Computer Science

Research Mentors

Melissa Lucash
Research Assistant Professor, Geography, Environmental Studies

Daniel Lumonya
Academic Director, SIT Study Abroad Kenya

Kathryn Lynch
Codirector, Environmental Leadership Program, Environmental Studies

Xiaoqi Ma
PhD Candidate, Prevention Science

Stephanie Majewski
Associate Professor, Physics

Michael Malek Najjar
Professor, Theatre Arts

Allen Malony
Professor, Computer and Information Sciences

Devon Mann
Chair, City of Eugene Sustainability Commission

Andrew Marcus
Professor, Chemistry and Biochemistry

Dawn Marlan
Senior Lecturer I, Comparative Literature, German and Scandinavian

Michelle Marneweck
Assistant Professor, Human Physiology, Institute of Neuroscience

Jessica Marshall
Doctoral Student, Family and Human Services

Erika Masaki
Instructor, Political Science, Lane Community College

Romila Mascarenhas
Assistant Professor, Chemistry and Biochemistry

Kendall Mather
Graduate Student, Psychology

Tim Mathew
Graduate Student, Physics

Robert Mauro
Associate Professor, Clark Honors College, Psychology

Ulrich Mayr
Lewis Professor, Neuroscience, Psychology

David McCormick
Professor, Presidential Chair, Biology, Neuroscience

Carrie McCurdy
Associate Professor, Food Studies, Human Physiology

Jeffrey Measelle
Professor, Psychology

David Meek
Associate Professor, Global Studies

Helia Megowan
Graduate Student, Human Physiology

Research Mentors

José Meléndez
Associate Professor, School of Planning, Public Policy and Management

Kaylee Meyers
Graduate Student, Bioengineering, Knight Campus

Chanel Meyers
Assistant Professor, Psychology

Jen Michel
Research Associate, Institute of Neuroscience

Adam Miller
Associate Professor, Biology, Neuroscience

Kathryn Mills
Associate Professor, Psychology

Soroush Mirjalili
Postdoctoral Scholar, Psychology

Chris Misa
Postdoctoral Researcher, Computer Science

Michael Moffitt
Philip H. Knight Chair, Professor, Clark Honors College

Nicolette Molina
Graduate Student, Psychology

Cameron Moore
Doctoral Student, Bioengineering, Knight Campus

Emily Moore
Instruction and Outreach Archivist, UO Libraries, Special Collections and University Archives

Camilla Mortensen
Pro Tem Instructor, School of Journalism and Communication

Barbara Mossberg
Professor of Practice, Clark Honors College

Dean Mundy
Associate Professor of Public Relations, School of Journalism and Communication

Barbara Muraca
Associate Professor, Philosophy, Environmental Studies

Benjamin Murphy
Corrigan Solari University Archivist and Historian, Associate Librarian, UO Libraries, Special Collections and University Archives

James Murray
Assistant Professor, Biology, Neuroscience, Math

Matthew Nardoci
Graduate Student, Biology, Neuroscience

Laila Nawab
Graduate Student, Chemistry and Biochemistry

Jacob Neal
Assistant Professor, Philosophy

Research Mentors

Peter Newstein
Graduate Student, Institute of Neuroscience

Gretchen Nihill
Doctoral Student, Psychology

Kari Norgaard
Professor of Sociology and Environmental Studies, Sociology, School of Global Studies and Languages

Matthew Norton
Associate Professor, Sociology

Jennifer O'Neal
Assistant Professor, Native American Studies, Indigenous, Race and Ethnic Studies

Young-Tack Oh
Visiting Assistant Professor, Architecture and Environment

Cory Olsen
Assistant Olsen, Interior Architecture

Keat Ghee Ong
Professor, Bioengineering, Knight Campus

Dorothee Ostmeier
Professor of German, and Folklore and Public Culture, School of Global Studies and Languages

Nicholas Pancheri
Doctoral Student, Bioengineering, Knight Campus

Alayna Park
Assistant Professor, Psychology

Kimberley Parzuchowski
Honors Faculty Coordinator, Philosophy Instructor, Honors Program, Lane Community College

CJ Pascoe
Professor, Sociology

Rachana Patel
Wellbeing Specialist, University Health Service

Jayson Paulose
Associate Professor, Physics

Alyssa Paulson Paulson
Graduate Student, Optical Molecular and Quantum Science

Shannon Peake
Research Assistant Professor, Psychology

Gabriela Peréz-Báez
Associate Professor, Linguistics

Kristin Perry
Assistant Professor, Family and Human Services

Leah Peterson
Graduate Student, Psychology

Jennifer Pfeifer
Professor, Psychology, Neuroscience

Colin Phifer
Instructor, Biology, Lane Community College

Alissa Phillips
Instructor, Cinema Studies

Research Mentors

Jennifer Phillips
Research Associate, Institute of Neuroscience

Patrick Phillips
Professor, Philip H Knight Chair, Biology, Institute of Ecology and Evolution

Sammy Plezia
Graduate Student, College of Education, Counseling Psychology

Michael Pluth
Professor, Chemistry and Biochemistry

Matthew Polizzotto
Professor, Earth Sciences

John Postlethwait
Professor Emeritus, Neuroscience

Chris Potter
Senior Research Associate, Physics

Jonathan Pruneda
Associate Professor of Molecular Microbiology and Immunology, School of Medicine, Oregon Health Sciences University

Laura Pulido
Professor, Collins Chair, Geography; Indigenous, Race and Ethnic Studies, Latinx

Kristen Rahilly
Instructor of Natural Sciences, Clark Honors College

Judith Raiskin
Professor, Disability Studies, Women's, Gender, and Sexuality Studies

Lindsay Rait
Graduate Student, Psychology

Manasa Rajeev
Graduate Student, Chemistry and Biochemistry

Vignesh Rangasami
Postdoctoral Fellow, Bioengineering, Knight Campus

Adam Rauff
Postdoctoral Fellow, Bioengineering, Knight Campus

Sangeetha Ravi Kumar
Research Associate, Bioengineering, Knight Campus

Melissa Redford
Professor, Linguistics

Emma Reed
Graduate Student, Human Physiology

Emily Reeve
Graduate Student, Human Phsyiology

Clara Rehmann
Graduate Student, Institute of Evolution and Ecology

Austin Ricci
Graduate Student, Human Physiology

Research Mentors

Emma Richardson
Lab Technician, Oregon Performance Research Laboratory

Kristin Robinson
Senior Research Assistant, Institute of Ecology and Evolution

Rachel Robinson
PhD Candidate, Bowerman Sports Science Center

Tricia Rodley
Senior Instructor, Theatre Arts

Hector Rodriguez
Pro Tem Faculty, Architecture and Environment

Kym Rohman
Instructor of Advertising and Design, School of Journalism and Communication

Janet Rose
Senior Instructor, Theatre Arts

Daniel Rosenberg
Professor, History

Angela Rovak
Instructor of Literature, Clark Honors College

Mahala Ruddell
Associate Librarian, Lead Processing Archivist, Special Collections and University Archives

Kory Russel
Assistant Professor of Landscape Architecture and Environmental Studies, Architecture and Environment

Chantelle Russell
Associate Director for Physical Education, Physical Education and Recreation

Motoki Sakurai
Graduate Student, Human Physiology

Victor Salpino
Graduate Student, Chemistry and Biochemistry

Mira Schoeberlein
Doctoral Student, Oregon Performance Research Laboratory

Robert Schofield
Research Associate Professor, Physics, Institute for Fundamental Science

Nataliia Schotkina
Research Assistant, Bioengineering, Knight Campus

Maria Schweer-Collins
Research Assistant Professor, College of Education

Emily Scott
Assistant Professor, History of Art and Architecture and Environmental Studies

Alex Segre-Cohen
Assistant Professor of Science and Risk Communication, School of Journalism and Communication

Divyanka Sharma
Graduate Student, Creative Writing

Research Mentors

Nataliia Shchotkina
Research Assistant, Rosaria Haugland Postdoctoral Fellow, Bioengineering, Knight Campus

Melanie Sheldon
Graduate Student, Chemistry and Biochemistry

Ben Shirtcliff
Visiting Associate Professor; Director, Environmental Design, School of Architecture and Environment

Birdie Shirtcliff
Research Professor, Center for Translational Neuroscience, Psychology

Malvika Singhal
Graduate Student, Knight Campus for Accelerating Scientific Impact, Department of Chemistry and Biochemistry

Josh Skov
Senior Instructor I of Management, Lundquist College of Business

Elizabeth Skowron
Professor, Psychology

Matt Smear
Associate Professor, Neuroscience, Psychology

Hollie Smith
Associate Professor of Science and Environmental Communication, School of Journalism and Communication

Jarrod Smith
Post-Doc, IMB

Haley Smith
Graduate Student, Chemistry and Biochemistry

Josh Snodgrass
Professor, Anthropology

Shannon Snyder
Graduate Student, Institute of Evolution and Ecology

Kryn Stankunas
Professor, Biology, Institute of Molecular Biology

Kirstin Sterner
Associate Professor, Anthropology

Scott Stewart
Professor, Institute of Molecular Biology

David Stuart
Professor, Department of Physics, University of California Santa Barbara

Paul Swangard
Instructor of Advertising and Sport Brand Strategy, School of Journalism and Communication

Nicole Swann
Assistant Professor, Human Physiology, Neuroscience

Emily Sylwestrak
Assistant Professor, Biology, Neuroscience

Research Mentors

Gina Szabady
Faculty Instructor, Language - Literature and Communication, Lane Community College

Max Tenenbaum
Graduate Student, Bioengineering, Knight Campus

Karen Thompson Walker
Associate Professor, Creative Writing Program

Dan Tichenor
Philip H. Knight Chair of Social Science, Political Science

Nelson Ting
Professor, Anthropology

Jade Truong
Graduate Student, Human Physiology

Nash Unsworth
Professor, Neuroscience, Psychology

Corbett Upton
Senior Instructor, English

Abigail Vaaler Loftus
Lab Manager, Institute of Molecular Biology

Allissa Van Steenis
Lab Manager, Center for Translational Neuroscience, Psychology

Jessica Vasquez-Tokos
Professor, Sociology; Indigenous, Race, and Ethnic Studies

Julie Voelker-Morris
Distinguished Teaching Professor, School of Planning, Public Policy and Management

Mathias Vogel
Senior Instructor II and Language Coordinator, School of Global Studies and Languages

Lissa Wadewitz
Carrie C. Beekman Professor of Northwest and Pacific History, History

Corey Wadsley
Postdoctoral Scholar, Human Physiology

Eleanor Wakefield
Senior Instructor, Writing, Public Speaking, and Critical Reasoning

Zach Walbrun
Graduate Student, Chemistry

Ashley Walker
Associate Professor, Human Physiology

Tian Walker
Doctoral Student, Anthropology

Paul Wallace
Professor, Earth Sciences

Zachary Wallmark
Associate Professor of Musicology, School of Music and Dance

Joey Wanczyk
Graduate Student, Creative Writing

Research Mentors

Chenya Warner
Doctoral Student, Psychology

Philip Washbourne
Associate Professor, Biology, Neuroscience

Carmen Watkins
PhD Candidate, Biology, Institute of Ecology and Evolution

Maya Watts
Senior Career Instructor, Biology, Oregon Institute of Marine Biology

Jo Weaver
Associate Professor, Global Studies

Michael Wehr
Professor, Neuroscience, Psychology

Rachel Weissler
Assistant Professor, Linguistics

Tim Wheeler
Postdoctoral Scholar, Bioengineering, Knight Campus

Frances White
Professor, Anthropology

Amanda White
Postdoctoral Scholar, Neuroscience

Lucy Whitmore
Graduate Student, Psychology

Julia Widom
Assistant Professor, Chemistry and Biochemistry

Stephanie Wiley
Instructor, Sociology

Nick Willett
Associate Professor, Bioengineering, Knight Campus

Colin Williamson
Assistant Professor, Cinema Studies

Jesse Wilson
Instructor of Natural Sciences, Clark Honors College

Hannah Wilson
Doctoral Student, Institute of Molecular Biology

Naomi Wilson
Graduate Student, Chemistry and Biochemistry

Juan Wolf
Associate Professor of Ethnomusicology, School of Music and Dance

Cathy Wong
Associate Professor, Chemistry and Biochemistry

Woan Foong Wong
Assistant Professor, Economics

Dylan Wood
Assistant Professor, School of Architecture & Environment

Leah Wothe
Graduate Student, Psychology

Research Mentors

Juliet Wright
Graduate Student, Physics

Anni Xiong
Graduate Student, Physics

Chundi Xu
Postdoctoral Scholar, Institute of Neuroscience

Yizhao Yang
Professor, Planning, Public Policy and Management

Kristen Yarris
Associate Professor, School of Global Studies and Languages

Keli Yerian
Distinguished Teaching Professor, Linguistics

Nathan Young
Graduate Student, Physics

Ahmar Zaman
Career Instructor, Psychology

Andrew Zavala
Graduate Student, Psychology

Dasa Zeithamova
Associate Professor, Psychology, Neuroscience

Annie Zemper
Assistant Professor, Biology

Kevin Zumwalt
Lab Manager, Institute of Neuroscience

Faculty Research Mentor Awards

The Center for Undergraduate Research and Engagement (CURE) has recognized 33 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 late 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

The Homelessness Policy Health Research Group, comprising research assistants, lab managers, faculty colleagues, and research volunteers, lauded Weaver's direction of the team's "work on an interdisciplinary NSF-funded project addressing stress, health, and resilience among people experiencing homelessness."

Lesley Jo Weaver

Associate Professor, Global Health Program, Product Design, School of Global Studies and Languages

Professor Weavers' mentees conveyed how she "practices responsive, reciprocal, and adaptive mentorship with every member of our team and has opened doors for our future that we never imagined possible. The actions she has taken to listen to and acknowledge our struggles, embrace our strengths, and make space for our ideas has been a crucial factor in our development as confident and capable researchers and as better people. Weaver's investment in our growth goes far beyond what is expected or required of a faculty mentor, and she has helped us build networks that will set us up for success after our time at UO."

The nominators underscored Professor Weaver's responsive care and compassion: "Our research focuses on working directly with people who are experiencing homelessness in the Eugene community. This work is emotionally heavy. While we are not the center of this work, our participants are, it can be incredibly emotionally taxing to operate in this space, and it's easy to become overwhelmed at the magnitude of the experiences of this community [and one's] mental health and well-being [can] suffer. Unsure how to handle this reaction, [mentees] turned to Dr. Weaver, asking her how one deals with the incredibly heavy nature of the things we see and hear about in our work. She replied by sharing her own story of first reacting to the pain and suffering of others in her research. After a period of sharing and discussion, Dr. Weaver concluded that the heavy feelings that accompany witnessing others' suffering never fade, but talking and sharing in community is one of the best ways to acknowledge and manage these feelings. In a world of academia that can often be sterile and emotionless, conversations like these demonstrate how Dr. Weaver never fails to practice empathy, responsively meeting her students where they are and accompanying them as they learn and grow."

Faculty Research Mentor Awards

The bachelor of landscape architecture 2025 cohort nominated Professor Busón in recognition of the "critical niche he has come to occupy within the network of the department, responding to the need for professors who teach with a focus on landscape design technology as it relates to an ever-changing job market and industry standards; and support students seeking help with spatial technology and insight into the competitive world of high-profile landscape design on an international scale."

Ignacio López Busón

Assistant Professor, School of Architecture and Environment, College of Design

His nominators extolled Professor Busón's responsive mentorship, "He has a reputation for being tough and extremely candid with students, but nearly everyone who has worked with him will attest that it comes from a place of genuine affection and confidence in our abilities, and he is well loved among the student body. He is responsive in a very literal sense–as in that he makes himself extremely available to students at all hours. Design studios mean late nights and last-minute revisions for many students, and students are often surprised by the expediency with which Ignacio was able to respond to messages or provide feedback on a project draft–regardless of the hour–often questioning when he was giving himself time to sleep or eat."

One mentee recounted their experience with his reciprocal mentorship, "He sees his relationships with students as opportunities to help each of us push the boundaries of landscape architecture and create something unique and valuable. I had the pleasure of completing a 2024 Summer Undergraduate Research Fellowship with him. From the beginning, he went out of his way to support my interests regarding the fellowship and insisted that I shape the experience to be the best possible fit for myself. Ignacio remained an invaluable mentor for me throughout this nearly year-long process, while also introducing me to other local experts and arranging opportunities for me to attend exclusive site visits, thus extending my network of mentorship. In this way, our work together was truly symbiotic: I was supported to create a comprehensive final project that I feel truly proud of, and I am happy to have been able to contribute to his own scholarship on the creek and to anyone else who may work on related projects in the future."

Faculty Research Mentor Awards

The Sociology Honors cohort nominated Professor Liévanos in recognition of his "exceptional mentoring for all of us throughout the process of writing our undergraduate theses." They affirmed that "Throughout our thesis writing process, from the IRB to the literature review and the writing process, Professor Liévanos has always taken the time to give us feedback. While our class had a wide variety of different projects, he recognized the differences between each project, with their variations between methods, literature, and theory, and is always there to readily offer flexible support and guidance."

Raoul Liévanos

Assistant Professor, Director of Undergraduate Studies, Department of Sociology

Students affirmed that "Professor Liévanos holds strong reciprocal relationships with all of his mentees and balances them as equals to himself, promoting respect between himself and mentees, but more importantly, developing trust in the relationship. He can trust that mentees will challenge him, take his advice, and show up for him, just as mentees can trust that Liévanos will challenge them, take their advice, and show up for them in return. It is impossible to meet Professor Liévanos and not be struck by the incredible care and dedication he has for his students. Our respect for him transcends beyond words, and there is no individual more worthy of this award than Professor Liévanos."

His mentees also credited Professor Liévanos for his commitment to their academic and career development: "he has helped us all make invaluable connections within our field, from helping us find our primary thesis advisors to introducing us to other professors in the specific fields we are interested in. His strengthening of our connections to academia went beyond just the interpersonal, and included other opportunities, such as research funding and personally leading us through the process of applying for research grants, and showing us who to reach out to and how."

LAURE

UO Libraries' Award For Undergraduate Research Excellence

Congratulations on your research project!

Now you have a chance to explain and win an award based on your research experience with the **Research Process & Scholarly Growth Essay**.

$2,000 Award

Due
June 15, 2025

UO Libraries' Award for Undergraduate Research Excellence recognizes **students who demonstrate excellent library research skills and high-quality academic work.**

LAURE winners will receive a monetary award of **$2,000**.

To learn more,
visit **bit.ly/uo-laure** or
email **LAUREAwards@uoregon.edu**

Libraries

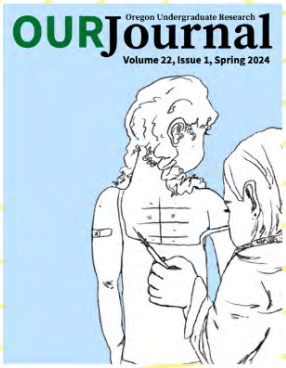
PUBLISH YOUR WORK IN

OURJournal

Oregon Undergraduate Research

The Oregon Undergraduate Research Journal (OURJ) is an open-access, interdisciplinary undergraduate research journal at the University of Oregon. Submitting to OURJ is a great way to experience the journal submission process and to expand the readership of your work beyond the UO.

Submitting is easy! We accept course papers, honors theses, independent research, and lab projects that are original and analytical in nature. We also feature submissions of student art and photography in every issue!

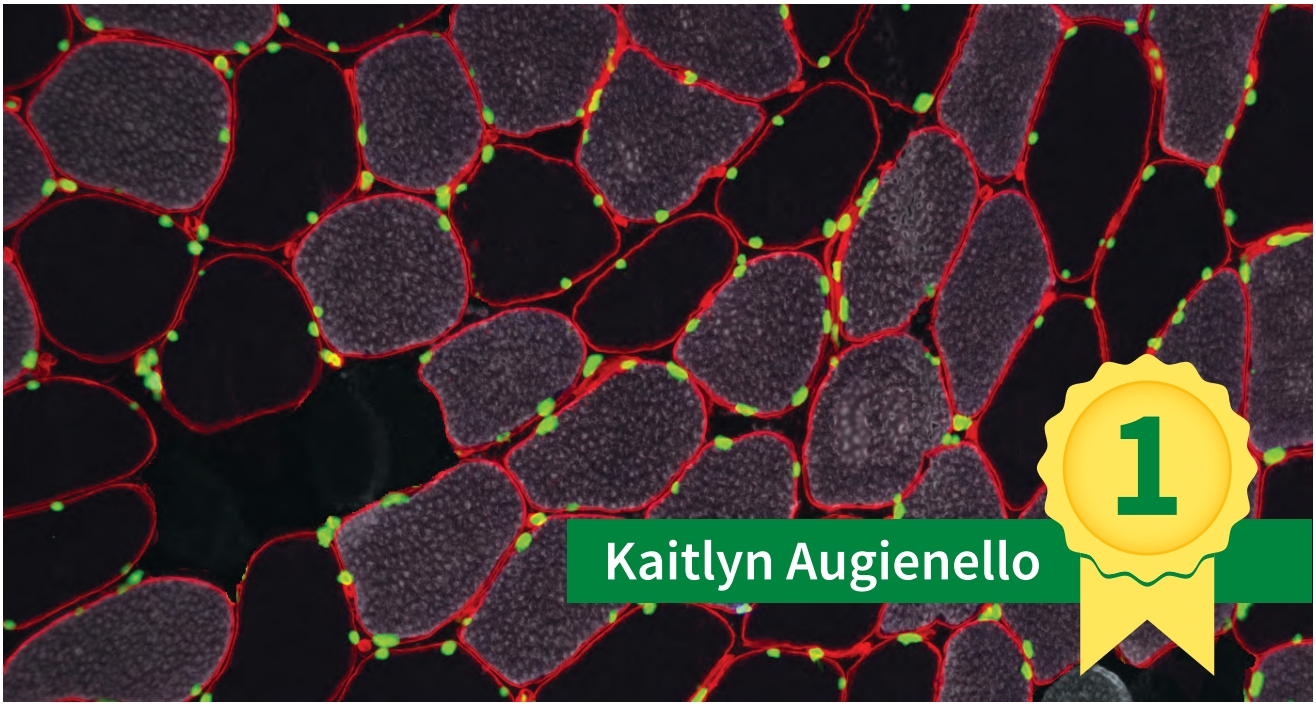


Learn more and submit today:
ourj.uoregon.edu

RESEARCH REVEALED

UNDERGRADUATE PHOTO CONTEST WINNERS

Research Revealed is a photo competition for University of Oregon undergraduates involved in research and creative scholarship.



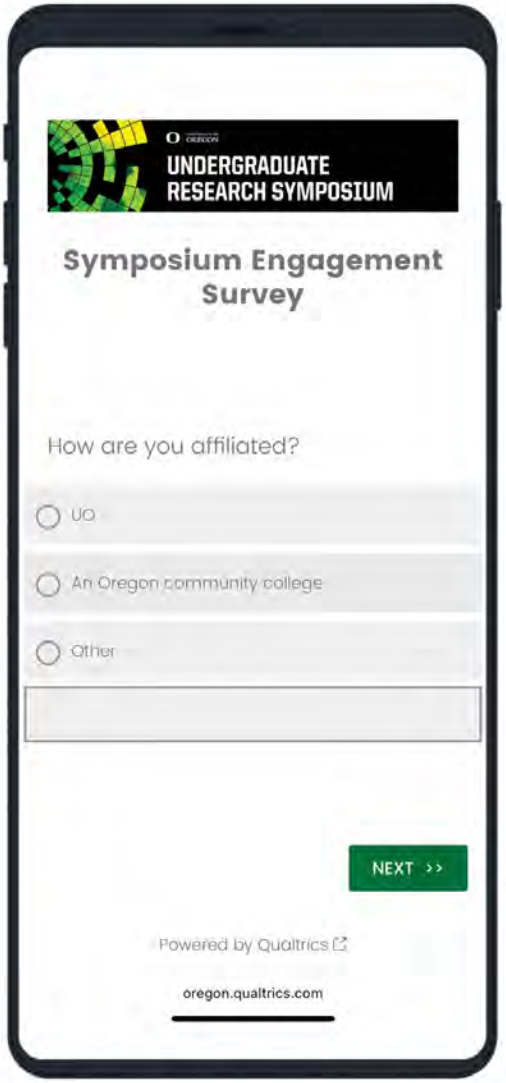
Visit us at the EMU ballroom lobby

tinyurl.com/reveal25 | research.uoregon.edu

UNIVERSITY OF OREGON | Office of the Vice President for Research and Innovation

Symposium Engagement Survey

Created in collaboration with the Tutoring and Academic Engagement Center, the symposium engagement survey is a versatile tool designed 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.

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. About 20 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. They discovered various ways that research is conducted, reported feeling connected with others, inspired, and excited about expanding their knowledge.

–Kenyon Plummer, Math and Science Learning Specialist

Presentation Abstracts

Visit our **schedule web page** for full symposium schedule.

Abdullin, Elyorbek
Lane Community College
Mentor(s): Gina Szabady
From Turbines to Transformers–Navigating the Tech Evolution

Turbine-Powered Cars: Rise, Fall, & Comeback

This research paper examines the history, challenges, and future of turbine-powered vehicles. It begins by discussing the origins of turbine technology during World War II and Chrysler's development of turbine-powered cars, supported by funding from the U.S. government. Next, it explores the economic and environmental hurdles that led to their decline, including tariffs, maintenance costs, and the oil crisis of the 1970s. Finally, the paper evaluates how modern technology, such as artificial intelligence (AI) and advancements in sustainable engineering, could revive turbine cars and align them with today's environmental and operational standards.

Acevedo, Andrew
University of Oregon
Mentor(s): Dr. José Meléndez
Data, Identify and the Politics of Being Seen
Poster Session #014

Artificial Privilege Theory: Leveraging Perceived Privilege for Advocacy

This research project is an original theory that explores how Artificial Privilege (AP), or socially perceived privilege, can create opportunities for marginalized individuals to advocate for systemic change and amplify the voices of other disadvantaged groups. This theory involves analyzing societal structures and identifying instances where individuals with AP can leverage their perceived advantages to access platforms, networks, and resources. The main finding is that AP can be transformed into a powerful tool for advocacy, enabling individuals to play a critical role in promoting equity and positive change.

Acker, Riley
University of Oregon
Mentor(s): Troy Houser, Dasa Zeithamova
Poster Session #262

Oscillations In Episodic Memory

This study explores how brain waves contribute to human memory formation. In particular, it investigates the role of theta oscillations (2–10 Hz), which have long been theorized to gate information flow in the mammalian brain. Presented are two behavioral experiments in which participants view a series of images to be later recalled, each preceded by an attention-grabbing cue intended to reset ongoing neural oscillations and a delay from a set of systematically varied intervals. This paradigm enables the investigation of rhythmic oscillations in encoding performance by generating a time series of the proportion of images correctly recalled and applying signal processing algorithms to extract the frequency. The first experiment found consistent evidence of oscillatory behavior at 8.5 Hz, with significant findings for how well participants remembered connections between stimuli. In the second experiment, we found the first behavioral evidence that the ability to distinguish between similar but not identical items oscillates at this same frequency. These experiments provide insight into the temporal dynamics of hippocampal function, and offer compelling evidence for a new, non-invasive paradigm to study the neural oscillations involved in episodic memory.

Adamec, Megan
University of Oregon
Mentor(s): Keat Ghee Ong, Salil Karipott

Next-Gen Healing Biomedical Innovations

A Capacitive Sensor for Continuous Monitoring of Adherent Cell Growth and Orthopedic Applications
As cells grow and develop, their dielectric properties change based on characteristics such as morphology, adhesion, and stage of proliferation or differentiation. Prior studies have leveraged this changing dielectric environment and demonstrated that impedance-based measurements are a valuable tool to monitor the cellular environment. This provides a basis to measure the adhesion of cells which is critical to evaluating the development and maintenance of tissues. Therefore, this study sought to design and validate an interdigital capacitive sensing scheme for in vitro monitoring of the adhesion of mouse L929 fibroblasts. This work encompasses the design, fabrication, processing, and testing of a novel interdigital capacitive biosensor and experimental protocol to monitor the in vitro environment in real time and non-destructively. The ability to monitor stages of cellular growth is a foundational technological platform for future innovation. In particular, this technology is promising for use in monitoring orthopedic healing and osseointegration on the cellular level, enabling real time and non-destructive monitoring of healing.

Adler, Faith
University of Oregon
Mentor(s): Keli Yerian, Halima Bibi
Virtual

Learning How to Learn Languages: Is a student-authored textbook possible? Open Pedagogy Says Yes!

Co-Author(s): Logan Fisher, Cameron Keaton, Addy Orsi, Abhay Pawar

Learning How to Learn Languages is a student-developed, interactive, open-source online textbook designed for the LING-144 class at the University of Oregon, but accessible by anybody, anywhere, at any time, with no cost to the reader, with only an internet connection. Written by a team of five undergraduate students, a graduate student, and a faculty member at the University of Oregon, this educational resource offers a glance at the field of second language acquisition in a bite-sized format to empower students in their language learning journey, regardless of prior experience.

With a focus on accessibility, interactivity, and connectivity, this textbook supports the engagement of diverse student voices. It utilizes various visual elements such as illustrations, student-created videos, authors' stories, and H5P (interactive) activities to encourage engagement. The "living" textbook was designed to be updated, changed, and rearranged over time by future cohorts of LING-144 students to adapt to their unique needs, and reflect the most up-to-date research in the field.

The textbook currently contains ten chapters: five chapters on different foundational aspects of language learning followed by five additional chapters on language skills and their integration with practical strategies and example stories from learners. The goal of this resource is to lower education costs, expand readers' perception of what language entails, and promote a learning environment of inclusion.

Adsitt, Keira
University of Oregon
Mentor(s): Matthias Vogel
Conscious Threads or Threads of Meaning

Thread Lightly: The Environmental Cost of Our Closets

The fashion industry has experienced exponential growth in both demand and production, but not without significant consequences. This paper examines the impact of excessive consumerism within the fashion industry, driven by technological advancements and exacerbated by social media microtrends. The rise of fast fashion has led to the widespread use of low-quality synthetic fabrics that contribute to pollution and are difficult to recycle, while also being discarded by consumers within a short period of time. Companies such as SHEIN, H&M, and Uniqlo have capitalized on shortened trend cycles and the fear-of-missing-out mentality

perpetuated by social media, encouraging excessive consumption. This paper aims to inform consumers about the environmental and ethical implications of fast fashion, provide alternative options, and emphasize how mindful purchasing decisions can drive meaningful change.

Adsitt, Keira
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #127

Thread Lightly: The Environmental Cost of Our Closets

The fashion industry has experienced exponential growth in both demand and production, but not without significant consequences. This paper examines the impact of excessive consumerism within the fashion industry, driven by technological advancements and exacerbated by social media microtrends. The rise of fast fashion has led to the widespread use of low-quality synthetic fabrics that contribute to pollution and are difficult to recycle, while also being discarded by consumers within a short period of time. Companies such as SHEIN, H&M, and Uniqlo have capitalized on shortened trend cycles and the fear-of-missing-out mentality perpetuated by social media, encouraging excessive consumption. This paper aims to inform consumers about the environmental and ethical implications of fast fashion, provide alternative options, and emphasize how mindful purchasing decisions can drive meaningful change.

Aeschliman, Alexandra
University of Oregon
Mentor(s): Vignesh Rangasami, Danielle Benoit
Poster Session #189

Leveraging Biomimetic Peptide Structure for for Targeted Fracture Healing

Nonunions develop in ~5-10% of yearly fractures in the United States. Minimally invasive therapeutic options, including regenerative drugs, would be advantageous to reinitiate nonunion fracture healing. However, as presently <1% of the injected dose of systemically delivered drug accumulates in bone, targeted drug delivery systems are of great interest. To this end, self-assembling poly(styrene-alt-maleic anhydride-b-poly(styrene)) nanoparticles were functionalized with linear TRAP Binding Peptide (TBP), as TRAP is deposited by osteoclasts during bone resorption. NPs loaded with AR28 (a Wnt agonist) enhance fracture accumulation and expedite fracture healing. Despite this promise, off-target accumulation of NPs was still observed in liver, spleen, and lung, in part due to TBP-NP exhibiting only micromolar affinity to TRAP. Therefore, this work seeks to improve TBP-TRAP affinity by altering peptide design. TBP emulates a stretch on glypican-4 (GPC4), a transmembrane protein expressed by osteoblasts that engages with TRAP during bone remodeling. AlphaFold

analysis revealed secondary structure of the TBP stretch of GPC4. Therefore, we hypothesize that emulating this secondary structure via cyclization may confer greater affinity to TRAP twofold: (1) by emulating TRAP-GPC4 interactions and (2) as restricted peptide conformations reduce entropic penalties of drug delivery system conjugation, which improves binding affinities.

Albiani, Bella
University of Oregon
Mentor(s): Josh Snodgrass, Lesley Jo Weaver
Health Stigma, and Ethics in Homelessness

Physiological Stress, Health, and Resource Access among People Experiencing Homelessness

Co-Author(s): Tian Walker, Allissa L. Van Steenis, L. Zachary DuBois, Lesley Jo Weaver

People experiencing homelessness (PEH) face numerous barriers to health, including limited access to health insurance and food assistance. This study examines how enrollment in these programs relates to food insecurity and chronic health conditions among PEH in a mid-sized Oregon city. Participants (n = 216) were surveyed about insurance, SNAP enrollment, housing status and food insecurity. Biomarkers were assessed via blood pressure, HbA1c and lipids (HDL, LDL, triglycerides, and total cholesterol) utilizing point-of-care devices. 75% of participants met the clinical criteria for hypertension (systolic ≥ 140, diastolic ≥ 80), with only 19% previously diagnosed, while 8.8% of participants met the criteria for diabetes with 7.4% previously diagnosed (HbA1c ≥ 6.5%). Significant associations were not found between access to a medical provider or SNAP benefits and lower systolic blood pressure or lower HbA1c. There was a significant association between temporary housing status and lower food insecurity. Many of those with insurance and SNAP benefits still reported an inability to access a provider (50%) and severe food insecurity (87%). These findings point to a mismatch between service access and meaningful utilization. Barriers beyond eligibility, such as stigma and logistical challenges, may prevent the effective use of services. Results from this study contribute to understanding of how inequality and institutional access shape health outcomes among PEH.

Albin, Samantha
University of Oregon
Mentor(s): Raoul Lievanos, Jessica Vasquez-Tokos
Poster Session #128

The Influence of Demographics on Generation Z's Perspective of Climate Change

This thesis explores how demographics influence lifestyle decisions of Generation Z within the context of climate change. This research investigates the formation of individual perspective and how certain

demographic factors shape Generation Z's quality of life as a result of climate change. To gather diverse qualitative data, I conducted interviews with a sample of around 10 students, age parameters of 18-27, from the University of Oregon. By coding these interviews alongside previous scholarly research, I identified patterns and drew conclusions from the data found in order to answer how life course, gender, place, and ideology affect how Generation Z students make decisions within the context of the climate crisis and their future. The findings suggest that these factors significantly influence how college students think about and respond to climate change. Through an analytical lens, I demonstrate that demographic variables play a crucial role in shaping the ways in which Generation Z engages with climate discourse and forms decisions in the face of ongoing environmental challenges.

Aldredge, Xavier
See "Miller, Gillian"
Monitoring Restoration: Native Plant & Pollinator Recovery in Riparian & Post-Fire Habitats

Alemán Henslee, Patrick
University of Oregon
Mentor(s): Dr. Michael Allan
Poster Session #017

Decolonial Aesthetics: Confronting US Nationalism in US-Mexico Migration Fiction

This essay conducts close readings of Valeria Luiselli's Lost Children Archive (2019) and Yuri Herrera's Signs Preceding the End of the World (2015) to explore the literary representations of national identity, national borders, and transnational Latinx migrants as they are conceptualized within the American imagination. The close readings reveal that, from different perspectives, both novels interrogate the myth of American exceptionalism and the common preconceptions Americans have toward Latinx migrants: Luiselli's novel displays its American narrator's national identity crisis following her confrontation with the reality of the ongoing child refugee crisis, while Herrera's novel assumes the transnational migrant's perspective to dissect the illogical meanings attributed to the symbols and practices that support American nationalism. This project builds from Glenda R. Carpio's formulation of "migrant aesthetics" in contemporary migration literature, from which I more closely consider the particular literary features that expose the fragile yet highly consequential assumptions that compose American national identity. Through this analysis, I conclude that migration fiction is a productive medium for ideological interrogation, especially the nationalist ideologies that produce physical and intangible violence against Latinx migrants.

Alexander, Stephanie
University of Oregon
Mentor(s): Josh Snodgrass
Poster Session #087

From Salads to Saltines: America's Obsession with Salt

On average, Americans consume ~3,400mg of sodium per day exceeding the recommended daily limit by ~1,000mg. Globally, the mean is 4310mg/day. Our current environment is vastly different from nearly all of our evolutionary history causing health concerns from elevated sodium intake. In the United States, over 70% of dietary sodium comes from processed and restaurant foods, resulting in much of the population exceeding the recommended limit, often without realizing it. Excessive sodium has significant impacts on communities experiencing inequalities with food security and economic stability. Low-income individuals with irregular work hours are particularly subject to making poor food choices. This includes college students, who are limited to campus food options. Sodium content has not been emphasized publicly and/or researched extensively resulting in a lack of awareness. To this end, I conducted a survey of sodium content in the foods available to University of Oregon students at the Erb Memorial Union to create awareness in this community. Results showed that the majority of available options are high in sodium. Additional research into American foodways can combine awareness and individual choice to empower a healthier community. Large scale clinical trials reflecting the impacts of a reduced sodium diet can support stricter policies to improve our food systems. Many sodium related health conditions are preventable and regulation of food standards could aid prevention.

Allen, Emi
See "Smith, Parker"
Early Adversity and Self-Regulation Skills Among Children in The Child Welfare System

Allums, Jayden
University of Oregon
Mentor(s): Kristen Yarris
Poster Session #065

Shaping Reproductive Justice In Argentina: The Impact of Social Movements on Legal and Social Change

The research poster on "Shaping Reproductive Justice in Argentina: The Impact of Social Movements on Legal and Social Change" focuses on the landmark legalization of abortion in Argentina, a significant achievement in Latin American reproductive rights. The poster explores how social movements, particularly

feminist and women's rights organizations, were pivotal in pushing for legislative change.

It highlights the tireless advocacy and public mobilization that led to the historic passage of the Voluntary Interruption of Pregnancy Law in December 2020, making Argentina the first major Latin American country to legalize abortion. This change was seen as a victory for reproductive justice, reflecting broader struggles for gender equality, social justice, and human rights.

The research examines the intersection of legal, social, and political forces, showing how grassroots activism, in collaboration with progressive lawmakers, shifted public opinion and ultimately influenced the national government. It emphasizes the role of campaigns like #Abortolegal in raising awareness, organizing protests, and generating a cultural shift toward reproductive rights as a matter of justice.

In summary, the poster underscores the transformative impact of social movements in Argentina, achieving legal reform and advancing a broader vision of reproductive justice that includes access to safe, legal abortion, gender equality, and social inclusion.

Alzaben, Mohammed
See "Crawford, Cordelia"
Hot Spots Project: Connecting Extreme Heat, Worker Exposure, and Corporate Supply Chains

Anderson, Liv
University of Oregon
Mentor(s): Cory Olsen
Poster Session #003

Stacks

The initial prompt for this furniture studio was to design a piece of furniture around a ritual that is specific to us. When I was thinking about what's important to me, I thought about my coffee table book collection. I am often drawn to design books that I want to display, and I especially like buying these while I'm abroad in places that I want to remember. That's when I thought to create a capsule for these books, where these special books can be on display indefinitely, in a spot designed just for them. Each book featured in this chair holds a deep meaning. There is also a quarter set into the seat, symbolizing family trips growing up. The chair itself also serves as an illusion because it appears to be one solid form from the outside, but its construction is actually multiple frames secured together, and it is hollow on the inside.

Apollo, Simon
See "Grubb, Skye"
Morphological measures of developmental stress in primates: cranial asymmetry and 2D:4D ratio

Apollo, Simon
University of Oregon
Mentor(s): Frances White
Poster Session #096

Identifying modern faunal osteological specimens and its applications to archaeology

Co-Author(s): Olivia Cotton, Sedona Epstein

Comparative collections are considered the best resources for learning to identify faunal remains. Learning these identification methods on complete bones makes identification of incomplete specimens easier. Incomplete faunal remains are common in archaeological assemblages, and identifying them can give insight into past human-animal relationships, including subsistence and domestication.

The UO Grand Collection, housed in the Primate Osteology Lab, has 280 non-primate (NP) specimens, 61 of which are unidentified. As part of this project, an NP database was established by confirming pre-existing notes and that all skeletal elements listed were present in the specimens' boxes. The 61 unidentified specimens were pulled aside and sorted according to prior speculation of genera and species, then individually examined for identification.

Methods: measured size to narrow search parameters; determined age based on presence of epiphyses; identified unique elements on the bones to help narrow down potential matches; then compared to drawings, photos, and real-life specimens from a variety of genera, finding those that shared the identifying features of the specimen.

This research could be expanded upon to make a more complete guide to identifying faunal remains. Ongoing subsections of the project are continuing identification, adding the remaining NP specimens to the lab's database, and cleaning ("degreasing") specimens.

Arney, Story
University of Oregon
Mentor(s): Jane Cramer, Diane Baxter
Poster Session #073

Arms Transfers and Escalation In Regional Wars: The Israeli-Egyptian War of Attrition

What is the relationship between weapons transfers and escalation in regional wars? Which kinds of weapons make escalation more likely? Which kinds make de-escalation more likely? Under what conditions? Understanding the answers to these questions is the key stronger states can use to control escalation in regional wars. This study proposes a new theory of escalation, Threats-Capabilities Theory, and tests it on four cases of a decision regarding escalation during the Israeli-Egyptian War of Attrition (1967-1970). Threats-Capabilities theory holds that escalation will become more likely when threats to that state escalate, but

even more likely when offensive capabilities allow it to escalate. Thus, an increase in offensive capabilities makes escalation more likely and an increase in defensive capabilities on the other side of the war makes de-escalation more likely. The four cases analyzed include Israel's decision to involve it's air force in the war, which was first motivated by a threat and then escalated even further because of the arrival of F-4 Phantom jets; the Egyptian decision to invoke Soviet intervention in the conflict in December 1969 because of the Israeli threat; Israel's decision to de-escalate by halting its air strikes deep inside Egypt in response to the arrival of Soviet air defenses; and the Israeli decision to not attack Egyptian SAM sites after they were moved into the Suez Canal zone in violation of a ceasefire agreement.

Arney, Story
University of Oregon
Mentor(s): Jane Cramer, Diane Baxter
Power, Policy, and Global Shifts

Arms Transfers And Escalation In Regional Wars: The Israeli-Egyptian War Of Attrition

What is the relationship between weapons transfers and escalation in regional wars? Which kinds of weapons make escalation more likely? Which kinds make de-escalation more likely? Under what conditions? Understanding the answers to these questions is the key stronger states can use to control escalation in regional wars. This study proposes a new theory of escalation, Threats-Capabilities Theory, and tests it on four cases of a decision regarding escalation during the Israeli-Egyptian War of Attrition (1967-1970). Threats-Capabilities theory holds that escalation will become more likely when threats to that state escalate, but even more likely when offensive capabilities allow it to escalate. Thus, an increase in offensive capabilities makes escalation more likely and an increase in defensive capabilities on the other side of the war makes de-escalation more likely. The four cases analyzed include Israel's decision to involve it's air force in the war, which was first motivated by a threat and then escalated even further because of the arrival of F-4 Phantom jets; the Egyptian decision to invoke Soviet intervention in the conflict in December 1969 because of the Israeli threat; Israel's decision to de-escalate by halting its air strkes deep inside Egypt in resposne to the arrival of Soviet air defenses; and the Israeli decision to not attack Egyptian SAM sites after they were moved into the Suez Canal zone in violation of a ceasefire agreement.

Atkins, Joshua
See "Bjerke, Ryley"
Comparing simulated and experimental behaviors of pendulums across a wide range of bob density

Augienello, Kaitlyn
University of Oregon
Mentor(s): Hans Dreyer, Helia Megowan
Poster Session #195

Impact of EAA vs EAA+BFR on Myonuclear Accretion & Muscle Memory

Co-Author(s): Gabriel Mancuso, Nitai Gaash, Madeline Luu, Adam Shuaib, Makayla Dreyer

We aimed to test the independent and combined effects of essential amino acid (EAA) supplementation and blood flow restriction (BFR) exercise on myonuclear accretion and muscle memory. Young, healthy subjects underwent a two-week protocol of 60g EAA daily and 6 unilateral BFR exercise sessions. Our goal was to determine if this combined therapy of EAA+BFR would increase myonuclear numbers, given that more nuclei may induce muscle memory. Our second goal was to determine if the increase in myonuclear numbers persisted after four weeks of washout to highlight feasibility in a clinical setting. Bilateral biopsies were obtained prior to treatment (baseline), immediately following the two weeks of treatment (day 14), and 4 weeks after treatment conclsuion (week 8). We hypothesized that 2 weeks of EAA+BFR would induce myonuclear accretion via satellite cell activation. Further, we hypothesized that new myonuclei would persist following 4 weeks without treatment while CSA and satellite cells would return to baseline. Immunohistochemistry was used to quantify myonuclei, satellite cells, fiber type distribution, and changes in cross-sectional area. Images were taken at 20x and analyzed using a combination of manual and automated methods. Our preliminary data from 10 out of 21 participants are inconclusive. Completion of this project will reveal cellular changes in response to EAA+BFR (vs. EAA alone) that may be leveraged for use in acutely stimulating muscle resilience.

Axon, Henry
University of Oregon
Mentor(s): John Christian
Poster Session #125

Modeling the Emergence of Ice Flow Trends in Greenland and Antarctica Under Climate Variability

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. In addition to changes in melt and snowfall on the ice surface, 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 at different locations across an ice sheet, making the response of a full

ice sheet to climate change complex in space and time. Although the recent trend of shrinking ice sheets is clear, it remains uncertain exactly when and where the ice-flow effects of anthropogenic warming will statistically emerge from the background of natural climate variability. To study the range of variability in glacier responses, we used a numerical model of ice flow and ran large ensembles of simulations that enable a statistical approach to assessing changes in ice flow across climate change scenarios with both variability and trends. We developed a method to determine a signal-to-noise ratio both temporally and spatially across simulated glaciers. This framework can be applied to a wide range of glacial settings and climate scenarios, offering insight into how and where climate-driven trends are likely to emerge in ice flow.

Bambaren, Lucas
University of Oregon
Mentor(s): Keat Ghee Ong
Poster Session #190

Bone Fixation Plates Measuring Torsional and Axial Strain

Transverse femoral fractures have a complicated and lengthy healing process. Recent studies have shown mechanical stimuli at the site of fracture promote bone healing and reduce the recovery time of said injuries. Measuring the torsional and axial load applied to a particular area may allow physicians to develop new rehabilitation techniques and optimize current ones. Using a strain gauge, it is possible to accurately measure the kinematics of the injured bone by translating applied torque to the fixation device into resistance values. This study aimed to produce a viable femoral fixation device to measure forces applied to a bone. This project discusses the fabrication, calibration, and application of a wireless sensor with a femoral fixation device measuring strain in a rodent model. It was found that the sensor displayed accurate strain values in real time on rats with transverse femoral defects. This device allows for the improvement of orthopedic rehabilitation procedures and contributes to the study of bone healing via mechanical stimulation.

Barajas, Karla
University of Oregon
Mentor(s): Nick Kreter, Michelle Marneweck
Poster Session #200

Neural efficiency in athletes during a simple goal-directed reaching task

Co-Author(s): Nick Kreter, Michelle Marneweck

Goal-directed actions depend on the brain's ability to integrate sensory information to support action subtasks – from identifying goal-relevant features (e.g., an object's location and distance relative to the

body) to using sensory cues for initiating movement. While athletes are known to perform these processes with greater efficiency and precision – attributed to long-term training – fMRI studies comparing athletes and non-athletes focus on overall BOLD-signal magnitude differences during sport-specific tasks. Such approaches overlook how the athlete's brain might uniquely represent action-relevant and initiation features, or whether these distinctions generalize beyond sport contexts. Here, we test how athletes represent these features and whether expertise-driven differences are evident. Using Bayesian pattern component modeling of fMRI data, we compared how both groups represent goal- and initiation-relevant features during a simple reaching task. In non-athletes, representations of multiple task features (e.g., direction and distance) and their interactions with initiation cues were broadly distributed across higher-order association and primary sensory areas. In athletes, only a select set of goal-relevant features interacted with initiation cues in higher-order association areas, reflecting more selective sensorimotor representations. These results suggest that neural efficiency in sensorimotor integration generalizes beyond sport-specific settings.

Barr Zeilon, Erik
Uppsala Universitet
Mentor(s): Carrie McCurdy, Avika Gomez-Sharma
Hormones, Heat, and Muscle Power Unveiled

Impact of Testosterone on Cell Metabolism and Insulin Resistance in Polycystic Ovary Syndrome

Polycystic Ovary Syndrome (PCOS) is a common female endocrine disorder marked by elevated testosterone levels and often associated with insulin resistance. This study aims to investigate the impact of elevated testosterone on mitochondrial function and morphology in primary skeletal muscle cells isolated from female Rhesus macaques, used as an animal model for PCOS. We hypothesize that chronic testosterone exposure impairs mitochondrial respiration explained by mitochondrial fragmentation, contributing to the insulin resistance seen in PCOS.

Using high-resolution respirometry, we measured respiratory function in cells treated with testosterone versus primary cells from subjects with a vehicle implant. Preliminary data suggest a trend toward impaired non-lipid respiration in the testosterone-treated cells. While we do not yet have preliminary data supporting a decrease in respiration linked to mitochondrial fragmentation, we hypothesize that the testosterone-treated cells will exhibit a more fragmented mitochondrial network, as assessed by confocal microscopy.

This study aims to deepen our understanding of how elevated testosterone disrupts mitochondrial function and contributes to metabolic dysfunction in PCOS. By investigating these changes in a primary cell culture model, we hope to identify potential mechanisms driving long term insulin resistance in women with PCOS and possibly highlight new therapeutic targets for addressing these metabolic complications.

Barth, Elena
University of Oregon
Mentor(s): Peter Newstein, Chris Doe
Poster Session #268

The Effect of the Transcription Factor Bar on Motor Neuron Specification in Drosophila

Co-Author(s): Peter Newstein, Chris Doe

Precise gene expression is essential to the differentiation of all the neurons in the nervous system. While the mechanism of neuron differentiation and synaptic specificity is not well understood in humans, dysregulation is linked to neurological diseases such as autism spectrum disorder or schizophrenia. Therefore, we use the Drosophila motor neuron model to study these pathways. In Drosophila, motor neuron (MN) identity is specified by the expression of specific transcription factors (TFs), resulting in three subtypes of MNs, named for their muscle targets: ventral, expressing nkx6, transverse, expressing Bar, and dorsal, expressing Eve. During MN development, Eve and Nkx6 engage in a cross-repressive regulatory relationship, though their interaction with Bar remains unclear. This project aims to determine the impact of Bar on TF expression, morphology, axon targeting, and synapse formation. Misexpression of Bar eliminated expression of Eve in a subset of dorsal MNs, suggesting that the transverse MN TF is sufficient to transform the TF identity of these neurons. However, analysis of embryos with a genetic deletion of Bar revealed unchanged MN synapses, suggesting that Bar may not be necessary for establishing proper MN morphology and synaptic connections, or is acting redundantly with another TF. Overall, this project highlights the importance of transcription regulation in the differentiation of MN identity and contributes to our understanding of synaptic specificity.

Battrick, Hailey
University of Oregon
Mentor(s): Judith Raiskin
Poster Session #023

Earl Biggs: The Legal Legacy of the Sex Crime Expert

This research examines the career and legislative activism of Earl Biggs, a Portland Police Department sergeant whose thirty-year career and advocacy work illuminates the evolution of sex crime legislation in mid-twentieth century America. Through analysis of arrest records, published works, and correspondence with sexologist Alfred Kinsey, Biggs's archives aid researchers in exploring how his experiences in the Portland Police Department's Vice Squad shaped his later advocacy for legislative reform. While Biggs initially participated in the enforcement of morality laws that criminalized consensual same-sex relationships, his views evolved significantly as he engaged with contemporary scientific research. This legal analysis focuses particularly on his 1953 Biggs-Roth Criminal Sex Offense Bill (House Bill No. 208), which attempted

to modernize Oregon's approach to sex crimes by distinguishing between consensual adult relationships and violent or exploitative offenses. Although the bill ultimately failed in committee, Biggs's work reveals broader tensions between traditional morality-based legislation and emerging scientific understandings of sexuality in post-war America. By analyzing Biggs's work, we may further our understanding of how law enforcement and legislative perspectives on sexuality and morality crimes evolved in response to scientific research and public opinion during the mid-twentieth century.

Bauer, Adele
University of Oregon
Mentor(s): Shawn Lockery, Amanda White
Molecules, Minds, and Mating

The Effects of a Psychedelic Drug on Egg-Laying Behavior in C. elegans

Co-Author(s): ShawnLockery, Amanda White, Nicole Dahmen, George von Dassow

Psychedelics have shown great promise in the treatment of mental health conditions such as treatment resistant depression, post-traumatic stress disorder, and substance use disorder. However, the mode of action of these drugs is largely unknown. Genetically tractable model organisms are particularly advantageous for identifying the genetic pathways involved in drug responses. We characterized the behavioral effects of a psychedelic in one such organism, the nematode worm C. elegans. We began by creating a toxicity dose response curve that compared survival 24 hours after drug exposure to the concentration of drug using the psychedelic drug 2,5-Dimethoxy-4-iodoamphetamine (DOI) or the control buffer solution (M9). The data revealed that DOI does have toxic effects at higher concentrations. After determining the minimal toxic dose, we examined the effects of DOI on a behavior type. One critical behavior of C. elegans is egg-laying, which is regulated by serotonin and its corresponding receptors. Psychedelics have a particularly high affinity for serotonin receptors. We hypothesized that a psychedelic drug would have the same stimulating effect on egg-laying as serotonin (5-HT). As expected, we found that 5-HT-incubated animals laid more eggs than the control. Surprisingly, animals incubated in DOI laid eggs at a similar rate to those incubated in the buffer solution. These results indicate that DOI does not stimulate egg-laying behavior significantly at any concentration.

Baxter, Emma
University of Oregon
Mentor(s): Emma Reed
Poster Session #201

Repeated far infrared sauna bathing does not reduce systemic inflammation in adults with obesity

Co-Author(s): Emma Reed, John Halliwill, Christopher Minson

Obesity is associated with chronic, low-grade inflammation, marked by increases in tumor necrosis factor-alpha (TNF-α) and interleukin-6 (IL-6). Exercise and heat therapy have been shown to reduce chronic inflammation. It is unknown if repeated far-infrared (FIR) sauna sessions reduce inflammation in an obese population. We hypothesized that repeated FIR sessions would decrease TNF-α and IL-6 in adults with obesity. Nine adults (body mass index: 36.5 ± 4.2 kg/m2) were randomized into either the sauna group (n=5) or the control group (n=4). The sauna group completed 30 sessions of FIR sauna bathing. The control did not participate in sauna sessions. A venous blood sample was obtained before and after the 30 sauna sessions or 8-10 weeks. Serum was analyzed for TNF-α and IL-6 using enzyme-linked immunosorbent assays. Data were analyzed with a two-way analysis of variance for time x group. TNF-α and IL-6 did not change over time in the sauna or control groups and did not differ between groups before or after the sauna sessions or 8-10 weeks. FIR sauna sessions did not reduce TNF-α and IL-6. Therefore, 30 sessions of FIR sauna bathing may not be effective at reducing chronic low-grade inflammation in adults with obesity.

Beaubrun-Diant, Lucian
University of Oregon
Mentor(s): Kive Solmaz
Poster Session #008

Bench Typologies

Hostile architecture is an urban design strategy that attempts to prevent perceived undesirable actions from happening in the space or undesirable people from using the space through designing furniture or space to be hostile towards it. A common part of the urban fabric is benches, places where people can sit outside in public. The rise in homelessness in the United States has led to associations with public benches as places where homeless individuals are likely to stay, leading to benches being adapted into hostile architecture. This project is an exploration into the different bench typologies found throughout Eugene, Oregon and what constitutes hostile and exclusionary design in bench design. Our interest in this topic was sparked by walks we had throughout the city, where we saw and felt how new benches were designed in impractical and uncomfortable ways. Furthermore, we saw how these new benches were designed to keep homeless

individuals out of view and out of mind for the general public. This project will compare the benches in different neighborhoods in Eugene to bring awareness of how this type of exclusion is experienced for homeless people.

Bell, Lainie
University of Oregon
Mentor(s): Richard Emlet, Maya Watts
Poster Session #284

Brittle Star Brawl: Mechanical vs. Chemical Defenses in Three Ophiuroid Species

Ophiuroid species in tropical coral reefs play important ecological roles, including cleaning sponge surfaces, suspension feeding on planktonic organisms, and serving as prey for reef fish. Common methods of defense against these fish include sharp arm spines and sheltering under reef rubble during the day. However, Ophiothrix suensonii, common near Bocas del Toro, Panama, remains exposed on sponges, suggesting it may rely on chemical defense.

We assessed predator-prey interactions of reef fish on O. suensonii, Ophiothrix stri (a smaller and less mechanically defended congener), and Ophiocoma echinata (a similarly sized, mechanically defended species) in two experiments. The first tested mechanical defenses with live ophiuroids in predator-exposed conditions. The second isolated chemical defenses by presenting agar-embedded ophiuroid tissue to fish.

Predatory fish were significantly less likely to approach agar samples containing O. suensonii tissue compared to control species O.stri and O.echinata, demonstrating chemical unpalatability (p < 0.05). No significant difference was found in fish approach rates among live specimens (p = 0.3), suggesting comparable mechanical defenses. Therefore, O. suensonii may employ chemical defenses to deter predation, allowing it to remain exposed in reef environments. Further research conducted in situ would allow for more comprehensive behavioral analysis unaffected by human presence, a potential source of error in our experiment.

Bellendaine, Ashley-Rose
University of Oregon
Mentor(s): Dorothee Ostmeier
Stories That Shape Us

Linking High Fantasy Writing with Folkloric Scholarship

In my talk, I will connect my creative writing training to my folklore studies by discussing my drafted novel, “Hibernian.” It is based on in-depth folklore research on Celtic mythology. Alongside my studies, I have spent seven years researching my own ethnographic roots and the mythology, motifs, and legacy of the

Celtic and Germanic tribes. My studies have prepared me to follow my passion and use fiction as a means of investigation, although I realize the roots I am searching for are gone. That is the central conflict I address in my work.

One plot element of my novel revolves around a fictional nation called Annwn, which is itself made up of dozens of clans inspired by many different cultures including Sápmi, Welsh, Irish, Icelandic, German, and Scandinavian. In the first section of my talk I will discuss the challenge of adapting historical analysis to my creative process to build a rich and diverse world. On a PowerPoint slide, I will show the audience the fictional map of the world I imagine and link the various areas of the map to their ethnographic sources. The way I have adapted the source material will be demonstrated by the names of people, places, and practices within my novel. The Undergraduate Research Symposium will give me the platform to discuss fiction with deep connections to critical scholarship.

Below, Isabelle
University of Oregon
Mentor(s): John Christian
Poster Session #124

The Impact of Knickpoints on Glacier Retreat

Marine-terminating glaciers that drain the Greenland ice sheet have retreated and thinned in response to ocean warming. However, these changes are also affected by the bedrock topography under the ice. A knickpoint is a sudden change in the bed slope beneath a glacier. If steep enough, a knickpoint can slow or even stop the inland propagation of thinning from the ocean margin. This phenomenon occurs when the downstream flow of ice outpaces the rate at which thinning travels upstream. Understanding this dynamic is key to accurately predicting how marine-terminating glaciers will respond to climate change. To further study this topic, we used a numerical glacier flow model that simulates ice deformation and basal sliding. We then applied this model to simplified geometries representing marine-terminating glaciers in Greenland. We added knickpoints of varying sizes to the bed topography and analyzed the effect on glacier thinning. Our results are consistent with previous work, observing that knickpoints reduce inland thinning. However, a new result is that the knickpoints also cause seaward thinning to speed up. These findings highlight the important role bed topography plays in glacier dynamics and further suggest that knickpoints may stabilize retreating glaciers but also increase variability at the glacier margins. By further improving our understanding of the knickpoint effect, we can improve projections of future glacier behavior.

Bentivoglio, Jack
See "Crawford, Cordelia"
Hot Spots Project: Connecting Extreme Heat, Worker Exposure, and Corporate Supply Chains

Bentz, Valentine
University of Oregon
Mentor(s): Laura Pulido
Works in Progress: Culture, Society & Politics

Radical Geography on our Campus: A People's Guide to the University of Oregon

Over the past year, I have begun to develop A People's Guide to the University of Oregon. Functioning as a tour guide, it shares seemingly ordinary places on our campus where people have confronted, challenged, lost, and won in their battles against oppression. It is a "deliberate political disruption" (Pulido et al., 2012) to the way our campus is commonly experienced, seeking to break out of the mainstream, individualized and masculinist ways of thinking of history by centering an analysis of power that recasts exclusionary narratives of space. Under the mentorship of Prof. Laura Pulido (editor of the People's Guide books series), I conduct archival research utilizing information available from UO Special Collections and University Archives and online archival repositories. Together, we confer on which histories are most apt to focus on unearthing, taking a particular focus to those that concern marginalized and underrepresented University communities. I then analyze sources, write each site entry and design and format the guide itself.

Overall, the People's Guide is is about power: who wields it, how it shapes us, and how to see it. We need to be aware of this power and encouraged to follow in the rich tradition of those before in moving our University forward. In this line, it is essential to commemorate and learn from the dynamic histories of struggle, community, and imagination that have shaped our the campus we call our own.

Berryman, Chase
University of Oregon
Mentor(s): David McCormick, Kevin Zumwalt
Poster Session #271

Comparative Analysis of DOI-Induced Spindle Waves and Non-REM Sleep Spindles in the Mouse Brain

Co-Author(s): Tapley Sorenson

Spindle oscillations are hallmark features of non-REM (NREM) sleep, typically emerging from coordinated thalamocortical interactions and implicated in sensory gating and memory consolidation. Psychedelic compounds such as DOI (a 5-HT2 receptor agonist) have been reported to evoke slow, rhythmic cortical

oscillations that are reminiscent in morphology–but not frequency–of sleep spindles. This study aims to compare the temporal structure, spectral characteristics, and spatial distribution of DOI-induced infra-slow oscillations (~0.03 Hz) with canonical NREM spindles in mice. While NREM spindles occupy a higher frequency band (10–15 Hz), DOI-evoked oscillations appear to exhibit extended periodicity and potentially distinct laminar dynamics. By systematically comparing these two oscillatory phenomena, we seek to determine whether spindle-like dynamics under psychedelics represent a functional analog of sleep-related rhythms, or instead reflect distinct circuit-level processes operating at different temporal scales.

Biegel, Sophie
University of Oregon
Mentor(s): Danielle Benoit, Robert Guldberg
Poster Session #185

Polymeric nanoparticle-mediated siRNA delivery to a 3D model of cartilage degradation

Co-Author(s): Phillip Hernandez, Robert Guldberg, Danielle Benoit

Osteoarthritis (OA) is a degenerative joint disease that affects over 500 million people worldwide and has no disease-modifying therapy. Here, a model of cartilage degradation, a key feature of OA, was used to test polymeric nanoparticle (PNP)-mediated short interfering RNA (siRNA) delivery as a therapeutic strategy for cartilage repair. We hypothesized that siRNA-loaded PNPs targeting GAPDH, a control gene representing our gene of interest, could be silenced without impacting GAG synthesis. In this system, siRNA silences a specific gene and PNPs facilitate delivery to the cytosol, where it functions. To test this, human chondrocytes were transfected with siRNA-loaded PNPs, pelleted to form 3D constructs representing human cartilage and treated with inflammatory cytokines to simulate OA. Gene silencing was confirmed using RT-qPCR, and sulfated glycosaminoglycans (GAGs), a critical element of the extracellular matrix, were quantified using the DMMB assay. We showed siRNA-loaded PNPs were able to silence over 70% of target gene expression without affecting GAG synthesis, which was expected since a control gene not associated with GAG synthesis was targeted. Cytokine treatment significantly reduced GAG synthesis, confirming our ability to model cartilage degradation in vitro. Ongoing work focuses on silencing expression of JUN, a transcription factor associated with OA progression. Broadly, this work supports the development of OA drug screening models and siRNA-based therapies.

Biersdorff, Page
University of Oregon
Mentor(s): Maria Schweer-Collins
Poster Session #129

Interventions for Addressing Adolescent Eco-Anxiety

Climate-related anxiety is on the rise among adolescents. Particularly, students ages 18-24 are more vulnerable due to greater awareness, education, agency and independence from childhood support systems. This demographic bears the generational responsibility of shaping climate science and policy, making their psychological resilience essential. This paper presents a narrative synthesis of existing literature on adolescent mental health and eco-anxiety, drawing parallels with interventions for war-impacted youth. Since eco-anxiety intervention is a newly researched subject, and shared themes of existential threat and environmental disturbance, post-conflict interventions provide a framework for future eco-anxiety intervention research. Studies identify effective interventions such as group therapy, grief-focused therapies, art therapy and mindfulness practices. While these studies provide valuable insights, more research is needed to develop comprehensive, evidence-based interventions specifically targeting eco-anxiety in adolescents.

Biesty, Liam
University of Oregon
Mentor(s): Scott Fisher, James Imamura
Poster Session #251

Asteroid Lightcurve Analysis; Observations from Pine Mountain and Nishi-Harima Observatories

Co-Author(s): Ian Sherman, Katie Linnenkohl, James Imamura, Scott Fisher

Photometric observations of asteroid 665 Sabine were conducted in collaboration with the University of Oregon's Pine Mountain Observatory (PMO) and the University of Hyogo's Nishi-Harima Astronomical Observatory (NHAO). These observations were made in July 2020 (PMO and NHAO) and November 2021 (NHAO). The observations provided a long-baseline dataset to refine the asteroid's rotation period. Over a span of 448 days, phase-aligned light curves were produced using data from NHAO's 0.6m telescope in the Johnson V band and PMO's 0.35m 'Robbins' telescope in the Sloan g' band. Field photometry was performed with AstroImageJ (AIJ), while field star magnitudes were calibrated using NASA/IPAC's Infrared Science Archive (IRSA) and ESA's GAIA Data Release 2 (DR2). Visual magnitude offsets for 665 Sabine were obtained from the Jet Propulsion Laboratory's Solar System Dynamics (JPL Horizons) database. Custom Python scripts were written for phasing, data reduction, and analysis. This project lays the foundation for two upcoming papers to be submitted to

the Minor Planet Bulletin while also serving as an introduction for students to data processing, modeling, calibration, and large dataset management. Additionally, it reinforces PMO's collaboration with other research institutions and demonstrates the observatory's ability to produce high-quality photometric data.

Bjerke, Ryley
Umpqua Community College
Mentor(s): Mick Davis
In the Swing of Things: Exploring Motion and Balance

Comparing simulated and experimental behaviors of pendulums across a wide range of bob density.

We observe how frequency and amplitude half-life of pendulums are affected by varying bob densities under the influence of air resistance. Amplitude half-life is measured as the time for the amplitude to decay to half the initial value. The system is simulated and visualized by applying the drag equation and the rotational form of Newton's Second Law, coded in the VPython language. The results of the simulation and experiment are compared and contrasted.

Black, Olivia
See "Eubanks, Sam"
Aves Compartidas 2025: Place-Based Education Through Migratory Birds

Black, Olivia
University of Oregon
Mentor(s): Kathryn Lynch
Poster Session #299

Picturing Perception: How the Environment is Portrayed in Popular Children's Literature

As climate change threatens our planet, it is important that children understand the world they are inheriting. Research has shown that books have an immense influence on young and emerging readers. Through a philosophy grounded in environmental criticism–a framework that explores how humans imagine our environment through literature–this thesis analyzes 40 popular children's picture books for their portrayal of the environment in support of environmental literacy–the outcome of someone who makes informed decisions on environmental issues–using the North American Association for Environmental Education's (NAAEE) guidelines for environmental education. This thesis investigates a collection of popular literature and provides recommendations to supporters of young readers in curating books that support environmental literacy. Results found that 80% of the literature does not support environmental

literacy through questions guided by the NAAEE. However, additional analysis found that some literature may still promote environmental literacy through extended themes or when developmentally appropriate conversations are supplemented. This thesis concludes that while some of the analyzed literature does not support environmental literacy, many can still contribute to the development of environmental literacy in young readers.

Bodle, Weston
University of Oregon
Mentor(s): Cathy Wong, Zach Walbrun
Poster Session #222

Exploring the structural formation and excited state dynamics of CuPc using in situ spectroscopy

Co-Author(s): Zach Walbrun, Alyssa Paulson, Nicholas Frainey, Cathy Wong

Organic semiconducting materials are promising candidates for solar cell materials and hold many benefits over traditional semiconducting materials including ease of manufacturing, low production cost, and substrate flexibility. A current obstacle that is holding back organic photovoltaics (OPV) is their low efficiency when compared to their traditional silicon-based counterparts. The efficiency of an OPV is dependent on many factors, including the structural formation of the electron donor and electron acceptor layers within the OPV along with the electronic dynamics of the donor/acceptor systems. Further understanding these parameters in potential active layer materials is crucial in optimizing the efficiency of OPVs and further revolutionizing the photovoltaic industry.

We worked with a potential electron donor candidate copper phthalocyanine (CuPc). CuPc has been shown to form a pyramidal like structure when cast as an organic thin film which could lead to a desirable intercalated layer within an OPV. Work has been done characterizing both the structure and electronic dynamics of CuPc in the dried film state, but we are interested in what is happening during the deposition process. To probe this interest, we use in situ spectroscopic techniques that include UV-Vis spectroscopy and the novel technique, Single Shot Transient Absorption (SSTA) Spectroscopy that was developed by the Wong Lab.

Boeckman, Andrew
University of Oregon
Mentor(s): Yizhao Yang
Poster Session #117

Sustainable Galapagos: Integrating Conservation and Development on San Cristóbal Island

The Galapagos Islands, a UNESCO World Heritage Site, face many sustainability challenges due to balancing socioeconomic development and environmental conservation. Top-down and conservation-focused development policies are unable to address rapid urbanization rates and the growing tourism industry within the islands. This project, led by Dr. Yizhao Yang, responds to the urgent need for and lack of evidence-based and community-engaged policymaking in the Galapagos Islands.

Through collaborative research, student experiential learning, and the implementation of a community education program, we are directly collaborating with the residents of San Cristóbal Island to yield community-driven changes in urban areas. Through historical policy research and geospatial analysis of land cover and demographic changes over time, Dr. Yang and I identified patterns of urban growth over time and how these urban planning policies have impacted the growth. Additionally, as a part of the GEO program "Sustainable Cities and Landscapes in the Galapagos", fifteen UO students and I participated in experiential learning, observing, and researching by proposing sustainable solutions to public spaces in the urban areas of San Cristóbal Island. Finally, we created an interactive public space audit for residents that will be deployed this upcoming summer. We hope this audit questionnaire will inform local policymakers about the most crucial needs for San Cristóbal Island.

Boggs, William
University of Oregon
Mentor(s): Paul Dassonville, Andrew Zavala
Poster Session #256

Perceptual Uncertainty in the Frohlich Effect Reflects Biased Representations, Not Biased Decisions

Co-Author(s): Andrew Zavala, Paul Dassonville

The Frohlich effect, a bias in perception of the starting location of a moving target in the direction of motion, provides a window into the dynamics of motion perception, particularly the speed of sensory processing. In this study, we had two hypotheses: 1) if the speed of visual processing can modulate reaction time, it should also be able to influence the perceived location of a moving stimulus in the Frohlich illusion; 2) to examine if peak perceptual uncertainty would be biased in the direction of motion as well, trailing the perceived onset

of the target rather than the physical one. Participants (n=41) viewed targets that were either static, or moving leftward or rightward, and judged whether each appeared to the left or right of a centrally located fixation point. Decision RTs peaked near fixation for static targets, consistent with greater uncertainty as the target gets more proximal to the point of comparison. RTs for moving targets followed sigmoidal functions with maximums shifted in the direction of motion, rather than at zero. This suggests that the point of maximal decision difficulty was biased in the direction of their perceptual shift. Contrary to our original hypothesis, reaction time did not correlate with illusion magnitude, indicating that the speed of processing may not be involved in the mechanisms of the Frohlich effect. These results provide behavioral evidence that motion changes the representation prior to decision-making, supporting the idea that

Bohannon, Carrie
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #112

Effects of Increased Urbanization on Land Surface Temperature: Austin, Texas and Delhi, India

Over time, rapid urbanization practices have prioritized sprawl over environmental considerations in development. This has resulted in developments built with materials that absorb more heat than what previously existed in these spaces, causing increased land surface temperature. We will examine the changing land surface temperatures resulting from increased urban areas in two cities: Austin, Texas and Delhi, India. Urban sprawl around Austin, Texas results in new developments that focus on rapid growth rather than mitigating environmental impacts. We will address how densely populated cities like Delhi are impacted by the urban heat island effect by measuring changes in land surface temperature over a period of rapid population growth. We will be looking at urban sprawl over the last 30 years compared to land surface temperatures changes using Landsat satellite imagery. Our study will also consider the impacts of land-use policy across these two cities. Google Earth imagery will be used to better correlate patterns of changing land surface temperature with land-use at a higher spatial resolution. We hypothesize that as urban sprawl and density increase, land surface temperatures in these cities will also increase, creating and intensifying Urban Heat Islands and Urban Hot Spots. This will show a positive correlation between land surface temperatures and urbanization. The urban heat island effect can have drastic health and social impacts on a city's population.

Bokovoy, Claire
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #054

Affordable Housing Scarcity and Impacts on Homelessness in Eugene, Oregon

Our research examines the relationship between homelessness in Eugene and the city's deficit of affordable housing. We will review federal and state laws, taxes, vouchers, and specific Eugene regulations to complete an analysis of the Eugene housing affordability crisis. Additionally, we will examine nationwide policies that aim to provide more affordable housing, and explore factors that lead to an increased strain on families. A literature review will accompany our findings, where we will probe existing writings that tackle housing affordability solutions, residential growth, legislative policy impacts, and case studies focused on unhoused families. The aim of our research is to investigate the causes of Eugene's affordable housing shortage, explore its influences on homelessness, and propose possible solutions to Eugene's affordability crisis.

Bottaro, Vincent
See "Cuevas Ullibarry, Denali"
Warming World: Changing Temperature, Vegetation Health and Density in Urban and Forested Areas

Bowden, Seth
See "Bjerke, Ryley"
Comparing simulated and experimental behaviors of pendulums across a wide range of bob density.

Boyd, Seth
University of Oregon
Mentor(s): Judith Raiskin, Linda Long
Poster Session #022

Representations of Indigenous Spirituality in Radical Faerie Publications

The Radical Faeries are a gay liberation community that arose from the countercultural scenes of the 1970s. The movement embraces spiritual philosophies that are not centered on an established religion, but rather pull from various belief systems to create an ideology of naturism and communalism. This ideology views gay identity as sacred and separate from patriarchal structures, in part stemming from Harry Hay's comparison to two-spirit Native people as healers in their communities. The movement created a rural commune of gay men in Wolf Creek, Oregon. This land, known as Nomenus, was created to be a spiritual sanctuary for a few full-time residents and to host Radical Faerie gatherings. Despite the spiritual practices pulling from

a variety of belief systems, the act of settling on new lands create a particular tension about how the community discusses, interprets, and appropriates Native spirituality and practices. This research project uses archival materials from the UO Special Collections to trace how published works originating from Nomenus portray indigeneity or unintentionally recreate colonial behaviors.

Bradbury, Jake
University of Oregon
Mentor(s): Brice Kuhl, Anisha Babu
Poster Session #260

Representations of Individual Memories in Cortical Activity Patterns

Prior research suggests neural activation patterns present during encoding are reactivated during retrieval. However, the strength of encoding-retrieval similarity may differ across brain regions. In this study, we investigate neural representational similarity between encoding and retrieval across both visual processing regions and memory regions. During functional magnetic resonance imaging, participants completed a paired-association memory task in which they were shown a series of face-scene image pairs (encoding) and were later cued with the face to recall the associated scene image (retrieval). Scene images were drawn from a set of 36 images consisting of 6 categories (e.g., pool), each with 6 exemplar images. Next, we extracted neural activity patterns from regions associated with visual processing and episodic memory, including hippocampus (CA1, CA23DG), angular gyrus (AG), early visual cortex (EVC), ventral intraparietal sulcus (vIPS), and parahippocampal place area (PPA). We then correlated neural representations across the encoding and retrieval tasks to obtain measures of encoding-retrieval similarity for image pairs of (1) the same scene image, (2) the same scene category, and (3) different scene categories. Paired t-tests showed significant differences between each of these three measures in AG, EVC, vIPS, and PPA. These findings suggest encoding-retrieval similarity is best supported in cortical regions, including both visual processing and memory regions.

Brave, Selena
University of Oregon
Mentor(s): Mahala Ruddell
Poster Session #013
Works in Progress: Culture, Society & Politics

Case Study: Congressman Peter DeFazio as a Framework for US Tribal Relation Standards

Congressman Peter DeFazio has arguably set the precedent in terms of advocacy for Native American tribes in the United States of America. The relationship building practices that he utilized and took pride in at

his town halls and with civilians at large easily translated to the relationships that were built with Native Americans across Oregon State. Today, American Indians make up only 2% of the US population. It is essential that government-to-government relationships such as these continue to expand in number, improve, and most of all support an equitable inclusion of Native American tribes.

This project aims to dissect the methods Peter DeFazio utilized in his tribal relations work. It will examine policies or legislation he supported or introduced, the collaborative processes he engaged in, any limits imposed, and the guiding values for his decisions. Data will be collected through careful qualitative analysis of archival documents and oral histories in the Peter DeFazio collection. Tribal perspectives will also be included from The Confederated Tribes of the Umatilla Reservation, The Coquille (Ko-Kwell) Indian Tribe, and The Cow Creek Band of Umpqua Tribe of Indians. True allyship between Tribal Nations and the United States Government is integral for the health and wellbeing of not just Native Americans, but humanity at large and all that Grandmother Earth encompasses. The results of this project will highlight triumphs by DeFazio as well as room for improvement.

Brehl, Helene
University of Oregon
Mentor(s): Dylan Wood
Poster Session #001

Tubular timber: structural testing and flat pack self-shaping structural component

Co-Author(s): Abraham De Jonge

Traditional solid wood structural elements often suffer from inefficiencies in material usage and transportation, while hollow-section structural components are commonly fabricated from carbon-intensive materials such as steel, aluminum, and concrete. Tubular Timber (TT) seeks to present a more sustainable alternative by utilizing wood's hygroscopic properties as a shaping mechanism to create super-thin-walled, hollow cylindrical members. TT is constructed from multiple layers of peeled, thin veneer sheets that are laminated together and programmed to self-shape into tubes as they dry which may significantly reduce material waste and transportation volume comparatively.

This research investigates the structural performance of Tubular Timber, with a focus on its compressive strength and the consistency of its ability to hygromorphically self-shape. Manufacturing methods include vacuum and hydraulic pressing techniques to laminate veneer layers, followed by controlled air drying to achieve a targeted cylindrical geometry. Compression testing evaluates the load-bearing capabilities of TT to assess its viability for structural applications. Initial findings indicate that TT exhibits a high strength-to-weight ratio while offering substantial material and logistical efficiencies. This study contributes to the growing body of research on bio-based, responsive materials and highlights TT's potential for reducing the carbon footprint of the construction industry.

Bringman, Piper
University of Oregon
Mentor(s): Divyanka Sharma
KIDDing with Time, Trees, and Human Impact

Cycle.

Cycle. follows the story of a copse of trees in the backyard of a family home. The trees wonder and comment on the life of a human girl who lives in that home, watching her grow and experience life in its entirety. It is a commentary on the shortness of the human life span, and how one being can have a profound impact on another. It is a creative reimagining of what it would be like to be a tree, and what sorts of daydreams and questions a tree might have about knowledge, movement, and emotionality. Cycle. refers to the repetitions of seasons which become the experience of life for a tree, and simultaneously, the patterns of infancy, childhood, adulthood, parenthood, old age, and death, which categorize some aspects of the human existence. Put more simply, Cycle. juxtaposes the inner and outer rings of awareness which ultimately create the cyclical nature of both human and botanical life.

Brooks, Owen
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #056

The Venezuela-Guyana Essequibo region border dispute and the recent discovery of oil

Beginning in the 1840s and continuing throughout the 19th century, British Guyana successfully expanded its borders into Venezuela's Essequibo region culminating in the Paris Arbitration Tribunal in 1899 delimiting the Essequibo region as British, defying the Monroe Doctrine. Given that account of the Paris Arbitration Tribunal unveiled to the Venezuelan public in the 20th century that the Tribunal's verdict was the result of an under-the-table deal between the Russian and British Empire and the 2015 discovery of oil off the coast of the Essequibo region, a reassessment of the Venezuelan public opinion on the Essequibo region is necessary. This project traces the history of Essequibo region possession through legal documents, official border maps, firsthand accounts of the Paris Arbitration Tribunal, and the larger geopolitical and economic tensions between the United States and the British Empire. I also utilize Venezuelan and Guyanese newspapers' reporting on the discovery of oil off the coast of Essequibo and the 2023 Venezuelan referendum to annex the Essequibo region and the resulting crisis. The influence of the legal history of the Venezuela-Guyana border dispute cannot be overlooked considering the discovery of oil off the coast of the Essequibo region and the Venezuelan referendum for the annexation of the Essequibo region. Understanding the public sentiment of Venezuela towards the Essequibo region is essential for navigating South American geopolitics.

Brosseau, Persephone
University of Oregon
Mentor(s): Melissa Lucash
Poster Session #105

Modeling forest growth under climate change in the Oregon Coast Range

Co-Author(s): Colin Mast, Melissa Lucash

The Oregon Coast Range covers 2.5 million hectares of highly productive temperate rainforest and is an ecologically and economically valuable region. Climate plays an important role in Coast Range forest succession suggesting that the productive conditions of this area may be at risk under climate change with increasing temperatures and altered precipitation. Our study examined the spatial variation in soil moisture, live tree biomass, and tree species establishment under climate change. Our team used LANDIS-II, a spatially interactive, raster-based forest landscape model, to model the long-term impacts of climate on soil moisture, live biomass, and tree establishment. We modeled a historic climate scenario and multiple climate change scenarios from 2015 until 2100. Preliminary results on average show an increase in available water and tree biomass under historic climate conditions, and a decrease in available water and tree biomass under climate change conditions. Establishment rates of tree species did not significantly change under historical conditions and decreased under climate change scenarios. Our results suggest that climate change will impact soil moisture, tree biomass and tree establishment in the Coast Range of Oregon.

Bruckner, Jane
University of Oregon
Mentor(s): Adam Glass
Poster Session #281

A Chemical and Cultural Study of Methylxanthines in Celsius and the Impact of Oversupplementation

A growing trend is blurring the line between supplements and daily dietary intake, where vitamins, caffeine, and herbal extracts are no longer confined to capsules, but incorporated into energy drinks, protein powders, and multivitamins. As these products become routine, distinctions between nutrition, overstimulation, and over-supplementation are becoming increasingly difficult to define. This project investigates the accuracy of stimulant content labeling in Celsius energy drinks as a case study, inspired by Celsius's inclusion of guarana seed extract, a natural caffeine source not independently regulated by the FDA. Conducted in Dr. Adam Glass's organic chemistry lab, this research uses proton nuclear magnetic resonance (proton NMR) spectroscopy to identify and quantify caffeine and theophylline levels across multiple Celsius flavors. Deuterated solvents D_2O and DMSO were used for sample preparation and spectral analysis. The lab work forms one component of a

broader thesis, including a literature review examining the cultural drivers of supplement use and a chemical review of how compounds like guarana, when combined with high-dose vitamins, may contribute to physical symptoms of overstimulation. This research aims to examine modern supplement trends, with a focus on their impact on young adults, and to contribute to critical conversations around labeling transparency, consumer awareness, and supplement safety.

Bruun, Ella

See "Ribeiro, River"

Exploring Student Neurodivergent Health Equity in Higher Education: University of Oregon's 2024 NCHA

Buckwald, Lakia

University of Oregon

Mentor(s): Kathryn Mills, Lucy Whitmore

Poster Session #126

Navigating Networks: Climate Cognition

Co-Author(s): Lucy Whitmore

As the climate crisis worsens, there is a need to not only consider the toll on the environment but the toll on individuals as well. The following reviews of mental health outcomes related to climate change show an association between anxiety, well-being and stress to climate change and extreme weather events. To assess the status of youth emotions regarding climate change and environmental-related events, the current study used a prospective longitudinal climate emotions approach. The current study quantitatively examined climate emotions such as climate and eco-anxiety, nature connection, and well-being with a sample of 219 sixth grade students. To examine seasonal changes, the survey was administered across 3 time periods during the 2024-2025 academic school year. Preliminary data from the first time point has shown a moderate positive relationship between nature connection and climate anxiety (r = 0.30555). Preliminary data averaged across the first two time points has shown a moderate positive relationship between nature connection and well-being (r = 0.4558) as well as a weak to moderate negative relationship between climate anxiety and well-being (r = -0.3492). The findings thus far suggest that while greater nature connection may enhance well-being, it may also have the potential to increase climate-related distress.

Burdis, Julianne

See "Brehl, Helene"

Tubular timber: structural testing and flat pack self-shaping structural component

Burnett, Jack
See "Fillo, Peter-George"
Genius Loci (Spirit of Place)

Burns, Nico
University of Oregon
Mentor(s): Jasmin Albert, Lauren Hallett
Poster Session #100
Nature in Motion

Flowering Plant Fitness in Response to Neighboring Competition for Pollination

Co-Author(s): Jasmin Albert

Pollination is essential for flowering plant species, and as pollinator populations are dwindling worldwide, restoration of both pollinator and flowering plant communities are critical. Successful restoration efforts are often a function of niche overlap, and this experiment focused on how using both generalist (interacts with many pollinators) and specialist (interacts with a few pollinators)plants in a restorative setting will create minimal pollinator niche overlap. I hypothesized that plants that are surrounded by a diverse community of both generalist and specialist plants will experience less competition for pollination, leading to better restoration outcomes. My field experiment took place in the Western Cascades in Leaburg, Oregon, where I focused on two species, one specialist, Collinsia grandiflora and one generalist, Clarkia purpurea. Half of the blooms on selected focals were covered in mesh bagging to isolate the effect of competition for pollinators. I counted seed production from each focal, bagged and unbagged, and used a General Linear Mixed Model that predicts seed output boost from pollination for each focal, using plant community strategy and neighboring competition as parameters. Preliminary data shows that there is no significant difference in seed output boost between the two plant community strategies, highlighting the need for more long term research on restoration techniques & outcomes. However, results may change as data processing comes to an end.

Busi, Ethan
University of Oregon
Mentor(s): Scott Hansen, Naomi Wilson
Poster Session #173

Functional significance of DOCK/ELMO multimerization at the lipid membrane

Co-Author(s): Scott Hansen, Naomi Wilson

White blood cells are vital for fending off foreign pathogens. These processes require the cell to transcribe external messages through cellular membranes and into the cytoplasm. Several proteins collaborate

to facilitate message processing by modifying lipids at the cellular membrane. GTPases regulate these processes by being toggled between “on” and “off” states. Guanine nucleotide exchange factors (GEFs) turn GTPase on; their overactivity is associated with uncontrolled cellular growth, a hallmark of cancer. DOCK/ELMO is a heterodimeric GEF that activates the GTPase Rac1 along the cellular membrane. DOCK/ELMO dimerizes with itself to form a tertiary complex. The impact of higher-order multimerization of DOCK/ELMO and its physiological significance is poorly understood. While work has been done that identified direct interactors of DOCK/ELMO like RhoG and PIP3; these studies were conducted within a solution and may not be accurate along a lipid membrane. This project will characterize the DOCK/ELMO molecular mechanism by recombinantly producing a lipid membrane in vitro. DOCK/ELMO will be fluorescently labeled and imaged with Total Internal Reflection Fluorescence Microscopy, allowing for observation at single particle resolution. Characterizing the biophysical properties of DOCK/ELMO on a lipid membrane will give insight into therapeutic targets for when cellular transduction pathways fail.

Cabrera, Haley
University of Oregon
Mentor(s): Vadim Karatayev
Poster Session #285

just Fitting empirical dynamical models to explore the effect of climate change on fish population dynamics

This research investigates how climate change, particularly the shifting North Atlantic Oscillation (NAO), influences fish population dynamics in the Northeast Atlantic. Recent decades have shown a shift toward the NAO’s positive phase, driven in part by anthropogenic climate change, which typically leads to increased storm activity across the North Atlantic and higher temperatures in Eastern North America. Due to the chaotic nature of the atmosphere and complex behaviors of ecological systems, we have chosen Empirical Dynamical Modeling (EDM) as our mathematical framework for these population dynamics. EDM reconstructs attractors via Takens’ embedding theorem to compensate for many unknown and unobserved variables in this data-driven model. We cover S-map and Gaussian Processes to fit the unknown function, but ultimately use Gaussian Processes which allows for flexible, nonparametric modeling and the integration of multiple time series. We process population and climate data from the NOAA to construct our model and evaluate its performance via out-of-sample R^2 and RMSE metrics. Simulations are used to test how shifts in environmental drivers–especially the NAO–impact mean fish abundance under future climate scenarios. Our findings demonstrate that increasing climate variability under NAO positive phase trends plays a key role in shaping fish population trajectories, offering insights into the complexities of changing climate on delicate ecological systems.

Calevi, Sophia
University of Oregon
Mentor(s): Daniel Hulsey, David McCormick
Poster Session #263

State-Dependent 3–5 Hz Cortical Oscillations in Response to Visual Stimuli in Mice

Low-frequency cortical oscillations are thought to shape sensory processing and are modulated by arousal. Prior research shows that 3–5 Hz rhythms emerge during low arousal and correlate with reduced visual cortex responses. This study explores how these oscillations relate to visual stimulus timing and internal brain state. Using wide field calcium imaging with GCaMP8m—a fast, sensitive indicator that enables improved detection of 3–5 Hz activity—we recorded cortical responses during passive visual stimulus sessions in mice. Arousal was tracked via pupil diameter and locomotion, and multimodal mapping (MMM) was used to identify functional dorsal cortical regions. Preliminary findings from two sessions in two mice showed that 3–5 Hz oscillations were most prominent during low arousal and were sometimes phase-locked to stimulus onset. How these sensory processing regions interact remains unclear. Ongoing experiments test whether visual cortex responses to passive stimuli occur with the co-presence or absence of simultaneous auditory input. We hypothesize that concurrent visual and auditory stimulation will enhance activity in both cortices. This research aims to clarify how slow cortical rhythms and brain state shape sensory integration.

Carney, Sue
University of Oregon
Mentor(s): Dr Melissa Brunkan
Works in Progress: Science

Three Sleeps: A sonic journey through the hidden world of sleep

This project is a collaboration between the artist and the UO Sleep Lab. The completed project will have 3 movements, totaling about 20-25 minutes. The movements will be based on data collected overnight from three different sleepers.

The act of creating sound from scientific data is a process called “Sonification”. The data itself is captured through electrodes on the scalp. Varied sensory recording devices are used to capture heart rate, breathing and muscle tension, among many other bodily processes.

Since the sleep events unfold over time, sonification is an ideal way of expressing data, as sound is grounded in time. One can think of a sonification as analogous to a graph, which is a static visual representation of data. Key differences are that a sonification is not static or visual. Sonifications use different sensory channels than visual representations of data, and can generate different perceptions, insights and understanding than data processed visually.

Today's "Lightening Round" will demonstrate the process of sonification and, time allowing, preview some designed sounds representing hormones released during the sleep process.

Carp, Malia

See "Fehringer, Isabella"

Surveying Oregon Ash Habitat in Preparation for Emerald Ash Borer

Carr, Ella

University of Oregon
Mentor(s): Alissa Phillips, Corrine Bayerl

Stories That Shape Us

"Hamletfield": An Original Screenplay Composition

"Hamletfield" is a full-length screenplay detailing the challenges of socializing with peers, mending lost relationships, and dealing with abusive parents. The protagonist, teenager Hazel, struggles with maintaining her relationships at school and wishes for her long-lost sister Laurel to help her. When she discovers her mother has been secretly corresponding with Laurel, she embarks on a coming-of-age style journey to find her. Hazel leaves her small town, where her mother utilizes her wealth and influence to control Hazel, and must survive in an unfriendly city. There, she learns healthy relationships and facilitates familial bonds with people who value her for who she is. "Hamletfield" deals with themes of dementia and transgenderism, as they shape one's true self.

Cervantes, Adrian

University of Oregon
Mentor(s): Juan Wolf

HURF'ing Through Culture, Identity and Power

Networked Soundscapes: Community and Creation in Experimental Music After the Internet

This study explores the impact of the internet on experimental music, focusing on how digital platforms and online communities intersect with local experimental music scenes, seeking to answer the question: How has the internet reshaped experimental music communities, particularly in Oregon? The internet has dramatically expanded the possibilities for the dissemination of this music, enabling global collaboration, near instantaneous sharing, and algorithmic discovery. However, this digital shift raises critical questions about how the aesthetics and ethos of experimental music evolves when mediated by digital technologies. This research will employ a mixed-methods approach. A qualitative analysis will examine case studies of

online platforms, like Bandcamp and Instagram, and their role in fostering experimental music communities. Ethnographic and autoethnographic methods, including interviews with local experimental musicians, will provide firsthand insights. Additionally, a digital and physical ethnography of performance spaces and streaming events will shed light on audience interaction and accessibility. The expected outcomes will provide an understanding of how the internet facilitates the democratization of experimental music while potentially reinforcing new hierarchies through platform algorithms. This study seeks to contribute to the fields of ethnomusicology and digital humanities by providing a framework for understanding experimental music in the digital age.

Cessna, Brooklyn
University of Oregon
Mentor(s): Parisa Hosseinzadeh
Poster Session #278

Computational Design of Protein Pathway Inhibitors

Normal cell function relies on specific Protein Protein Interaction (PPI) networks, which help maintain homeostasis within the cell. P53 is an important hub protein which interacts with various target proteins to create large PPIs. In some cases, the disruption of the PPI networks causes a “diseased state” within a cell, typically leading to apoptosis. P53 is an apoptosis inducer as well as a tumor suppressor, however if a mutation is present in the P53 pathway, then it may lead to the growth of cancer. P53 has been linked to 50% of all cancer developments. The purpose of this research is to computationally design protein pathway inhibitors of P53 to better understand its roles and interactions in the onset of cancer. Three of the target proteins being used in this study are CREB-Binding Protein (CBP), S100B, and SIRT-1. Each protein is widely studied and has known interactions with the C-terminal disordered region of P53. By computationally designing inhibitors that bind to the target proteins, we are able to examine P53 in its diseased-state. Through purification of the target proteins, we determined which designed inhibitors bind to each of the target proteins. SDS and Native Page gels were used to test purity of each protein. In addition, Fluorescence-Polarization (FP) was used to determine whether binding occurred between the inhibitor and target protein. Currently, the binding between the target protein and inhibitor has been tested and more are being designed.

Chang, Ainsley
University of Oregon
Mentor(s): Dare Baldwin
Works in Progress: Human Experience

Evaluating the Reliability of a Novel Caregiver-Infant Joint Attention Task in Rural Cambodia

Co-Author(s): Amy Vu

Implementation science plays a crucial role in improving the effectiveness of research in real-world settings. As researchers develop new ways to study complex behaviors, such as caregiver-infant interactions, it's essential that these methods are reliably administered. The SET Implementation Science (SETIS) study investigates how consistently researchers administered, and caregivers followed, instructions for the Secondary Engagement Task (SET), an assessment of caregiver-infant joint attention. The SET was used in a randomized controlled trial in rural Cambodia that examined the effects of maternal thiamine supplementation on infant development. The coding system developed for the SETIS utilizes multiple 0–4 rating scales (0 = absence of criteria; 4 = utmost representation) to index behaviors during each epoch. Caregivers progressed through five 30-second epochs using cues like gaze and vocalization to sustain and withdraw joint attention. We coded caregiver behaviors (e.g., facial expressions, vocalization) and researcher behaviors (e.g., prompt frequency, appropriate intervention, filming angle). The expected findings include identifying key implementation challenges and strengths, allowing future researchers to improve the SET and similar tools used in global developmental research. This project supports valid, inclusive research practices, contributes to culturally sensitive research designs, and promotes equitable insights into early cognitive and social development.

Chester, Kalel
University of Oregon
Mentor(s): Stephanie Majewski, Anni Xiong
Poster Session #240

Truth Study of Charged Higgs Reconstruction

The Large Hadron Collider (LHC) is a particle accelerator that uses proton-proton collisions in hopes of discovering new Beyond-Standard-Model (BSM) particles. In the search for BSM particles, the charged Higgs boson is a target of interest within supersymmetric models. Using simulated data from the ATLAS detector at the LHC, potential reconstruction methods for the charged Higgs in the all-hadronic final state are analyzed. This decay involves the production of jets, stemming from the decay chain of the charged Higgs into a top quark and anti-bottom quark. The reconstruction methods explored include comparisons of standard and

truth-assisted techniques. Additionally, reconstruction methods optimized for dark meson decays, which share similar final states with the charged Higgs, are utilized. Preliminary results suggest that the large-R jet method, optimized for dark mesons, is ineffective. This poster will present results about a truth-assisted reconstruction method that gives promise for more accurate signal reconstruction and continued efforts contributing to ongoing research in charged Higgs reconstruction techniques and enhancing the sensitivity of future searches.

Chi, Alyssa
University of Oregon
Mentor(s): Marian Hettiaratchi, Alycia Galindo
Poster Session #177
From Marine Life to Muscle: Exploring Growth and Repair

Aligned Hyaluronic Acid Composite Polycaprolactone Scaffolds for Enhanced Muscle Repair

Volumetric muscle loss (VML) is the extensive damage and loss of 20% or more of the total amount of muscle. Following VML, muscle cannot regenerate on its own due to a disruption in biochemical and physical cues during the regenerative process. This results in fibrotic tissue formation, impaired mobility, and requires personalized treatment such as tissue transfers and rehabilitation to help manage the injuries. However, there is no effective treatment for volumetric muscle loss that fully restores muscle function. The Hettiaratchi Lab aimed to tackle this challenge by developing tissue engineered scaffolds to help accelerate functional muscle tissue. Specifically, we develop hyaluronic acid (HA) hydrogels and modify them with biochemical cues, then combine the HA hydrogels with scaffolds, and evaluate HA coated scaffolds for attachment and differentiation. Our investigation concluded that the peptide conjugated HA coated scaffolds promote cellular attachment and enhance cellular differentiation. Our future steps involve conjugating neurotrophic factor specific affibodies to hydrogel coated scaffolds to broaden the capabilities of this delivery device for other injuries such as the spinal cord. Through characterization of the affibodies by their affinity strength, we will establish a method for controlled neurotrophic factor delivery, which can successfully promote neural tissue repair and lead to the discovery of novel therapeutics to repair central nervous system tissue.

Chinsangaram, Petra
University of Oregon
Mentor(s): Melissa Baese-Berk
Poster Session #032

The Role of Experience in the Perception of Non-Native Speech

Research has found that individuals are biased against non-native speech. This can result in discrimination, such as employers being less likely to hire non-native English speakers. Some research has demonstrated that more exposure to non-native speech can change a person's perception. The current study explored how an individual's level of exposure to non-native speech during their childhood impacts their perception of non-native speech. Participants were categorized into three groups: those who had experience hearing non-native English speech from their parents, those who had a lesser level of experience during their childhood, and those who had little to no experience hearing non-native English speech in their childhood. They listened to native and non-native English speech and rated the speakers according to various characteristics. In general, participants with more experience demonstrated less of a bias against non-native speakers (i.e., rating non-native speakers as more intelligent and professional than participants with less experience). Results pointed to less consideration given to native-like speech in perception of qualities like intelligence and professionalism among individuals with more childhood experience. Additionally, individuals with more childhood experience may demonstrate higher levels of solidarity with non-native speakers, thus impacting their perception of qualities like friendliness and resourcefulness.

Chisholm, Tyler
University of Oregon
Mentor(s): Jen Doty, Xiaoqi Ma
Poster Session #137

Beyond the Screen: Mapping Social Media's Role in Adolescent Emotional Regulation

Co-Author(s): Jen Doty, Xiaoqi Ma, Luke Brennan

Although social media is often associated with negative outcomes for youth, such as cyberbullying and emotional distress, it may also support emotional regulation among adolescents. This systematic literature review analyzed 24 studies from over 1,400 screened articles to examine the relationship between digital media use and emotional regulation for adolescents aged 11–19. Findings reveal both risks and benefits: while problematic use can contribute to dysregulation, online platforms also offer tools for coping, self-reflection, and emotional expression. Protective factors such as media literacy and parental mediation were also identified. These results highlight the need for a more balanced understanding of adolescent technology use and suggest pathways for promoting emotional well-being through digital engagement.

Chmelir, Calvin
See "Swanson, Joseph"
Foul Play

Chmelir, Calvin
University of Oregon
Mentor(s): Daniel Grimes
Poster Session #287

cebra Mutation and Cilia Function in Early Embryonic Zebrafish Development

Co-Author(s): Samuel Bertrand

Motile cilia are crucial for early embryonic development, regulating proper left-right organ positioning and spinal straightening by generating fluid flow in extracellular spaces. Lack of ciliary function, known as Primary Ciliary Dyskinesia (PCD), causes organ laterality defects, infertility, and congenital heart defects in humans. We isolated a spontaneous mutation called cebra in our zebrafish stocks that exhibited ciliary dysfunction phenotypes. We then sought the causative mutation to clarify the genetic landscape of primary ciliopathies.

Using bulk mRNA sequencing and whole genome sequencing, we narrowed in on a list of potential candidate genes and hypothesized ruvbl2 as the root of cebra. We used various tools in genetic editing, body quantification, and tissue imaging to test our theory. We used CRISPR/Cas9 to create ruvbl2 G0 mutants and found that they phenocopied cebra mutants in eye size, body angle curvature, and cilia motility. Furthermore, when we resupplied cebra embryos with the ruvbl2 gene, we observed full restoration to wild-type phenotypic fish and confirmed that the cebra mutation disrupts ruvbl2.

Chowdhury, Ananya
University of Oregon
Mentor(s): Rose Al-Saadi, Patrick Phillips
Molecules, Minds, and Mating

Sex-Specific Effects of Spermidine on Lifespan and Healthspan in Male Caenorhabditis elegans

Spermidine is a naturally occurring polyamine known to promote longevity by inducing autophagy and maintaining cellular homeostasis. While previous studies have shown that spermidine increases lifespan in hermaphroditic Caenorhabditis elegans, its effects on males remain poorly understood. This research investigates whether spermidine extends lifespan and improves healthspan in male C. elegans. Using three independent assays–lifespan tracking, mating efficiency, and oxidative stress resistance via paraquat

exposure–male worms were treated with 0.2 mM spermidine and compared to untreated controls. Surprisingly, spermidine exposure significantly reduced lifespan in male worms. Mating assays revealed no significant difference in reproductive success between treated and control males, and paraquat sensitivity tests showed no enhancement in oxidative stress resistance. These results contrast with prior findings in hermaphrodites, suggesting a possible sex-specific response to spermidine. The study underscores the importance of incorporating sex as a biological variable in aging research and raises critical questions about the generalized use of anti-aging compounds. Future directions include testing a range of spermidine concentrations, retesting in hermaphrodites, and investigating effects in genetically modified strains to further dissect underlying mechanisms. This work highlights the complex, context-dependent nature of longevity interventions.

Chowdhury, Sameeha

See "Taylor, Kyrie"

Perceptions in Position: Mapping Race and Stereotype on Campus

Clark, Dylan

University of Oregon
Mentor(s): Raquel Amador, Mariah Kornbluh

Mind the Gap: Research Meets Practice

By Youth, For Youth: Transforming Mental Health Through Youth Leadership

Across the country, youth are raising their voices about mental health and well-being, but too often, their insights are overlooked in the systems that are designed to support them. This project previews the upcoming 2025 Youth Advisory Committee (YAC) Summit, a youth-centered event designed to elevate the voices of adolescents in discourse surrounding mental health topics and inform strategies to better serve youth across all of Lane County, Oregon. The summit, a space entirely youth-led and shaped by the priorities and perspectives of adolescents, aims to centralize the priorities, lived experiences, and collective visions of young people navigating mental health systems today. This project will focus on anticipated themes grounded in existing research on youth advisory boards and participatory approaches, including concerns about tokenistic involvement, the need for safe and supportive spaces to express mental health topics, and the importance of identity-affirming environments that promote agency. Inspired by frameworks such as Youth Participatory Action Research (YPAR) and Typology of Youth Participation and Empowerment Pyramid (TYPE), this project highlights the summit's broader efforts to amplify youth agency. By prioritizing youth's perspectives and connecting them to frameworks of empowerment and structural change, this presentation contributes to the ongoing conversation about how institutions can meaningfully engage youth as partners and drivers of change.

Clark, Dylan
University of Oregon
Mentor(s): Mariah Kornbluh
Poster Session #138

Likes, Shares, and Self-Care: The Influence of Social Media Influencers on Youth Mental Health

Co-Author(s): Percy Conrad, Gabriella Garcia, Mariah Kornbluh

As social media becomes a primary source of information for adolescents and adults, influencers–public figures with substantial online followings–play a critical role in constructing narratives around mental health. This qualitative study investigates how youth aged 15-24 engage with influencer content related to mental health and well-being. Through semi-structured interviews (N=32), participants identified key influencers they follow and discussed how they interacted with these posts such as liking, sharing, and commenting. Inductive thematic analysis was used to examine how these influencers promote, disseminate, or contextualize mental health content on social media, with special attention to specific themes such as stigma reduction, personal anecdotes, discourse on evidence-based information, and misinformation. Influencers were categorized into celebrities, political figures, and information-based accounts, with content analysis conducted on their Instagram posts from 2021. Preliminary insights from this descriptive study illustrate diverse ways in which influencers engage with mental health content–ranging from fostering community support, promoting mental health advocacy, or discussing personal anecdotes. Rather than establishing a causal relationship, this study aims to map the current landscape of youth engagement with mental health on social media.

Clayton, Leah
University of Oregon
Mentor(s): Raoul Lievanos, Matthew Norton
Poster Session #134

Emotional Intimacy: : Reflections on Closeness Across Family, Romantic, and Friendship Relationships

This study explores patterns of how young adults talk about their close relationships and define closeness across friendship, family, and romantic bonds through the thematic analysis of 15 interviews. Participants, varying in gender identity, race, and sexuality, shared experiences of closeness, trust, and vulnerability in their most meaningful relationships.

Key themes identified include emotional support & vulnerability, mutual growth & learning, communication & conflict resolution, shared activities, trust & reliability, and self knowledge & independence. Family

relationships were most often characterized by long-term support and implicit understanding, sometimes complicated by generational or cultural expectations. Romantic relationships emphasized mutual growth, physical intimacy, and deep emotional connection, with communication playing a critical role. Friendships provided a space for self-expression, humor, and shared experiences, often shaped by an idea of 'found family' or voluntary commitment.

This research contributes to the broader understanding of interpersonal connection by illustrating how intimacy is both universally significant and uniquely experienced across relationship dynamics from the perspectives of young adults. Through thematic analysis we can see the range of how people put words to a feeling of closeness that is not necessarily easy to name.

Clements, Jeff
University of Oregon
Mentor(s): Mailie Hutterer
Poster Session #079
Works in Progress: Culture, Society & Politics

Medieval Roleplaying: Exploring Historical Precedents

This work contextualizes modern assumptions around roleplaying and explores historical roots extending into medieval society. By deconstructing and redefining roleplaying, this research applies a new historical lens of examination, understanding roleplaying as naturally emergent, particularly in childhood play, and with well-established psychological and social benefits. Rather than being invented for modern gaming, roleplaying behaviors can be identified across cultures and time periods.

The topic of medieval roleplaying is examined through:

- Tournament jousting and mock battles
- Religious plays and liturgical practices
- Courtly "games of love" and fortune-telling games
- Troubadour performances and other theatrical performenceces
- Immersive religious experiences

This research seeks to deepen our understanding of medieval leisure practices in the context of roleplaying that connects us to our medieval predecessors through similar shared experiences.

Cole, Alana
University of Oregon
Mentor(s): Anna Carroll
Poster Session #300
Stories That Shape Us

Ouroboros: Parsing the Power of Metaphor and the Mythical Norm in a Creative Poetry Collection

This project is a collection of original poems, divided into five sections that mirror the passing seasons. Each section and season focuses on a different embodied experience, beginning in Early Summer and ideas of incubation and creation, and concluding in Spring with poems that capture moments from adulthood. Each season is rooted in figurative language that is cognisant of the season's abundance as an anchoring element to the organic creative process. The thesis also engages with existing literature that discusses the importance of figurative language in poetry, Dr. Andrea Herrera's three-dimensional model of inequality that revolves around the 'mythical norm,' and Julia Kristeva's theory of the abject as a way of positioning this creative thesis in a conversation of the creators and theorists that have come before. By naming this project after the ouroboros, the ancient image of the snake devouring its own tale, the thesis foregrounds its consideration of who is the consumer and who is consumed and its preoccupation with reimagining the embodied experience through the lens of food and in the packaging of poetry.

Combs, Aletta
University of Oregon
Mentor(s): Rachel Robinson
Poster Session #209

How Vertical Oscillation and Stiffness Influence Uphill Running Economy

Co-Author(s): Rachel Robinson, Mike Hahn

Background: Lower vertical oscillation (VO) is linked to improved running economy (RE) on level ground (LG), but its effect on uphill running (UH) is unclear. UH requires greater propulsive force to move the center of mass upward, potentially increasing VO.
Purpose: To determine if VO and vertical stiffness (VStiff) affect UH economy.
Methods: Twenty-seven recreational runners (14 F, 33.74 yrs., 72.19 kg, 176.74 cm) completed three 10-minute running trials (0%, 5%, 10% grades) on a force-instrumented treadmill (Bertec) while oxygen consumption (Parvo Medics) and marker position data (Motion Analysis Corp.) were collected. VO (COM displacement from midstance to mid-flight) and VStiff (peak vertical ground reaction force divided by COM displacement from

contact to midstance) were calculated in Visual 3D. The effect of VO and VStiff on oxygen cost (ml/kg/km) was assessed via linear regression (SPSS, IBM Corp).
Results: No significant relationship was found between oxygen cost and VO or VStiff. VO at 10% grade approached significance (p = 0.083), with a near-significant correlation coefficient (-824.699, p = 0.066), suggesting greater VO may reduce oxygen cost on steep grades.
Conclusion: Increased VO may aid UH RE by improving elastic energy return, possibly via the Achilles tendon. Further work should examine VO and ankle plantar flexor work to help guide training techniques for trail runners.

Conrad, Percy
See "True, MaryJane"
The Benefits of Implementing Civic Education In K-5

Conrad, Percy
University of Oregon
Mentor(s): Mariah Kornbluh, gabi garcia
Poster Session #153

Pride or Prejudice: Analyzing LGBTQ+ Rhetoric on Social Media

Co-Author(s): Dylan Clark

Identity development is an important function of adolescence (Erikson, 1968). This is especially true for LGBTQ+ youth as they discover their differences compared to their heterosexual or cisgender peers. As more youth identify as LGBTQ+, social networking applications – like Facebook, Instagram, TikTok or X – have quickly established a dominant presence in the lives of kids and teenagers since their rise twenty years ago. The prevalence of these applications indicates a shifting developmental landscape, where young people are developing critical functions – like identity formation and exploration – across both the virtual world and "real-life" (boyd, 2008; Pérez-Torres, 2024). With these effects, social media has become especially prevalent in LGBTQ+ youth identity development; it's critical to study the messages youth are exposed to online. Using semi-structured interviews (N=32) conducted in 2021 with a diverse group of youth (ages 15-24, M=20.8), we are in the process of conducting a qualitative content analysis of social media influencers' (N=28) posts from the year of the interviews, coding for themes related to the LGBTQ+ community. Influencers were determined based on participants mentioning following them explicitly within their interviews. Preliminary themes, limitations, and future directions will be discussed.

Contreras, Ada
University of Oregon
Mentor(s): Kathryn Lynch
Earth Vibes Only

Old Growth, New Connections: Climate Science Education Strengthens Relationships with Nature

Co-Author(s): Charlotte Shewchuk, Grace Craven, Kenia Lyle, Viviain Sorrel, Isa Eisenberg, Ayden Lucus

As the birds fall silent, students notice the shift as rain begins to fall; environmental education teaches that the Earth tells her story to those who stop to listen. Despite positive effects on students' academic and personal success, environmental education is uncommon in classrooms. The Environmental Leadership Program Climate Science team partnered with the HJ Andrews Experimental Forest and four local middle schools to help students deepen their connection to nature through outdoor education. Our team used place-based learning and engaged pedagogy to advance student knowledge, wonder, and sensory awareness in climate science and forest ecology. We facilitated a pre-trip classroom field trip and an all-day classroom field trip for over 200 students. Curriculum for the Andrews Forest included four investigative lessons focused on phenology, tree identification, microclimates, and wildfires. We guided students from awareness to action by building a connection to land and environmental issues through meaningful facilitation. This equipped students with an understanding of climate science and forest ecology to recognize the effects of climate change around them and initiate positive environmental action.

Contreras, Ethan
University of Oregon
Mentor(s): Shannon Snyder, Bill Cresko
Poster Session #279
Cellular Innovations

Predator-Biosalt Exposure Effects on Cellular Proliferation in Defensive Tissues of D. Lumholtzi

Cellular mechanisms that control cell cycles during development are critical for tissue growth in organisms. A model is the freshwater crustacean Daphnia, well known for growth of morphological defense tissue in the presence of predator biosalt, kairomone, during development. Knowledge is limited in regard to cellular mechanisms that induce morphological tissue growth. A study by Graeve et al 2022 indicate that during growth of defenses tissue due to kairomone exposure, numbers of replicating cells in defensive "helmet" tissues of D. Longicephala temporarily decrease during development as compared to control. I aim to determine if temporary cellular arrest also occurs in the defensive "spines" of D. Lumholtzi . Due to D.

Lumholtzi's defensive spine structure, a clearer quantification of temporary cellular arrest in morphological defense tissue as opposed to D. Longicephala is possible. To accomplish this, a cell-proliferation assay of EdU and fluorescent imaging will quantify changes in epidermal tissue growth of kairomone-exposed and control D. Lumholtzi during development. If evident that the same temporary, developmental cellular arrest occurs in D. Lumholtzi as in D. Longicephala, then indication is present that the same cellular-arrest mechanisms are conserved across species. This addition to knowledge about the effect of kairomone on cellular arrest in Daphnia will help to uncover cellular mechanisms responsible for temporary cellular arrest during development.

Cope, Madisen

See "Gonzalez, Thomas"

Then and Now Zine

Costa, Lainey

University of Oregon
Mentor(s): Troy Houser, Dagmar (Dasa) Zeithamova

Poster Session #158

Memory Effects of Event Boundaries Caused by Audio Change

Our experiences unfold continuously, yet episodic memory is organized into distinct events. This segmentation is likely due to spatial and temporal context changes, or event boundaries. Previous literature on event segmentation has shown increased errors in temporal order memory and subjective distance ratings for items experienced across emotional context changes, but how these contextual changes affect associative memory has received less attention. Here, subjects watched a controlled video of a person encountering objects while three emotional audio valences (joy, calm, and anxiety) each in turn played throughout. Afterward, temporal order memory and subjective distance ratings were collected for pairs of objects. In addition to these typical measures, we tested associative memory by asking participants to pair a previously heard audio clip to the object seen during the sound. Results showed a boundary effect on temporal order memory but no effect on subjective distance. There was no boundary effect on associative memory for objects adjacent to the boundary collapsing across emotion valences. However, separating by emotion valence elucidates potential differences between associative memory performance for adjacent and nonadjacent objects. These results provide further insight into the impact that emotional context has on the fragmentation of our memories.

Cottle, Brock
University of Oregon
Mentor(s): Tim Wheeler, Gabriella Lindberg
Poster Session #171

Tailoring Hydrogel Stiffness: The Role of Chemistry in Gelatin Bio-inks

Co-Author(s): Judah Aptecker, Tim Wheeler, Gabriella Lindberg

Gelatin bio-inks, made of hydrogels embedded with living cells, are used to bio-print 3D tissues and organs. Hydrogels are formed by photocuring polymer strands with a crosslinker, creating an aqueous network that supports cell growth. Controlling hydrogel stiffness is key to guiding cell behavior, and can be done by chemically altering the polymer backbone or adjusting crosslinker concentration. Although various gelatin functionalization chemistries exist, direct comparative studies between them are limited.

This study compares mechanical properties of gelatin bio-inks with various alkene functional groups (methacryloyl, allyl, and norbornene) to a novel alkyne-functionalized bio-ink, GelYNE, that offers enhanced customizability via two reactive sites. We also optimize crosslinker concentration of each formulation to expand the tailorable range of stiffness.

To compare stiffness, we fabricated hydrogels using identical light energy and performed compression testing. Photorheology identified optimal crosslinker concentrations. GelYNE matched the stiffness of standard gelatin bio-inks, and was the sole bio-ink with a significant increase in stiffness when crosslinker concentration was optimized.

These results suggest GelYNE can outperform gelatin-methacryloyl, one of the most widely used bio-inks. GelYNE offers a broad stiffness range ideal for controlling cellular behavior – a key step toward designing optimal photo-polymerizable bio-inks for tissue engineering.

Coulter, Kaden
University of Oregon
Mentor(s): Michelle Marneweck
Mind Over Muscle: Memory, Muscle, and Aging

DeepMReye Implementation

Monitoring subject behavior is a challenge in functional magnetic resonance imaging (fMRI) sensorimotor research, particularly when verifying subjects are adhering to gaze-related instructions. Eye-tracking systems are typically used to address this issue, but these systems are often expensive, complex, or incompatible with certain experimental conditions. For example, eye tracking is hindered or inapplicable in studies when subjects close their eyes or hardware obstructs traditional setups.

To address this, I aimed to implement and evaluate the feasibility of DeepMReye, a neural network that

decodes gaze from fMRI data after scanning. This approach offers an accessible and promising alternative to real-time eye tracking by allowing researchers to collect gaze information where traditional methods fail. In applying DeepMReye, we explored its potential to enhance the reliability of gaze-related measures in research where gaze compliance is essential. In previous studies, where it was crucial that subjects maintained instructed gaze, an analysis pipeline was developed with DeepMReye to verify task adherence. This ensured that subjects' gaze aligned with gaze and reach targets, thereby validating neural activation patterns as task-related effects. This technology and its associated pipeline enable previously collected fMRI data to be repurposed, offering a low-cost and accessible solution that may enhance sensorimotor research without the need for additional data collection.

Coultrap, Madison
See "Thum, Ying"
Bridgewater Grove

Craddock, Yun
University of Oregon
Mentor(s): Max Tenenbaum
Poster Session #167
Works in Progress: Science

Crosstalk Effects of Trace Size and Pitch in Thin-Film Neural Interface Devices

Co-Author(s): Max Tenenbaum, Felix Deku

Thin-film intracortical microelectrode arrays have enabled significant advances in neural engineering by allowing high-resolution recording and stimulation of neural activity. Unlike rigid silicon-based probes, thin-film devices benefit from photolithographic fabrication, which offers greater flexibility in device geometry and trace layout. However, as the field pushes towards high-channel count devices, traces are packed more densely, and signal isolation becomes a growing concern. Crosstalk between adjacent traces can obscure neural recordings and induce off-target effects during stimulation. While crosstalk characterization is well established in high-speed digital, RF, and IC design, these methods do not account for the unique electrochemical interface and biological environment of neural devices. In this work, we investigate how trace size and pitch influence crosstalk in thin-film microelectrode arrays and present an experimental framework for quantifying signal leakage in the context of neural recording systems. These results lay the foundation for a broader investigation into the effects of material choice and multilayer architectures on crosstalk performance in next-generation neural interfaces.

Crandall, Chase
University of Oregon
Mentor(s): Sedona Epstein, Frances White
Poster Session #089

Females Still on Top: How Small Group Size and Hand-Rearing Impact Bonobo Hierarchies

Co-Author(s): Sedona Epstein, Sara Cotton, Frances White

The hierarchical structure of bonobo (Pan paniscus) societies is well documented; however, it is less clear how hierarchies are impacted when bonobos are housed in small family groups. Hand-rearing bonobos can also impact expression of typical social behaviors and influence group dynamics. From June through August 2024, 99 hours of observational behavioral data was collected from the bonobos at the San Diego Zoo (n = 8), with ages varying from 10 to 50 years old, using the ZooMonitor application. We gathered continuous, all-occurrence, and ad libitum data to construct hierarchy matrices of four different group compositions and analyzed using the Compete package in R. Our data yielded hierarchies with expected bonobo group dynamics, based on the existing literature, with female dominance and a less than linear hierarchy (Landau h = 0.462, p=0.280). One male, who was hand-reared and placed with his mother as an adult, was noteworthy in exhibiting frequent, but ignored, aggressive charging towards the dominant female and placed low in the hierarchy. This contrasted with other males who placed higher and did not exhibit these disruptive behaviors. Our results demonstrate the resilience of bonobo social structures in a variety of social settings, validate the use of zoos in research, and exemplify the complex effects of hand-rearing on bonobo social well-being.

Crawford, Cordelia
University of Oregon
Mentor(s): Josh Skov
Nature in Motion

Hot Spots Project: Connecting Extreme Heat, Worker Exposure, and Corporate Supply Chains

The Hot Spots Project is creating a searchable database for identifying worker exposure to extreme heat risk in wide range of corporate supply chains, along with action items for companies, policymakers, and civil society organizations. The database is a collaborative student research effort among the project partners: the Center for Sustainable Business Practices (in LCB) and the student organization Net Impact. The effort also receives technical support from staff in the Sustainability, Energy and Climate Change practice of WSP, a global consulting firm. The Hot Spots team team has accumulated a handful of reports on a plethora of industries such as rice in Thailand, dairy in California, and cobalt mining in the DRC. These industry reports

contain aim to raise awareness about the increasingly important environmental justice issue of extreme heat, and to inform adaptation strategies to improve worker health and wellbeing outcomes internationally. Each report focuses on workers in a particular industry and geography, with information on labor force composition, extreme heat details, and features of the relevant policy environment.

Creemer, Sadie
University of Oregon
Mentor(s): Daniel Lumonya
Power, Policy, and Global Shifts

Ambulatory System in Kisumu, Kenya: Usage, Challenges and Evidence-Based Policy Recommendations

The public ambulance system, a new since 2021, offers free ambulance usage for all people in Kisumu County. However, utilization rates are incredibly low for on-scene medical emergencies despite the high burden of disease and medical traumas in the region. The service is used primarily for inter-medical facility transfers and initiated by medical personnel rather than for on-scene response initiated by county residents. The research aims to answer the question: "What are the barriers to utilization of the ambulatory system in Kisumu County, Kenya for medical emergencies?" This research explores why utilization of the free service is low and what barriers exist in accessing the service through survey data from residents and focus-group discussions including ambulance users and community leaders and what the service is primarily used for in the status quo compiled using facility data analysis. The output of the research provides policy recommendations for the County Department of Health including immediate interventions such as transitioning to a short-code toll free dispatch center phone number and using existing structures to share information about the service, to long-term interventions such as beginning education about emergency medical response in the primary school level.

Crump, Madison
Umpqua Community College
Mentor(s): Mick Davis
In the Swing of Things: Exploring Motion and Balance

Slipping vs. Tipping

In this project, we're investigating the relationship between the center of mass height and the velocity curve radius and tipping behavior of an object on a curved path. Our experiment includes a cylinder with an adjustable center of mass on a turntable with controllable angular speed. Our goal in this project is to use Newton's second law to predict the velocity at which the cylinder will tip or slip across the surface. Prediction

of slipping and slipping of objects on curved paths is relevant to real-world safety and industrial applications such as trucks on curved roads and the movement of goods on conveyor belts. An experimentally verified predictive model is a valuable tool for designers working in these applications.

Csaszar, Avery
University of Oregon
Mentor(s): Alex Segre-Cohen, Hollie Smith
Virtual

A Scoping Review of Greenwashing

Evidence of climate change has existed for over a century, with impacts intensifying over time. Human activities are driving environmental harm, and consequences will worsen without urgent action. Many products appear eco-friendly through green packaging and labels, yet these often mask their true environmental impact. This misleads eco-conscious consumers into supporting unsustainable practices. To counter this, we must shift from deceptive claims to factual transparency.

The image of being "green" is increasingly vital, pushing companies to appeal to environmentally aware consumers. However, this leads to greenwashing–misleading the public into believing a product or company is more sustainable than it is. Greenwashing undermines climate action and reinforces harmful practices to maintain a false green image.

This scoping review defines greenwashing, explores common tactics, and examines literature-backed solutions. It aimed to provide a comprehensive resource for researchers, policymakers, and the public to understand and address greenwashing. This research answered the following research questions: 1. What criteria is used to identify greenwashing in literature found in select databases? What themes are most prevalent in the definitions of greenwashing? 2. What tactics of greenwashing have been most explored in academic literature? 3. What solutions does the literature provide to combat the practice of greenwashing?

Cuevas Ullibarry, Denali
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #101

Warming World: Changing Temperature, Vegetation Health and Density in Urban and Forested Areas

Vegetation life is severely affected by human-driven climate change leading to rising land surface temperatures and decreasing the quality of the environment in both rural and urban areas. The urban heat island effect is a concentration of high land surface temperature in urban areas dominated by non-reflective

surfaces. The environmental drying also contributes to larger wildfire burn areas. We will analyze two potential results from increased temperatures: 1.) the impacts on land surface temperature and vegetation health due to the urban heat island effect in New York City and Houston, and 2.) the impacts on vegetation health after repeated wildfires in the Plumas National Forest in California. Using data collected over the past one to two decades through satellite imagery, the vegetation health and density and land surface temperature are tools that can investigate both forests impacted by wildfires as well as the changes to land surface cover that contribute to heat islands. We will investigate if public policy focused on mitigating urban heat islands will lead to an impact on urban land surface temperatures. We also hypothesize that the repetition of wildfires in one location leads to a greater percentage of burn area in the surroundings in other fires. Both urban and forested areas are negatively impacted by rising temperatures and decreasing vegetation density/health due to the feedback loop between the two, threatening the future of these environments.

Cumming, Margo
See "Deivanayagam, Nithi"
Mapping Wildfire Patterns Using Satellite Imagery: Yellowstone vs. Olympic National Parks

Cumming, Margo
University of Oregon
Mentor(s): Dare Baldwin, Leah Peterson
Poster Session #155

Shaky Decisions: Exploring Human Responses to Earthquake Video Footage on Social Media

Earthquakes are extremely unpredictable natural disasters capable of inflicting long-term social disruptions, endless damage, and even loss of life. This project explores the video-based information college students encounter on social media depicting human behavior in response to major earthquake shaking, and their interpretations of what they see and hear in such footage. Through the UO General Survey, our survey asks participants to find three earthquake videos from a social media site of their choice and answer a set of questions regarding their earthquake knowledge and protective action. By probing individuals after watching the videos from their social media algorithms, we are able to identify gaps in their knowledge of correct protective action and what they may remember about earthquakes in general. We are interested in learning more about to what extent social media exposure of earthquake content affects earthquake beliefs and attitudes. I hypothesize that exposure to earthquake content online significantly influences individuals' perceptions of earthquake risk. Acknowledging the vast diversity of earthquake education in the United

States, the overarching goal of this project is to better understand individuals' beliefs, knowledge, and attitudes surrounding earthquake risks and safety measures.

Davies, Cambria

See "Saccio-Devine, Josephine"

Natures Classroom: Getting Students Outside Strengthens Communites

Davis, Kimberley

University of Oregon

Mentor(s): Karen Guillemin, Jarrod Smith

Poster Session #274

A Molecular Understanding of Non-Pathogenic Iron Acquisition in Beneficial Gut Microbes

Iron is an essential nutrient for all forms of life. In animals, iron is limited, typically bound tightly inside cells or with iron-binding proteins outside of cells. This process, called nutritional immunity, limits iron availability to pathogens and microbes, which restricts growth. To overcome nutritional immunity, many gut pathogens access iron by producing virulence factors that destroy animal tissues, freeing the iron trapped inside gut cells. However, the gut harbors trillions of resident microbes that have evolved mechanisms to access this vital resource without harming their hosts. We have a poor understanding of the molecular mechanisms underlying this friendly form of iron acquisition. My research investigates how a resident gut microbe-produced protein, AimA, produced by a beneficial gut microbe, allows this microbe to get iron from the animal nutritional immunity protein, lipocalin, without eliciting host damage. Preliminary data shows I can measure AimA-lipocalin interactions using the Bacterial two-hybrid system (BTH). To identify the potential binding interface between these proteins, I modeled their interactions in AlphaFold3. This analysis points to several likely key residues on AimA and lipocalin, and I created mutants at these sites for assaying in the BTH. My research will detail a molecular mechanism beneficial gut microbes use to access host-bound iron and inform future studies on microbial modulation of host nutritional immunity by resident microbes.

Dean, Olivia

See "Kuhn, Ella"

Identifying morphological traits for distinguishing macaque species in skeletal collections

Dean, Olivia

See "Apollo, Simon"

Identifying modern faunal osteological specimens and its applications to archaeology

Dehmer, Sam
University of Oregon
Mentor(s): Peg Boulay, Kristina Beggen
Changing Spaces, Shaping Places

Sharing Our Space with Wildlife: the Politics of Poop at the Howard Buford Recreation Area

In the Environmental Leadership Program taught by Peg Boulay, the 2025 Wildlife & Parks team studies the complex relationships between human recreation, including compliance with park policy, social and environmental impacts of dog (Canis lupus familiaris) waste (poop), and their disturbance to coyote (Canis latrans) behavior at the Howard Buford Recreation Area (HBRA). During field days in the spring term, in partnership with Friends of Buford Park and Mt. Pisgah, team members monitor coyote behavior in response to habitat management and human disturbance in the HBRA. Next, to understand human attitudes towards conservation actions in the park, we collect observational data and conduct visitor opinion surveys on the impacts of dog waste in the park and seasonal trail closures designed to protect denning coyotes. Lastly, since dog waste is a pollutant that affects visitor experience, watershed health, and the transmission of disease to native wildlife, this team collects quantitative data on dog and human behavior relative to dog waste to inform an experiment analyzing the effects of dog waste collection cans locations on people's willingness to clean up their dog(s)' waste. This project will be used to develop presentations for the Research Symposium and the team's community partners. Findings will inform park and natural area managers in decision-making to maintain an ecological balance between animal habitat and visitor enjoyment.

Deivanayagam, Nithi
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #109

Mapping Wildfire Patterns Using Satellite Imagery: Yellowstone vs. Olympic National Parks

Climate change accelerates forest loss by rising temperatures, creating drier conditions, and prolonging fire seasons. Increased wildfires threaten biodiversity and forest resilience across national parks, especially in Western states. We will be researching decreased forest cover in specific spaces in Yellowstone National Park and Olympic National Park due to wildfires within the last two decades. We will be looking at forest loss in Yellowstone and Olympic National Parks with satellite imagery and fire records. We hypothesize that different climate stressors are driving unique wildfire patterns in each park, which is a reflection of regional

vulnerabilities to climate change. Understanding how climate change affects forest ecosystems differently can help guide more effective, region-specific conversations and policies, and can raise public awareness about the broader implications of global warming on our protected natural landscapes.

Deivanayagam, Nithi
University of Oregon
Mentor(s): Allen Malony, Gwen Frishkoff
Poster Session #080

Digitization of an Educational Zen Buddhist Board Game

This thesis describes the design and implementation of a computer-based educational game for Zen Buddhist training and practice, called the Training & Enlightenment e-Game (TAEeG). TAEeG is a digital version of the Training & Enlightenment™ board game, which was manufactured by the Order of Buddhist Contemplatives (OBC) in the 1980s. TAEeG software was developed using Python, together with the Tkinter library, to create the graphical user interface (GUI). The GUI preserves key features of the original game board, including a 2-dimensional Wheel of Training (Dharmachakra), with ~200 spaces that present brief ethical narratives, to represent core teachings in Soto Zen Buddhism and to provide opportunities for meditation and application of Buddhist precepts in real-life scenarios. Software development includes database management, algorithmic progression, pseudorandomized movement of player avatars, and interactions between the Database, Game, and GUI Modules.

DePinto, Samantha
University of Oregon
Mentor(s): Eleanor Wakefield, Dawn Marlan
Poster Session #037

The Rhetoric of Fear: Analyzing Audience Response to School Shooting PSAs

The Rhetoric of Fear: Analyzing Audience Response to School Shooting PSAs explores the relationships between Sandy Hook Promise's yearly PSAs, which focus on knowing the signs before violence in schools can happen, fundraising efforts that sponsor in-school trainings for students and staff, and policy change efforts. This project will provide an in-depth analysis of these PSAs to determine the most effective forms of rhetoric and their effect on audiences, focusing primarily on logos, pathos, ethos, visual rhetoric, and audience discourse. School shooting statistics and general historical context, and policy will also inform the effectiveness of the PSAs and how they change year after year. By combining rhetorical analysis, audience reception, and social outcomes, this study will showcase how strategic communication can drive both analysis and social change in the fight against school violence.

Der, Camilla
University of Oregon
Mentor(s): Kaylee Meyers, Keat Ghee Ong
Next-Gen Healing Biomedical Innovations

Tracheostomy Tube Sensor Attachment for Detecting Emergency Airway Events in Pediatric Patients

Co-Author(s): Kaylee Meyers, Keat Ghee Ong

Tracheostomy tubes are life-sustaining medical devices that facilitate breathing support for patients with severe respiratory disorders. Infants and children requiring prolonged use of tracheostomy tubes face complications such as accidental decannulation, incorrect placement, or mucus obstruction that can lead to detrimental effects if not addressed promptly. For ventilator-independent patients, complication identification is inadequate, hindering caregivers' ability to respond quickly and accurately. To identify emergency airway complications in a precise and prompt manner, this project engineers a sensing monitor device integrated into a universal tracheostomy tube attachment. Through the development of sensing circuitry, electronics housing design, and data collection programming, a 2.8 x 2 x 2.7 cm, 8.8 g sensor device was engineered. To test the device for complication identification, common emergency events were simulated. Breath fluctuations were detected within 3-5 seconds of a simulated complication, distinguished by unique waveforms compared to normal breathing. With 20% of tracheostomized pediatric patients experiencing a complication event, there is an urgent need for an effective emergency identification tool. This project aims to fill this critical gap in medical technology by engineering a universal monitoring device attachment that could help mitigate the detrimental effects of tracheostomy tube emergency events in children and infants.

DeVelasco, Olivia
University of Oregon
Mentor(s): Mira Schoeberlein
Poster Session #207

The Impact of Menstrual Cycle Hormone Fluctuations on Gross Efficiency During Cycling

Fluctuations in estrogen and progesterone throughout the menstrual cycle influence various physiological processes that may impact the amount of energy used to achieve a specific amount of work (gross efficiency; GE). In this study, we investigated the relationship between sex hormone fluctuations and cycling GE in female athletes. We hypothesize that GE will lower during periods of high hormone (estrogen and progesterone) concentrations. Fifteen endurance-trained women repeated an exercise protocol once a week

for a month. Serum estradiol and progesterone concentrations were measured each experimental visit to describe hormone profile. End-stage expired gas values were used to determine energy expenditure during exercise. GE was calculated as power output divided by energy expenditure. Differences in GE across the visits were analyzed via one-way repeated measures ANOVA. GE was not different between the four visits ($P = 0.572$) despite fluctuations in estradiol ($P = 0.013$) and progesterone ($P = 0.005$). These findings suggest that menstrual cycle related fluctuations in estrogen and progesterone are not associated with energy expenditure during cycling. This research expands our knowledge of female exercise physiology and provides insight to inform research and training strategies across the menstrual cycle.

Diaz, Andrew
University of Oregon
Mentor(s): Lulu Enkhbaatar, Andrew Marcus
Poster Session #224

Understanding Specific and Nonspecific Binding of E. coli Lac Repressor to Operator Sites

The E. coli lac repressor (LacI) regulates gene expression by binding to its base-sequence specific DNA operator while also interacting nonspecifically with genomic DNA. Although structural aspects of the LacI-DNA recognition pathway have been extensively studied, the detailed molecular mechanisms underlying base-sequence specific recognition remain incomplete. We aim to map the free energy landscapes that govern structural and dynamic fluctuations of defined DNA sequences, which enable LacI to recognize and tightly bind to its cognate operator site, and to slide and dissociate from non-operator sequences. We utilize fluorophore probes to site-specifically label DNA constructs at key positions to enable precise measurements of conformational changes upon protein binding, including critical regions such as the 'hinge region' that mediate regulatory dynamics. To study DNA breathing fluctuations, we employ a novel polarization-sweep single-molecule fluorescence method. Our experiments confirm that LacI forms a tightly-bound complex with optical probe labeled O1 DNA constructs and preliminary results indicate that fluorophore labels inserted at different operator positions experience distinct conformational effects upon LacI binding. These findings lay the groundwork for future studies to understand sequence-specific protein-DNA interactions and gene regulation, which can potentially provide new insights for the development of genome editing technologies.

Dibble, Bradley
University of Oregon
Mentor(s): Nicki Swann
Poster Session #258

Neural Dynamics of Temporal Expectation: EEG Evidence from a Variable Foreperiod Task

Temporal expectation plays a critical role in cognitive processing, influencing reaction times and neural dynamics. This study examines the neural mechanisms underlying temporal anticipation using a sequential foreperiod paradigm and electroencephalography (EEG). Participants performed a reaction-time task where cue-target intervals varied, allowing for an assessment of how prior timing influences expectancy and preparatory brain activity. There are three foreperiod lengths: 0.5 seconds, 2 seconds and a randomly generated surprise foreperiod length between the short and long foreperiod length.

We are analyzing event-related potentials (ERPs) and oscillatory activity to assess how temporal prediction modulates neural responses. Based on prior research, we hypothesize that predictable foreperiods will enhance preparatory neural activity, reflected in increased contingent negative variation (CNV) amplitude and beta-band synchronization.

As data collection and analysis progress, this study aims to provide deeper insights into the neurocognitive basis of temporal preparation. Understanding these mechanisms may contribute to research on cognitive control, motor readiness, and disorders affecting timing perception.

Dickinson, Olivia
See "Ramasamy, Tarini"
Assessing the Effect That Increasing Surface Temperature Has Had on Coastal Ecosystems

Dodge, Cade
University of Oregon
Mentor(s): Dominik Graetz, Ulrich Mayr
Poster Session #135

Attention as Optimization: Reward-Guided Exploration and Its Limits in ADHD

Co-Author(s): Dominik Graetz, Ulrich Mayr

ADHD is a disorder marked by suboptimal attentional control and high distractibility. Additionally, individuals with ADHD exhibit longer reaction times. Do longer reaction times make distracted behavior more adaptive? Assuming that attention is directed in a reward-maximizing manner, we predicted that the cost for exploring the environment for individuals with slower reaction times is lower. Here, we first test the hypothesis that

attention is directed in a reward-maximizing manner. Additionally, we test the hypothesis that individuals with ADHD make suboptimal decisions when directing attention. To measure attentional decision-making, N = 42 subjects participated in a task-switching paradigm in which correct responses are rewarded. Critically, only checking on-screen task cues allows for correct performance. We calculated cue checking frequency to measure exploration as a function of manipulated decision variables, one of which mimics RT differences between individuals with and without ADHD. We found that explorative behavior is indeed predicted by decision variables, indicating that humans use an optimization strategy to direct attention. ADHD symptoms, however, did not correlate with the optimality of these decisions. These findings are congruent with the view that attentional resources are directed in a reward-maximizing manner. However, this view may not explain individual differences described by ADHD.

Dodge, Kavi
University of Oregon
Mentor(s): Andrew Lovering
Poster Session #205

Body Core Temperature and Thermal Sensation in Recreational SCUBA Diving

Co-Author(s): Fabian Moeller, Tucker Orman, Zeljko Dujic, Nikola Foretic, Andrew Lovering

Maintenance of core temperature within a normal range is crucial during recreational SCUBA diving in water temperatures below thermoneutral (~30°C) for humans. We previously reported that thicker wetsuits and more favorable anthropometrics (e.g., greater body mass) are associated with better maintenance of body core temperature in divers in ~18°C water. However, no study to date has investigated whether semi-dry suits are superior to wetsuits for maintenance of core temperature. This study investigated whether these anthropometric associations remained in SCUBA divers wearing either wetsuits or semi-dry suits and whether suit type superiority. We hypothesized that semi-dry suits would minimize core temperature loss and improve thermal sensation compared to wetsuits, and that higher body mass and body mass index would reduce the rate of core temperature loss in ~22.5°C -water. We measured suit thickness, anthropometrics, core temperature (telemetric pill), and thermal sensation in 39 recreational divers (17 females) wearing wetsuits (5.8 ± 1.3 mm, n=19, 6 females) or semi-dry suits (7.4 ± 0.8 mm, n=20, 11 females). All participants had significantly reduced post-dive core temperature (-0.4°C; p = 0.0004) and thermal sensation (-1.0 a.u.; p < 0.001) with no significant differences between suit types. We conclude that suit thickness, suit type, and favorable anthropometrics don't significantly affect changes in core temperature and thermal sensation when SCUBA diving in 22.5°C water.

Dorofeev, Christina
University of Oregon
Mentor(s): Laura Jeanty
Poster Session #244

A search for long-lived dark photons with ATLAS

While experimental observations largely support the predictions of the Standard Model (SM), many significant questions remain unanswered, particularly regarding dark matter. One hypothesis is that dark matter interacts indirectly with the Standard Model through a mediator particle, rather than being directly coupled to the SM. This mediator, often referred to as a portal, facilitates interactions between the SM and a hidden dark sector; a simple and well-motivated example is the dark photon. Our analysis targets the search for long-lived dark photons decaying into muon pairs, using data collected by the ATLAS detector at the Large Hadron Collider (LHC). Within ATLAS, the reconstruction of particle trajectories is performed by the Inner Detector (ID), which is located closest to the interaction point. Though the analysis is currently ongoing, we have observed a significant number of events with low ID track transverse momentum (pT) in simulation. The goal of this study is to classify and characterize these events in order to improve our understanding of track reconstruction and to provide context for our dark photon search.

Dorofeev, Christina
University of Oregon
Mentor(s): David Stuart
From Colliders to Supernova - Chasing Particles

Can milliQan? A search for millicharged particles at the Large Hadron Collider

We examine data from the milliQan experiment, which aims to detect millicharged particles (mCPs) predicted by extensions to the Standard Model (SM). Millicharged particles (χ), with charges much smaller than the elementary charge ($\epsilon \ll 1$), have been a subject of theoretical interest due to their potential implications for charge quantization. In addition to their role in grand unification theories, millicharged particles have been proposed in various hidden (dark) sector models. These models suggest that millicharged particles could interact through kinetic mixing with SM photons, offering a potential method for their detection. This talk provides an overview of the milliQan bar detector's performance and alignment using muons produced in pp collisions at the Large Hadron Collider (LHC), focusing on the energy deposition, timing, flux, and trajectory of beam muons as they pass through the detector. This talk also analyzes the signal phase space by investigating sub-single photoelectron (sub-SPE) behavior in photomultiplier tubes (PMTs) and characterizing this background.

Drum, Jacob
University of Oregon
Mentor(s): David McCormick, Zachary DuBois
Poster Session #133

The Temporal Dynamics of Nondual Awakening: A Qualitative Analysis

Mystical transformations – in different contexts termed nondual awakening, spiritual enlightenment, liberation, and union with God – have been reported across cultures and time periods since the beginning of recorded history. Recent decades have seen the emergence of individuals and communities who claim that such transformations occur to ordinary people in modern society. This study investigates the narratives of such individuals to identify the consistencies and variations in the unfolding of this transformation. Twelve one-hour online semi-structured interviews were conducted with individuals who report having experienced nondual awakening, here defined as the shift away from identification with a separate self and subsequent recognition of the unity of experience, awareness, and/or reality. Audio recordings were transcribed and thematically coded for the temporal and developmental aspects of each individual's journey through awakening. Preliminary analysis shows both shared patterns and substantial variety in the unfolding of awakening. Participants described both gradual and sudden aspects of awakening as well as distinct phases they encountered, such as periods of suffering, spiritual practice, emptiness, fullness, and the so-called "honeymoon period". These results shed light on the nature of nondual awakening as a process and challenge conventional assumptions that awakening is necessarily a single and discrete event.

Duarte, Diego
University of Oregon
Mentor(s): Alexander Dracobly
Poster Session #076

The Experience of War: the Great War as Seen through the Letters and Memoirs of Those Who Lived It

History 428 - World War 1 has submitted a class entry into the Symposium. Our project is a collaborative poster presentation, an amalgamation of firsthand accounts representing the lives and stories of various people who experienced it. It is inspired in both form and function by Peter Englund's "The Beauty and The Sorrow." Observers should note the ways in which the same events may be described, experienced, and understood differently, both between the subjects of our presentation and between our modern understanding and their contemporary ones.

Dubey, Sejal
University of Oregon
Mentor(s): Kirstin Sterner
Poster Session #091

Molecular Signatures of Aging in the Primate Brain

Co-Author(s): Megan McNamara, Tanner Anderson, Kirstin Sterner

The global population is living longer than ever before, and rates of age-related diseases of the brain such as Alzheimer's are on the rise. This project aims to provide a granular comparison of aging at the genomic level in the hippocampus and the prefrontal cortex, two highly relevant candidates for research due to their evolutionary importance and susceptibility to age-related decline in humans. Gene expression data from rhesus macaque hippocampus (n=96) and matched prefrontal cortex (n=73) tissues were generated and analyzed as part of a larger ongoing study. Importantly, these datasets include representation across adulthood, allowing us to characterize changes that occur during midlife. These transcriptomic analyses revealed age-associated differentially expressed genes (DEGs) in each brain region and serve as the basis for the present project, which seeks to 1) identify overlap between the two datasets and 2) identify patterns of gene expression unique to each brain region. We expect that age-associated DEGs that vary between the hippocampus and prefrontal cortex will reflect region-specific functional changes in aging. Taking perspectives from neurobiology, comparative genomics, and evolutionary medicine, this research will help characterize molecular signatures of aging in the primate brain and highlight candidate genes and pathways for further study.

Dunn, Alexander
University of Oregon
Mentor(s): Elizabeth Shirtcliff
Poster Session #163
Growth Spurts and Brain Bursts

A Novel Metric of Adolescent Pubertal Growth: Cranial Age of the Spheno-Occipital-Synchondrosis

Co-Author(s): Kelsi Keuhn, Allissa Van Steenis, Jennifer Pfeifer, Elizabeth Shirtcliff, Auriel Willette

Puberty is a developmental process across the second decade of life that involves maturation of many biological processes, including skeletal growth that culminates in adult height attainment. Linear growth is understudied compared to sexual dimorphism, so it is unclear when puberty is completed. Thus, this study examined a novel measure of pubertal growth of the skeleton based on fusion of the spheno-occipital synchondrosis (SOS) visually examined through T1-weighted magnetic resonance imaging (MRI) scans. MRI

scans were collected as a part of a longitudinal study involving adolescents assigned female at birth, ages 11-17 (n=203). MRI scans were analyzed using the 3D Slicer software to perform threshold-based segmentation, to quantify volumetric data of the cartilaginous region comprising the SOS. Volumetric measures were then compared against pubertal staging from the Tanner-Whitehouse (TWH) scoring method, a metric of pubertal growth completion. Analyses revealed SOS voxel count predicted TWH stages (p<0.01) and that multiple raters were reliable coders of SOS voxel count, r(50) = 0.845, p<0.01, as well as TWH, k = 0.957. Preliminary data shows SOS fusion can serve as a reliable metric of pubertal development and offset with relevance to the growth axis. If validated through further imaging analyses, this preliminary data opens the possibility for analysis of puberty as a continuous growth process through widespread archival analysis of MRI scans of the brain.

Duong, Thu

University of Oregon
Mentor(s): Jeff Measelle
Works in Progress: Science

Harvard World Pre Health Conference

The Harvard World Pre-Health Conference directly aligns academic and professional goals in Clinical Psychology, particularly an interest in psychopathology. The event offered valuable insights through various research presentations. Networking opportunities with experts facilitated connections to graduate programs, especially at Harvard University, which offers a program focused on severe psychopathology. A notable event was the Invention Convention, where participants created a poster addressing antibiotic resistance, enhancing problem-solving and writing skills.

Dussan, Hana

See “Martinez, Samantha”
Bridging Research and Practice in Education Through Multidisciplinary Lenses

Dzeketey, Solange

See “McFarland, Emma”
Landlord-Tenant Relations in University of Oregon Student Housing: Problems and Solutions

Dzeketey, Solange
University of Oregon
Mentor(s): Jesse Wilson
Poster Session #035

Potential of CA Public Institutions as Source of ASL Education for Hearing Parents of Deaf Children

Every year, 840 to 1,260 children in California are born with significant hearing loss. Of these children, at least 90% are born to hearing parents who often have had little to no exposure to American Sign Language (ASL). Early exposure to signed languages can prevent deaf children from language delays, but a barrier to this can be a lack of ASL education opportunities for hearing parents of deaf children (HPDC). This study assesses whether existing infrastructure provided by California public universities can meet the ASL education needs of HPDC. Classroom seat data were gathered from the fall class schedules of ASL 101 classes for each University of California, California State University, and California Community College campus (n=149). Ten percent of each class's seats were "reserved" for HPDC. Census data and National Institutes of Health estimates were used to determine the number of hearing parents of deaf children expected in each county per year (with an average rate of deaf births set at 0.25%). Findings indicate the spatial distribution of these seats results in an uneven distribution of need-met, despite a statewide ability to meet 95.33% of the need. Findings call for an increase in ASL classes at certain institutions in Southern California and the Bay Area as well as further implementation of online ASL classes for residents of more remote counties. This work has the potential to improve language development and quality of life for deaf children.

Eby, Layla
University of Oregon
Mentor(s): Corbett Upton
Virtual

Suffering In Silence: Exposing and Preventing Sexual Abuse In Youth Treatment Facilities

Many children are victims of sexual assault yet the amount of children and teens sexually abused in treatment facilities is disheartening and swept under the rug. I researched why sexual assault is so common in treatment facilities and how we can prevent it to better support these victims. Often these victims are shamed into silence or they are not able to access proper reporting resources. As well as victims are not able to get away from the abuse or get help for months or even years because they are still in the institution and are detached from the rest of the world. Much of this abuse is patient on patient but it is also staff taking advantage of patients. This research is important because not many studies have been done on the

long-term effects of sexual abuse in a treatment setting. As well as there are still no preventative measures in place to protect these children from the beginning. Many children in the industry are still victims of sexual assault and raising awareness will help create change and maybe prevent such acts from happening in the first place. Raising awareness is also helpful in having survivors come forward and hold the institutions at large accountable. Awareness of this issue is so valuable because it will help reforms to be placed on failing institutions and it would happen less often if this issue was commonly known.

Eccles, Cooper
University of Oregon
Mentor(s): Madison Fowler
Poster Session #102

The Climbing Conflicts and (Re)imagining of Bear Lodge National Monument

Co-Author(s): Ella Nelson, Jessica Fox

Bears Lodge, more commonly known as Devil's Tower National Monument, is a large igneous formation located in the Black Hills of Northeastern Wyoming, renowned for its impressive size and rock climbing opportunities. Many Indigenous Tribes treat Bear Lodge with great cultural significance, using it as a sacred site of ceremony and worship long before the colonization of the American West. When the United States government designated Bear Lodge as the first national monument in 1906, Tribes were barred from (legally) holding ceremonies on the land for almost a century. Even when granted these rights, Tribes had to dispute with rock climbers about who had a greater claim to the land. The National Park Service's (NPS) attempts to mediate these conflicts were poorly thought out and showed their neglect for Indigenous culture on the lands they operate on. Many climbers have continued to interfere with religious ceremonies and show incredible disrespect to the Tribes. Through our research, we interrogate the centuries of injustice that Indigenous Tribes face at Bear Lodge, the failings of the NPS to properly mediate conflicts with climbers, and reimagine the site under the care of the original Tribes that once inhabited these lands.

Eifert, Jorden
Lane Community College
Mentor(s): Erika Masaki
Poster Session #067
Works in Progress: Culture, Society & Politics

Safeguarding Oregon's Cultural Heritage: A Policy for Sustainable and Inclusive Development

The absence of Cultural Impact Assessments (CIAs) in Oregon's land-use policies has resulted in the continued marginalization of Indigenous communities and the destruction of culturally significant sites. This

policy analysis examines the necessity of CIAs, demonstrating how they can be effectively integrated into environmental assessments to promote cultural and ecological sustainability. Drawing from case studies, legal analysis, and Indigenous governance models, this paper argues that embedding Traditional Ecological Knowledge (TEK) into development policies strengthens both environmental resilience and economic sustainability. It recommends the mandatory implementation of CIAs in all development projects, the establishment of Indigenous oversight mechanisms, and the introduction of incentives for sustainable land management. Oregon can serve as a national leader in ethical and justice-driven policymaking by aligning economic progress with the protection of cultural heritage.

Eke Garcia, Jocelyn
University of Oregon
Mentor(s): Kathryn Mills, Victoria Guazzelli Williamson
Poster Session #150

Through Their Eyes: How Everyday Discrimination Impacts Perspective-Taking in Minorities

Co-Author(s): Kathryn Mills, Victoria Guazzelli Williamson

Perspective-taking—the ability to understand others' thoughts, emotions, and intentions—is a key component of social cognition. For BIPOC (Black, Indigenous, and People of Color) individuals, this process is shaped not only by cognitive development but also by sociocultural factors, including experiences of everyday discrimination. This study investigates how such discrimination influences perspective-taking in minority adolescents and adults (ages 12–60) in the Pacific Northwest. Grounded in Theory of Mind and Intersectionality Theory, the research explores how compounded forms of marginalization—race, gender, and social status—shape mentalizing strategies. Participants completed behavioral and neuroimaging tasks designed to assess emotional bias, egocentric bias, and hyper-mentalizing, alongside measures of discrimination and mental health. Findings are expected to reveal how everyday discrimination affects social cognition across development, with adolescents potentially showing more immediate cognitive impacts and adults exhibiting either resilience or cumulative strain. By integrating behavioral data with neural imaging, the study aims to create individualized mentalizing profiles and link them to real-world outcomes such as anxiety, depression, and social functioning. The goal is to deepen our understanding of how systemic inequities affect cognitive and emotional processes, and to inform interventions that promote empathy, resilience, and inclusivity in marginalized co

Elliott, Bear

See "Apollo, Simon"

Identifying modern faunal osteological specimens and its applications to archaeology

Elliott, Zara

University of Oregon
Mentor(s): Annie Zemper

Poster Session #273

Proliferation Markers in Early Mouse Colon Development

Co-Author(s): Annie Zemper

The development of most organ systems is well characterized, but the colon remains comparatively understudied. Specifically, the timing and regulation of crypt formation and the expression of key proliferative markers are not fully understood. This project investigates the expression of two such markers, Lrig1 and epCAM, at postnatal day 14 and postnatal day 21–stages that precede previously documented expression patterns. While later developmental stages have been studied, the initial onset and spatial regulation of these markers remain unclear. Additionally, the formation of proliferative gradients–typically characterized by high expression at the crypt base and lower expression toward the apex–has not been precisely mapped in early postnatal development. We use immunohistochemistry on cryosectioned colon tissue from OCT-embedded frozen blocks to visualize and analyze marker localization. This approach enables us to assess spatial dynamics and begin defining the molecular timeline of crypt morphogenesis. A deeper understanding of these processes could offer insight into gastrointestinal developmental disorders and inform regenerative strategies. Future directions include examining earlier postnatal stages and exploring the upstream regulatory pathways that control the onset and localization of marker expression.

Elzeyadi, Faris

See "Hernandez-Ramos, Brandon"

The Optical Effects of Resonance Push-Pull Benzofulvene Systems

Escalante, Kashimire
Lane Community College
Mentor(s): Stacey Kiser, Colin Phifer
Poster Session #116

Outfoxed: A Preliminary Survey of Gray Foxes Near LCC Campus

The habitat preferences of gray foxes (Urocyon cinereoargenteus) in the Pacific Northwest, particularly in relation to the presence of competing carnivores, remain poorly understood. This preliminary survey in Eugene, Oregon, aimed to address this gap by examining the spatial distribution of gray foxes and their interactions with potential competitors such as coyotes and bobcats. Using camera traps deployed at Lane Community College and surrounding wooded areas, this study found no evidence of gray foxes in locations where these competing carnivores were frequently observed; however, the short duration of this study, approximately one month in the spring, and small number of cameras restricts the ability to draw conclusions from our data. Data donated by community members indicated the presence of gray foxes in urbanized areas. This study lays the groundwork for further investigations into the challenges gray foxes face from competitors and the potential influence of urban environments on their habitat selection. It also highlights the need for additional research to better understand their behavior and survival strategies.

Escobedo, Liliana
University of Oregon
Mentor(s): Bala Ambati, Sangeetha Ravi Kumar
Poster Session #166

Comparative Analysis of Protein Expression in Normal and Keratoconus Cornea Cells

Co-Author(s): Sangeetha Ravi Kumar, Hironori Uehara, Bonnie Archer, Balamurali Ambati

Keratoconus (KCN) is a progressive corneal disorder marked by thinning and conical deformation of the cornea, leading to visual impairment. Reduced lysyl oxidase (LOX) activity and increased levels of matrix metalloproteinases (MMPs) contribute to the pathophysiology of KCN. This study aimed at determining LOX and MMPs in normal and KCN cells to determine their potential as model systems for future investigations of therapeutic molecules. Primary cell cultures were established from normal (n=2) and KCN (n=1) human corneas. The expression of MMP-2, MMP-9, LOX, and beta-actin was measured by Western Blot to compare protein expressions between normal (n=3 replicates) and KCN (n=4 replicates) corneal cells. ImageJ software enabled image analysis and quantification. A t-test determined statistical significance. Relative MMP-2 expression was significantly increased (p=0.0002) in KCN cells (1.15±0.15) versus controls (0.28±0.15). LOX expression showed no significant difference between KCN (1.02±0.69) and normal (1.15±0.43) groups. MMP-9 was not detected in either group. These findings reflect the upregulation of MMP-2 seen in KCN patients,

supporting its role in disease progression. The absence of MMP-9 expression suggests these cell lines are unsuitable for studying MMP-9 but may serve as valuable models for investigating MMP-2-targeted therapies. Further research is needed to explore enzyme-modulating treatments to mitigate disease progression in KCN.

Espino-Marquez, Isabela
University of Oregon
Mentor(s): Corey Wadsley
Works in Progress: Science

The Power to Pause: Investigating Force Action Stopping Through Signaling Tasks

Co-Author(s): Corey Wadsley, Ian Greenhouse

Our intended actions sometimes need to be cancelled when they are no longer appropriate, such as stopping to avoid a car that enters the crosswalk without seeing you. The Action Control Lab studies how the brain produces movement. We do so by testing how participants suppress unwanted movements, cancel ongoing movements, and broadly suppress noise in the motor system. Even actions as simple as picking up a pen, sitting up from your seat, and maneuvering around the laundry on your floor requires organizational processing across various regions in the motor cortex and associated areas of the brain. Studying these areas helps us to better understand the ability to control and suppress. The current study examines how humans control their actions when first detecting an unexpected event and then deciding to stop or continue it. To determine this, we use measures of action, derived from force and electromyographic recordings, while participants perform stop-signal tasks. The objective of this research is to uncover the neural bases of action cancellation and, ultimately, aid in the development of strategies to improve inhibitory control.

Estes, Olivia
University of Oregon
Mentor(s): Michael Wehr
Poster Session #272

Ketamine does not rescue plaque load or gap detection in the 5XFAD mouse model of Alzheimer's

Co-Author(s): Alexa Wright, Aldis Weible, Michael Wehr

Ketamine has become increasingly studied due to its effects on neuroplasticity and neuroinflammation. Recent studies suggest that the early sensory and behavioral deficits associated with Alzheimer's disease (AD) may be caused by synaptic disruption before irreparable neuropathology. This suggests that ketamine has the potential to intervene in early AD pathology and slow down or prevent network disruption. We tested this with the 5XFAD mouse model of Alzheimer's with both an acute single dose ketamine protocol and a

chronic dosing protocol over 15 weeks. To quantify the effects of ketamine we utilized amyloid (Aß42) plaque load and auditory gap detection, as it serves as an early biomarker for AD pathology in mice and humans. These Aß42 plaques were quantified in two key brain regions, auditory cortex and brainstem. For the auditory gap detection task mice detect brief gaps in background noise as a measure of auditory processing. We found that both chronic and acute ketamine protocols had no effect on plaque load or gap detection. We were able to confirm the validity of gap detection as an early biomarker as we found robust correlations between gap detection deficits and amyloid accumulation in brainstem and auditory cortex. Overall, we found that ketamine does not have any beneficial effect on AD pathology for either an acute single dose or chronic dosing protocol.

Eubanks, Sam
University of Oregon
Mentor(s): Katie Lynch
Nature in Motion

Aves Compartidas 2025: Place-Based Education Through Migratory Birds

Co-Author(s): Anna Shehab, Alice Puk, Jayda Roberts, Pazi Greenberg, Julia Shay, Rachel Freeby

Aves Compartidas is a bilingual environmental education program that aims to break barriers across languages, redefine what it means to be a scientist, and strengthen family involvement in education. Our program promotes connections between the Willamette River watershed in Oregon and the Río Laja watershed in Guanajuato, Mexico, through a curriculum based on their shared migratory birds. We served 207 elementary students across nine third, fourth, and fifth grade classrooms through 15 inclusive indoor and outdoor lessons, three comprehensive field trips, and a celebratory Wildflower Festival hosted by Mount Pisgah Arboretum. We collaborated with Ecology in Classrooms and Outdoors, Mount Pisgah Arboretum, and River Road/El Camino del Río Elementary School. Using the Learning in Places Collaborative frameworks, our curriculum explores the socio-ecological relationships between the environment, students, their families, and their local community, promoting environmental stewardship.

Evans, Landin
See "Horban, Noah"
Single-Slit Diffraction

Facanha, Isabella
University of Oregon
Mentor(s): Sammy Plezia
Poster Session #149

A Systematic Review of Weight Stigma in Physical Therapy

Co-Author(s): Sammy Plezia, Lisa Flexner, Nicole Kelly, Elizabeth Budd

Introduction: Weight stigma, defined as negative attitudes, prejudice, stereotypes, and discrimination regarding a person's larger body size, is a prevalent issue in health care and leads to worse health outcomes, such as increased levels of stress and poor patient care. Physical therapists are not well-represented in this literature. Our team conducted a systematic review of recent studies examining weight stigma among physical therapists.
Methods: The systematic review was conducted in March 2024 and consisted of five steps: conducting a search of databases, screening the study abstracts for relevance, reviewing the full study for eligibility criteria, assessing the quality of the studies, summarizing the evidence, and interpreting the findings.
Results: The quantitative data suggest that students and licensed physical therapists demonstrate an average degree of weight bias and a significant portion observe weight discrimination in their healthcare setting. The qualitative data indicate that physical therapists believe they have a "professional responsibility" to support weight loss. However, some physical therapists understand that weight loss is not every patient's goal and that discussing weight can damage rapport.
Conclusion: More quantitative and longitudinal research needs to be done to assess the extent to which weight stigma impacts the quality of physical therapy services and patient outcomes.

Fehringer, Isabella
University of Oregon
Mentor(s): Peg Boulay, Momo Kelley
Nature in Motion

Surveying Oregon Ash Habitat in Preparation for Emerald Ash Borer

Since the first detection of Emerald Ash Borer (Agrilus planipennis) (EAB) in Michigan in 2002, EAB has caused widespread ash tree (Fraxinus spp.) mortality by feeding on the trees' circulatory tissue, ultimately killing the tree. Ash trees are an important contributor to streambanks and aquatic ecosystems, filtering nutrients, pollutants, and maintaining water temperatures through shade. After EAB was detected in Forest Grove, Oregon, in 2022, experts in Eugene were concerned that it could quickly spread south and decimate populations of Oregon Ash (Fraxinus latifolia) within the city. The purpose of this project is to document and establish baseline data on vegetation conditions within ash stands in Eugene, Oregon, and offer a structured

method for monitoring Oregon Ash using the City of Eugene's Protocol. This monitoring data will be utilized to inform management decisions aimed at mitigating environmental damage and slowing the spread of EAB.

Feldman, Ava
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #052

Housing Limitations for those struggling with Drug Addiction

Homelessness affects approximately 771,480 people a year and around two-thirds of these individuals struggle with drug or alcohol addiction. Eugene is no exception to this statistic. Due to this, our project works to research the limitations individuals face when searching for housing resources in Eugene. Our project combines local resources, national statistics, and analysis on existing research to answer the question: What are the housing limitations for those struggling with Drug Addictions in Eugene? Our preliminary findings show there is a lack of permanent housing geared towards individuals with drug addictions. Rather, these individuals are forced to become sober or continue living on the streets, often in unsupported communities. This research is significant because we will offer insight on how to support the homeless population in Eugene struggling with addiction.

Ferrell, Olivia
University of Oregon
Mentor(s): Frances White
Poster Session #092

Tails of Identification: Building a Basis for Comparative Morphology of the Vertebral Column

Co-Author(s): Skye Grubb, Sara Cotton, Sedona Epstein

Vertebrae identification has long posed an issue to osteologists, primatologists, and zoologists. While size and shape may help determine that a vertebra the size of a quarter likely does not belong to a horse, how can one accurately identify down to the genus, or even the species level? Comparative collections, such as the Grand collection, function to solve these exact issues, but accessibility remains a problem. The collection houses 617 primate and 280 non-primate specimens that have yet to be digitized. Despite the vastness of the internet, few thorough comparative collections exist digitally. Through documentation of the vertebrae within the collection, researchers would be able to utilize the information in a more convenient manner through an online database. By using the Grand collections specimen database, each specimens' vertebrae will be photographed, and observations of species-specific features will be recorded. The final step in this project

will be to build a website dedicated to the comparative morphology of the vertebral column in primates and non-primate species. The main goal of digitizing the vertebral columns would be to aid in the identification of one of the most challenging vertebrae to identify: the caudal vertebrae (aka, the vertebrae of the tail). Through photography and detailed descriptions of the spine from the atlas to the tip of the tail, the scientific community will benefit from a comparative morphological database.

Fillo, Peter-George
University of Oregon Student
Mentor(s): Ben Shirtcliff, Devon Mann
Poster Session #302

Genius Loci (Spirit of Place)

Co-Author(s): Stella Edmundson, Kelan Hicks, Maddie Coates, Acacia Czuk, Cam Legget, August Tam, Talia Ruehr, Gabriel Ruiz, Nyx (Amber) Yoder

The OASIS student group presents Genius Loci ("spirit of place"), a community engagement tool bridging diverse perspectives on the shared environment of Eugene, Oregon. This environmental design, shaped as a Big Leaf Maple Samara and employing Geomorphic Biophilic Design, features a topographical map of a five-mile stretch of Eugene, from Spencer's Butte to Skinner's Butte, incorporating local landmarks. Constructed from sustainable, locally sourced materials, including recycled steel and poplar grown using wastewater byproducts, the project embodies circularity. Functioning as a "seed bomb," the central element will distribute native wildflower and vegetable seeds to establish pollinator habitats and promote community at Camp Alma, a wellness center for veterans. This project, supported by the City of Eugene Sustainability Commission and numerous community partners, reflects on the existing beauty and potential of the Eugene community.

Fliesler, Ella
University of Oregon
Mentor(s): Patrick Horve, Karen Guillemin
Poster Session #275

Investigating the activities of the microbiome-derived protein, Beta-cell Expansion Factor A (BefA)

Co-Author(s): Patrick Horve, Karen Guillemin

Ongoing research on host-associated microbial communities is revealing that microbiomes can have major impacts on animal development, disease outcomes, and daily physiology, such as immune system activity and brain function. The Guillemin lab has found that the gut microbiome is essential for the proliferation of

insulin-producing beta-cells in the zebrafish pancreas. This project investigates the mechanism of action of a bacterial secreted protein found in the zebrafish gut called Beta-Cell Expansion Factor A (BefA). We have found that BefA on its own can cause proliferation of beta-cells in germ-free fish (fish that are not colonized by bacteria), mimicking the impact of the microbiome during development. Previous research in the Guillemin lab showed that BefA can permeabilize the membranes of bacterial cells and of mitochondria, the bacterial-derived organelles that are the powerhouse of eukaryotic cells. We hypothesize that by perturbing mitochondrial membranes, BefA stimulates cellular programs that ultimately increase mitochondrial activity. Preliminary data suggests that BefA can act on cell types other than beta-cells and that it can increase the lifespan of the nematode, C. elegans. This research has the potential to give insights into treatments for both type I and type II diabetes and provide a better understanding of factors impacting mitochondrial health.

Foday, Favour
University of Oregon
Mentor(s): Paul Kempler, Manasa Rajeev
Poster Session #231
Cellular Innovations

High Surface Area Iron-Nikel Electrodes For Electrochemical Applications.

Co-Author(s): Manasa Rajeev, Andrew Goldman

The Kempler Lab at the University of Oregon has developed a novel electrochemical method for producing iron. This advancement addresses the environmental challenges of traditional iron production while supporting the demand for affordable, high-performance materials in electrochemical systems. The aim of this study is to investigate whether high surface area iron produced through this method can serve as an effective alternative to conventional rare metal electrodes in energy-related applications. Through controlled electrochemical synthesis, the lab identified optimal forms of iron oxide and process conditions that yield iron sheets with exceptionally high surface areas. These materials were tested for their potential use as electrodes. Early results show that iron and iron-nickel composites produced through this method exhibit promising characteristics, including enhanced conductivity, surface reactivity, and economic feasibility. This is especially important in replacing electrodes made from rare and costly metals such as platinum and gold. The findings suggest that iron-based electrodes offer a sustainable and accessible solution for the development of low-cost, efficient electrodes critical to advancing renewable energy and industrial electrochemical processes.

Foerster, Sophia
University of Oregon
Mentor(s): Nick Willett, Cora Ferguson
Poster Session #183

The Role of Estrogen in Cartilage Extracellular Matrix Homeostasis

Osteoarthritis (OA) is a chronic degenerative disease of the joint characterized by unresolved acute inflammation. Post-menopausal females are more susceptible to developing OA, implicating sex-specific factors in disease pathology. Estrogen (E2) has been shown to mitigate catabolism of the extracellular matrix (ECM). The objective of this study is to investigate how E2 influences cartilage collagen I and II production in an age- and sex-specific manner. We hypothesized that physiologic levels of E2 would increase the collagen type II to type I ratio.

Chondrocytes were isolated from 3 human donors (M53, F24, F69), formed into 1mm spheroids, and cultured under physoxic conditions (TGF-b, 5% 02). Spheroids were cultured for 28 days in phenol-red free chondrogenic media supplemented with E2 (0-2720 pg/mL). Brightfield imaging and biochemical assays were used to quantify DNA and glycosaminoglycan content. Histology and immunohistochemistry techniques were used to analyze collagen types I and II.

The younger female donor exhibited variability in glycosaminoglycan content. The analysis of collagen (type I and II) quantity and distribution remains ongoing. Current findings suggest a potential age- and sex-specific sensitivity to E2. Our work demonstrated the utility of a hormone-responsive system to investigate age and sex-specific differences in cartilage ECM regulation. Future work will introduce inflammatory cytokines into this system to mimic an inflammatory environment.

Folpe, Snow
University of Oregon
Mentor(s): Young-Tack Oh
Virtual

fire//place: Destruction, Renewal, Fire, and Craft in Architecture

This project examines architecture's current and future response to the increasing risk of wildfire in Interface WUI areas, and the phenomenon of modern urban fire. In understanding and properly addressing wildland fire and its role in changing the American building culture, architects and occupants must be equally empowered and informed so as to create spaces that burn responsibly and resist fire effectively.
This project identifies the Willamette Valley and the city of Eugene, Oregon, as a site vulnerable to an increasing threat of wildfire damage and smoke pollution. This project walks through a critique of proponents

of fire stewardship, land management, and current tactics of government suppression. A deeper look into the American building culture and popular material choices holds material science and choices up to the microscope in the face of climate change, predicted cyclical burning, and fire's enumerated and untold side effects when coupled with normative building envelopes.

Foskett, Caroline
University of Oregon
Mentor(s): Malvika Singhal, Marian Hettiaratchi
Cellular Innovations

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

Co-Author(s): Malvika Singhal, Marian Hettiaratchi

Robust bone repair relies on dynamic interactions between numerous cells, proteins, and extracellular matrix molecules (ECM). Critically-sized bone defects are not able to heal without external intervention such as surgery and result in disturbed interactions between the ECM and osteogenic growth factors such as bone morphogenetic protein-2 (BMP-2). BMP-2 helps mediate the chemotaxis and osteogenic differentiation of mesenchymal stem cells into osteoblasts which actively participate in bone formation. We are interested in leveraging the naturally occurring extracellular components of bone allograft such as hydroxyapatite mineral. So, we designed several fusion proteins each containing the following components: an amino acid sequence specific to hydroxyapatite to a peptide linker (rigid or hybrid), and a BMP-2 specific affibody that binds specifically to BMP-2. Protein expression was performed in E. coli with purification utilizing immobilized metal affinity chromatography in denaturing conditions. SDS-PAGE and circular dichroism was used to characterize the fusion protein size and secondary structure, while micro-bicinchoninic acid assay was used to determine the total amount of protein that retained onto hydroxyapatite pellets over 48 hours. Additionally, we performed fluorescence microscopy to confirm these retention trends. Future work includes measuring the fusion protein's ability to control the release of BMP-2 in vitro and mineralize subcutaneously in vivo.

Fouts, Madeline
University of Oregon
Mentor(s): Ben Hutchinson, Ray Jackson
Poster Session #261

Investigating Memory Retrieval and Perceptual Processing with Steady-State Visual Evoked Potentials

Co-Author(s): Tess Sameshima, Autumn Hummel, Amelia Goodwill

How does the brain manage the competing tasks of recalling a memory while perceiving current stimuli? To investigate whether memory retrieval modulates perception, this study uses electroencephalogram (EEG) to record participants' brain waves. When exposed to flickering visual stimuli at specific frequencies, the brain generates brain waves at that given frequency, a phenomenon known as steady state visual evoked potential (SSVEP). Using SSVEPs to measure participants' perception, a memory task was used to explore how recalling a memory impacts perception. During the encoding phase of this study, participants hear various object names and are shown the corresponding object on either the left or right side of the screen, with the goal of remembering where the object appeared. During the retrieval phase, the participants hear object names and must recall which side of the screen each object was on, while 8 hz and 12 hz flickering lights appear on either side of the screen. Using EEG, we can investigate how recalling the memory of the object's location affects the brain's response to the flickering lights. If the amplitude of the SSVEP decreases during retrieval, that suggests memory retrieval suppresses visual perception, and if SSVEP increases during recall, that implies memory retrieval enhances visual perception. Exploring how memory and perception interact sheds light on how the brain manages competing tasks, which may have applications in educational and clinical settings.

Francis, Lily
University of Oregon
Mentor(s): Nicole Kurhanewicz, Diana Libuda
Poster Session #291

Sexually dimorphic and heat-sensitive localization of PRG-1 aggregates in the C. elegans germline

Co-Author(s): Nicole Kurhanewicz, Hannah Wilson, Diana Libuda

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. Notably, PRG-1 knockdown enhances heat-induced DNA damage in developing sperm. My project investigates the sex-specific features of PRG-1 contributing to the production of heat induced DNA damage in developing sperm. High-resolution immunofluorescence microscopy was used to characterize PRG-1 aggregate localization and morphology during both gamete development. I found at baseline PRG-1 displays sex-specific aggregate morphology and localization in the germline. For instance, sperm-associated PRG-1 aggregates are smaller and more numerous, while egg-associated PRG-1 aggregates are less numerous and less spherically shaped. Following heat shock, PRG-1 aggregation is disrupted in both sexes, however sperm-associated PRG-1 aggregates remain nuclei-associated, while egg-associated PRG-1 aggregates move to the cytoplasm. This work provides insight into differences between the sperm and egg development, genome maintenance programs, and the conserved mechanisms underlying the heat-induced male infertility.

Frerichs, Bess
University of Oregon
Mentor(s): Melissa Redford
Poster Session #034

Filled pause usage in children and adults as an insight into language planning development

Filled pauses (FPs), words like uh or um, are disfluencies that signal language planning and speech monitoring. When planning-related filled pauses (PRFPs) occur between clauses, they indicate conceptual planning for language; when they occur within clauses, they indicate word-finding. Although FPs have been studied extensively in adult speech, little is known about child FP usage. The relationship between FPs and inhalations has not been studied in child speech, even though inhalations are also associated with conceptual planning. Our research fills these gaps by focusing on PRFPs and co-occurring inhalations in spontaneous narratives produced by 20 children (5-year-olds) and 20 adults. All FPs were coded for function, clausal location, and adjacent inhalations. A total of 811 FPs were identified. Children produced 1.28 FPs every 100 words while adults produced 2.24 FPs; however, the difference was due to extensive individual variation in adult speech. Children produced fewer PRFPs than adults; these occurred more often within a clause than between clauses in child speech compared to adult speech. The association between inhalation and PRFP use was also weaker in child speech compared to adult speech. Overall, the distribution of PRFPs in child versus adult speech supports the hypothesis that children's language planning is more limited than adults'. Studying the trajectory of FP usage across age-groups could provide valuable insight into the development of speech planning.

Friedman, Jessica
University of Oregon
Mentor(s): Ahmar Zaman
Poster Session #142

Books vs. Blunts: Linking Drug Use and Academic Performance in Juvenile Offenders

Co-Author(s): Ellie Palmer, Carlie Crowther

This study aims to investigate the relationship between drug use and academic performance within a population of juveniles in the court system. The data utilized in this study was obtained through the Florida Department of Juvenile Justice (FDJJ) administrative data of youth who completed community-based FDJJ placement (e.g., diversion programs, probation supervision) between 2015-2018 (Wolff, 2023). This sample included 15,573 juveniles involved in the court system and measured 41 variables in total, including this study's variables of focus: academic performance and drug use, which we simplified for the purpose of statistical analysis. A chi-square test was conducted to analyze the relationship between academic performance and drug use. Our findings are concurrent with prior research on the relationship between adolescent drug use and academic performance (Jeynes 2002). Analysis shows a significant relationship between academic performance and drug use, demonstrating that individuals who did not use drugs were more likely to have better grades than those who have used drugs. Through this study, we were able to show the significance of the association between academic performance and drug use among juveniles in the court system, thus emphasizing the need for additional research on this topic. Further research may facilitate the implementation of academic support and drug use prevention programs for youth who are involved/at risk of involvement in the criminal justice system.

Fuller, Esmee
University of Oregon
Mentor(s): Nataliia Schotkina
Poster Session #188

Cryopreservation of 3D Chondrocyte Constructs for Accelerating Osteoarthritis Research

Co-Author(s): Natalia Shchotkina, Matt Hofmann, Adam Higgins, Morgan Giers, Gabriella Lindberg

Introduction: Osteoarthritis research utilizes 3D chondrocyte spheroids to model cartilage-like tissue and study therapeutic compounds. However, spheroid fabrication requires weeks of culture, making it inefficient. This study aims to establish a cryopreserved repository of cartilage spheroids, allowing for on-demand use. **Methods:** Bovine chondrocyte spheroids(150k cells) were cultured under physoxic conditions(5% O_2,14 days). Three cryopreservation methods were tested: (1) 10%ethylene glycol(EG) + 10%dimethyl sulfoxide(DMSO),

(2)10%fetal bovine serum(FBS) + 10%DMSO, and (3) a negative control (no cryopreservant). Cryopreservation occurred at day 9, and spheroids were thawed after 7 days in liquid nitrogen, then cultured for 5 more days (total:9+5days) before analysis. Cartilage health was assessed via biochemical assays and histology (GAG,DNA,Safranin-O staining).

Results and Discussion: DNA analysis showed significantly lower DNA levels in spheroids cryopreserved with 10%EG+10%DMSO and at baseline(9d) compared to the positive control(14d,no cryopreservation). Additionally, 10%FBS+10%DMSO resulted in significantly lower GAG levels, suggesting compromised tissue formation. Ongoing work includes metabolic activity analysis pre- and post-thawing.

Conclusion: While 10%FBS+10%DMSO preserved DNA content, it impaired cartilage formation, emphasizing the need for optimized cryopreservation methods for long-term storage of cartilage-mimetic tissues in 3D cell culture.

Gaash, Nitai

See "Godino, Lia"

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

Gallegos, Felice

University of Oregon

Mentor(s): Jessica Atencio

Poster Session #202

Vascular Function Following Prolonged Heat Exposure in Young and Older Adults

Co-Author(s): Jessica Atencio, Rauchelle Richey, Juliana Esquivel, Lindan Comrada, John Halliwill, Christopher Minson

Heat waves are characterized by prolonged periods of abnormally high temperatures. The incidence of heat waves has increased due to the acceleration of climate change. Aging is associated with endothelial dysfunction and chronic inflammation. These changes put older adults at a greater risk of adverse health outcomes during prolonged exposure to high environmental temperatures. The purpose of this investigation is to compare the effect of prolonged heat exposure on endothelial vascular dysfunction in young (18-35 y) and older (60-80 y) adults using flow-mediated dilation (FMD). FMD assesses endothelium-dependent vasodilation, quantified as the percent change in brachial artery diameter from baseline to peak dilation following a 5-minute cuff occlusion. Impaired FMD responses are indicative of reduced endothelial function. We hypothesize that FMD will improve in young adults through acute, heat-induced adaptive responses to endothelial function but will be impaired in older adults following prolonged heat exposure. FMD of the brachial artery will be assessed 24 hours before and 24 hours after a 6-hour simulated heat event (42°C and 20% humidity). We anticipate that this investigation will provide novel insight into how prolonged heat

exposure affects endothelial function using FMD, thus, enhancing our understanding of vascular vulnerability following acute heat events in young vs. older adults.

Galvin, Kieran
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #114

Human Impacts on Land and Water Resources: Case Studies from the Klamath River Dam and the Gaza War

Climate change and human conflict deeply impact land and water systems, disrupting ecosystems and limiting access to resources critical for biodiversity and human survival. The removal of dams along the Klamath River, the largest river restoration project in U.S. history, raises questions about how landscapes recover after decades of hydrological control. In Palestine, ongoing war has destroyed infrastructure and severely restricted access to water, food, and electricity, worsening a humanitarian crisis. Our project uses satellite imagery to compare these two cases: analyzing ecological and geomorphological changes in the Klamath River basin from pre-dam removal (2020) through restoration (2024–2026) and examining the impacts of war in Palestine from 1973 to the present. We expect the Gaza conflict to correlate with land degradation, vegetation loss, and water scarcity, while the Klamath case should show signs of ecological recovery–such as increased vegetation, sediment shifts, and improved water flow. This research highlights how human actions, whether restorative or destructive, leave measurable marks on the natural world; insights that can inform environmental policy, humanitarian response, and climate resilience strategies.

Garcia, Natalie
University of Oregon
Mentor(s): Kate Kelp-Stebbins
Poster Session #046

Latine Futurism in Frames: Re-Claiming Colegio Cesar Chavez's Legacy

Colegio Cesar Chavez was the first four-year accredited Chicano-run college in the United States. Founded in Mt Angel, OR, the college opened in 1973 and closed in 1983 due to issues with funding. The college prided itself on its approach to a bilingual/bicultural curriculum, known as College Without Walls education program. For my comic, I asked myself, "What would a College Without Walls education program look like in the future?" My comic, titled Isa's Dreams, centers the history of Colegio Cesar Chavez, the impact of the college on its graduates, and imagines what this college could have looked like if it had stayed running. My intent for the comic is to make the history of Colegio Cesar Chavez accessible to youth throughout Oregon, so I have made

this comic adaptable for Oregon educators to use in their lesson plans. The comic is written in both English and Spanish to encourage biliteracy in young adult and adult readers. I have also created an educator's guide to the comic, with various prompts for educators to pick and choose from in their lesson plans. By making the history of Colegio Cesar Chavez more accessible, I aim to empower Latinx youth across Oregon and help them feel more connected to the history around them.

Gardner-O'Kearny, Aidan
University of Oregon
Mentor(s): Laura Jeanty, Nathan Young

From Colliders to Supernova–Chasing Particles

Combinatorial fake discriminatory selections for combined dE/dx and disappearing track search
In the ATLAS Detector at the Large Hadron Collider, the search for long-lived charginos as a part of a supersymmetric extension to the Standard Model utilizing a disappearing track and anomalous ionization energy signature presents unique experimental challenges. The short length scale of tracks within the inner detector results in an unusual background composed primarily of combinatorial fakes. As a result, new ways to understand this background are needed. In this work, we seek to characterize the ionization behavior of our background, as well as what ways we can select against it. This work presents the motivations and effects of a series of selections that will help optimize our sensitivity to new physics, as well as a novel use of pixel cluster level data as a discriminant against background.

Gardner-O'Kearny, Aidan
University of Oregon
Mentor(s): Laura Jeanty, Nathan Young
Poster Session #247

Combinatorial fake discriminatory selections for combined dE/dx and disappearing track search

In the ATLAS Detector at the Large Hadron Collider, the search for long-lived charginos as a part of a supersymmetric extension to the Standard Model utilizing a disappearing track and anomalous ionization energy signature presents unique experimental challenges. The short length scale of tracks within the inner detector results in an unusual background composed primarily of combinatorial fakes. As a result, new ways to understand this background are needed. In this work, we seek to characterize the ionization behavior of our background, as well as what ways we can select against it. This work presents the motivations and effects of a series of selections that will help optimize our sensitivity to new physics, as well as a novel use of pixel cluster level data as a discriminant against background.

Gast, Peyton
University of Oregon
Mentor(s): Joey Wańczyk
KIDDing the Norms- Women, Identity, and Non-Traditional Narratives

Selfish Woman, Primates and Non-Lethal Weapons, Coastline

I've found that the best moments in my work come from a place of emotion. Anger is one feeling I often utilize to create truly powerful lines in my poetry. The anger doesn't necessarily come across as angry, though–sometimes it's humorous, grotesque, or even helpless-sounding. The point remains: when I channel that charged energy into a piece, it often leads to the work I'm most proud of.

Gause, Chago
University of Oregon
Mentor(s): Kayla Conde
KIDDing with Time, Trees, and Human Impact

Tensions between modernity and tradition in Native American poetry

Language as an exploration of Modern American Indian experience is an area that is incredibly deserving of exploration and a seeking for understanding. In this paper I will explore a small portion of the landscape of contemporary Native American culture and art through a close reading of several Native American poems and two essays. Native American poetry is many things, one of those things is a confrontation. When Native American poetry is written in English, it is an indigenous exploration of existence written in a language that was forced by a colonizing people in an attempt to eradicate a traditional way of life. It becomes a confrontation of the past, of what has happened for it to be here now. In this paper, I will examine poetry written in English and first languages. My focus will be on investigating the tensions that arise in modern Native American poetry: tensions between modern lifestyles and traditional cultural practices and ways of knowing, tensions between grief and joy, the reckoning of modern life and the confrontation of history that is necessary for truth and healing.

Gautam, Harsh
See "Ramirez, Mariano"
MAPS Technology in the SiD Digital Electromagnetic Calorimeter to Optimize Higgs Boson Measurements

Gehrig, Michael

University of Oregon
Mentor(s): Lauren Hallett, Jasmin Albert
Works in Progress: Science

The Impact of Basalt Dust Application on the Concentrations of Heavy Metals within Hazelnut Orchards

Oregon produces 99% of the nation's hazelnuts, generating over $120 million of revenue annually. To increase sustainability in the hazelnut industry, scientists and farmers have begun incorporating basalt dust into the agricultural soils to sequester carbon and improve soil health via basalt weathering, a process that draws down atmospheric carbon and combines it with water and silicates to create long-term carbonate mineral storage. This process may also increase crop yield, pH, and soil water retention, however little research has investigated the potential adverse effects of this practice.

Although basalt dust sourced in Oregon is primarily made of silicon, calcium, and iron, it also contains low concentrations of certain heavy metals, like chromium and manganese, which may lead to heavy metal accumulation in hazelnut trees. These heavy metals have been linked to various negative health effects, including cancer, fertility issues, and brain damage if ingested in excess amounts. Chromium, for example, is a carcinogen and can cause damage to sperm and sperm counts, and manganese is a known neurotoxin.

Due to these facts, my project seeks to uncover the impact basalt dust application has on the heavy metal concentrations within the hazelnut trees, and where these concentrations are stored. I hypothesize that an increase in these heavy metals will be observed, but not to an alarming extent, ensuring the safety of the sustainable practice.

Giometti, Emma

University of Oregon
Mentor(s): Josef Dufek
Poster Session #110

Charcoal Reveals Emplacement Temperatures of Pyroclastic Density Currents from Crater Lake, Oregon

Pyroclastic density currents (PDCs) are hot, denser than air flows of hot ash, rock debris, and volcanic gases that commonly occur during volcanic eruptions. The high dynamic pressures and temperatures present within the rapid-moving flow create a hazardous environment for communities and infrastructure in proximity to volcanoes. Precisely due to these hazards, few direct in-situ measurements of key properties, like temperature, have been obtained. The thermal history of these flows help determine their runout distance and provide information about the amount of turbulent entrainment of atmospheric gases into these flows.

PDCs that flow through valleys surrounding a volcano will pyrolyze organic material into charcoal by carbonization in a low-oxygen environment. The evolution of the chemical composition of these charcoals from pyrolysis is a function of the thermal history the organic material has experienced. Hence, charcoal in a PDC deposit is a good candidate to act as a thermal proxy for conditions that occurred during transport. Charcoal has been used as a geothermometer in previous studies, yielding well-confined temperature ranges for PDCs formed by a variety of volcanic settings. Fourier Transform Infrared Spectroscopy (FTIR) is expected to be ideal in identifying a number of spectral features of carbon bonds associated with the pyrolysis reaction. I aim to answer if FTIR charcoal analysis can provide precise emplacement temperatures of PDCs from Mt. Mazama.

Gjishti, Flavia
See "Beaubrun-Diant, Lucian"
Bench Typologies

Godino, Lia
University of Oregon
Mentor(s): Hans Dreyer
Poster Session #197

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

Co-Author(s): Helia Megowan, Alex Denton, Mike Hahn, Hans Dreyer

Muscle "memory" describes the phenomenon where a previously trained muscle regains strength and size more rapidly after a period of atrophy compared to untrained muscle. At the cellular level, 'memory' is theorized to be due to the myonuclei gained (myonuclear accretion) during training being immediately available following disuse for a faster and more complete recovery of strength and cross-sectional area. Prior research has shown that essential amino acid (EAA) supplementation and blood flow restriction (BFR) exercise can increase myonuclei numbers and potentially enhance muscle resilience. This study tests if increasing myonuclei with a 2-week combined EAA + BFR preconditioning treatment before a damaging bout of eccentric exercise with electrical stimulation and 3 days of immobilization will improve structural and functional muscle recovery compared to no treatment. Muscle biopsies from the vastus lateralis and blood samples will be collected to assess structural changes and inflammation in muscle cells. Strength and biomechanical assessment will be used to quantify functional recovery. Immunohistochemistry will be used to quantify myonuclei, satellite cells, tissue damage + repair, and inflammatory cells. We hypothesize that EAA+BFR will increase cross-sectional area, satellite cell and myonuclei numbers, and functional performance. Post-eccentric damage, we expect the EAA+BFR treatment group to exhibit a faster and more complete recovery than the control.

Gómez Cabrera, Jonah
University of Oregon
Mentor(s): Victoria Ehrlich
Resisting Borders: Migration and Activism

The Fragility and Visibility of The Authentic Mexican Identity in 'La Revolución' by Fabián Cháirez

This research is conducted through a comparative analysis of La Revolución (2014) by Mexican contemporary painter Fabián Cháirez and the symbolic image of revolutionary hero Emiliano Zapata. The analysis begins with an investigation of the Palacio de Bellas Artes' 2019 exhibition 'Emiliano. Zapata después de Zapata' as a case study, which featured Chairez's work as part of the contemporary cohort for the collection and elicited significant backlash from Zapata's family and their followers. By utlizing queer theorical framworks from authors Jaques Khalip and Anne D'Alleva, alongside Octavio Paz's concept of 'The Mexican Mask,' this study contextualizes the temporal narrative that the mythological image of the hero that Zapata, shaped by nationalist and heteronormative ideologies. It is of utmost importance to include queer perspectives and identities in Mexican history and revolutionary discourse. The intervention promoted in Cháirez's work seeks to more accurately represent the culturally and racially diverse country, as well as to challenge longstanding exclusionary practices based on race and gender that have been culturally reinforced for decades

Gong, Huixin
University of Oregon
Mentor(s): Peter Alilunas, Erin Hanna
Asian Studies Event
History Reimagined: War, Theater and Unheard Voices

Persistence to Create: Love-Driven Resistance to Patriarchy by Chinese Female Fans

The Social Network (2010, dir. David Fincher) was very popular with fans around the world before 2015. Now, fifteen years after the film's release, it has been almost forgotten by most fans; however, a group of Chinese women continues to insist on making the film the object of their fandom. Like many fan creations, the works of these Chinese female fans are often dominated by slash fan fiction - stories that imagine romantic or sexual relationships between male characters - and filled with pornographic narratives. Dating back to the 1980s, this phenomenon of women creating and obsessing about their fan creations has already existed, and the controversies and criticisms of it inside and outside the fan community have never gone away. Why are slash creations so attractive to female fans and long-lasting regardless of time and region? And does their focus on sexual acts between male bodies carry undertones of patriarchal ideology? Through textual analysis of slash creations and interviews with Chinese female fans of The Social Network, I examine those lingering

questions in the context of the complex politics, culture and censorship systems of Chinese society. I argue that, for the female fans around the world, including Chinese female fans, such practices are a moderate and spontaneous feminist act, a love-driven attempt by women to deconstruct the official patriarchal narrative of mainstream culture, and a meaningful journey of self-discovery.

Gonzalez, Thomas
University of Oregon
Mentor(s): Solmaz Mohammadzadeh Kive
Poster Session #009

Then and Now Zine

Our research focuses on a zine that explores the evolution of hostile architecture in Eugene, OR. The central question examines city codes that negatively impact the unhoused population, limiting their access to public spaces. Our research specifically investigates the cost and maintenance of hostile design elements in Eugene, with comparisons to similar examples in Portland. Hostile architecture includes design features like anti-homeless benches, barred alcoves, and other barriers meant to deter people from resting or seeking shelter in public spaces. These measures often go unnoticed by the general public but play a significant role in shaping how cities respond to homelessness. Through this project, we aim to analyze how local policies contribute to these exclusionary practices and how public funds are used to implement and maintain them. To support our findings, we have utilized Google Maps' historical imagery to create a timeline of changes in Eugene's streetscape, identifying where hostile architecture has been installed. Additionally, we have reviewed Eugene city codes related to homelessness and assessed the cost-effectiveness of these measures in Lane County. This research helps highlight the financial and social consequences of hostile architecture and its role in marginalizing unhoused individuals. By producing this zine, we hope to raise awareness of the challenges faced by Eugene's unhoused population and the systemic barriers they encounter.

Goodman, Audrey
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #123

Shifting Shores: Investigating the Coastal Impacts of Rising Sea Level Using Satellite Imagery

Rising temperatures driven by climate change impacts are increasing sea levels, impacting agriculture and coastal communities. We will examine coastline changes in Vietnam and Northeastern Spain due to the impact of rising sea levels driven by climate change using satellite imagery collected over the previous

two decades. We hypothesize that rising sea levels driven by climate change erode the coastline through inundation of coastal land area, impacting important agricultural areas. We expect to see this impact through a loss of coastal land, increased human modifications to the coast, and potential impacts to agricultural fields, specifically rice production. Rising sea levels are dramatically altering coastlines, impacting coastal communities by exacerbating natural disasters and threatening agricultural production.

Graciani, Josmarie
University of Oregon
Mentor(s): Chris Doe, Kristen Lee
Neural Blueprint- From Molecules to Movement

Transcriptional regulation of neuronal morphology and synapse localization in Drosophila

Co-Author(s): Kristen Lee

Damage to neural circuits can result in irreversible degenerative disorders. To understand how such circuits form and are maintained, we investigate how transcription factors (TFs) shape the morphology of the Moonwalker Descending Neuron (MDN), a neuron responsible for backward locomotion in Drosophila melanogaster. During adulthood, MDN consists of a cluster of four cell bodies and descending neurites. We hypothesize that cross-regulation among TFs directs the MDN's adult morphology and synapse localization. Using the UAS-GAL4 system and RNAi knockdown, we found that the TFs Hunchback (Hb), Engrailed (En), and Pdm2 regulate one another: En activates Hb and Pdm2, Pdm2 activates Hb, and Hb activates Pdm2. Here, I focus on Hb. Using Multicolor Flip-Out, Hb regulates MDN morphology, specifically dendritic branching, axonal bifurcation, and cell body location. By labeling synapses, we also found that Hb regulates synapse localization. We want to know what genes may function downstream of Hb, and started by assaying midline cues. Our midline screen revealed that Robo3 and Lar are expressed in MDN, significantly altering cell clustering and neurite formation. Our data support the model that TF cross-regulation and activation of specific midline guidance cues shape adult MDN morphology and synapses.

Grossman, Adam
University of Oregon
Mentor(s): Lissa Wadewitz
History Reimagined: War, Theater and Unheard Voices
Poster Session #042

The Sand Creek Massacre: Gold, Grass, and Guns

This research intends to further understand the driving environmental and social factors behind the Sand Creek Massacre. Through the analyzation of historical documents, including legal papers, witness testimony,

and correspondence, this research highlights an indigenous perspective of the events precipitating the massacre. In this perspective, one will see how the Colorado Gold Rush is responsible for changing the indigenous landscape, as it marks the onset of a mass migration of people and livestock into Cheyenne and Arapaho land. This influx rapidly decreased the amount of land available to indigenous people, which led them to face starvation, disease, and a hostile colonizing populace. By first analyzing the history of the Cheyenne and Arapaho, this research highlights their ties to the land and the beginning of their relationship with white fur traders and the subsequent effects this relationship had on the Cheyenne and Arapaho way of life. Next, the Colorado Gold Rush is explored, which discovers how and why such a large amount of settlers moved to the front range. Finally, this research discusses the events directly leading up to the massacre, calling attention to the actions of white military officials in committing the atrocities at Sand Creek.

Grover, Lauren
University of Oregon
Mentor(s): Romila Mascarenhas, Julia Widom
Poster Session #174

Characterization of Cobalamin-Dependent Riboswitches in the Human Gut Microbiome

Vitamin B12, also known as cobalamin (Cbl), is a water-soluble vitamin utilized by bacteria to perform essential enzymatic functions. Most gut bacteria are unable to synthesize Cbl themselves and must obtain it from external sources. The B12 uptake (Btu) system is a collection of proteins that serves to shuttle Cbl into bacterial cells, including residents of the human gut. Bacteroides thetaiotaomicron (B. theta) is the most prominent member of the human gut microbiome and the mechanisms by which it trafficks Cbl are vital in dictating its fitness. Some of the most understudied features of the Btu system are its riboswitches, structural elements in RNA that regulate gene expression by binding to small molecules. In B. theta, cobamide-dependent riboswitches control the expression of genes that enable the organism to scavenge Cbl from the gut environment and use it for their own cellular processes. To assess the effects of ligand binding and the specificities of the cobalamin-dependent riboswitches from B. theta, circular dichroism (CD) spectroscopy was used to assess the changes in the secondary structure of the riboswitches that occurred while titrating in various forms of Cbl. The second riboswitch that lies on locus 1 of B. theta's Btu system was shown to exhibit a significant spectral shift upon addition of aquacobalamin, but not with the addition of 5' deoxyadenosylcobalamin, indicating an upper axial ligand preference for Cbl.

Grubb, Skye
See "Apollo, Simon"
Identifying modern faunal osteological specimens and its applications to archaeology

Grubb, Skye
University of Oregon
Mentor(s): Frances White, Stephen Frost
Poster Session #090

Morphological measures of developmental stress in primates: cranial asymmetry and 2D:4D ratio

Co-Author(s): Sedona Epstein, Sara Cotton

Fluctuating asymmetry has long been studied in primates, but limited research connects fluctuating asymmetry with other anatomical measures of developmental stress in individuals. The degree of cranial asymmetry is thought to reflect the degree of genetic and/or environmental stress experienced during development. In contrast, the ratio of the second to fourth digit reflects levels of prenatal testosterone exposure, with low ratios (i.e. a longer fourth digit) reflecting higher testosterone. This study seeks to find a possible relationship between morphological measures of developmental stress and prenatal testosterone levels as a whole-body phenomenon.

Nine specimens returned both 2D:4D ratios from their proximal phalanges and cranial asymmetry measured from 31 landmarks. (2D:4D mean 0.9142, sd 0.0619 and asymmetry 0.00125, sd 0.00147). The 2D:4D ratio and cranial asymmetry were significantly negatively correlated (Spearman correlation coefficient -0.750, p=0.0199).

These results indicate association between cranial asymmetry and prenatal testosterone levels experienced by individuals during development. Individuals with low 2D:4D ratios showed higher levels of cranial asymmetry, suggesting higher levels of prenatal testosterone exposure may act as a stressor during development, affecting the phenotypic expression of genotypes in populations. This expressed instability ultimately may impact the perceived attractiveness of individuals with consequences for mating success.

Gruber, Taylor
University of Oregon
Mentor(s): Daniel Jenkins
Poster Session #002

History of Themed Design as Pretext for Immersive Experiences

This research project seeks to affirm the value of themed design within the growing landscape of immersive consumer experiences, emphasizing the critical role of integrative storytelling & entertainment in built

environments. Further inspired by the Disney College Program, particularly with planning that captures memorable, immersive moments in the parks. This project is driven by a fascination with storytelling through design rich in detail & narrative. These environments invite viewers to explore how space can convey a compelling story. One of the central goals of this research is to challenge & dispel the stigma that often surrounds themed entertainment as being less-than traditional architectural or design disciplines. Themed design requires meticulous attention to detail, creativity & imagination; qualities that transform physical spaces into narrative-driven experiences. Despite its importance, this niche design area is frequently misunderstood & undervalued. This study will explore the foundational role of themed design in hospitality & consumer spaces, particularly as the demand for immersive environments continues to rise. It also highlights the subtle, often overlooked elements that contribute to the success of themed spaces, demonstrating how even small details can significantly impact how a story is perceived & felt. The inspiration for this project stems from personal experience with the DCP, the influence of the Themed Entertainment Association & Bob Weis' book.

Guilliot, Karlie
University of Oregon
Mentor(s): Douglas Killingtree
Beats of Belonging–Identity in Motion

Kitty & The Crescent Moon

The story of Catherine "Kitty" Genovese did not begin and end on March 13th, 1964, contrary to what many people want you to believe. She was a complex individual who led a beautifully devastating life. In her 28 years she played many different roles, a Catholic school chatterbox, a midnight bartender, and a loving partner. These are the versions of Kitty Genovese that the papers refuse to print. March 13th, 1964 marked the end of her life, but Douglas Killingtree and his beautiful play Kitty & the Crescent Moon marks the part of life that she lived in all of its complex beauty.

Throughout my research for this show, cataloging the life and death of Ms. Genovese, something kept coming back to me over and over again; a mugshot. The photo shows a disgruntled 25 year-old Kitty following her arrest for betting in 1961. She ran the scheme hoping to make more money between her night shifts at the bar. This is the photo that was published in the papers. A photo that defines her as a criminal has become synonymous with her entire life. Framing her as a woman who did something wrong, who was to be feared. From a day to a photo, Kitty Genovese is continuously posthumously defined by choices she didn't make, but a quick reframing of the narrative reveals so much more. She was stolen from her life, but her story doesn't need to be taken too. Remember, the next time Catherine Genovese is mentioned in a textbook, a podcast, or a news story, that she is so much more than March 13th, 1964.

Gulka, Quinn
University of Oregon
Mentor(s): Katya Hokanson
From Turbines to Transformers - Navigating the Tech Evolution

Stacking Returns: Investment Potential in Retired LEGO Star Wars Sets

In recent years, LEGO investing has emerged as a surprising alternative asset class, with certain sets doubling, tripling, or even quadrupling in value after retirement. A 2015 study by researchers at the Higher School of Economics found that select LEGO sets offered an average annual return of 11%, outperforming gold and many blue-chip stocks. But the LEGO market has evolved dramatically over the past decade. Today, LEGO increasingly caters to adult collectors, and introduces more exclusive sets–both of which influence aftermarket behavior. This research focuses specifically on LEGO Star Wars sets, a fan-favorite and historically high-performing theme. The key question driving this study is: what features make a LEGO Star Wars set appreciate in value over time? In this paper, I analyze secondary market price data from BrickEconomy and BrickLink, evaluating sets by factors such as piece count, release year, exclusive minifigures, and original retail price. I compare growth rates across subthemes and identify trends that help forecast a set's investment potential. The findings highlight a pattern: sets with iconic characters, limited distribution, or media tie-ins consistently outperform others. In an era of volatile traditional investments, LEGO offers a nostalgic and tangible option. Understanding what drives value in these sets may offer insight not only into investing strategies, but into the evolving relationship between pop culture, scarcity, and perceived value.

Gullickson, Maxwell
See "Duarte, Diego"
The Experience of War: the Great War as Seen through the Letters and Memoirs of Those Who Lived It

Gunther, Katelyn
University of Oregon
Mentor(s): Jen Doty, Yeseul Lee
Growth Spurts and Brain Bursts
Poster Session #139

Relationship between youth social self-efficacy, mental health, and risky online behavior

Communication technologies are playing an increasingly important role in the lives of adolescents. While this entails numerous benefits and newfound opportunities for youth, it also leaves youth vulnerable to high-risk scenarios. This has included heightened experiences of online sexual victimization (OSV) among adolescents

in recent years. Guided by resilience theory, this study aims to explore youth mental health and social self-efficacy as potential protective factors against the following risky online behaviors that have implications for OSV: sharing passwords, forming close friendships via online platforms, meeting strangers in person, and sharing sexually suggestive photos online. This study is a secondary analysis of national data collected via Qualtrics using logistic regression (N=307) Analyses revealed that a high sense of social self-efficacy was associated with higher likelihood of sharing passwords, meeting strangers in person, and making friends online. Mental health was split into the three subscales (emotional, social, and psychological well-being); however, only emotional and social well-being emerged as significantly associated with lower likelihood of online risk taking. A higher state of emotional well-being was found to be associated with lower likelihood of sharing passwords, meeting strangers, and sharing sexually suggestive photos while strong social well-being was only found to be significantly negatively associated with sharing photos online.

Guthrie, Rylee
University of Oregon
Mentor(s): Divyanka Sharma
KIDDing with Time, Trees, and Human Impact

Lillian's Baby

"Lillian's Baby" is a piece I composed based on the expansion of a paragraph long writing exercise meant to encourage exploration of the fantastical. Ironically, the end result took a different direction. Either way, I wanted to write a story about grief, what it does to us, and how we ultimately work through it. It was a great opportunity to breach my comfort zone, especially stylistically.

Guzman, Samantha
University of Oregon
Mentor(s): Amy Swanson
Beats of Belonging- Identity in Motion

Echando Raíces: The Importance of Putting Down Cultural Roots in Dance Communities

My research project stems from my experiences as a Latina dancer attending a predominantly white institution in a predominantly white town. I've observed how dancers of color typically experience a lack of belonging in the dance classroom and rarely see themselves represented on stage. This realization sparked my first choreographic work, Solo Por Una Noche: Selena En Vivo!, as well as my involvement with Salseros, a Latin dance company based in Eugene, where I serve as an event assistant, teaching assistant, and performer.

This research project extends my choreography and my work with Salseros to explore the role of cultural

identity and community-building in creating safe, inclusive spaces within dance. Through interviews with cast members of Solo Por Una Noche and Salseros dancers, along with ethnographic and scholarly research, I explore how grounding dance communities in cultural roots–whether through speaking Spanish, using Latin music, teaching history related to the piece, or incorporating styles like Salsa, Cumbia, and Bachata into my choreography–fosters belonging and representation. My findings suggest that integrating cultural heritage into dance spaces creates more inclusive environments where individuals from diverse backgrounds feel seen, supported, and safe.

Hajarizadeh, Auveen
University of Oregon
Mentor(s): Robert Guldberg
Poster Session #191

Using Intermittent Rest to Enhance Bone Regeneration and Immune Modulation During Rehabilitation

Co-Author(s): Kylie Williams, Dylan Gill, Kaitlyn Link, Robert Guldberg

Postoperative rehabilitation aids musculoskeletal recovery, yet the role of rest in bone regeneration remains underexplored. This study investigated how rest integrated into rehabilitation affects healing. After two weeks of treadmill pre-training, 2- and 3-mm bilateral femoral defects were created in 21 female rats and stabilized with compliant internal fixation. Following a one-week recovery, rats were assigned to one of three groups: sedentary, rehabilitation with rest, or rehabilitation without rest. Rehabilitation consisted of treadmill running twice weekly at 13 m/min. Bone healing was monitored using in vivo radiography and microCT; systemic immune responses were assessed via flow cytometry at multiple time points. Analysis of 2-mm defects revealed an increase in endpoint bone volume in the rehabilitation with rest group compared to both the rehabilitation without rest group ($p = 0.058$) and the sedentary group ($p = 0.12$). Immune profiling revealed that rehabilitation with rest significantly reduced monocyte populations at week 2 compared to sedentary animals ($p = 0.0013$). Moreover, only the rehabilitation with rest group exhibited a significant decrease in myeloid-derived suppressor cell (MDSC) populations between day 7 and week 2 post-injury ($p = 0.0185$). These findings suggest that incorporating rest into rehabilitation may enhance bone healing and influence systemic immune responses, highlighting rest as a potential modulator of post-injury recovery.

Hall, Franny
See "Dehmer, Sam"
Sharing Our Space with Wildlife: the Politics of Poop at the Howard Buford Recreation Area

Harris, Joseph
See "Bjerke, Ryley"
Comparing simulated and experimental behaviors of pendulums across a wide range of bob density.

Hart, Luka
University of Oregon
Mentor(s): Nathalia Hernández-Vidal
Poster Session #029

Operation Watermelon: The Role of Social Media in Information Age Social Movements

Using qualitative analysis of a case study from the social media platform TikTok, this project investigates how 21st century communication of political ideas and actions are shaped by our access to technology. In doing this, it seeks to answer the questions: What norms of social media usage for advocacy have developed? How does the TikTok platform influence or facilitate the strategy undertaken by this collective action? How does this collective action fit into the larger social movement for Palestinian liberation? How do these norms perpetuate colonialist power structures?

Hassan, Mariam
See "Galvin, Kieran"
Human Impacts on Land and Water Resources: Case Studies from the Klamath River Dam and the Gaza War

Hays, Rory
University of Oregon
Mentor(s): Ahmar Zaman
Poster Session #144

The Relationship Between Trauma, Staff Abuse, and Mental Health in Incarcerated Youth

How does past and present physical abuse by family and staff relate to the mental health of youth incarcerated in America's juvenile justice system? This research project seeks to explore this question by utilizing a large-scale dataset collected by the Bureau of Justice Statistics, known as the National Survey of Youth in Custody (NSYC; 2017). The NSYC contains data from over 6,000 youth incarcerated across 332 juvenile detention facilities, who were asked a large number of questions about such things as their prior history of abuse, current experiences of staff physical abuse, and mental health status. Through statistical analysis, this study examines the relationship between a number of these variables as well as demographic

factors such as race or gender identity, which can often be particularly relevant to the treatment youth receive from the legal and carceral systems.

Heibel, John
University of Oregon
Mentor(s): Daniel Lowd
Poster Session #083
From Turbines to Transformers–Navigating the Tech Evolution

MaPPing Your Model: Assessing the Impact of Adversarial Attacks on LLM-based Programming Assistants

Co-Author(s): Daniel Lowd

Large Language Model-based programming assistants offer the promise of faster programming but with the risk of introducing more security vulnerabilities. As agentic LLMs increasingly incorporate results from untrusted third parties, the risk of prompt attacks is growing. We introduce the Malicious Programming Prompt (MaPP) attack, in which an attacker adds a small amount of text to a prompt of an otherwise innocuous model to alter the result of a programming task. We show that our prompt strategy can cause an LLM to add vulnerabilities while continuing to write otherwise correct code. We find that our prompts are broadly effective, with no customization required for different LLMs. Furthermore, the LLMs that are best at our benchmark are also best at following our malicious instructions, suggesting that scaling large language models will not prevent MaPP attacks. Using a dataset of eight CWEs in 16 scenarios, we find that MaPP attacks are also effective at implementing targeted vulnerabilities across a range of models. Finally, we demonstrate that MaPP attacks can be effective in complex code editing tasks, using a dataset of real-world GitHub issues and an agentic coding system. In spite of being fine-tuned to reduce harm, the LLMs we employed exhibited no difficulty in creating these vulnerabilities across a wide variety of settings. Our work highlights the need to secure LLM prompts against manipulation as well as rigorously auditing LLM-generated or LLM-assisted code.

Henderson, Chandlor
University of Oregon
Mentor(s): Camilla Mortensen
Virtual

400-Year Nightmare

This project explores my two-year research journey into the folklore and family history of my maternal and paternal lineages. The first year focused on my mother's family in the southern United States, where I

gathered folklore through interviews and transformed these stories into a cartoon strip. The second year expanded the research to include journalistic articles about my maternal family but was interrupted by the death of my father. Consequently, the project grew to include my father's family history, particularly surrounding the Congdon Street Baptist Church, the oldest Black church in Providence, RI. This project provides a comparative analysis of the cultural and historical insights gained from both sides of my family, highlighting the significance of oral traditions and documented histories in understanding familial and communal identities. My research underscores the importance of integrating diverse sources to construct a comprehensive narrative, offering valuable perspectives for future studies in folklore and family history.

Henry, Megan
University of Oregon
Mentor(s): Hector Rodriguez
Poster Session #004

Georgetown Community for Special Needs

The objective of this design studio was to create a community for a specific group of people who combine living and working in the same building. In my project, this is much more integrated; people who balance working at home with providing care to those who have special needs. This is a community meant to incorporate many needs that are not currently being met in this neighborhood of Seattle. Incorporating a food bank into a community center helps all in need, not just the people who live on the site. The community center is meant to bridge the gap where care and work responsibilities conflict. This project also incorporates the WELL Building Standard to encourage healthier and happier residents through measurable and science-backed standards.

Herder, Luke
University of Oregon
Mentor(s): Chanel Meyers, Gretchen Nihill
Poster Session #152

Conflict or Harmony: Outcomes and Integration Strategies for Holding Multiple Minority Identities

Co-Author(s): Chanel Meyers, Gretchen Nihill

Previous literature about individuals with multiple minority identities has predominantly focused on specific interactions between domains (e.g., race and gender; Hecht et al. 2001; Yampolsky et al. 2013). However, little work has examined how different combinations of identities impact well-being and identity integration (Cheng et al., 2008; Jackson et al., 2012). As such, we were interested in sampling participants with multiple

minoritized identities across race, gender, and sexual orientation. Study 1 examines the correlations between identity pride, identity centrality, and well-being, with those who self-identified as minoritized across at least two domains. Study 2 examines whether specific combinations of minoritized identities (e.g., race and gender vs. race and sexual orientation vs. gender and sexual orientation) report more or less identity integration or malleability. Given past research on identity integration, we expect participants who report higher identity integration of their minoritized identities to report greater well-being. We had no specific predictions regarding which combination of minoritized identities would report more or less identity integration; however, we expect identity integration and identity malleability to be negatively correlated. These findings have critical implications for how individuals with multiple minority identities navigate their identities and whether certain identities are more or less compatible with each other.

Hernandez-Ramos, Brandon
University of Oregon
Mentor(s): Adam Glass
Poster Session #226

The Optical Effects of Resonance Push-Pull Benzofulvene Systems

Due to their conjugation-dependent characteristics, benzofulvenes and their derivatives exhibit notable optical properties, such as tunable fluorescence and color modulation, making them valuable for synthetic and pharmaceutical applications. This research aims to synthesize various structurally distinct benzofulvene compounds and analyze their optical behavior through UV-Vis and fluorescence spectroscopy. By introducing electron-donating and electron-withdrawing substituents, we explore the push-pull electronic effects that influence conjugation and, consequently, optical responses. Through prior experimentation, we identified optimal positions for resonance acceptors and donors, which guided our substituent selection. These studies enable us to evaluate HOMO-LUMO energy gaps and how they can be adjusted through strategic molecular modifications. A central goal of our work is to enhance the reproducibility of benzofulvene synthesis, optimize yields, and better understand the influence of substituent variation on optical properties. Thus far, our results strongly support the notion that benzofulvene monomers possess tunable optical characteristics, reinforcing their potential in practical and applied contexts. We hereby present an efficient, simple, and inexpensive method for synthesizing these benzofulvene monomers.

Hess-Neustadt, Camila
University of Oregon Student
Mentor(s): Robert Mauro, Tobin Hansen
Poster Session #075
Works in Progress: Culture, Society & Politics

Immigration Salience and the Rise of the Swedish Populist Radical Right: Testing the Flash Potential

Since the 1990's there has been a rise in radical right populism (PRR) in Western Europe. This study illuminates the causes of the rise of PRR politics in Sweden, which was long considered impervious to this widespread wave of radical right populism. Research has identified immigration as one of the issues most connected to support for the populist radical right. And yet, opinions on immigration to have remained relatively constant over time. How can these two findings be reconciled? This study builds on the work of Schnaudt and Stecker (2022) and Dennis & Geddes (2020) which attribute the rise of radical right populism to changes in the salience of immigration over time, rather than changes in immigration opinion. I hypothesize that individual opinions on immigration will have a significant relationship with PRR voting where anti-immigrant opinions are positively related with PRR support; however, this effect will be mediated by immigration issue salience, where the effect of immigration opinion on voting is stronger in periods of greater immigration salience. Using a logistic regression I find a significant main effect of immigration opinion on PRR voting, and a signicifcant interaction effect between immigration opinion and immigration salience, supporting the hypothesis. This finding helps us understand the widespread rise of PRR support which is indispensable for attempting to understand the contemporary political climate of much of the Western world.

Hibbard, Julia
University of Oregon
Mentor(s): Kristin Robinson, Patrick Phillips
Poster Session #289
From Marine Life to Muscle: Exploring Growth and Repair

Investigating the Temporal Requirement of DAF-2 Degradation for Lifespan Extension in C.elegans

Co-Author(s): Kristin Robinson, Patrick Phillips

Delaying aging while maintaining health is a compelling goal of biomedical research. Our study explores this possibility using Caenorhabditis elegans (C. elegans), a model organism with diverse wild strains that mirror the genetic variability found in humans. This diversity makes C. elegans ideal for investigating conserved

genetic pathways regulating longevity. Previous research has established the importance of the insulin/IGF-1 signaling (IIS) pathway, particularly the transcription factors daf-2 and daf-16, in lifespan regulation. Specifically, daf-2 inhibits daf-16, and loss of daf-2 function results in increased daf-16 activity and extended lifespan. Building on this, we designed a genetic system to temporally control DAF-2 degradation using a degron tag responsive to auxin, a plant hormone. When exposed to auxin, DAF-2 is selectively degraded, allowing us to assess the impact of its loss at different life stages. In prior experiments, C. elegans exposed to auxin throughout their lifespan showed significant increases in longevity. We aimed to determine the minimal duration of DAF-2 degradation required to achieve maximal lifespan extension. DAF-2::degron tagged C.elegans were initially raised on auxin and then transferred to auxin-free plates at staggered intervals. Preliminary results suggest that short-term exposure to auxin early in life leads to significant lifespan extension, indicating that transient inhibition of daf-2 may be sufficient to delay aging.

Hite, Angeline
University of Oregon
Mentor(s): Marisa King
Poster Session #104

Monitoring Avian Biodiversity in the Willamette River Natural Area

As anthropogenic activity increases and urbanization grows, green spaces provide essential habitat for preserving biodiversity. The Willamette River Natural Area (WRNA), provides crucial green space for organisms, particularly avian species. Part of the WRNA's mission is to fuel student engagement regarding restoration and research. Birds are easily observable and sensitive to environmental change, making them effective indicators of an environment's health. This study uses avian surveys (conducted once weekly) assessing current avian biodiversity at the WRNA. Tracking species richness, abundance, and diversity of birds at the WRNA will guide conservation efforts, future research, and long-term goals. In collaboration with the Campus Natural Areas Program, this research serves as a baseline for future biodiversity monitoring. Preliminary results, measured using Simpson's Diversity Index, indicate high avian diversity (0.8193). As more procedures are implemented (e.g increasing the quality of the space for avian breeding via nesting boxes and platforms), current data will be applied to measure the effectiveness of these strategies. Further, this research examines resident and migratory birds' usage of the WRNA. Therefore, the data from this study also provides insights into migrating patterns that can help detect shifts in existing avian movement. Ultimately, these findings benefit ongoing efforts and initiatives to enhance species richness at the WRNA and other green spaces.

Ho, Dora
University of Oregon
Mentor(s): Dare Baldwin, Jeffrey Measelle
Growth Spurts and Brain Bursts

Health factors impacting infants' social responsiveness to mother's attempts at playful engagement

Co-Author(s): Dare Baldwin, Jeffrey Measelle, Jenna Rudolph, Hou Kroeun, Kyly Whitfield

Thiamine (vitamin B1) deficiency affects millions of infants in several regions globally, putting their brain development, and lives, at risk (Measelle et al., 2021). My research investigates possible benefits of maternal thiamine supplementation for breast-fed infants' development in the first 6 months of life. In the context of a larger randomized controlled trial, I am examining the influence of thiamine supplementation and other health factors on infants' response to mothers' efforts in playful engagement, a foundational aspect of neurocognitive development. At 2-, 12-, and 24-weeks post-partum, 335 mother-infant pairs completed the newly developed Primary Engagement Task (PET), involving a graduated series of maternal engagement behaviors designed to elicit enjoyment from infants. Infants displayed systematic responses to mothers' playful bids across the PET, which a) became more pronounced with development, and b) were systematically related to thiamine supplementation dose at 24 weeks (e.g., Rudolph, et al. 2022). In subsequent analyses, our team found that infants' increased systemic inflammation, measured by C-reactive protein (CRP) levels in infants' blood, was associated with reduced peak alertness during the PET stage that was maximally engaging for infants. These findings point to a complex relationship between an infant's general health profile and their neurocognitive development, which we are exploring further in a series of new analyses.

Hoffman, Corey
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #031

Dominance and the Sochi Olympics

Despite a promise of peace during the Olympic Games, sports and foreign policy have long intertwined on the biggest stage. Soviet and later Russian international sports have often been tied to the country's idea of hard power and dominance, and the country has used the Olympics to advance its political agenda. This paper explores how contemporary Russia projects international political power through sports. It examines the diplomatic roles Russian athletes played in the 2014 Sochi Olympics, Vladimir Putin's obsession with the Olympics, and the role the Olympics played in Russia's military advances in Ukraine, Georgia and other parts of Eastern Europe. This paper argues that Russia uses international sporting events as a practice of political

dominance. The results allow conclusions to be made as to the future of Russia's international sporting relations with other Eastern European countries and the world.

Hoffman, Gabby

See "Feldman, Ava"

Housing Limitations for those struggling with Drug Addiction

Hogan, Ainsley

University of Oregon
Mentor(s): Ashley Walker, Abigail Cullen

Poster Session #213

Age Drives Cerebrovascular Dysfunction and Neuroinflammation Independent of Arterial Stiffness

Co-Author(s): Emily Reeve, Abigail Cullen, Ashley Walker

The pathophysiology of Alzheimer's Disease (AD) is still poorly understood despite its prevalence. Epidemiological studies have shown a link between increased large artery stiffness (LAS) and the development of neurodegenerative diseases such as AD. Increased LAS is a common age-related change in the vasculature and is primarily caused by the increased fragmentation and degradation of elastin. To assess the contribution of LAS on cerebrovascular, neuroinflammation, and cognitive function, a mouse model haploinsufficient in elastin (Eln+/-) was employed in young (6 months) and old (24 months) mice. Cerebrovascular function was investigated by assessing endothelial-dependent and independent dilation using ex vivo pressure myography experiments. Neuroinflammation was assessed through gene expression from cortex samples. A decline in endothelial-dependent dilation, measured by maximal dilation to acetylcholine (ACh), was observed with age in both Eln+/- mice (p<0.05) and wild-type mice (p<0.0005), however endothelial-independent dilation remained unaffected. Expression of the cytokine interleukin-1b (IL-1b) was higher with age in both Eln+/- mice (p<0.0001) and wild-type mice (p<0.0001). Additionally, wild-type, but not Eln+/- mice had higher expression of another cytokine, tumor necrosis factor a (TNFa) with age (p<0.05). These results suggest that age is a primary risk factor for cerebrovascular dysfunction and neuroinflammation.

Hoke, Madeleine
University of Oregon
Mentor(s): Judith Raiskin, Linda Long
Poster Session #024

The role of the Oregon Lesbian Lands in Lesbian and Women's Culture

Lesbian Lands, or Women's Lands, were communities of Lesbians and Women who sought out a safe place outside of male centered heteronormative society. They existed in many places throughout the country, from Washington to Florida, but Southern Oregon boasted many and held clean records of their every-day lives. OWL Farm, one of these such lands, kept extensive records which were eventually donated to the University of Oregon Special Collections. There is a misconception that comes up when people learn about Lesbian Lands, and it is that they were completely separate communes on the fringes of society, and to an extent they were. However, the documents enclosed in the Southern Oregon Country Lesbian Archival Project (SoCLAP!) collection show that the women of the OWL Farm didn't just live in an enclosed bubble away from everything; but they also held events where like-minded women could visit and be a part of the community without needing to live on the Land. From participating in Arts & Crafts Fairs to hosting Beltane Celebrations and Women's Healing Retreats, the OWL Farm was an integral place where women's community could flourish in Southern Oregon, and they could feel safe and free in a place surrounded by women with similar qualities as they hold.

Holguin, Zoe
University of Oregon
Mentor(s): Christopher Chavez
Poster Session #028

From Scrolls to the Polls: How TikTok mobilizes college students to vote in the 2024 election

Speculation surrounding the cause of low voter turnout for voters aged 18-25 has been up for debate for decades. Political figures have utilized digital platforms such as TikTok to mobilize voters, with social media apps becoming the new outlet for disseminating information to millions of people within seconds. Previous literature has discussed the hurdles political candidates face to drive the younger generation, who have maintained the status of being the smallest voter demographic.Though young people are the smallest group of registered voters, they continue to dominate online spaces with their influence on popular culture. Social media has become a crucial component of voter mobilization in the new digital age, particularly for voters aged 18-25. This study aims to analyze the relationship between young voters and their usage of TikTok to get information about the 2024 presidential election and show that social media positively affects voter turnout.

This research study utilizes a mixed-method approach involving survey data from 105 participants and five in-depth interviews. The survey gauged how participants interact with the app TikTok, while the interviews delved into a deeper analysis of their behavior on the app, as well as their discernment of information regarding the presidential election. The interviews with participants also indicated a positive correlation between the accessibility of electoral information distributed through TikTok and the likelihood of going

Horban, Noah
Umpqua Community College
Mentor(s): Mick Davis
In the Swing of Things: Exploring Motion and Balance

Single-Slit Diffraction

This presentation describes the process of investigating how diffraction patterns are created and how the width of the slit affects the distance between the local minima to the central maximum. We aligned a laser on a slit of variable width and measured the resulting distance from the central maximum to the first order minimum. We compare the results to predictions based on the standard textbook model of single slit diffraction.

Howell, Marly
University of Oregon
Mentor(s): Alison Carter
Poster Session #085
Asian Studies Event

Understanding Decorated Earthenware Ceramics during the Pre-Angkor and Angkorian periods

Co-Author(s): Alison Carter

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 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 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, Griffin
University of Oregon
Mentor(s): Woan Foong Wong
Power, Policy, and Global Shifts

A Study on the Impact of the US-China Trade War on US Housing Prices

During Donald Trump's first presidential term, the United States launched a trade war with China, marked by a series of escalating tariffs on goods exchanged between the two countries. A growing body of research has examined the impact of these trade policies across various sectors of the U.S. economy. One notable study, "The Consumption Response to Trade War Shocks: Evidence from the US-China Trade War" by Michael E. Waugh, analyzes the effect of the trade war on county-level consumption, using automobile sales as a proxy. Drawing on Waugh's methodological framework, this paper investigates the potential effects of the trade war on the U.S. housing market, a sector that has experienced sustained price growth over the past few decades. I assess whether the tariffs imposed on Chinese imports during the trade war affected housing prices at the county level. To do so, I estimate a fixed-effects regression model that includes time and regional fixed effects and controls for local economic conditions via county-level employment rates. This empirical strategy aims to isolate the causal impact of trade policy shocks on housing market outcomes. Given that the trade war unfolded in successive rounds, this study focuses on the cumulative effects of tariff implementation, beginning in early 2018 and concluding in the fall of that year. The analysis uses data spanning from early 2017 through late 2019, allowing for the examination of both pre and post-shock housing market responses.

Hummel, Autumn
University of Oregon
Mentor(s): Heather Leonard, Jessica Marshall
Works in Progress: Culture, Society & Politics

Passion and Desire to Serve: A Qualitative Study of FHS Community Partners

Co-Author(s): Jessica Marshall, Heather Leonard, Jen Doty, Mary Beninati

This study explores how the Family and Human Services (FHS) curriculum at the University of Oregon can best prepare students for the workforce or graduate education. Through ten in-depth interviews with key

community partners, our team examined how field professionals perceive opportunities for growth and strengths of students from the FHS program. Our team of researchers used a collaboratively developed interview protocol and employed Braun & Clarke's (2006) thematic analysis framework to analyze qualitative data. Key themes that emerged included the importance of experiential learning, the need to equip students with self-care strategies and tools for navigating professional boundaries, and the role of passion and intrinsic motivation in career success. The interviews with community partners emphasized that beyond academic preparation, students would benefit from learning more in depth about self-care tools and practices, as well as additional opportunities to reflect on their drive and passion for the field of social work. These findings highlight the value of embedding both practical and reflective components into the FHS curriculum and contribute to ongoing conversations about how undergraduate programs can better align with the needs of human services fields and graduate education. This research was conducted within and funded by the Family and Human Services Program in the Department of Counseling Psychology and Human Services at the University of Oregon.

Hung, Brian
University of Oregon
Mentor(s): Darren Baker, Sara Graves
Poster Session #170
Mind Over Muscle: Memory, Muscle, and Aging

Aged mice exhibit signs of increased senescent cell burden in the spinal cord before signs of nerve

Co-Author(s): Darren Baker, Sara Graves, Karthik Jeganathan, Bennett Childs

Aging can be defined as the time-related degradation of physiological functions essential for survival and reproduction. With aging comes phenotypic changes in individuals as well as increased risks for health-related problems, including neurodegenerative conditions like Alzheimer's disease and Parkinson's disease. These particular age-related pathologies result in memory loss, agitation, and difficulties with movements related to nerve cell loss in the brain and spinal cord. Studies have shown that many age-related chronic diseases are linked to the accumulation of senescent cells. Cellular senescence is characterized by cells entering a state of cell cycle arrest while remaining metabolically active and resistant to cell death. 3 In this study, we sought to investigate a link between senescent cell accumulation and age-related spinal cord degeneration. To assess cellular senescence in the context of the aging spinal cord, we explored senescent cell burden in the spinal cords of naturally aged mice. Understanding the potential interplay between cellular senescence and changes in the aging spinal cord is essential in further discovering treatments for age-related neurodegenerative disease and to improve the quality of life for affected individuals.

Hunter, Louis
See "Leung, Kyleigh"
Comparison of Muscle Oxidative Capacity in the Gastrocnemius, Rectus Femoris, and Vastus Lateralis

Hwang, Daniel
See "Dunn, Alexander"
A Novel Metric of Adolescent Pubertal Growth: Cranial Age of the Spheno-Occipital-Synchondrosis

Hylton, Rivers
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #049

Zip Code FC: Does Geography and Wealth Shape Competitive Soccer in Eugene?

This study examines how club soccer participation in Eugene disproportionately favors players from wealthier neighborhoods. Prior research on housing segregation shows that a child's neighborhood has a hand in shaping their future due to disparities in resources and access. This participation in outside sports can directly impact the range of opportunities a person will have after graduating high school. However, little attention has been given to the role of sports as a pathway for social mobility, particularly at the local level. Our research addresses this gap by analyzing roster data from Eugene Metro Fútbol Club (EMFC) alongside local school district demographics. We used data from the local school districts to (a) correlate the student population with the number of graduated players and to (b) highlight the racial makeup of each high school to correlate with housing segregation. We used interviews with former players and coaches to supplement and give a qualitative dimension to our research. Our findings reveal that students from lower-income areas are significantly less likely to graduate from EMFC, limiting their access to college scholarships and other opportunities. This income-based segregation also affects team dynamics, reinforcing broader social inequities. By highlighting these disparities, our research contributes to understanding systemic barriers in Eugene's youth sports landscape.

Ibanez Sanhueza, Sebastian
University of Oregon
Mentor(s): Birdie Shirtcliff, Allissa Van Steenis
Poster Session #162

Cortisol: A Potential Long-COVID Biomarker in Youth

The COVID-19 pandemic created a public health crisis which, years later, is ongoing yet contained. People are experiencing symptoms of a new condition, termed long-COVID, in which they recover from acute viral

distress but continue to have symptoms of fatigue, brain-fog, respiratory distress, changes in taste/smell, and other sickness behaviors for months to years following COVID infection. The latest research shows that patients with long-COVID present very low cortisol concentrations, a stress hormone key in various physiological functions measured in a range of non-invasive and minimally-invasive biospecimens. This project examines archival cortisol biospecimens collected before, during, and after the COVID-19 pandemic. We further analyze data from the Early Growth and Development Study, reports of health symptoms, medical records, and a burst of assessments throughout the pandemic. Early data analysis shows a moderate negative size effect (R= -0.366) between the number of symptoms and the cortisol concentration, and a non-significant Pearson correlation (p = 0.085) trending towards significance. If successful, this study will demonstrate the value of (low) cortisol as a biomarker for long-COVID in adolescents and serve as a template for archived biospecimen projects to inform about long-COVID.

Inman, Grace
University of Oregon
Mentor(s): Amanda Cook, Melanie Sheldon
Poster Session #225

Exploring Palladium-Catalyzed Decarbonylative Dehydration of Carboxylic Acids

Transition metal catalysis is an expanding field within the chemical community. Of specific interest is the identification of a renewable synthesis of alkenes for the reduction of fossil fuel consumption. Current procedures, with this end goal in mind, focus on palladium (Pd) for its catalytic properties. The focus of this research is to develop a Pd catalyst for the decarbonylative dehydration of carboxylic acids to form alkene precursors for synthetic molecules on an industrial level. Optimization of this catalytic system explores the impact of varying bulky phosphine ligands, steric hindrance of the sacrificial anhydride, amount of base added, reaction temperature, and reaction rates between Pd(0) and Pd(II) sources. With the aim of tuning the procedure towards the kinetically favorable terminal alkene.

Isakharov, Lazar
University of Oregon
Mentor(s): Abby Cullen, Ashley Walker
Poster Session #216
Mind Over Muscle: Memory, Muscle, and Aging

Dietary zinc affects cerebrovascular but not cognitive function in young Alzheimer's model mice.

Co-Author(s): Skylyn Ferguson, Abby Cullen, Ashley Walker

Prevalence of Alzheimer's disease (AD) is rising with the aging population, exacerbated by oxidative stress and cerebrovascular dysfunction. Zinc, a vital antioxidant, is a global nutritional deficiency impacted by both diet and age. We aimed to elucidate zinc's role in the cerebrovascular pathology of AD. We hypothesized that low-zinc diet decreases cognitive function through endothelial impairment and dysfunctional antioxidant response compared to normal- and high-zinc diets in AD model mice. Male and female mice were fed normal (30 ppm), low (2-5 ppm) and high-zinc (300 ppm) diets for 8 wk starting at 4 m. We evaluated cognition via Morris Water Maze and Novel Object Recognition tests. Cerebrovascular function was assessed via pressure myography and brain immunofluorescent staining. Our data revealed no significant effect of zinc on cognition. Endothelium-dependent dilation to acetylcholine (ACh) and insulin had sex and zinc-dependent effects. Max ACh dilation was significantly lower in low-zinc males vs. other males and low-zinc females. High-zinc females trended toward increased max ACh dilation than normal. High-zinc males dilated more to insulin than normal- and low-zinc, while the responses in females were not different. However, high-zinc females dilated significantly less to insulin than high-zinc males. Antioxidant analysis is ongoing, but we expect to find dysregulation in low-zinc diet animals. This study advances understanding of zinc's impact on AD pathology.

Istratov, Nikita
University of Oregon
Mentor(s): Joyce Chen, Alexandre Dossin
Historical Musical Performance & Collegium Musicum

Historical Fortepiano Performance of: Mozart Sonata K. 310 I. Allegro Maestoso

Wolfgang Amadeus Mozart's Sonata K. 310 was written in 1778. As a classical pianist, I play this piece (and others from the period) on modern grand pianos. However, the way listeners are used to hearing it today is not at all the way Mozart heard it when he wrote it. This is because the grand pianos we use today are very different from the keyboard instruments that existed in Mozart's time. The cutting-edge technology of his age was the "fortepiano," invented around 1700 by Bartolomeo Cristofori. This instrument introduced a novel key action. It uses hammers to strike strings at different speeds and allows for dynamic control (from "forte"

to “piano”, hence the name). The older harpsichords could not do this due to the way they pluck the strings. Listening to Mozart’s Sonata on a more “true-to-intent” instrument way reveals a new perspective that cannot be experienced otherwise. My work here involves understanding the way the instrument works and the most effective way I can utilize it. Differences in key size, depth, weight, and response make performing an interesting challenge.

This sonata is one of only two that are in a minor key. In fact, out of Mozart’s 600+ completed works, only around 30 were written in minor. When discerning Mozart’s motivation for this key selection, it is impossible to ignore his circumstances. Mozart was visiting his ill mother in Paris at the time, who would pass away in July. Dissonance and turmoil permeate all three movements of this sonata.

Jackson, Nicole
University of Oregon
Mentor(s): Laura Jeanty, Juliet Wright
Virtual

The Muon Collider: Analyzing Simulated Background and Signal Processes to Advance Particle Tracking

Within particle physics, we have discovered a multitude of groundbreaking findings with particle accelerators. Previous particle accelerators have used electromagnetic fields to accelerate and collide stable charged particles, including electrons, protons, and ions. These machines have been at the forefront for information on particles we know exist, including the Higgs Boson and antimatter. That leaves the question: What about the particles that we don’t yet know exist, but think should be there, including dark matter? This leads to the idea for a future muon collider, a circular particle accelerator geared towards innovation, cost-efficiency, and searches for new particles. The muon collider would be the next generation of high-energy physics focused on the acceleration and collision of muons. One preliminary step to producing this accelerator is to simulate such an environment. By producing computational models and data simulations that model the collisions that this accelerator would produce, data can be extracted to indicate the key results from this collider and inform the future design of this detector. This presentation will focus on the studies of the simulated beam induced background and signal processes found within the collider. Furthermore an emphasis on processes used to distinguish between background and signal particles and methods geared towards advancing particle tracking through detector design and understanding the collider environment will be showcased.

Jakubenas, Jeffery
See "Fillo, Peter-George"
Genius Loci (Spirit of Place)

James, Dante
University of Oregon
Mentor(s): Caitlin Kowalski, Matt Barber
Poster Session #220
Next-Gen Healing Biomedical Innovations

Sebum Driven Shifts in Antimicrobial Efficacy Against the Skin Pathogen Staphylococcus aureus

Human skin contains up to 6,000 sebaceous glands per square inch. These glands produce sebum comprised of lipids, antimicrobials, and proteases. Sebum is instrumental in skin barrier integrity and defense; however, how sebum influences bacterial growth and antimicrobial susceptibility is unknown. Synthetic sebum (SS) formulations have recently become available. SS recapitulates key lipids of human sebum providing a reproducible alternative to study the influence of sebum on microbial physiology. The pathogen Staphylococcus aureus causes a range of skin diseases from boils to eczema. While antibiotic resistance is a major concern, even clinically susceptible S. aureus strains can survive antibiotic treatment. This process, termed antimicrobial tolerance, results from the environment and physiological state of the bacteria. We hypothesize sebum impacts S. aureus antimicrobial tolerance. We screened 200+ antimicrobials against S. aureus +/- SS. SS increases efficacy of 16 compounds and decreases efficacy of 7. As proof of principle, we focused on the ability of SS to protect S. aureus from membrane depolarizing compounds. Fatty acids alone or the ability of S. aureus to incorporate them in the membrane are insufficient for protection. Future work is focused on dissecting mechanisms by which SS impacts S. aureus antimicrobial susceptibility. This project may advance therapeutics against pathogens by utilizing host secretions in conjunction with antimicrobials

James, Sofia
University of Oregon
Mentor(s): Melissa Redford, Jessica Huber
Neural Blueprint–From Molecules to Movement

Language planning markers predict inhalations during pauses in disordered and healthy older adults

Co-Author(s): Jessica Huber, Melissa Redford

Parkinson's disease (PD) disrupts the cognitive system that underlies language planning and the motor system that underlies speech production. These systems must nonetheless work in concert to produce

fluent, coherent speech. Our study question is: How are language planning and speech systems coordinated in the minds of individuals with PD, whose cognitive and motor functions are compromised. This study focuses specifically on the relationship between markers of language planning and speech breathing in monologic speech elicited from 20 adults with PD and 20 age-/sex-matched controls. Speech was transcribed and segmented into utterances based on pauses (> 150 msec). The presence/absence of inhalation during pausing was marked. Markers of planning were coded independently and used to predict the presence/absence of inhalation. Preliminary analyses showed expected differences between groups in breathing rate and discourse coherence, cohesion as well as in the frequency of backwards-looking disfluencies. Despite this, the same 3 variables (forward-looking disfluencies, clause and episode boundaries) predicted inhalations across groups, suggesting a robust relationship between planning and breathing in speech. These results suggest that language disfluencies are unlikely to be motivated by the higher rate of breathing seen in PD. For speech-language pathologists, this understanding justifies a focus on communication during treatment that is independent of speech constraints.

James, Talia
University of Oregon
Mentor(s): Dean Mundy
Poster Session #070

Restructuring DEI: Fighting Antisemitism on College Campuses

Now more than ever, antisemitism is destroying college campuses. As a Jewish student, I have experienced and witnessed a dramatic increase in antisemitism at the University of Oregon since October 7, 2023. This research aims to unveil the causes of modern day antisemitism. This thesis includes five interviews and two focus groups, each with six participants. The primary research supported the literature review, and helped to understand how and why antisemitism is not included within the realm of the DEI framework. This thesis suggests improvements the UO can adopt to ensure a safe campus for its Jewish community.

Jgerenaia, Elenae
See “Payne, Alex”
The Malinow Howlers: Illuminating Ethical Concerns of an Influential Study through Osteology

Johnsen, Maya
University of Oregon
Mentor(s): Carrie McCurdy, Jade Truong
Poster Session #219

Does High Glucose Protect Against Metformin Growth Inhibition in Fetal Skeletal Muscle?

Metformin is a widely used, affordable treatment for type 2 diabetes and is increasingly considered for other conditions involving insulin resistance. Unlike insulin, metformin crosses the placenta and enters the fetal circulation, raising concerns about its potential impact on fetal development. Despite its use in gestational diabetes and insulin-resistant pregnancies, the long-term effects of metformin on offspring remain unclear. Previous work in our lab using a macaque model showed that maternal metformin treatment led to lower birth weights in female offspring compared to vehicle controls, while no change in birth weight was observed in offspring of insulin-resistant mothers treated with metformin. To investigate potential mechanisms behind these findings, we assessed the effect of metformin on fetal skeletal muscle proliferation. Primary fetal skeletal muscle cells were cultured in high- or low-glucose media with varying metformin concentrations. Proliferation was measured by plating cells at a defined density and counting them at multiple time points. These findings will provide insight into how metformin exposure during pregnancy may shape fetal muscle development and long-term metabolic health.

Johnson, Andrew
University of Oregon
Mentor(s): Stacey Kiser, Colin Phifer
Poster Session #115

Assessing Lane Community College's Nutria Population

Co-Author(s): Jayson Neville, Colette Stringfield, Ala Nour Mahmoud

Invasive species wreak havoc on ecosystems; they have the ability to destroy niches and push native species to extinction. The nutria (Myocastor coypus), native to South America, is an invasive semi-aquatic rodent introduced to the U.S. In the early 1900s. They are known for their destructive behavior, persistent grazing on crops, and now find refuge in our native wetlands. Nutria were introduced to Oregon in the early 1930s with a reputation for inhabiting any wetlands with highly dense vegetation. Our research group became aware of nutria potentially occupying Lane Community College, which could potentially be affecting its biodiversity. To learn if this was true, we distributed game cameras along Russel Creek (a Willamette connection that runs through campus), searched for signs of vegetation destruction, and created a public survey for people in Lane County to report nutria sightings. We were unable to get concrete data on nutria being on our campus; our

footage captured a variety of vertebrae, none of which we confirmed to be nutria. Our public survey showed that 53 individuals were sighted along the river in the Eugene/Springfield area, which means our campus is at risk for reintroduction. We also captured signs of vegetation destruction but were unable to determine if these were caused by nutria. This population research on invasive species is crucial to understanding how to appropriately allocate resources to protect the well-being of our campus ecosystem.

Johnson, Daniel

See "Bohannon, Carrie"

Effects of Increased Urbanization on Land Surface Temperature: Austin, Texas and Delhi, India

Jones, Anwen

See "Townsend, James"

The Importance of Social Networks in Off-Campus Housing Decisions

Jones, Niles

See "Duarte, Diego"

The Experience of War: the Great War as Seen through the Letters and Memoirs of Those Who Lived It

Jorgenson, Shanie Lynn

University of Oregon
Mentor(s): William Cresko, Shannon Snyder

Poster Session #286

Exposure to Fish Predation Affects Survivorship in Daphnia lumholtzi

Co-Author(s): William Cresko, Shannon Snyder

Aging is a universal component of biology. Research on variation in aging has identified both genetic and environmental factors. In addition, this research has helped to identify interventions, such as calorie restriction, that can extend lifespan. However, the molecular mechanisms by which environmental exposure influence variation in aging are still largely unknown. We used Daphnia as a model organism to study environmental elements of aging. Daphnia are well known for their ability to respond to environmental changes and predatory cues. The purpose of this study was to determine if predation cues could affect longevity in Daphnia lumholtzi. To do this, we tracked survivorship of the 4th generation of Daphnia lumholtzi reared in artificial lake media with or without fish conditioning. We found that Daphnia lumholtzi treated with fish media had a lower mortality rate than control Daphnia lumholtzi, and the first 10 days showing the most significant difference in mortality rate. This suggests that predatory cues impact survivability at different

life stages in Daphnia lumholtzi. These findings set the stage for subsequent research examining the role of differential gene expression in mediating the environmental effect on longevity.

Jorissen, Joelle

See "Escalante, Kashimire"

Outfoxed: A Preliminary Survey of Gray Foxes Near LCC Campus

Kadlec, Abigail

University of Oregon
Mentor(s): Angela Rovak

Poster Session #295

The Literary Voyage of Jean Rhys: Characteristics of Modernist Women's Literature and Its Revival in Contemporary Novels

This project aims to uncover how the modernist female literary imagination persists in contemporary novels today. This will be exemplified through using *Voyage in the Dark* by Jean Rhys as a primary reference and comparator text. Using findings drawn from *Voyage in the Dark*, this project compares Rhys's novel to contemporary novels *Conversations with Friends* by Sally Rooney and *The Lesser Bohemians* by Eimar McBride. These similarities come in thematic forms of women's autonomy, which extend to body and identity. I explain that the structural and thematic elements found in modernist women's literature reflect the negation of women's autonomy over their identities and bodies in exchange for societal survivaland how those characteristics recur in women's contemporary novels. Investigations of similar aspects that represent Rhys's modernist influence include forms of deviances in prose and individualism in characters. I argue that despite the modernist and contemporary period being so far removed from each other, women's novels in British and Irish society reflect the negation of women's autonomy over their identities and bodies in exchange for societal survival.

My argument engages the emerging theory of 'metamodernism' and how this analytical frame helps us understand experimentalism in contemporary literature. Specifically, metamodernism refers to how modernism influences the exploration of ambiguity, creative paradox, and disillusionment in contemporary novels.

Kadovitz, Olivia
University of Oregon
Mentor(s): Philip Washbourne, John Postlethwait
Poster Session #264

Transgenic Zebrafish Reveal Relationship Between Vasopressin and Sexual Behavior

Co-Author(s): Philip Washbourne, Dylan Farnsworth, John Postlethwait

This experiment seeks to investigate the neuronal mechanisms regulating sexual behavior in vertebrates. Ablation of galanin neurons in female zebrafish, revealed reduced fertility outcomes, establishing a causal relationship between galanin and sexual behavior. Further transcriptomics revealed a neuropeptide expressed by a subset of galanin cells. Vasopressin was confirmed to be the neuropeptide expressed in a subset of galanin neurons through immunolabelling galanin cells with vasopressin antibodies in brain sections. These findings provide critical insights into the neurochemical mechanisms controlling sexual behavior in vertebrates by identifying vasopressin as a mediating factor. This opens new avenues for studying how neuropeptide interactions regulate reproduction, with potential applications in treating infertility or sexual dysfunction.

Kaisner, Emma
University of Oregon
Mentor(s): Anna Carroll
Poster Session #298
Stories That Shape Us

Exploring Reproductive Justice in Contemporary Short Stories

Through examining themes of reproductive justice in contemporary fiction, this thesis aims to answer the question, “How do works of contemporary literature interact with reproductive justice concepts and translate these ideas into fiction?” This thesis will examine the role of English Literature and narrative fiction in the reproductive justice movement, to explain storytelling’s ability to personalize large scale issues and explore the effects of a policy on an individual level.

To do this exploration, I will engage in a formal literary analysis of contemporary short stories, written by Women of Color. The stories I have chosen to analyze are Daniel Evan’s “Harvest,” Ling Ma’s “Tomorrow,” and Octavia Butler’s “Bloodchild.” Each story centers around an individual dealing with pregnancy and reproductive health, while simultaneously navigating societal barriers that restrict their autonomy and access to treatment. My close reading will be informed by reproductive justice theory, and it will examine the intersectionality of reproductive healthcare. I will explore how factors of race, age, and class influence the circumstances of the fictional characters, and how this mirrors reproductive justice issues debated in the

United States. Upon the completion of this thesis, I hope to identify how reproductive justice is presented in fiction, by exploring common themes and literary elements across the works I am examining.

Kebret, Mara
University of Oregon
Mentor(s): Matthew Barber, Killian Campbell
Poster Session #282

Extracellular Cations Modulate Aminoglycoside Antibiotic Sensitivity In Staphylococcus aureus

Co-Author(s): Killian Campbell, Matthew Barber

Microbes must adapt to a variety of antimicrobials encountered inside and outside of the host environment. Aminoglycosides are a class of clinically used antibiotics that target bacteria by inhibiting vital protein synthesis, inducing cell death. The bacterial pathogen Staphylococcus aureus has emerged as a global health threat due to its ability to rapidly evolve resistance to a variety of antibiotics, including aminoglycosides. While S. aureus can adapt ion uptake machinery to confer protection against antimicrobials, the role of environmental metallic ions in modulating cell surface charge and antibiotic resistance is unknown. Here we applied different concentrations of mono/divalent cations to S. aureus in culture with antibiotics to quantify the protective effects from aminoglycoside toxicity. We found that increasing concentrations of environmental cations provide a protective effect from aminoglycoside toxicity. Following this, we sought to determine if specific cell wall components contribute to modulating resistance to aminoglycosides. We utilized a panel of transposon-insertion mutants for a variety of genes that encode for cell-wall associated proteins. Critically, we found that inactivations in mprF and Tar genes confer increased aminoglycoside sensitivity and resistance phenotypes respectively. This study identifies a new role for environmental ion availability in the modulation of cell surface charge, with consequences for common clinically utilized antibiotics.

Keplinger, Cole
University of Oregon
Mentor(s): Judith Raiskin
Poster Session #020

Understanding Homosexuality Through the Lens of Earl Biggs

The public conscious of homosexuality in the mid-twentieth century can be profoundly explored through one of its primary architects: the law. Sergeant Earl R. Biggs stands at the heart of this intersection as a pivotal figure (in the state of Oregon) in shaping and reflecting societal perceptions of homosexuality. His role is

particularly significant in understanding the evolving discourse of homosexuality, especially in the wake of the Kinsey Report's release. The mid-20th century understanding of homosexuality was deeply shaped by a contradictory understanding that perceived it simultaneously as an inherent abnormality and a voluntary moral failing, justifying both medical interventions and punitive legal measures. Biggs exemplifies this paradox, as he arguing that homosexuality is rooted in biological defect while also maintaining that social social conditions, such as parental influence, seduction, and isolation from the opposite sex could lead individuals into deviant sexual practices such as homosexuality. His role as a legal prosecutor, a proponent of sodomy laws, reflects the grander anxiety about gender and sexuality during this period, where scientific rhetoric (including that communicated through Biggs) was suppressed under the social narratives of the time. Examining Biggs' work reveals how the medical, psychological, and legal discourses sought to pathologize and suppress non-normative identities under the guise of public protection.

Kersgaard, Emma
University of Oregon
Mentor(s): Mahala Ruddell
Poster Session #078

Providing Evidence of History: Archival Processing and Access to Information

In the current political climate with threats to funding for libraries and attacks on access to diverse media and histories, archival work is crucial in preserving information for public research. Archival studies play a key role in granting access to local and lesser-known pieces of history. Using Special Collections and University Archives (SCUA) and broader archival frameworks such as the sanctity of evidence, respect des fonds, the life cycle of records, and the organic nature of records, I worked on processing two collections. I focused on The Oregon Bach Festival records and the Oregon Women's Land Trust records. Both smaller collections, the OWL Trust records reveal a piece of lesbian local history that has only gained wider awareness through archival research, and the Oregon Bach Festival records reveal the impact the music festival has had on local communities. By reviewing materials, creating processing plans and physical arrangement for each collection and then uploading data into finding aids, I followed SCUA principles to accurately describe and then make these collections accessible to researchers. Through these frameworks, I found the precision that the archival process uses to retain information is necessary in providing evidence of history. The collections I worked on provided pieces of history that work against dominant narratives of the past, providing crucial information for researchers' future use.

Kim, Taewoo
University of Oregon
Mentor(s): Joyce Chen
Historical Musical Performance & Collegium Musicum

C.P.E. Bach Keyboard Trio in A Wq. 89 no.3 H.527

Carl Phillip Emmanuel Bach was highly praised by his contemporaries and successors such as W.A. Mozart, and L. Beethoven. While he has become less of a household name in recent times shadowed by his father J.S. Bach, his music has left a mark on the history of classical music. The Keyboard Sonata in A, also known as the accompanied sonata in A, was publish as a part of the 6 trios Wq.89. These works are known to bee one of the earliest forms of small size ensembles including keyboards, although similar works by composers such as Rameau and Mondonville date back to 4 decades earlier. Just as classical music has developed, the instruments have come a long way since the time of C.P.E. Bach, fortunately, the University of Oregon is home to various historical instruments including the 1994 Fisk fortepiano which is known to be a replica of the piano the pieces were written for. Performed on the Baroque Violin and Cello as well, this amazing composition has given a great direction on exploring historically accurate practices that figures such as W.A. Mozart, and Joseph Hadyn would have studied.

King, Sydnie
University of Oregon
Mentor(s): Paul Swangard, Nicole Dudukovic
Poster Session #026

Big Ten, Big Impact: The University of Oregon's Move to the Big Ten Conference

This research examines how the University of Oregon's move to the Big Ten Conference has influenced its institutional branding strategy and recruitment efforts. As higher education becomes more competitive, universities must adopt innovative strategies beyond academics to appeal to prospective students. Athletics reach broad audiences through media coverage, social media engagement, and national sporting events. This visibility plays a significant role in shaping an institution's brand identity and in influencing students' college decisions. This study uses a mixed-methods approach–content analysis of university marketing materials and semi-structured interviews–to investigate how athletic conference affiliation serves as a tool for shaping university image and visibility. As the landscape of collegiate athletics continues to change, so does its influence on universities' strategic priorities. This project aims to uncover how the University of Oregon is leveraging its conference transition to shape its brand and recruit a broader student population.

Kirsch, Miles
See "Gonzalez, Thomas"
Then and Now Zine

Kitagawa, Seira
University of Oregon
Mentor(s): Torsten Kjellstrand, Kristen Rahilly
Asian Studies Event
Works in Progress: Human Experience

Exploring how self-identity shifts by cross-cultural experience

I am working on a storytelling-based project exploring how one's view of self-identity shifts based on cross national experiences. I hope to tell stories in multimedia ways including audio storytelling, narrative/ profile writing and usage of visuals such as photos and short videos. As I lived in Japan for 16 years in a Japanese household, I never formally thought about my identity as much. When I came to the US, things changed. I experienced a culture where there is a need to have identity or some uniqueness. For me, it was being Japanese, however, I also felt not completely suited when I went back to Japan to visit my family. I came up with this question – who am I and where is home for me? After spending five years going back and forth, now I have an optimistic view towards these topics. I want to acknowledge this unique experience and highlight how people react, relate and live out their own identity.

Klein, Jasmine
University of Oregon
Mentor(s): Nicole Froidevaux, Sheila Crowell
Poster Session #156

The Association Between Shame and Birth Experiences

Certain psychological factors affect whether the experience of giving birth is positive or negative. Guilt and shame have been linked to negative mental health outcomes in both general and perinatal samples, but neither have been studied in relation to birth experiences. The purpose of the current study was to determine whether guilt and shame are associated with birth experiences. Additionally, the study sought to determine whether there was a positive psychological factor that could buffer the negative effects of guilt and shame. Past research has found that relationship satisfaction can protect against emotional distress. Thus, I hypothesized that relationship satisfaction would act as a buffer in the relationship between shame and guilt and birth experiences. The current study was a longitudinal, self-report design. Participants took questionnaires during their second trimester measuring guilt and shame and relationship satisfaction. They

took a questionnaire measuring birth experience six weeks postpartum. I found that shame during pregnancy was associated with birth experiences such that higher levels of shame corresponded with more negative birth experiences. Guilt was not associated with birth experiences, and relationship satisfaction did not act as a buffer between shame and birth experiences or guilt and birth experiences. These findings suggest that developing new interventions to reduce shame in pregnant mothers may positively impact their birth experiences.

Knudsvig, Olivia
University of Oregon
Mentor(s): Madison Fowler
Poster Session #106

From Co-Management to Land Back: (Re)Imagining Mesa Verde National Park

Mesa Verde National Park, the first U.S. national park established to protect archaeological heritage, is situated on the unceded homelands of 27 Indigenous Tribes. Since its founding, its management has prioritized Western scientific research, preservation, and tourism at the expense of Indigenous sovereignty and cultural values. This project critically examines how Mesa Verde's settler colonial frameworks have historically excluded Indigenous voices and perpetuated cultural erasure. We explore the complex intersection of archaeological preservation, ecological conservation, tourism, and Tribal sovereignty, highlighting how current management strategies conflict with Indigenous beliefs around excavation and stewardship of sacred sites. While recent co-management efforts and inclusive programming exhibit progress, they are limited and symbolic. We argue for a transformation in park governance through the expansion of co-management into Indigenous-led stewardship, the establishment of a self-determined Indigenous governance council, and the advancement of the Land Back movement. These changes would prioritize Tribal consent in archaeological research, return artifacts and ancestral remains, and center Indigenous knowledge to conservation practices. Grounded in the Just Transition Principles, this project envisions a future where stewardship of Mesa Verde reflects justice, sovereignty, and healing–redefining what public land management can and should look like.

Knutson, John
University of Oregon
Mentor(s): Addison Koneval
HURF'ing Through Culture, Identity and Power

Transfer of Writing Knowledge Through Tutors at the University of Oregon

This study seeks to understand transfer of writing knowledge in a culture focused and literary dominant English program to students. To do this I ask the question: "How and in what ways do writing tutors develop

knowledge of what makes a 'good' paper and why?" The field of composition has long focused on the practice of teaching writing and the practices that go into it through first year composition classes, writing labs and tutors, and the transfer of the knowledge gained therein to other subjects. I will apply composition and rhetorical concepts to responses given by writing tutors to explore sources of knowledge and writing practices of undergraduate and graduate writing tutors, as well as the effects of common pedagogical practices have had on their knowledge and practice.

Kohnke, Cami
See "Sanborn, Chloe"
Mental Illness, Homelessness, and Policing

Kojima, Kaytlyn
See "Taylor, Kyrie"
Perceptions in Position: Mapping Race and Stereotype on Campus

Komons, Ava
University of Oregon
Mentor(s): Adam Miller, Jennifer Michel
Poster Session #265

Disruption of the ZO1b ZU5 Domain by CRISPR Gene Editing Causes Electrical Synapse Loss in Zebrafish

Co-Author(s): Jennifer Michel, Adam Miller

Electrical synapses are complex structures necessary for quick synaptic transmission. It is understood that there are specific scaffolding proteins essential for recruiting connexins. Malformation of these synapses can contribute to neurodevelopmental diseases such as autism, epilepsy, and myopia. One protein identified, ZO1b, is required for the localization of Cx34.1 and Cx35.5. Previously, we found that the N-terminal PDZ domain of ZO1b directly interacts with Cx34.1. There is little known on other ZO1b interaction domains, however, and this project aims to explore the role of the C-terminal domain ZU5 on synapse formation. ZU5 is found to indirectly interact with actin, a protein responsible for cellular localization. We hypothesize that disruption of the ZU5 domain will lead to incorrect localization of ZO1b, causing lack of formation of electrical synapses. In a zebrafish line expressing V5-tagged ZO1b, we modified the coding region of the ZU5 domain with CRISPR gene editing and observed synapse formation using fluorescent confocal imaging of 5-day-post-fertilization zebrafish. Our results show reduced fluorescence of gap junctions in our modified fish in the Mauthner circuit, a neuron responsible for movement. This suggests significant disruption of ZO1b

localization and robust loss of electrical synapses. Further research building on this foundation is important to understand the direct role of mislocalization of ZO1b in the development of neurodegenerative disease.

Kotamarti, Amelia
University of Oregon
Mentor(s): Mike Harms
Poster Session #182
Cellular Innovations

Sounding the cellular alarm: Uncovering mechanisms of immune receptor activation

Co-Author(s): Lauren Chisholm, Mike Harms

Annually, 1.7 million adults in the US develop sepsis, a life-threatening condition where the immune system becomes overactive in response to a bacterial infection. TLR4, an immune receptor, plays a key role in this overactivation. TLR4 is activated by LPS, an oily molecule made by bacteria, through a well-described mechanism. First, LPS is carried by a helper protein, CD14, to the active site of TLR4, initiating an inflammatory pathway. Next, if CD14 is tethered to the cell membrane, a second inflammatory pathway is initiated.

TLR4 can also respond to other danger signals, such as S100A9, an inflammatory cytokine. S100A9 has been implicated in multiple illnesses, including Alzheimer's Disease, but attempts to use it as a drug target have failed due to a lack of knowledge about its mechanism of action. Using an assay in mammalian cells, we demonstrate that if CD14 is not tethered to the cell membrane, S100A9 cannot activate inflammation, while LPS can. These results suggest that S100A9 may only be able to activate the second inflammatory pathway, not the first. Current experimental methods measure a general inflammatory output. To ameliorate this lack of specificity, I am developing a novel assay that will differentially measure activation levels of the two pathways. Understanding how much S100A9 activates each of these two pathways will help uncover S100A9's mechanism of action, making it an easier drug target.

Krajack, Kennedy
University of Oregon
Mentor(s): Ashley Walker, Skylyn Ferguson
Poster Session #217

APOE4 mice have worse endothelial and cognitive function, a possible risk for Alzheimer's disease

Co-Author(s): Siena Stueland, Claudia Pelayo

Apolipoprotein E ε4 allele (E4), compared to the ε3 allele (E3), is the strongest genetic risk factor for late-onset Alzheimer's disease (AD). Beyond its role in amyloid-beta accumulation, E4 is implicated in cerebrovascular dysfunction, which can impair brain blood flow and contribute to cognitive decline. Due to limited research on how E4 impacts brain and vascular health, this study aims to evaluate whether E4 leads to greater endothelial dysfunction and worsened cognitive performance. We hypothesize that E4 mice will have greater impairment in posterior cerebral artery (PCA) endothelial function and cognitive ability than E3 mice. We used a mouse model with humanized E3 or E4 genes and a humanized amyloid precursor protein (hAPP) knock-in (n=14, 6 months). Ex vivo endothelial-dependent dilation was assessed using acetylcholine (ACh). Cognitive performance was evaluated via Morris Water Maze (MWM) for spatial memory and Nest Building (NB) for instinctual behavior. ACh dilation trended higher in E3 versus E4 mice. E4 mice had impaired cognitive function compared to E3 mice, with significant differences in NB (p=0.002) and no differences in MWM (p>0.05). In conclusion, E4 mice exhibit reduced PCA endothelial function and cognitive performance, suggesting a link between the E4 allele, vascular dysfunction, and cognitive decline. By understanding how E4 genotype and vascular dysfunction influence brain health, our research can guide future targeted AD therapies.

Krantz, Louisa
University of Oregon
Mentor(s): Dasa Zeithamova, Troy Houser
Poster Session #160

Presentation order of associations does not affect generalization via acquired equivalence

Co-Author(s): Dasa Zeithamova, Troy Houser, Kyla Brannigan

The ability to make connections (i.e., generalize) across stimuli is vital to understanding the world around us. Acquired equivalence is a form of generalization where one assumes that if two stimuli share one feature, they may share another. Despite knowing that acquired equivalence exists, the ways in which we learn the shared information– and thus generalize it to other stimuli– is still not fully understood. Some studies have

suggested that learning each shared association in blocks enhances generalization via acquired equivalence, but the evidence remains mixed. We suggest a more novel hypothesis: that scaffolding these associations during training could enhance acquired equivalence compared to presenting the information in blocks. To reconcile, we performed a between-subjects study, consisting of three phases: pre-exposure to the stimuli, training of the three initial associations related to the two stimuli (including one shared one), and then testing whether they generalize this information between the stimuli. Participants were placed in one of four training groups: blocked one (shared association learned second), blocked two (shared association learned last), scaffolded, and random (control condition in which association types were intermixed randomly across participants). A 2x4 ANOVA revealed no significant difference in generalization across the different groups, suggesting that neither blocked or scaffolded training boosts acquired equivalence more than the other.

Kraske, Sarah
University of Oregon
Mentor(s): Katelyn Alley, Victoria DeRose
Poster Session #176

Investigating Nucleolar Protein Reassembly After Pt(II) or Small Molecule Induced Nucleolar Stress

Understanding the mechanisms by which chemotherapeutic compounds function is critical for advancing cancer research and drug development. Currently, three FDA approved platinum(II) chemotherapeutic drugs–cisplatin, carboplatin, and oxaliplatin–are widely used. While cisplatin and carboplatin induce cell death via the DNA Damage Response pathway, oxaliplatin operates through a distinct mechanism involving nucleolar stress, similar to small molecule inhibitors BMH21, CX5461, and Actinomycin D (ActD). Nucleolar stress (NS) arises from disruptions to the nucleolus, a nucleus subcompartment where ribosome biogenesis occurs. Despite its clinical relevance, the molecular underpinnings of NS remain poorly understood, highlighting the need for further investigation. This study examines the reversibility of NS induced by Pt(II) compounds compared to small molecule inhibitors. We tracked the behavior of multiple nucleolar proteins during stress induction and at several time points following drug washout. Our findings reveal that Pt(II) induced NS is irreversible, while stress caused by BMH21, CX5461, and ActD is reversible upon drug removal and incubation in drug-free media. Additionally, both NS induction and reversal occur in an ordered manner, suggesting a regulated cellular process. These results provide new insight into the mechanistic distinctions between Pt(II) compounds and small molecule inhibitors, informing future therapies for nucleolus targeting in cancer treatment.

Kuhn, Ella
University of Oregon
Mentor(s): Frances White
Poster Session #094

Identifying morphological traits for distinguishing macaque species in skeletal collections

Co-Author(s): Sara Cotton, Sedona Epstein, Simon Scanell, Skye Grubb

The Primate Osteology Lab is home to 323 Macaque specimens of varying species, 29 of which are unidentified. Unidentified specimens are a problem in collections since there are many common traits within a genus, making it hard to distinguish between species. This problem is exacerbated when there is no soft tissue. Since there is little information on osteological Macaque species identification, more points were needed in order to confidently sort the 29 unknown Macaques. Using pre-existing data in species differentiation as a guide, we expanded the amount of features based on observed potential indicators. We then took measurements of specimens and reference skeletons and compared them to see if there was a pattern. Preliminary findings suggest this methodology is effective, and the rest of our specimens are being examined for identification. Methods: check age and sex (if known), if unknown base age estimation on presence of epiphyses; measure the size of key morphological features- these vary from bone to bone; compare them with measurements from multiple reference skeletons of each species (to account for biological variation), and find what species is closest to the specimen data. This research could be expanded upon to create a more comprehensive guide for species identification within the Macaque genus, and potentially other genuses. Ongoing sections of the project include continuing identification and adding more skeletons into our database to increase accuracy.

Kurihara, Catalina
University of Oregon
Mentor(s): Tian Walker
Poster Session #063

Surviving the System, Creating Our Own: A Bloom & Thrive Survival Guide

In the wake of the 2022 Dobbs v. Jackson decision, which overturned Roe v. Wade (1973), reproductive justice in the U.S. has become increasingly unstable and politicized. As states continue to individually determine access to care, the gap in reproductive health education and resources grows–particularly for people of color who menstruate. This research explores how the intersections of race and gender-identity have been overlooked in reproductive healthcare and education. In response, I propose Bloom & Thrive, an online survival guide that's accessible and educational created specifically for people of color who menstruate.

Bloom & Thrive aims to bridge the information gap by offering free, comprehensive, and culturally-responsive reproductive health education. The goal is to create a form-fitted resource to represent marginalized identities in reproductive justice, care, and health. Through literature review on communicable reproductive education, and collaborative design practices, this research investigates how we can realize Bloom & Thrive. As an intervention proposal designed to directly address disparities through community-centered solutions, this project outlines the steps involved to create and disseminate this resource with an initial focus on Lane County and Hood River County. Ultimately, this project seeks to empower people of color who menstruate through knowledge, autonomy, and care-centered resources.

Kuypers, Elena
University of Oregon
Mentor(s): Diana Libuda, Acadia DiNardo
Molecules, Minds, and Mating

Unpacking Germ Cell Gene Regulation: WAGO-3's Sex-Specific Roles in Sperm vs. Egg of C. elegans

Proper regulation of gene expression is essential for germ cells–sperm and egg–to accurately transmit genetic information to the next generation. In Caenorhabditis elegans, small RNA pathways guide this regulation by targeting mRNAs for degradation. Central to these pathways are Argonaute proteins, which direct small RNAs to their targets and localize to germ granules–liquid-like compartments at the nuclear periphery that organize gene regulatory components. Regulation by small RNA pathways is sex-specific, targeting different genes in eggs versus sperm. One Argonaute, WAGO-1, shows distinct localization between the sexes, but sex-specific differences in its paralog, WAGO-3, remains understudied. My project investigates whether WAGO-3 also shows sex-specific localization and interaction with two germ granule components: PGL-1, a structural protein, and ZNFX-1, a helicase involved in small RNA signaling. Using immunofluorescence microscopy, I found that WAGO-3 forms discrete foci in developing eggs but appears diffuse in developing sperm. WAGO-3 colocalization with PGL-1 and ZNFX-1 also varies by sex. These findings suggest that differential localization of WAGO-3 may contribute to sex-specific regulation of gene expression. By characterizing WAGO-3's spatial organization, this study advances our understanding of Argonaute specialization and small RNA pathway dynamics in germline development. This work may help reveal conserved principles of fertility and gene regulation.

LaBelle, Gillian
University of Oregon
Mentor(s): Leah Wothe, Dare Baldwin
Poster Session #147

What I eat in a day: Food choices beyond gender on social media

Co-Author(s): Leah Wothe, Dare Baldwin

"What I Eat in a Day" (WIEIAD) videos are a popular social media trend that may influence young adults' perceptions of food and health. These videos typically show a creator's daily meals, often with commentary on diet choices and nutrition. This content analysis examined 334 TikTok WIEIAD videos (186 female-presenting creators), focusing on creator gender presentation, food groups shown, and gendered food stereotypes. We predicted male-presenting creators would consume more protein and masculine-coded foods, while female-presenting creators would eat more fruits, vegetables, dairy, and feminine-coded foods. Videos were crowd-sourced to minimize algorithmic bias and coded for creator gender presentation, food group consumption, and the gendered perception of foods at dinner. Food stereotypes were rated on a scale from masculine (-1) to feminine (1). Female-presenting creators showed significantly more consumption of vegetables, grains, and dairy than male-presenting creators (Chi-squares > 3.73, p's < .05), while protein and fruit intake did not differ. A Wilcoxon rank-sum test (W=7509.5, p<.00001) revealed female-presenting creators consumed more stereotypically feminine foods, while male-presenting creators consumed more neutral ones. These patterns suggest WIEIAD videos may reinforce gendered food norms and shape viewers' attitudes toward eating. Future research should explore how these portrayals influence young audiences' health and food perceptions.

Lanoza, Kanoa
See "Miller, Gillian"
Monitoring Restoration: Native Plant & Pollinator Recovery in Riparian & Post-Fire Habitats

Lauder, Mia
University of Oregon
Mentor(s): Jen Michel, Adam Miller
Poster Session #266

Exploring the Proteomic Findings of the Electrical Synapse Density in Zebrafish

Electrical synapses enable fast synaptic communication through gap junctions and are important components of neural circuits. While chemical synapses have a well-researched and established post-synaptic density, electrical synapses remain elusive. Proteomic studies in the lab identified a panel of

candidates at the electrical synapse density whose roles on gap junction modulation remain unknown. Two of these candidates –slitrk5 and dlgap3– are scaffolding proteins linked to OCD and compulsive hair pulling in humans. My study asks: Are Slitrk5 and Dlgap3 proteins located at the electrical synapse? Does the loss of Slitrk5 or Dlgap3 impact electrical synapse formation?

Methods for this study include utilizing CRISPR technology in the zebrafish model organism. First, Slitrk5 and Dlgap3 proteins were affinity-tagged and localized in vivo using immunofluorescent confocal microscopy. Second, Slitrk5 and Dlgap3 genes were knocked out of animals, then analyzed to determine effects on electrical synapse formation in vivo using immunofluorescent confocal microscopy. Primary findings have shown protein localization in the brain, and potential disruption of neural circuitry when the proteins are eliminated. The broader purpose of this study is to continue efforts to understand the electrical synapse density. Understanding the location and downstream effects of loss of protein function will better inform future directions for exploring the role of electrical synapses in disorders.

Le, Asiana
University of Oregon
Mentor(s): Chanel Meyers, Gretchen Nihill
Poster Session #151

Are they just a racist?: Looking at the correlation of manifestations of prejudice

Co-Author(s): Samara Walker, Gretchen Nihill, Chanel Meyers

Prejudice is often considered monolithic, meaning that different manifestations of prejudice come from the same source. Past research on stigma by prejudice transfer suggests that men of color and white women anticipate a threat to their identities when witnessing prejudice toward an identity they do not hold (Sanchez et al., 2017). However, past research has not investigated whether a person who espouses racism and sexism also endorses other forms of bias, such as ableism, homophobia, transphobia, and xenophobia. In this project, we aim to examine whether these differing forms of prejudice are indeed related. Participants were asked to rate how likely a person who makes a racist comment is to make other forms of prejudicial comments. We expect that racism and sexism will correlate, supporting past research (e.g., Sanchez et al., 2017). However, we anticipate that beliefs about racism may not be correlated with other forms of prejudice. Importantly, this work highlights the need to disentangle different manifestations of prejudice and how they can be related or distinct.

Lee, Jisu
University of Oregon
Mentor(s): Gabriela Peréz-Báez, Kaori Idemaru
Asian Studies Event
HURF'ing Through Culture, Identity and Power

Social Status of Korean in the United States: A Survey

The perception of Korean culture in the United States has gone through a significant shift within the last two decades. Previously, those of Korean heritage in the US placed greater emphasis on assimilation over retaining their cultural identity, whereas now, Korean culture has become a popular object of consumption in the US at large. Concurrently, at least in anecdotal observations, younger Korean heritage speakers now tend to be more fluent than their older counterparts: however, it remains unclear whether the perception shift is a direct driver for language acquisition. As such, this study seeks to answer the question of what factors are most influential in driving Korean language acquisition among heritage speakers in the United States. This study sheds light from a sociolinguistic perspective on how Korean language usage among heritage speakers in the US changed since 1965 via a comprehensive survey, comparing factors such as age of immigration, current age, method of Korean language acquisition and retention, and extant of usage in various contexts.

The anticipated results for this study would indicate that cultural perception shifts are indirect factors while parental home language policy would be the direct factor in driving heritage language acquisition. If true, this research finding would be important among heritage language educators in general as evidence for appealing to parents of heritage speakers.

Lee, Jude
University of Oregon
Mentor(s): Karen Thompson Walker, Kayla Conde
KIDDing with Language and Poetry

The Kaleidoscope of Poetic Form

Through my time in The Walter and Nancy Kidd Creative Writing Workshops here at the University of Oregon, my writing had drastically changed. My poetry has not just deepened but expanded due to the effects of the workshops and creative community I am now a part of. Before the Kidd program, my poetry was evolving but often times, I relied on the same tactics in both language and expression. My poetic voice was stagnant and needed to adjust. When I was accepted to the workshop, I made the commitment to not only give it my all but vary my poetry from the norm of my poetic style. The focus on this was my form. This collection of poems exists to both conform to and break the boundaries of the structures of poetry. From strict, classical

elements of rhyme and meter to the contemporary aspects of experimental creative work, my poems are a spectrum of formal and thematic choices. With allusions to famous poetry and the sharing of personal narrative, this collection exists as a conversation of what poetry looks like throughout both visual and auditory aspects. As no two poems exist within the same realm of poetry, this creative work takes on a type of collection not about theme but about what poetry is and can be.

Lengkong, Aleanna
University of Oregon
Mentor(s): Michael Pluth, Haley Smith
Poster Session #232

Quantification of Reactive Sulfur Species Using the Monobromobimane Method

Co-Author(s): Christopher Steven

Hydrogen sulfide (H2S) is an important gasotransmitter that is endogenously produced by mammals and plays crucial roles in the cardiovascular, skeletal, immune, and muscular system. Due to the physiological importance of H2S, quantification of the gaseous molecule has become important to understanding it in biological systems. Monobromobimane (mBB)-based assays are useful for quantifying low concentrations of H2S in biologically relevant media, such as plasma and blood. This project aims to utilize mBB to react with a sulfur-containing compound to form fluorescent sulfide dibimane (SdB), which can then be quantified using High-Pressure Liquid Chromatography with Fluorescence Detection (HPLC-FLD). This method enables separation and quantification of the reactive sulfur species (RSS), including free H2S, acid-labile sulfide, and reductant-labile sulfur species. Importantly, we would like to use the mBB assay in studies with bone to emphasize its potential in biological applications.

Lennon-Jones, Casey
University of Oregon
Mentor(s): Matt Smear
Poster Session #270

Depression-like behaviors and disrupted neural synchrony in anosmic mice

Co-Author(s): Sidney Rafilson, Nate Gonzales-Hess, Aldis Weible, Matt Smear

Anosmia, the loss of smell, is prevalent in the population and is a common symptom of COVID-19 and neurodegenerative disorders (Mahalaxmi et al., 2021). Anosmia is correlated with depression in both humans and mice (Croy & Hummel, 2017), more so than blindness or deafness (Kohli et al., 2016), but the link between anosmia and depression is not well understood. Mice heavily rely on their sense of smell to sample their environment and anosmia is an established model of depression (Mucignat-Caretta et al., 2004). Previous

work in our lab has shown that breathing rhythms are aligned with neuronal spikes and local field potentials (LFP) in the olfactory bulb (OB) (Rafilson et al., 2024; Sterrett et al., 2024). To test the impact of anosmia on behavior and OB activity, we induced an anosmic state using methimazole (MMZ). We found that mice who are anosmic sniff at much lower frequencies for longer periods compared to mice without anosmia. Motion tracking data showed that anosmic mice stay in corners of the arena for a significantly longer period of time, which is a common behavior seen in depression-model mice (Yang et al., 2014). We also found that MMZ disrupts ongoing LFP-sniff synchrony in the OB. This work lays the foundation for a better mechanistic understanding of the link between anosmia and depression.

Leung, Kyleigh
University of Oregon
Mentor(s): Emma Richardson
Poster Session #211

Comparison of Muscle Oxidative Capacity in the Gastrocnemius, Rectus Femoris, and Vastus Lateralis

Co-Author(s): Olivia DeVelasco

Muscle oxidative capacity (MOC) refers to the ability of muscles to use oxygen for energy production, impacting endurance and sustained exercise. Mitochondrial density, muscle fiber type, and training adaptations are key determinants of MOC. In this study, we aim to compare MOC in the gastrocnemius medialis (GM), rectus femoris (RF), and vastus lateralis (VL) using recovery of muscle oxygenation via Near Infrared Spectroscopy (NIRS) following intermittent occlusion. The determinants of MOC vary within these key lower limb muscles. We hypothesize that the difference in oxidative capacity across will be reflective of muscle fiber type within these muscle groups. Participants will complete one visit with two intermittent occlusion protocols using a thigh cuff and light exercise. VL and RF will be assessed after cycling, and GM after calf flexions. NIRS will determine recovery kinetics of muscle oxygen saturation to calculate a k-value, which is an indicator of MOC. Initial results demonstrate mean k-values of 1.96, 2.17, and 1.99 for the GM, RF, and VL, respectively. We are expanding our data set for statistical comparison. Our findings may provide insights into muscle-specific endurance and performance characteristics.

Lew, Sera
University of Oregon
Mentor(s): Dare Baldwin, Jeffrey Measelle
Poster Session #084

Infant Active Joint Attention & Thiamine Levels Robustly Predict 24-Week Neurocognitive Scores

Co-Author(s): Dare Baldwin, Jeffrey Measelle, Tim Green, Hou Kroeun, Kyly Whitfield

Thiamine-deficient diets, common in rural areas of Southeast Asia, undercut infants' neuro-cognitive development, though the specific neuro-cognitive abilities affected remain unclear. We examined possible benefits of maternal thiamine supplementation for breastfed Cambodian infants' active participation in joint attention interactions with their caregivers. Such interactions offer infants key opportunities for learning and thus serve as a driver of neuro-cognitive development. We randomly assigned 335 lactating mothers to receive capsules of either 0, 1.2, 2.4 or 10mg of thiamine daily from 2-24 weeks postpartum. We assessed infants' active joint attention (AJA) via the Secondary Engagement Task (SET) at 12 and 24 week timepoints. Additionally, we used the Mullen Scales of Early Learning (MSEL) to assess infants' cognitive abilities, including receptive-language skills. Against predictions, maternal thiamine supplementation was not associated with infants' active joint attention at 12 or 24-weeks. Yet, multiple regression revealed both 24-week AJA and thiamine supplementation dose were independent and robust predictors of 24-week cognitive scores while controlling for baseline cognitive scores. These novel findings suggest that thiamine levels don't affect infant AJA, yet further confirm the role of thiamine levels and AJA in neuro-cognitive development. Thiamine's relation to neuro-cognitive development appears to operate through channels of influence other than infant AJA.

Lew, Sera
University of Oregon
Mentor(s): Dennis Galvan
Asian Studies Event
History Reimagined: War, Theater and Unheard Voices

Women's Creative Adaptation to Gender Roles in North and South Korea: a Comparative Analysis

Women's gender roles in the Korean context are complex, variable, and alive. Actors within any society grapple with the elements and ideologies of their surrounding milieu by creatively adapting components and reshaping them to create change. This study investigates ways Korean women adapt to the confines of patriarchy in two separate contexts: The North Korean famine of 1994 and South Korean feminist movements

of the 2000s to present. While these settings offer two distinct societies and cultures, this comparative analysis reveals striking similarities and notable differences in the way actors leverage change. Specifically, in North Korea, women have largely dominated black markets via marriage and engaged in sex work, superseding the barriers of the government and limits of the patriarchy. In South Korea, feminist women influence online spaces, sparking movements and encouraging ways women can take steps to change their everyday routine and expectations, such as not engaging in marriage, to weaken patriarchal pressure. Through the in-depth analysis of both primary and secondary sources, I examine North and South Korean case studies to uncover how the patriarchy intersects with Confucianism, socialism, and capitalism and how these dynamics shape everyday life choices of women. By tracing these narratives, this study identifies revolutions of change that utilize social structures to break free from the shackles of patriarchy.

Lewis, Abby
University of Oregon
Mentor(s): Colin Williamson
Poster Session #027

Math On TV: Edutainment, Power, & National Fitness

Throughout the 1980s and 1990s, US presidential addresses increasingly emphasized math and science education as essential for maintaining global competitiveness. During the same period, PBS developed a range of children's edutainment TV shows designed to get kids interested in the same subjects through humor, storytelling, and interactivity. While the television programming seems unrelated to the national politics, they are surprisingly linked. This project explores the link through textual analysis of the popular but little discussed math edutainment shows Square One TV (1987-1992) and Cyberchase (2002-present), examining their historical contexts, teaching strategies, and target audiences. Ultimately, we argue that shows like Square One TV and Cyberchase were not just educational tools, but part of a larger American campaign to promote national fitness in an increasingly competitive global context. By situating these shows within federal narratives of fitness, we also explore how math is far from a neutral subject. Indeed, mathematical knowledge is a form of power, which influences access to opportunity and resources. Finally, by analyzing these shows in their historical contexts, we show that they teach us how ensuring equitable access to math education is vital for mathematical empowerment for all.

Lindon, Ava
University of Oregon
Mentor(s): Melissa Redford
Poster Session #033

Non-native vowel contrast perception in persons with and without synesthesia

Grapheme-color (GC) synesthesia refers to a type of synesthesia in which graphemes elicit a consistent and involuntary color-association response. For example, an individual with GC synesthesia may see 'A' as red and 'E' as green regardless of the color of the text. Although relatively little is known about how synesthesia influences speech perception, at least one study has shown that GC synesthetes also see different colors when hearing different vowels. Given this, color may provide an additional cue to vowel identity. If this is the case, we might expect synesthetes to have an advantage over non-synesthetes in discriminating foreign language vowels, specifically ones that are difficult for English speakers. To test this hypothesis, English-speaking synesthetes and non-synesthetes (20 per group) will complete two perceptual word categorization experiments. The words, produced by French speakers, differ only in the vowel (e.g.,seul [sœl] "alone" vs. sol [sɔl] "ground"). Participants listen to two words produced by one speaker, then a third produced by another. The participant's task is to decide whether the third word is the same as the first or the second (i.e., ABX task). In Exp. 1, the task is purely auditory; in Exp. 2, the words are also written out phonetically. Predictions are that synesthetes will have the advantage in Exp. 1 but not necessarily in Exp. 2, where the "visual cues" to sound are more equalized. Data collection is currently in progress.

Lindstrom, Hanna
University of Oregon
Mentor(s): Motoki Sakurai, Andrew Karduna
Poster Session #208

Faster Reaction Times do not equate to Higher Accuracy in Baseball Players compared to Non-Players

Co-Author(s): Motoki Sakurai

Reaction time (RT) is important for executing successful ball-catching movements in baseball. Despite research on RT for overhead athletes, there is limited work examining RT and reaching accuracy (RA) in a baseball player's environment. Virtual Reality (VR) can visually alter one's environment to evaluate RT and RA. The present study aimed to evaluate differences in RT and RA during a novel dynamic reaching task in VR between baseball and non-baseball groups. Twenty one collegiate baseball players and twenty one control subjects performed a shoulder flexion reaching task in VR. Subjects elevated their non-throwing shoulder to intercept a target located 5 m in front of their field of view, traveling 5 m/s towards them, and directed to one

of three different horizontal endpoints located at shoulder height. Trial blocks consisted of twenty one trials of subjects' hands accurately depicted in VR. RA was calculated as the absolute angle difference between target endpoint and reaching hand, and RT from the time difference when the ball and reaching hand started moving. A faster RT in the baseball group was observed (p=0.006), while RA was not different between the groups (p=0.22). Results suggest baseball players have superior upper extremity motor function compared to non-athletes. VR can be a powerful tool allowing athletic, clinical, and other populations in need of motor function assessment to create training plans and overall improve RT and RA.

Linn, Ava

See "Schwing, Emma"

Beyond the Law: Public Awareness, Healthcare Access, and Reproductive Justice in Mexico

Lippa, Charlotte
University of Oregon
Mentor(s): Adam Rauff
Cellular Innovations

Composite Microfiber-Hydrogel Scaffolds Improve Cellular Viability and Seeding in Muscle Constructs

Co-Author(s): Adam Rauff, Phillip Hernandez, Samuel Nightheart, Ievgenii Liashenko, Paul Dalton, Nick Willett, Robert Guldberg

Volumetric muscle loss occurs when native muscle tissue is lost beyond innate regeneration capabilities. One challenge of fabricating muscle tissue grafts in vitro is contraction of commonly used hydrogel matrices. Our composite muscle constructs, consisting of microfiber scaffolds and collagen hydrogel, resist matrix contraction and drive alignment. However, our system is novel and lacks established protocols. Our goal was to quantify cell viability and retention on composite constructs. We hypothesized that composite constructs would increase cell viability and retention compared with scaffold-only samples.

C2C12 myoblasts were seeded hydrogel-microfiber constructs. Control groups included collagen hydrogel (Gel-only), and microfiber scaffolds. Cell viability was found using immunofluorescence imaging, and alamarBlue assay. Cell retention was found using DNA mass with PicoGreen assay.

Cells adhered to microfiber scaffolds and assumed aligned orientation. Cell viability from the live-dead assay was variable in the MEW-only group, while composite constructs and gel-only samples did not differ. Cell retention increased with higher seeding density in composite cultures, as did DNA mass.

Composite constructs are a viable muscle culture system, offering controlled cell organization, and improved viability and seeding density. These constructs combine the benefits of soft matrices with the structural integrity of microfiber scaffolds.

Littlejohn, Tiana
University of Oregon
Mentor(s): Kathryn Mills, Lucy Whitmore
Poster Session #132

Using Psychology to Foster Human Consciousness and Connection to Nature

As environmental challenges intensify, fostering environmental consciousness and pro-environmental behaviors among young adults becomes increasingly urgent. This study explores the impact of an Environmental Psychology course on college students' environmental attitudes and behaviors. Specifically, it examines whether educating students about the psychological connection to nature can enhance their environmental consciousness and motivate pro-environmental actions. In an experimental Environmental Psychology course, college students participated in a longitudinal study, completing weekly surveys to track their connection to nature, environmental attitudes, and behaviors. Prior studies have found that exposure to ecological principles increases college students' connection to nature and engagement in sustainable behaviors. In a sample of 40 students, we observed increased self-reported feelings of connection to nature over a 10-week term. Alongside this, participants also reported an increase in pro-environmental behavior. These findings support the idea that fostering environmental consciousness among college students through targeted curricula can contribute to broader efforts to address the mental health and environmental crises of climate change. Future research should focus on examining similar course content in other educational settings, aiming to analyze the long-term effects of such educational programs.

Litty, Makenzie
University of Oregon
Mentor(s): Raoul Lievanos, Kari Norgaard
Poster Session #043

Sovereignty and Scarcity: Media Representations of the Navajo Nation's Fight for Water Rights

Tribal water rights are a point of contention in the southwest as the seven basin states resist reallocating Colorado River water. These tensions most often manifest in the legal sphere when tribes engage in litigation against state and federal agencies, which are covered in the media. The present study seeks to answer the following questions: How has the media framed the Navajo Nation's battle for water access throughout the Navajo Nation vs. Department of the Interior? To what extent do they (a) reflect, naturalize, and reinforce settler-colonial narratives and (b) contribute to the overall erasure of Indigenous populations? Drawing on settler-colonial theory and other relevant sociological literature, I undertake a qualitative content analysis of newspaper articles discussing Navajo Nation water rights published by settler and Indigenous-

owned newspapers on the local and national level during 2003, 2017, and 2021-2023. I argue that the media attempts to delegitimize the Navajo Nation's lawsuit primarily through shifting definitions of seniority, rewriting history, and highlighting water scarcity in the southwest to fit settler interests. The present study contributes to the current literature on contemporary settler-colonial operations and provides insight into potential factors that led to SCOTUS ruling against the Navajo Nation in 2023.

Lloyd, Caitlin
University of Oregon
Mentor(s): Mariachiara Gasparini
Poster Session #086
Asian Studies Event

Iconographic and Technological Evolutions in Qing Dynasty Rank Badge Embroidery

For centuries, rank, status, and social hierarchy kept order in the Qing Dynasty. Strict procedures of the royal court defined one's place in society which was symbolized by the wearing of rank badges by civil and military officials on their chest. These badges consisted of both front and back pieces that were embroidered with silk thread. And while for centuries these badges served their intended purpose, a shift occurred towards the end of the Dynasty, when there was a sharp decline in their symbolic significance and quality of craftsmanship. Through this examination of the badges held the collection of the Jordan Schnitzer Museum of Art, along with cross examinations of other collections and historical text, I propose that the overall decline in technical abilities and badge quality was a direct result of the ability to purchase rank status. The emergence of techniques such as painting silk, machine manufactured appliques, and red thread couching embroidery, demonstrates a shift in not only embroidery techniques, but also a societal rejection of historic embroidery badge practices. These changes emphasize efficiency in production allowing the badges to be produced cheaper and faster. This research relies on visual and microscopic analyses of badge imagery, while also considering the historical context of the declining Qing Dynasty.

Locke, Abiel
See "Podrabsky, Dylan"
Empathy & Bridge-building: Anthropological ethics and the capacity for change

Locke, Abiel
University of Oregon
Mentor(s): Josh Snodgrass, Jo Weaver
Health Stigma, and Ethics in Homelessness

Anthropology, Ethics & Community: Creating an intestinal health study with people who are homeless

Co-Author(s): Mackenzie Ní Flainn, Zachary DuBois, Tara Cepon-Robins, Jo Weaver, Josh Snodgrass

Ethical community-based participatory research (CBPR) methods are more often being used in the social sciences, particularly in anthropology. Anthropology offers insights for engaging in rigorous community reciprocity. This is relevant in work with highly vulnerable communities. In collaboration with people experiencing homelessness (PEH) in Eugene, Oregon, we are developing a pilot study examining intestinal health, intestinal parasitic infection, and water, sanitation and hygiene access as part of the larger Homelessness and Health project. Our methods will include minimally invasive biomarker collection and a survey specific to PEH's access to hygiene facilities and water sources. This project aims to be inclusive of PEH's expertise in their health, preferred interventions, and long-term community interests. It is utilizing focus group discussion, bidirectional communication to maximize participant feedback, and the combination of biological metrics and a sociocultural framework to examine this issue and ensure our research has positive impacts for the community. As part of the work of mitigating the historically extractive nature of research, this project is distributing supplies to people outside (e.g. first aid kits and food) and is building open lines of communication across nonprofit organizations, city government spaces, and other community-based organizations. We offer our experience of developing community accountability and best practices for future interventions.

Lohf, Haley Mae
University of Oregon
Mentor(s): Felix Deku, Rebecca Frederick
Poster Session #168

Accelerated Long-term Chemical Stability Evaluation of Multichannel Thin-film Implants

Co-Author(s): Max Tenenbaum, Valerie Brogden, Oyinkansola Tunji-Ogunsanya, Dr. Rebecca A. Frederick, Dr. Felix Deku

Neurological conditions are the leading cause of disability worldwide (WHO, 2024). In response, neural engineering labs are working to develop new treatment methods using small, flexible electronic devices to record and stimulate signals in neural tissue. To find the device designs best suited for the neural interface

applications, different material compositions need to be tested for overall integrity of fabrication methods and durability of the device. Using thermally accelerated aging, this study tests the overall durability of one neural interface design, comparing two substrate variants: polyimide (PI) and polyimide/amorphous silicon carbide (PI/a-SiC), and two electrode materials: gold (Au), gold/electrodeposited iridium oxide film (Au/EIROF). Each device variant was tested in two aging conditions: 37°C and 67°C, with the electrodes submerged in sealed vials of phosphate buffered saline (PBS). At two-week intervals, impedance and charge storage capacity of each electrode were measured until device failure. Results demonstrate that the added a-SiC layer improved electrochemical insulation and interlayer adhesion, preventing liquid ingress. Devices with such improvements are more likely to last longer, while remaining reliable for neuromodulation, vital for long-term patient use.

Lopez, Ilsi
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #053

The Impact of Extreme Weather on Eugene's Unsheltered Population and the Lack of Resources Available

Due to residing outside, homeless individuals are at a higher risk of experiencing natural hazards - including the destruction of shelter, food, and belongings, and trauma caused by loss of social connections and mental health impacts. Resources surrounding natural disasters are focused on housed people, leading to unhoused individuals slipping through the cracks. Due to this, more research is needed to focus on the effects these people experience. The homeless population faces significant danger during extreme weather events, including the 2024 ice storm in Eugene Oregon. They are vulnerable to life-threatening conditions such as frostbite and hypothermia due to the deprivation of resources such as shelters and the restrictions put in place. They are often denied access to public spaces and are subjected to policies that discriminate against them and isolate them. We reviewed scholarly sources focusing on homelessness, including populations in the United States and Australia. We analyzed news articles, reading direct quotes and interviews from homeless people in Eugene experiencing effects of the ice storm. Our goal through research is to bring light to the lack of resources and affects homeless people in Eugene experience due to extreme weather, and what Eugene should do to lessen those effects.

Lopez, Leonardo
See "Horban, Noah"
Single-Slit Diffraction

Lopez Padilla, Celine
University of Oregon
Mentor(s): Jonathan Pruneda, Scott Landfear
Poster Session #192

Novel Inhibitors in Leishmania mexicana: A Pathway to New Antileishmanial Therapies

Leishmania mexicana, a parasite responsible for leishmaniasis in tropical regions, undergoes a complex lifecycle involving transmission by sandflies and replication within mammalian macrophages, resulting in debilitating skin lesions. Current treatments are inadequate due to their toxicity and limited efficacy. Recent studies have identified promising compounds such as arylquin VMS-7-25 and chloronitrobenzamide compound 254, which are hypothesized to target dephospho-coenzyme A kinase (DPCK), a crucial enzyme in Coenzyme A biosynthesis. This study aimed to investigate the interaction of these compounds with DPCK using recombinant protein expression in E. coli. Protein solubility and yield were optimized through vector screening and scale-up, with initial data indicating insolubility challenges. Once sufficient purified protein is obtained, thermal shift assays will be used to assess compound binding and stabilization. Confirming these interactions could validate DPCK as a potential therapeutic target and support the development of safer, more effective treatments for leishmaniasis.

Lopez Padilla, Michelle
University of Oregon
Mentor(s): Carrie McCurdy, Avika Gomez-Sharma
Poster Session #215

Impact of Maternal Western Style Diet and Obesity on Offspring Cardiac Metabolism and Structure

A surge in obesity rates in the U.S. since the late 20th century corresponds with an increase in the consumption of the western style diet (WSD) – high in sodium, fats, sugars, and processed ingredients. The negative health outcomes in adults induced by a WSD has been extensively studied, but the influence of a maternal WSD (mWSD) on fetal development has not. This project investigates the impact of mWSD on offspring cardiac metabolism and structure at the juvenile timepoint. The left ventricular (LV) wall was harvested from lean juvenile non-human primate offspring from dams fed mWSD or maternal control diet (mCD). There is an increase in heart weight to body weight ratio in the mWSD offspring indicative of cardiac hypertrophy. Whether this hypertrophy is pathological is unclear. To investigate this, a hydroxyproline assay was performed to quantify changes in collagen deposition, followed by histology to visualize changes in cardiac structure. It was hypothesized that there would be a significant increase in collagen content, cardiomyocyte cross-sectional area, collagen deposition, and lipid droplet accumulation in the LV of offspring

exposed to mWSD compared to mCD. A significant increase in collagen content in the LV of offspring exposed to mWSD was found. This supports preliminary metabolic data, suggesting a shift in metabolic fuel preference is tied to pathological hypertrophy as a result of exposure to mWSD.

Love, Logan
University of Oregon
Mentor(s): Michael Malek Najjar, Tricia Rodley
Beats of Belonging- Identity in Motion

A Stage Director's First Steps, the intensions before the stage.

Examining the practices and steps stage directors take when first diving into a piece of work. The world that lives within the pages requires research into the author, language, location, relationships, and time period of the play. To connect with audiences, directors must research and consider the time period in which the play was written and the time it is being performed. Directors utilize these elements to enhance their storytelling through collaboration with the two key components of a production: designers and actors. The introduction of other art disciplines, such as music and visual art, helps connect the artistic visions of the director and designers. Communicating this research to designers and technicians enhances the visual and audio elements that are presented to the audience. By working with actors on given circumstances, motivated movement, and line-by-line analysis, directors can use their research to collaborate with actors to enhance characters and their storytelling.

Love, Sasha
University of Oregon
Mentor(s): Derek Brandow
Poster Session #121
Earth Vibes Only

Cavefish: underappreciated underground wonders

My podcast episode gives listeners an insight into the lives of the subterranean fish that live in aquifer and cave systems in the southern United States. These creatures are very unique (they are often colorless, blind, and have intriguing sensory compensation) and they are incredibly valuable for healthy ecosystems. Learning more about them could help humans analyze groundwater contamination and find possible treatments for diabetes, but don't listen to me, take it from the experts on my show including zoologists and professors in the field.

Luna, August
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #038

How Youth Violence in South Korea Receives Representation Through the Netflix Original, The Glory

School violence has been recognized as a major social problem in South Korea. This research project explores the representation of school violence in South Korea in the Netflix Original, The Glory. I examine its accuracy of portrayals and the connections between youth violence, school bullying, and mental health in South Korea through a literature review of secondary publications on the nation-wide bullying epidemic. I continue with an examination of the psychological aspects of youth violence and its consequences for the mental health of Korean youth. In analyzing these articles and the series I explore the factors and cultural influences of what make the show's characters display acts of physical and psychological violence throughout their life, and how the main character's mental health changes due to violence. Preliminary observations indicate that in essence, The Glory portrays is an exaggerated, but accurate, representation of true events that happen often in South Korean schools. The main character's mental health seems to be an explicit recreation of victims of youth violence where, "Forms of violence have become much more diverse in recent years, and their severity has increased." This examination demonstrates that The Glory is a realistic representation of modern school bullying in South Korea, rather than just a dramatized performance for shock value. It offers a tool for further cross-cultural analysis of Korean youth.

Luu, Madeline
University of Oregon
Mentor(s): Hans Dreyer, Helia Megowan
Poster Session #196
Hormones, Heat, and Muscle Power Unveiled

Automated Pipeline Method for Serial Image Analysis of Muscle Biopsy Cross-Sections

Co-Author(s): Helia Megowan, Kaitlyn Augienello, Adam Fries, Hans C. Dreyer

Manual analysis of skeletal muscle cross sections for features such fiber type, cross sectional area, myonuclei, or 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 a Cell Profiler-Cell Pose pipeline that quantifies cross sectional area, fiber type, myonuclei, and satellite cells from skeletal muscle biopsies. Immunohistochemistry was used to quantify myonuclei, satellite cells, fiber type distribution, and changes in

cross-sectional area (laminin), and images were captured at 20x and cleaned of overlapping cells or regions where tissue is obscured. Images are then run through our Cell Profiler-Cell Pose pipeline and individual myofibers, myonuclei, and satellite cells are segmented and saved as masks. Masked images are run through a novel python code that converts the images to a spreadsheet containing cross sectional area, perimeter, myonuclei, satellite cells, and fiber type for each individual cell. Testing shows agreement between the manual and pipeline analysis and in shorter time; ~10 minutes vs. ~4 hours. Altogether, this pipeline will allow for the timely and reliable quantification of changes within skeletal muscle cross sections between timepoints, treatment groups, and individuals.

Mackey, Blu
University of Oregon Student
Mentor(s): Kendall Mather, Marcus Cumberbatch
Poster Session #292
Works in Progress: Human Experience

Exploring the Intersection of Fashion, Culture, and Psychology

Many sources have revealed that the rapidly growing availability of a vast, broad range of styles has provided more opportunities for self-expression through clothing or fashion choices and exploration of personal style. However, there remains a significant lack of research on the psychological and cultural aspects of our personality and identity that can directly influence these fashion choices. Additionally, despite the recent "connections… made between the clothing we wear and the inner world of the wearer," (Maxey, 2022) there has been a lack of psychological perspective on the topic of fashion and the processes that influence our fashion choicesour unconscious clothing choice processes.

So far we have no good way of assessing fashion choices in order to examine the correlation between personality and fashion choices therefore, this research develops a novel assessment instrument in order to capture individuals' fashion choices and examine how they can be related to items such as personality or cultural variables. Overall, this research examines the intersection of fashion and psychology by exploring the relationships between individual differences (e.g., personality traits, values, and cultural background) and fashion-related preferences (e.g., aesthetic preferences and motivations driving fashion choices) by reviewing current literature and administering a fine-curated survey to the college population of University of Oregon students, specifically adults ages 18-30.

Mahady, Emma
University of Oregon
Mentor(s): Carl Brozek, Audrey Davenport
Poster Session #234

Size Independent Metal Dopant Effects on Strain and Optical Properties in Metal Organic Frameworks

Metal Organic Frameworks (MOFs) are highly porous, crystalline structures with a diverse range of applications due to their highly tunable, versatile nature. One of the ways to tune the optical, electrical, and catalytic properties of MOFs is through their metal centers. However, the extent to which doped metal concentrations effect strain and shifts in ultra-violet visible light spectroscopy (UV-vis) is unknown. In this work, a zinc triazolate (ZnTA2) MOF was stoichiometrically doped with copper while the size was held constant. The resulting bimetallic system's composition was verified with powder x-ray diffraction (PXRD) and inductively coupled plasma mass spectrometry (ICPMS). The UV-vis spectrum for each sample was then collected and the unit cell parameters and strain values were extracted from the PXRDs. From the UV-vis spectra a large blue-shift in d-d peaks plotted against the metal concentrations was observed. This shift shows remarkable correlation with the strain values. Furthermore, this shows a novel, size independent method for manipulating the strain of a MOF. Size independent strain engineering could be useful for synthesizing practical semiconductors MOF.

Mancuso, Gabe
See "Godino, Lia"
EAA and BFR Treatment to Induce Muscle Resilience Prior to Eccentric Damage

Manoogian, Brin
University of Oregon
Mentor(s): John Leisure
Poster Session #040

"Human panorama for your study": Henry T. Finck's Lotos-Time in Japan

The aim of this research is to situate Henry Theophilus Finck and his book *Lotos-Time in Japan* in their historic cultural contexts, not only by examining connections to the individuals and works referenced in *Lotos-Time*, but also through a larger comparative analysis of the book and similar narratives. Published in 1895, *Lotos-Time* is a travelogue written by Finck about his travels in Japan. The book is also a work of cultural commentary, using Finck's impressions and ideas about Japan in an examination and critique of both Japanese and Western societies. A native of Oregon, Finck was a music critic and author active in the

late 19th and early 20th centuries. An outsider to Japanese culture and lacking fluency in Japanese, Finck relied on contacts he made in Japan, particularly Japanese traveling companions, to translate the linguistic and cultural contexts he encountered. Finck's understanding and interpretation of Japan also owed much to previous English-language travelogues and other written works about Japan, which he referenced and quoted extensively in *Lotos-Time*. The book is thus both a contribution toward and an integration of the genre of mid- and late-nineteenth-century travelogues, a part of a larger community of English-language texts that take Japan as their subject.

Markey, Mollie
University of Oregon
Mentor(s): Katie Lynch, Kristen Rahilly
Changing Spaces, Shaping Places

Impact of the COVID-19 Quarantine on K-12 Environemental Education Programs in Lane County, Oregon

Prior to 2020, Environmental education traditionally took a very hands-on, localized form. The COVID-19 quarantine and social isolation period caused major impacts in the ways that environmental education programs could be run. This study investigates how K-12 environmental education programs in Lane County adapted to the challenges of the COVID-19 quarantine, as well as determines if environmental education programs have carried the adaptations learned during the COVID-19 quarantine into current programs. Six respondents from four environmental education programs in Lane County (Mount Pisgah Arboretum, School Garden Project of Lane County, Willamette Resources and Educational Network, Whole Earth Nature School) were interviewed in order to identify how their programs responded to the COVID-19 quarantine. Major impacts included changes in funding sources, relationships with teachers and schools, ability of nonprofits in Lane County to coordinate their programs, administrative burdens, and program structure. Because COVID-19 also had a lasting impact on people's mental health, particularly children, it is more important than ever that children get outside and experience the benefits of environmental education. Programs that support getting children outside already exist but need the support of their communities and school districts in order to maximize their visibility and reach.

Marshall, Luke
University of Oregon
Mentor(s): Zena Ariola, Chris Misa
From Turbines to Transformers - Navigating the Tech Evolution

Direct LLM Translation and LLM Assisted Translation: A Static Comparison of Translated Programs

Current large language models are able to take a given program which is written in a certain programming language and translate it into another programming language. A person is also able to do this as well, but it takes a significantly longer amount of time even if the person is familiar with the object and target programming languages. AI assistance is pervasive within the coding community, and can be used in tasks such as translating programs between programming languages. This presentation is a comparison of programs created through LLM direct translations and those created by an undergraduate author with limited assistance from AI.

Marshall, Zach
University of Oregon
Mentor(s): Adrianne Huxtable
Poster Session #257

Combined perinatal opioids and neonatal systemic inflammation impair neonatal chemoreflexes

Co-Author(s): Madison Kerkmann

The number of pregnant women using opioids is increasing, thereby increasing the number of neonates exposed to perinatal opioids. Further, in utero opioid exposure escalates hospital stay durations and rates of readmission, thereby increasing incidences of neonatal infections and inflammation. We previously demonstrated both perinatal opioid exposure and neonatal inflammation independently impair neonatal respiratory circuitry development, but the combinatorial effect of these two early life stressors is unknown. Here, we test the hypothesis that the additive impact of perinatal opioids and neonatal inflammation pathologically impairs neonatal breathing. Using plethysmography to measure breathing in awake, freely behaving neonates from postnatal day 0-12 (P0-12), we found that perinatal opioids alone augmented neonatal breathing, while perinatal opioids and neonatal inflammation age-dependently blunted eupneic (quiet, resting) breathing. This supports that the combined impact may lead to pathological neonatal bradypnea (abnormally low rates of breathing). Further, the combined stressors augmented chemoreflexes and chemosensitivity at P2 with lingering impairment in older age groups. These findings support additive, age-dependent breathing impairments by two increasingly common early life stressors on developing

respiratory systems. Importantly, our data suggest the need for respiratory-related interventions for infants exposed to early life opioids and inflammation.

Martin, Jenny
University of Oregon
Mentor(s): Cheyna Warner, Kyla Brannigan
Poster Session #157

Investigating Gender and Memory for Faces

Co-Author(s): Kyla Brannigan, Cheyna Warner, Dagmar (Dasa) Zeithamova

Prior research supports that memory for faces is influenced by the interaction between participant gender and gender of viewed faces. Most past research focuses on recognition memory. Less is known about how gender interacts with memory generalization, the process by which learned information is applied to novel scenarios. This study employs a category learning paradigm where participants sort faces into categories based on specific attributes and are then tested on their ability to both remember specific faces and categorize new faces into the learned categories. Participants were sorted into four groups: males viewing male faces, females viewing female faces, males viewing female faces, and females viewing male faces. Participants passively viewed faces then implicitly learned the category structure through feedback. Participants then were shown a series of previously seen and novel faces and tested on recognition. Finally, participants completed a category generalization task where they placed old and new faces into the learned categories. Results show that stimuli gender is a significant predictor of recognition performance. For generalization, participant gender is trending towards significance. Understanding how memory recognition and category generalization differs between gender provides insight into implicit biases that may affect social interactions, stereotypes and discrimination.

Martin, Liam
University of Oregon
Mentor(s): Kory Russel
Strategies for Stronger Communities

Free Water from the Sky: Reducing Homelessness with Rainwater Harvesting?

Today, more than 650,000 people in the United States lack a permanent place to live. Systemic homelessness can largely be attributed to a lack of affordable housing and lasting solutions involve more housing at lower costs. However, in the short term, city governments and non-profits must respond to the inherent suffering among the unhoused and the burden of large informal camps on businesses and communities. The largest inhibitor of short-term unhoused response efforts is funding. Eugene-based Community Supported

Shelters (CSS), a housing-first, non-profit organization which provides ultra-low-cost transitional housing, is experimenting with strategies to reduce their operational costs, thereby expanding the extent of its services. This presentation explores the feasibility of implementing rainwater harvesting systems (RWHS) at CSS safe spot communities, proposes a design, and discusses the co-benefits of RWHS's. This research included visits to CSS communities, interviews with CSS employees, and literature reviews of RWH and homelessness. RWH shows real promise for CSS primarily because it will reduce the amount of expensive water needing to be trucked in and out of the communities. The RWHS design is not only applicable for CSS but has implications and applications for urban gardening, food security, sustainable development, informal settlements, climate change, and population growth globally.

Martinez, Samantha
University of Oregon
Mentor(s): Sean Grant
Mind the Gap: Research Meets Practice

Bridging Research and Practice in Education Through Multidisciplinary Lenses

Co-Author(s): Beatriz Cabrera, Sam Hamilton, Megan Sebree, Elizabeth Day, Sean Grant

Abstract: Our panel aims to synthesize the research we conducted at the HEDCO Institute in the College of Education on two trending topics in K-12 education: Depression Prevention (DP) Programs and the Four-Day School Week (4DSW). Through the multidisciplinary lenses of research synthesis, knowledge mobilization, and interest-holder engagement we aim to bridge the gap between research and practice to analyze existing evidence and translate it into actionable tips and recommendations for educators. To identify the student demographics reported and the ways they were reported, a systematic review with meta-analysis was conducted on school-based depression prevention intervention trials. Subsequently, student demographic data was extracted from eligible studies and organized into domains. The DP review found a lack of coordination of the domains and measurements of student demographic data made it difficult to determine the relevance of DP programs. The 4DSW scoping review synthesized findings from 111 empirical studies and three interviews with superintendents to assess the impact of 4DSW policies on student outcomes, teacher/family outcomes, and implementation challenges. By considering a body of evidence, rather than single studies, we aim to highlight how educators can use evidence syntheses to make more informed and representative decisions for all their students and the importance of multidisciplinary research in informing evidence-based educational policies and practices.

Martinez Dolores, Jimena
See "Eubanks, Sam"
Aves Compartidas 2025: Place-Based Education Through Migratory Birds

Mason, Noelle
See "Fouts, Madeline"
Investigating Memory Retrieval and Perceptual Processing with Steady-State Visual Evoked Potentials

Massarat, Arya
University of Oregon
Mentor(s): Rachel Robinson
Poster Session #179

The Impact of Muscle Strength on Joint Kinetics While Under Uphill Running Conditions

Co-Author(s): Rachel Robinson, Mike Hahn

Understanding how strength differences between individuals contribute to uphill running biomechanics is key to improving performance and preventing injury. Uphill running increases demand on the hip extensors and ankle plantar flexors, but it is unclear how strength in these muscle groups explains variation in joint kinetics. This study investigated whether hip extensor, knee extensor, and ankle plantar flexor strength predict joint moment and positive work during uphill running. It was hypothesized that greater strength would be associated with higher joint moment and positive work during uphill running. Twenty-seven recreational runners (14F; 33.7 ± 12.8 yrs) ran 10-minute treadmill trials at 0%, 5%, and 10% grades. Motion capture and force-instrumented treadmill data were used to calculate joint kinetics, and isokinetic dynamometry measured muscle strength. SPSS bivariate regression models were used to assess relationships between strength and joint kinetics at each incline. Knee extensor strength significantly predicted knee extensor moment and positive work at 5% and 10% inclines (p < 0.05). Ankle strength was significantly correlated with ankle plantar flexor moment at LG (r=0.62, p=0.003) and 5% (R=0.59, p=0.007), but did not significantly contribute to the model suggesting speed to be the primary driver in this model. These findings suggest knee strength contributes meaningfully to uphill running mechanics and may be a valuable focus in training and rehabilitation.

Mathis, Natalie
See "Contreras, Ada"
Old Growth, New Connections: Climate Science Education Strengthens Relationships with Nature

Maxwell, Colin
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #097

Vegetation and Water System Changes Over Time in Southeastern U.S. Watersheds

Climate change is intensifying river flooding and hurricane activity across the southeastern United States, placing pressure on critical water systems, ecosystems, and adjacent communities. This project investigates two case studies within the southeastern region of the United States: (1) shifts in vegetation, water levels, and soil quality in the Pearl River ecosystem near Jackson, Mississippi, following the 2022 flood, and (2) long-term impacts of Hurricane Katrina (2005) on wetland loss and vegetation health in the Mississippi River Delta. Using satellite imagery, we analyzed land surface changes over time, focusing on metrics such as the Normalized Difference Vegetation Index (NDVI). We hypothesized that river flooding, coastal inundation, and sea level rise have caused critical changes to clean water availability, including wetland loss and declining surrounding vegetation health. Understanding these changes is key to informing climate adaptation, protecting water quality, and building resilience in vulnerable communities.

McClain, Harper
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #048

Gatekeepers of the Home: How Housing Intermediaries Shape Accessibility

Housing market intermediaries, or "middlemen," significantly decrease access to housing. These actors are motivated by the ethics of the contemporary homeownership system, which is built on the prioritization of profit over affordability. When contextualizing the effect of middlemen in housing in the United States, we look to Eugene, OR. A powerful housing market intermediary in Eugene, Greystar Real Estate Partners LLC, is under investigation for being guilty of algorithmic pricing schemes leading to artificial increases in rent. Landlords such as Greystar Real Estate Partners LLC fuel the loss of autonomy for renters and homeowners in the broader Lane County area. A loss in autonomy as a renter and homeowner contributes to the ever-present pressures of the housing crisis that is rampant across the United States. To examine this pressing issue, we studied news articles, the landlord's website, and existing literature that supports current and future legislation that can be used to empower homeowners and renters to have autonomy in the housing market.

McDonald, Olivia
University of Oregon
Mentor(s): Nash Unsworth, Ulrich Mayr
Poster Session #229
Works in Progress: Human Experience

How ADHD Affects Attention in College Students

ADHD has become more discussed recently as 4.4% of college students have a diagnosis (Musso & Gouvier, 2014). This impacts many students' attention, which is necessary for them to succeed academically and in other aspects of their lives. However, in attention-grabbing tasks, students may be able to hyperfocus, reducing irrelevant stimuli and improving task performance (Grotewiel et.al, 2023. This study aims to take a closer look at how ADHD affects attention, looking specifically to see if hyperfocus may be at play. The study looked at 403 University students ages 18-34. During the study, participants completed 2 ADHD assessments before moving on to three working memory tasks and two attention control tasks. While this study reached no conclusive results, it has room to be expanded upon and has highlighted gaps in the research. Not only is hyperfocus poorly defined, it seems to be understudied. Further research should be done into attention for those with ADHD to support college students better so that they can succeed in education and better manage all aspects of their lives.

McFarland, Emma
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #058

Landlord-Tenant Relations in University of Oregon Student Housing: Problems and Solutions

At the University of Oregon, 28% of students live in university-owned, -operated, or -affiliated housing (US News). Though on-campus housing is a pillar of the first-year experience and can lead to positive social and academic outcomes for students, the relationship between University of Oregon Housing (UO Housing) and students can be tenuous and imbalanced. This study provides a preliminary view into the role that universities play in facilitating housing as a landlord in conjunction and relation with student renters, allowing us to consider the ethical implications and responsibilities universities have to their students within the context of providing quality, affordable, and accessible housing. After a literature review of landlord-tenant relations, we developed a survey to investigate the student experience with UO Housing. Quantitative and qualitative data pulled from the 208 student responses helped to identify potential areas of improvement for UO Housing as they act in the role as a landlord to their student renters. The findings of

this study highlight the problematic aspects of UO Housing as a landlord and reveal a disconnect between students that should be resolved to improve student satisfaction.

McLain, Elliot
University of Oregon
Mentor(s): Alex Fountain
KIDDing the Norms- Women, Identity, and Non-Traditional Narratives

Against Plot Structure: Storytelling Through Subversive Narrative Cohesion

I am currently writing my line of inquiry research project for the Kidd Creative Writing Program, in which I study a craft element and explore how it impacts writing, and I have chosen plot structure. My motivation for studying plot structure is how writing fiction is often reduced to articulating particular plot beats at certain intervals in order for prose to be considered "good storytelling." If a story is unable to provide a successful demonstration of traditional plot structures, it is often viewed as confusing, unsatisfying, or simply unenjoyable. This universalization of plot structures, as exemplified by Joseph Campbell's Monomyth or Robert McKee's understanding of the Arcplot, has long demonized the works that do not adhere to the standards set by the "literary canon." Many stories that defy all expectations of traditional plots through nonlinear or subversive structures are still well-written. However, abandoning any semblance of structure to write whatever one feels does not always lead to the best results. Writing against traditional plot structures is a careful, calculated decision that can enhance narrative cohesion that a traditional structure would otherwise harm. I intended to analyze works of fiction, particularly by Black and people of color authors, that subvert traditional plot expectations while maintaining narrative cohesion to demonstrate how simple plot structures are not the only way to produce compelling prose.

McLaren, Ash
University of Oregon
Mentor(s): Sheila Crowell, Nicolette Molina
Poster Session #047

The Protective Function of Resilience on Maternal Childhood Trauma and Infant Emotion Dysregulation

Maternal experiences of childhood trauma are known to adversely affect mental health during pregnancy, and may influence infant outcomes through biological and behavioral pathways. A growing body of research suggests that the effects of these early adversities can be transmitted intergenerationally, posing risks to offspring emotion regulation. Resilience–defined as the capacity to adapt in the face of adversity–has emerged as a protective factor that buffers the effects of childhood trauma. However, few studies have

investigated whether resilience during pregnancy can mitigate the association between maternal adverse childhood experiences (ACEs) and infant emotion dysregulation. The current study aims to examine whether maternal resilience moderates the association between ACEs and infant emotion regulation at seven months of age. Using data collected from a diverse sample of pregnant individuals and their infants, this project utilizes resiliency theory to explore maternal resilience as a moderator. Data analysis is ongoing; however, we anticipate that greater resilience will attenuate the negative effects of maternal ACEs on infant outcomes. Findings from this study may help inform future interventions aimed at strengthening resilience during pregnancy to disrupt cycles of intergenerational trauma and support healthier developmental trajectories in children.

McManus, Charlie
University of Oregon
Mentor(s): Andrea Herrera
Poster Session #082
Data, Identify and the Politics of Being Seen

Improving Trans Computer Science Majors' Experiences via Better Data Collection and Implementation

The University of Oregon produces a yearly survey for all undergraduate students called Student Experience in the Research University or SERU, the results of which are published in interactive visualizations by UO's Office of Institutional Research. This survey involves a lot of detailed answers regarding how students from different majors and marginalized gender groups feel about how the University handles topics, including diversity and inclusion. This gives UO the opportunity to support historically marginalized groups like transgender Computer Science (CS) majors. Unfortunately, my findings show this important data is not being collected according to best practices for research on transgender students and is not widely shared to departments on campus, which limits its opportunity to enact change. To help better collect and utilize this data I suggest more options when asking about gender to help differentiate how trans students feel about diversity on campus versus how cis students feel about diversity on campus. As well it is important that all students are able to view data that can be divided by both gender and major at the same time. Finally, I recommend the Office of Institutional Research develop and publish a robust system for disseminating this data across campus to make it clear if this data is being given to different departments and how it is shared.

McNamee, Jeffrey
University of Oregon
Mentor(s): Cathy Wong, Laila Nawab
Poster Session #228

Controlling Passivation: Investigating Nucleation and Growth Pathways for Perovskite Nanocrystals

Co-Author(s): Cathy Wong, Logan Russo, Laila Nawab

Lead halide perovskite nanocrystals (NCs) are a rapidly emerging class of materials with promising applications in solar cells and optoelectronics. Their nucleation and growth kinetics are commonly described by the LaMer model, which posits an abrupt burst nucleation event triggered by monomer supersaturation. After this initial nucleation, growth proceeds through two primary mechanisms: (1) diffusion-driven monomer deposition onto pre-formed nuclei and (2) Ostwald ripening, where larger crystals grow at the expense of smaller, less stable ones. This study examines the effect of available polar surface area on the nucleation and growth processes during the synthesis of MAPbBr3. To test this, we used a ligand-mediated transport synthesis at room temperature, with either 0 or 10 glass beads added in solution. Results show that the polar Si–O bonds on the beads' surface stabilize small, otherwise unstable NC nuclei, increasing absorbance while leaving fluorescence mostly unchanged. This suggests that when polar surfaces are available during a synthesis, poorly passivated NCs that otherwise re-dissolve would instead be preserved. These insights improve our understanding of perovskite NC nucleation and growth and offer new strategies for controlled NC synthesis.

McWilliams, Kaitlyn
See "Ribeiro, River"
Exploring Student Neurodivergent Health Equity in Higher Education: University of Oregon's 2024 NCHA

Medici, Alyssa
University of Oregon
Mentor(s): Solmaz Kive, Claire Herbert
Poster Session #007

Urban Exclusion: Gentrification, Privatization, & the Rise of Hostile Architecture in Eugene, Oregon

Co-Author(s): Caroline Alkire

Over the past 50 years, public funding for urban development has been continuously decreasing, leading cities to resort to other means to fund projects, namely public-private partnerships. Public spaces are

regulated through policy and design by municipal authorities to enact the wishes of their private partners, prioritizing economic returns and leaving the needs of everyday users and residents behind. Our research explores the relationship between the rise in urban public space privatization, the increasing phenomenon of gentrification, and the resulting usage of hostile architecture in urban design practices. We first completed a literature review of articles discussing the subjects of urban privatization, gentrification, and hostile architecture. We then utilized concepts from these articles to complete a case study of design and policy change in Eugene, Oregon, which has led to the rise in hostile architecture within the city, particularly in the downtown core. Through studying city code and ordinances, as well as doing a spatial study into the accessibility of public space amenity design, we find that cities have become more exclusionary to vulnerable populations, particularly the unhoused. Through our work, we suggest that private involvement in public urban development increases displacement and the likelihood of hostile design practices being implemented. This shows the harm that comes out of privatization trends, particularly on accessibility and spatial equity.

Medler, Erin
University of Oregon
Mentor(s): Jad D'Allura
Poster Session #103

The Geology in the Southeast Corner of the Cascade-Siskiyou National Monument, Oregon and California

Co-Author(s): Jad D'Allura

The Western Cascade Volcanic Series in the Agate Flat-Jenny Creek area consists of Oligocene basaltic andesite lavas, volcaniclastic sandstone, debris flows, and silicic tuff. Being slightly tilted to the northeast, these rocks are unconformably overlain by the 3.86 +/- 0.06 Ma High Cascade lava of Pinehurst Inn (Tpbpi). The upper sections of the Tpbpi lava are mostly diktytaxitic and vesicular, yielding blocky, rubbly outcrops with columnar and platy joints forming cliffs and colluvium aprons deposited over Western Cascade rocks. Steeply inclined northwest-trending faults affect both series. Basalt, andesite, and dacite intrusions formed along a zone paralleling the fault pattern. These intrusions range in age from late Oligocene to late Miocene, revealing a long-lived zone of weakness. Jenny Creek Falls is made up of intrusive bodies that trend northwest. Evidence shows (river gravel, pillow basalt, and palagonite) that Jenny Creek used to flow slightly east of its current location. The Tpbpi lava formed a pond in the ancestral creek, eventually filling the creek and flowing over into Agate Flat. Agate Flat contains dacitic and rhyolitic tuff, with heterolithic volcanic sandstone interlaced with thin lava flows. The recessive nature of these rocks explains the wide, topographically subdued terrain of Agate Flats.

Melchert, Raquelle
University of Oregon
Mentor(s): Wagner Dantas
Poster Session #214

Protein Restriction Reduces High-Fat Diet-Induced Inflammation in the Aging Heart

Co-Author(s): Wagner Dantas

The risk of cardiovascular disease is increased by aging and obesity. Specifically, cardiac aging, which is the decline in structural and functional capabilities of the cardiovascular system, can result from abnormalities in mitochondrial function that impact energy production, inflammation, and protein quality control. Protein restriction is an emerging therapeutic intervention used to combat age-related diseases, however, it is unknown if protein restriction attenuates mitochondria-mediated cardiac aging. The purpose of this study was to explore the impact of dietary protein restriction on cardiac aging in relation to obesity. Twelve-month-old high-fat diet fed mice were used to mimic the aged and obesity condition. Mice were randomly selected for a four-month diet of low-fat (CTRL), protein restriction (LP), high-fat (HF), or high-fat combined with protein restriction (HF+LP) using 6-12 mice/group. Heart tissue samples underwent RNA sequencing to analyze transcriptomics profile and the presence of DNA in the mitochondrial and cytosolic fraction were analyzed by qRT-PCR. Additionally, protein expression was analyzed by immunoblotting and the mitochondrial ultrastructure was visualized by transmission electron microscopy (TEM). Altogether, the high-fat diet and consequential impaired mitophagy enhanced cardiac inflammation, whereas dietary protein restriction and subsequent activation of the AMPK-ULK1 mediated pathway reduced cardiac inflammation in aged mice with obesity.

Melloul, Silkie
University of Oregon
Mentor(s): Benjamín Alemán
Poster Session #238

Hot Mess: What Really Drives Boil Time?

When designing systems for efficient heating, such as cookware, convection ovens, and electric kettles, it is essential to understand how physical characteristics and design choices influence heat transfer. This project explores how heatsink fin shape, size, and arrangement affect the time it takes to boil water in a simulated environment, with the goal of identifying which factors most strongly affect thermal performance.

Using a computer simulation, we tested 32 heatsink designs made of copper or aluminum, systematically varying configuration, fin shape, spacing, and thickness. Initial analysis pointed to certain configurations as clear favorites, but final optimization produced unexpected results, with designs that seemed less favorable

early on outperforming others under specific conditions. To uncover what was driving these outcomes, we examined correlations between boil time and physical properties including heatsink mass, surface area, and water volume.

The analysis revealed that larger, heavier heatsinks with greater surface areas generally slowed the heating process, while designs with greater water volumes tended to boil faster. These correlations helped explain the unexpected optimization results and underscored how interacting design factors can produce counterintuitive outcomes, reinforcing the importance of comprehensive, data-driven analysis in heat transfer design.

Melo, Fox
University of Oregon
Mentor(s): Aaron Galloway

From Marine Life to Muscle: Exploring Growth and Repair

Effects Of Different Algal Species on Feeding Rates of Purple Sea Urchins

Primary producers from diverse macroalgal groups (Rhodophyta, Chlorophyta, and Phaeophyceae), are important food sources for invertebrate herbivores and detritivores. Recent changes in the climate and predator dynamics have affected the amount of available macroalgae in the nearshore intertidal and shallow subtidal benthos of the NE Pacific. In parts of the Oregon coast, declines in nearshore macroalgae have accompanied purple sea urchin (Strongylocentrotus purpuratus) population increases. Because purple sea urchins consume macroalgae, clarity on their feeding rates and dietary preferences is needed to provide clarity about their effects on the marine ecosystem. This experiment investigates the effects of urchin-algae trophic dynamics along the Oregon coast through the following research question: Do urchins in the Oregon intertidal zone demonstrate differences in feeding rates and ultimately gonad growth among some of the different algal diets that are common in Southern Oregon intertidal rocky beaches. We found significant differences between the feeding rates of purple urchins consuming Egregia menziesii and those consuming the red coralline algae (Corallina vancouveriensis). There was no significant difference between the other consumed groups (Ulva lactuca, Mazzaella splendens, Nereocystis luetkeana) to Corallina vancouveriensis. The data found there was a significant change in the consuming rate of macroalgae throughout the experimental period.

Mendoza Aguilar, Naelea
University of Oregon
Mentor(s): Rachana Patel
Works in Progress: Human Experience

The mental effects of how social connectedness is integrated in college campuses.

Social connectedness is one of the most common human needs that drives us individuals to reach our full potential. According to Maslow, an individual cannot reach their higher needs if their basic survival needs are not met. Data shows that social isolation is prevalent amongst college aged students. Students who identify as first generation, international, non-tradition, BI POC, and LGBTQ+ are typically the most marginalized and underserved while pursuing higher education. They lack a sense of belonging, particularly at a PWI (Predominantly White Institution). It is important to understand how their social connection experiences differ and shape their higher education experience as compared to their counterparts. My goal is to understand the structural barriers that students face while also proving that there are solutions and resources to overcome these barriers to continue students success!

Messenger, Colby
See "Horban, Noah"
Single-Slit Diffraction

Miller, Gillian
University of Oregon
Mentor(s): Peg Boulay, Carly Hamilton
Earth Vibes Only

Monitoring Restoration: Native Plant & Pollinator Recovery in Riparian & Post-Fire Habitats

This monitoring project focused on riparian area and pollinator restoration at Whitewater Ranch, an organic blueberry and timber farm in Oregon's McKenzie River Valley. Building on the efforts of previous Environmental Leadership Program Restoration and Research teams, our work had a two-pronged focus. One arm focused on restoring riparian habitat along Goose Creek on White Water Ranch with the goal of evaluating previous restoration methods and supporting native pollinators. This work was achieved by removing invasive species, monitoring pollinator populations and plant success, measuring water temperature, and planting native riparian pollinator-friendly plants. The other arm of our work was conducted in collaboration with the Ponisio Lab, studying the impact of post-fire land management on native wildflower and pollinator species. This work was achieved via monitoring pollinator populations and conducting surveys of native wildflower

community characteristics in post-fire areas. Native pollinators are critical for wild and cultivated plants, while riparian areas provide crucial ecosystem services and foster resilient environments. Our findings will guide restoration strategies, inform post-fire land management, and support Whitewater Ranch's mission to balance agricultural profitability and ecological health. Overall, this project contributes to discussions on sustainable land use, biodiversity conservation, and the intersection of agriculture and ecological restoration.

Miller, Joshua
See "Valdovinos, Sienna"
The Effects of Southern California Wildfires on Vegetation Index (NDVI) and Infrastructure (NDBI)

Miller, Joshua
University of Oregon
Mentor(s): Nick Pancheri
Poster Session #186

Evaluating therapeutic interventions for osteoarthritis of the rat knee joint following ACL rupture

Osteoarthritis (OA) is a degenerative joint disease that affects millions of US adults and costs billions of dollars to treat. OA causes joint immobility, pain and, most importantly, has no cure. Past studies have shown that ACL injuries hasten the onset of OA and is thus necessary to understand what can be done to alleviate OA pathology progression. We propose that intervening immediately after ACL injury with certain therapeutics that lessen the immune response and decrease inflammation will help prevent the progression of OA. In a pilot screening study, we used a non-invasive knee injury (NIKI) machine to induce ACL ruptures without direct damage to adjacent tissue. We then intraarticularly injected Platelet-Derived Growth Factor in both free and microgel encapsulated forms to promote bone and cartilage cell proliferation alongside Ferulic Acid in vivo and monitored anatomical/functional changes one week, three weeks, and four weeks after injection. Using μCT tomography, we showed that there was an increase in cartilage thickness in the knee and a decrease in subchondral bone across all therapeutics compared to the uninjured Sham (control) group. This work advances the knowledge available regarding OA effects in synovial knee joints and potential treatments to prevent or reduce OA pathology. Future work will include a dosage sweep of the prominent anti-inflammatory therapeutic drug Resolvin D1 to obtain an in-depth analysis of its effect on OA progression and inflammation.

Mironova, Maria
University of Oregon
Mentor(s): Michael Moffitt
Poster Session #068
Nature in Motion

Environmental Regulations, Civil Society, and Extractive Waste: The Debate over Stocamine

An active civil society is the hallmark of a healthy democracy. Equally, the post-materialist tradition has framed environmental threats as a matter of human rights. This project takes on this framework of political ecology, examining civil society action in addressing risks associated with the Stocamine extractive waste facility in Wittelsheim, France. Today, Stocamine houses 42,000 tonnes of waste in immediate proximity to Europe's largest aquifer, risking contamination of the region's water supply, prompting a decades-long debate over the possible and necessary extent of destocking. Building on existing scholarship of power systems in environmentally hazardous areas, this project seeks to evaluate the effectiveness of civil society organizations in advocating for full destocking of the Stocamine facility, focusing on journalistic coverage, organizing, and legal action, formalized in a case study format. The research indicates that the greatest success has been achieved by increasing public awareness of the issue. The findings are contextualized within the scope of broader implications for environmental policy, particularly in the context of EU mining regulations and the increasing pressure for resource extraction to meet sustainability goals. An examination of the status of Stocamine thus allows for a deeper understanding of the modes of public engagement in environmental issues against a changing political landscape and understanding of human-environment interactions.

Misra, Gayatri
University of Oregon
Mentor(s): Young-Tack Oh
Conscious Threads or Threads of Meaning

Conversation Within The Conscious Through Archiving

Home has many meanings and interpretations for every living being on this planet. It may be the sound, smell, taste, sight of something, or it may be a memory. Multiple intangible elements make up what we call home, and we unconsciously create certain memories that we tie to home for ourselves. This project explores the relation of home with three essential things: Language, Spices, and Textiles, and is about how an archive can be presented, practiced, and shared, created by the community . A celebration of home not just through the spatial aspects but with the integration of memories, senses, and interaction of people

with varying elements of the space; how a cosine wave of a trigonometric equation on a Cartesian coordinate system would behave. Throughout the research, a common pattern of colors was observed: Red, Blue, Yellow, and Green, aligning with the 4 elements of nature: fire, water, air, and earth. One of the ways to approach it and also felt right was to evoke the 5 senses through the 4 elements of nature throughout the site. This project delved into the understanding of the experience of archiving through the spatial sensory nodes, and deconstructing the process of archiving and architecture.

Mitchem, Owen
University of Oregon
Mentor(s): Yvette Cendes
Poster Session #248
From Colliders to Supernova - Chasing Particles

Radio observations of Intermediate-aged SNe Ia and Constraints on Progenitor Systems

Type Ia supernovae (SNe Ia) play an important role in cosmology, serving as “standard candles” on the final rung on the cosmic distance ladder. SNe Ia are well understood to be caused by the violent explosion of a degenerate carbon-oxygen white dwarf (WD) destabilized by mass accretion from a binary companion, yet the nature of their progenitor systems and explosion mechanisms remain poorly understood. Radio observations can be used to place limits on the density of the circumstellar medium (CSM) surrounding Ia SNe, which could distinguish between possible progenitors: Single degenerate (SD), where the companion is a non-degenerate star, and the double degenerate (DD), where the companion is also a WD. Here we present a survey of targeted and archival GHz observations from the Karl G. Jansky Very Large Array (VLA) of intermediate-aged SNe Ia (~10-100 years post-explosion) located at <20 Mpc. This sample allows us to probe the interaction between the SN shockwave and any present CSM, and indicate the presence of CSM to large radii, which can differ between SD and DD scenarios. We place these results in the context of CSM densities surrounding <10^18 cm from the SNe, and provide implications on potential progenitors for Ia SNe.

Mogenson, Hannah
University of Oregon
Mentor(s): Mattie Burkert
Poster Session #293

Lockean Personhood and Literary Depictions of Disability: Analyzing 18th Century Representation

This presentation explores evolving eighteenth-century perceptions and representation of disability, contrasting John Locke’s emphasis on rationality as essential to “personhood” with Jonathan Swift’s satirical

critique in Gulliver's Travels. Swift, and other authors challenge the marginalization of those deemed "non-persons" due to cognitive or physical differences, aligning with a shift towards viewing disability as a social construct rather than an individual deficiency.

Mohr, Jackson
University of Oregon
Mentor(s): Christina Karns
Poster Session #254

Heart-Brain Interactions: Reliability of EEG, Heart-Rate Variability, and Pre-Ejection Period

Co-Author(s): Tommy Monkarsh, Emily Howlett, Christina Karns

Chronic stress is a major public health concern. Understanding the relationship between brain states and the autonomic nervous system is critical for developing therapies that regulate stress, but little research has systematically examined the relationship among physiological measures. We assessed ongoing EEG oscillations, heart rate variability (HRV), and pre-ejection period (PEP) as physiological measures of brain states and autonomic function. The amplitude of ongoing EEG oscillations in different frequency bands is associated with different brain states. HRV is associated with parasympathetic nervous system (PNS) activity. PEP, the time it takes for blood to be pumped out of the heart upon contraction, is an index for sympathetic nervous system (SNS) engagement. Our prior research demonstrated that, during a resting task, EEG measures were associated with PEP but not HRV (Howlett and Karns, in prep). We found that alpha oscillations were associated with increased PEP. To validate these results, it is critical to establish test-retest reliability of these EEG and EKG measures across individuals. We hypothesize that these physiological measures will show good reliability across a baseline recording session and a repeated session at the end of a testing session (Pearson's r greater than .7). Validating these results will improve understanding of the allostatic effects of chronic stress on the body, a foundation for future work on specific stress-reduction interventions.

Monkarsh, Tommy
University of Oregon
Mentor(s): Christina Karns
Poster Session #245

From Heavy Metal to Baroque: A Meta-Analysis on HRV Response in Arousing vs. Relaxing Sounds

Co-Author(s): Jackson Mohr, Meghan Ramirez, Christina Karns

Does morning traffic or chirping birds affect physiological stress levels? We examined the extent to which "arousing" sounds (e.g. heavy-metal) and "relaxing" sounds (e.g. classical) modulate heart rate variability (HRV). HRV is thought to index autonomic nervous system (ANS) balance. High HRV is observed in healthy subjects, indexing good adaptation while low HRV may index a deficit. HRV can be measured in several ways. For instance high-frequency (HF) HRV is a measure of the variation between consecutive high frequency heart beats (HB), whereas LF HRV measures variation between lower frequency HBs. HF HRV measures indicate more parasympathetic modulation whereas LF HRV is associated with blood pressure and respiration (Shaffer 2017).

Using PRISMA guidelines, we screened 10,000 articles and included 21 studies of healthy adults that reported baseline HRV and at least one HRV metric (HF, LF, RMSSD/SD1, SDNN, or pNN50) measured during or after sound exposure without additional stressors and conducted a statistical meta-analysis. Results indicate that there is no reliable HRV difference between arousing and relaxing sound conditions. Interestingly, the data suggest a consistent reduction in HRV across all sound categories, regardless of categorization; indicating that even "relaxing" sounds may trigger ANS responses. Thus, this work contextualizes sound's influence on ANS response, highlighting the need to consider everyday sounds in wellness and therapeutic designs.

Montgomery, Daela
University of Oregon
Mentor(s): Hannah Wilson, Diana Libuda
Poster Session #290

Assessing sex-specific heat-induced DNA damage in H3K9 methyltransferase mutants in C. elegans

Co-Author(s): Hannah Wilson, Diana Libuda

The production of sperm and eggs is crucial for reproduction and passing genetic information to the next generation. Evidence across many species, including C. elegans, shows heat causes DNA damage in sperm and male infertility. The molecular mechanisms regulating heat-induced DNA damage, however, are

unknown. Prior research found packaging DNA into chromatin regulates DNA damage in germ cells using chromatin modifiers such as H3K9 methylation (H3K9me). H3K9me displays sex-specific localization and response to heat shock, decreasing only during sperm development. My research investigates whether the absence of H3K9me results in increased heat-induced DNA damage during C. elegans sperm development. H3K9me is established by three methyltransferase proteins, SET-32, SET-25, and MET-2. To assess DNA damage in the absence of H3K9me, I am using a mutant strain lacking all H3K9 methyltransferases. With immunofluorescence microscopy, I will visualize and quantify heat-induced DNA damage to determine if H3K9me differentially regulates heat-induced DNA damage in developing germ cells. My data shows that mutant sperm have more heat-induced DNA damage than in wildtype sperm. Furthermore, there is a greater increase in heat-induced DNA damage in mutant sperm compared to eggs. Overall, these data suggest that H3K9me regulates heat-induced DNA damage and aids in our understanding of H3K9me's role in protecting developing sperm from heat-induced DNA damage to prevent male infertility.

Moore, Maddie
See "Saccio-Devine, Josaphine"
Natures Classroom: Getting Students Outside Strengthens Communites

Morgun, Nikolay
University of Oregon
Mentor(s): Lindsay Braun
Poster Session #015
History Reimagined: War, Theater and Unheard Voices

Sol Plaatje's Mafeking Diary: A Black Man's View of a Seemingly White Man's War

This work analyzes the Mafeking Diary by Sol T. Plaatje. Sol Plaatje was a key figure in the history of black South African nationalism. He was one of the core founders of the African National Congress. Plaatje started from humble beginnings. Born in the Orange Free State in 1876, Plaatje grew up around Xhosa and Mfengu people. When Plaatje was twenty-three, he was working as a court clerk in Mafeking in the outer edge of the Cape Colony, when war broke out in South Africa in 1899. The war initially began as an all-out assault by Boer forces against the British Cape Colony. Boer forces besieged notable towns and cities such as Kimberley and Ladysmith. Mafeking became subject to siege under this wave of attack. Mafeking was under siege from October 1899 to May 1900. Sol Plaatje was in Mafeking during the siege and was in the town until the very end. While under siege, Plaatje kept a diary with daily entries. The diary recounted Plaatje's struggles, experiences, and insights during the siege. What makes the diary significant is that it is one of the few existing primary source accounts from the perspective of a black South African in the Anglo-Boer War (1899-1902). Although Plaatje never published the diary himself, ultimately made its way into the modern South

African historical canon. Ultimately, Sol Plaatje's Mafeking diary helps shed light on the immense contribution of black South Africans, daily life during the siege, and the human realities of war.

Morris, Katy
University of Oregon
Mentor(s): Claire Herbert, Raoul Lievanos
Poster Session #059

Criminalizing Homelessness: Legal Processes and Poverty Governance in Grants Pass v. Johnson

Houselessness is a growing societal issue that continues to gain traction in political discourse. I answer the following questions in my research: How did the Supreme Court case Grants Pass v. Johnson move from the United States District Court For The District Of Oregon Medford Division up to the Supreme Court? How did legal decisions and news media frame poverty governance through this court case? Through process tracing methodology and framing analysis, this research explores how the case evolved through the legal system and how poverty governance narratives are constructed. Preliminary findings show that the City of Grants Pass utilized four subsections of poverty governance to escalate the court case: using political power, exercising political authority, mobilizing political resources, and gaining political legitimacy. Media framing amplified the voices of those who are exercising poverty governance and the voices of individuals with power in general. As a landmark ruling on homelessness criminalization, this case represents a critical moment for understanding the intersection of legal systems, media representation, and the governance of poverty in contemporary social discourse.

Morrissette, Alex
See "Bell, Lainie"
Brittle Star Brawl: Mechanical vs. Chemical Defenses in Three Ophiuroid Species

Morrissette, Dylan
See "Dehmer, Sam"
Sharing Our Space with Wildlife: the Politics of Poop at the Howard Buford Recreation Area

Moyer, Jeana
University of Oregon
Mentor(s): Jayson Paulose
Poster Session #246

Manipulating sound by varying material properties in space and time

Co-Author(s): Ben Kauffman

From ultrasound to radio to fiber optic internet, many technologies rely on processing and transmitting wave signals. Often, this involves transforming a wave into an electric signal which is processed using electronic circuits. But what if waves could be manipulated directly by the material they are traveling in? This is made possible in a metamaterial, which is solid matter engineered to have unique wave properties by adjusting its geometry and external forces as opposed to changing the molecule itself. We investigate the behavior of sound waves when the elastic properties of metamaterials are changed dynamically as the wave travels through it. We model the metamaterial as an array of masses connected by springs. Elastic modulations are implemented by varying the spring stiffness properties along the chain in two ways: in space and in time. By solving the equations of motion of the modulated array using Python, we reveal the influence of different types of stiffness modulations on traveling wave signals. We find that spatial modulation of spring stiffnesses controls the direction and speed of packets, while time modulation amplifies the signal. Going beyond prior studies, we show that these effects are extremely sensitive to the system's boundary conditions. Our studies advance the understanding of time-modulated metamaterials and point towards new ways of directional control and amplification of waves.

Muller, Olive
University of Oregon Student
Mentor(s): Emily Scott
Poster Session #118

Narratives of Ecological Crisis: Towards an Ecopoetics of Climate Change

This project critically examines dominant Western narratives of climate change–particularly those rooted in apocalyptic and anthropocentric frameworks–through the lens of Indigenous critique and decolonial theory. Drawing on the work of Indigenous scholars such as Kyle Powys Whyte, and theorists including Donna Haraway and Andreas Malm, I explore how prevailing climate discourses often erase Indigenous experiences and perpetuate colonial and capitalist logics. In response, I advocate for a decolonial ecopoetics–a literary mode that foregrounds Indigenous knowledge systems, reciprocity with the more-than-human world, and non-linear understandings of time and place. Through close readings of poems by Joan Naviyuk Kane and Laura Da', I demonstrate how their work disrupts reductive environmental narratives by centering Indigenous

perspectives on land, memory, and ecological interdependence. Ultimately, this research argues that decolonial ecopoetry offers a powerful method for reimagining climate discourse in ways that are more just, pluralistic, and accountable to histories of colonialism.

Muñiz, Cinthia
University of Oregon
Mentor(s): Nicole Swann, Apoorva Karekal
Neural Blueprint- From Molecules to Movement

Brain Activity During Movement Stopping: Parkinson's Disease vs. Controls

Co-Author(s): Apoorva Karekal, McKenzie Canes, Allison Prince, Blake Sims, Nicolen Swann

Parkinson's disease (PD) is a progressive neurodegenerative disorder characterized by both motor and cognitive impairments, including deficits in inhibitory control. Despite its prevalence, there is a lack of accessible, non-invasive biomarkers to aid in monitoring disease progression and treatment effects. This study investigates electrophysiological markers of motor inhibition in PD patients, comparing medication-on and medication-off states to healthy controls. Using electroencephalography (EEG) and event-related potential (ERP) analysis, we measured brain responses during a continuous movement stop task designed to assess inhibitory control. We focused on the P300 component, a neural marker associated with attentional and cognitive control processes, to evaluate how dopaminergic medication influences cortical activity in PD. Preliminary findings suggest that P300 amplitudes are modulated by medication status, with reduced amplitudes observed in PD patients on medication compared to those off medication and healthy controls. These results may reflect the complex effects of dopaminergic therapy on cognitive control, particularly in tasks requiring response inhibition. Our findings highlight the potential utility of ERP measures as non-invasive biomarkers for assessing the cognitive side effects of dopaminergic treatment in PD. Further investigation could inform individualized medication strategies to optimize both motor and cognitive outcomes in clinical care.

Munks, Leo
University of Oregon
Mentor(s): Jennifer Pfeifer, Theresa Cheng
Poster Session #154

Social Support, Agency, and Identity Disclosure in LGBTQ+ Adolescents

Disclosure of an individual's LGBTQ+ identity, or "coming out", is an important milestone in an LGBTQ+ person's life. Prior research suggests that disclosure to others often occurs during adolescence, and can increase self-esteem, decrease the risk of depression, and improve interpersonal relationships. This

study will investigate the relationship between agency (utilizing a self-narration task), social support (Multidimensional Scale of Perceived Social Support), and timing of disclosure. Studying social support and agency's relationship with identity disclosure can highlight how important the presence of these factors is in facilitating LGBTQ+ identity disclosure. If these predictive factors were better understood to facilitate LGBTQ+ identity disclosure, more emphasis could be placed on improving social support and personal agency in LGBTQ+ individuals' lives. More specifically, this study aims to determine whether the interaction of social support and agency predicts timing of LGBTQ+ identity disclosure. Utilizing an initial sample of 174 participants measured across up to five waves, a hierarchical linear model will be used to nest observations by participant. I hypothesize that adolescents will be able to disclose their queer identity when they have been able to articulate themes of agency, as well as when they have access to high levels of social support.

Murphy, Jesse
University of Oregon
Mentor(s): Mattie Burkert
Poster Session #081

Frankenstein's Program: Designing a Class Unit Around 90s Software

The rapid advancement of computing software and hardware since the 90s has left many programs unavailable on modern systems. Digital novels, video games, and personal web pages are left with spotty technical availability and legal status, unable to be easily taught or accessed for research purposes. Last summer I helped Prof. Mattie Burkert design a unit for a class around one of these programs - the nonlinear hypertext novel *Patchwork Girl*, a loose adaptation of *Frankenstein*–while also researching the program's legal and technical status to find how best to present it to students in a classroom setting. Over the course of ten weeks, I did a survey of the scholarship both on *Patchwork Girl* specifically and hypertext fiction as a medium. I constructed a critical annotated bibliography analyzing what I found, and selected specific texts and passages for a classroom setting. I also did research into copyright law to determine how best to present the novel in a way that was both cost-effective, technically possible, and complying with fair use. With the recent, growing crises in the lack of properly archived digital media and decreasing tech literacy, this project helps preserve a specific early work in electronic fiction while providing a window for students into the early days of personal computer technology.

Murphy, Kyle
University of Oregon
Mentor(s): Jacob Neal
HURF'ing Through Culture, Identity and Power

Novel Biological Causes in the Extended Evolutionary Synthesis

Evolutionary biology strives to predict the ways in which species will change when they are exposed to environmental pressures. Its predictions inform agricultural decisions--chemical applications, irrigation schedules, crop selection. But right now, the field is in a period of transition as new discoveries in developmental biology motivate a reorganization of evolutionary causes. This project assesses the new unifying paradigm, the Extended Evolutionary Synthesis (EES), and the change that it constitutes in both the methods of evolutionary biology and the scope of its application. This undertaking is accomplished through analysis of works in the history and philosophy of science, which provide conceptual frameworks for abstract comparison of the landmark works of the last century of evolutionary theory. By these conceptual frameworks, the EES constitutes both a departure from the reductionist methods that traditionally inform modern scientific conclusions and an introduction of novel causal structures. This entails that the adoption of the EES marks a change in the generalizability of the conclusions that biology is able to draw--EES informed study design facilitates practicable conclusions. Cataloguing this development allows informed practitioners to guide the transition between theories in a manner that reduces shock to agricultural practice.

Naterwalla, Sanaz
See "Russo, Stella"
Impacts of the 2016 Rio Olympics: Mapping a Future of Community Enrichment through Sustainability

Nesbitt, Kellen
University of Oregon
Mentor(s): CJ Pascoe, Raoul Liévanos
Changing Spaces, Shaping Places

Evaluating the Community Impact of the Closure of Eugene, Oregon's Only Emergency Department

In December 2023, PeaceHealth Sacred Heart University District hospital closed, leaving the city of Eugene, Oregon without an emergency department within city limits. This project evaluates the closure's impact on access to emergency care, particularly for those with financial and transportation barriers. Using a dual method approach, this research is grounded in interviews with those working in and around emergency healthcare, providing first hand insight. These semi-structured interviews lasted from 30-60 minutes,

from those working primarily in nonprofits, local government, healthcare, and the University of Oregon. Geospatial analysis of commute times to the remaining hospitals in neighboring Springfield, combined with socioeconomic data highlights disparities in access, and provides context for the interview data. Overall, while the closure has complicated access to care, interviewees cite staffing shortages, inadequate primary care, and limited discharge options as greater challenges impacting the healthcare system locally. However, the closure disproportionately affected the unhoused and University of Oregon students, whose proximity to the former hospital and limited transport options create unique barriers. These findings provide insight on the effects of hospital closures on communities amongst a broader trend of closures nationally, with an aim to inform future solutions.

Newton, Kelly
University of Oregon
Mentor(s): Solmaz Kive
Poster Session #006

Pay to Play: Eugene Riverfront Development

Co-Author(s): Liv Anderson, Blaine Brennan, Chandler Higginbotham, Stephanie Popp

This study explores the redevelopment of the Eugene, Oregon waterfront by examining how it will impact the overall community and the unhoused population currently residing in that area. The research aims to develop privatization as a new type of hostile design to analyze the hostile nature of privatizing public land. By evaluating urban planning policies, redevelopment plans, and similar revitalization projects, this study seeks to address how privatization functions as an exclusionary tool. The study also examines the existing hostile design techniques utilized along the waterfront path and how design choices such as surveillance, constant bright lighting, and unusable benches have the power to deter the unhoused population from utilizing public land. Additionally, this study will consider how the prioritization of high-end residential and commercial developments over affordable housing fails to address Eugene's ongoing housing crisis and further limits options for low-income and unhoused populations. Through analyzing data and research, the findings suggest that privatization is a tool of spatial control, which reinforces socioeconomic divides and makes certain spaces unusable for the less fortunate members of communities. This study is a call to action for the city of Eugene specifically for more inclusive urban planning that considers the rights of all community members.

Nguyen, Joseph
University of Oregon
Mentor(s): Shannon Peake
Poster Session #146

A brief parent mindfulness intervention to reduce parenting stress around child behavior problems

Co-Author(s): Emily Kondo, Alyssa Herman, Alayna Park

To reduce parenting stress, parenting interventions have utilized a skill called mindfulness, defined as awareness that emerges through paying attention purposefully, being in the present moment, and being able to do so in a non-judgmental manner. However, the effectiveness of brief mindfulness interventions in reducing parenting stress has not been explored. This study investigates whether a brief mindfulness intervention for parents can lower parenting stress. Parents of young children completed a measure mindfulness parenting practices and reported their level of parenting stress before and after receiving a single session of mindfulness. The overall endorsement of mindful parenting practices increased, but the change was non-significant. The increase was driven by a significant increase in parents' emotional awareness. Results showed a significant reduction in parenting stress but the change was not associated with the change in mindful parenting practice. An important implication of the study was mindfulness showed a trend towards significant increase, driven by awareness. Additionally, parenting stress decreased significantly, meaning percentage of child behavior problems parents deemed stressful decreased. Work in this area is crucial to find effective intervention that is cost and time efficient to allow for more accessibility to vulnerable parent demographics.

Nguyen, Joseph
University of Oregon
Mentor(s): Alayna Park
Works in Progress: Culture, Society & Politics

Characterizing the Usefulness and Ease of Using Mental Health Websites

Co-Author(s): Shannon Peake

Mental health websites (e.g., online fact sheets) can be used to increase public knowledge of the signs and symptoms of mental illnesses and help those in need understand effective coping strategies and treatment options. A plethora of mental health websites exist but are not necessarily utilized. For mental health websites to be used, the websites must be perceived as useful (e.g., providing relevant information) and easy to use (e.g., creating a smooth and accessible experience). This study characterizes interviews asking UO undergraduate students (N = 366; 76% female; 64% White) about the usefulness and ease of using

350 mental health websites. To generate a comprehensive list, websites were nominated by mental health professionals contacted through emails to professional listservs. UO undergraduate students navigated a website for 2-3 minutes while verbalizing what they liked and disliked. They then completed a questionnaire on their perceptions of the website's usefulness and ease of use and repeated this process so that each participant evaluated 4-5 websites. Participants' interviews were coded by two researchers for usefulness or ease of use and then for directionality (positive, negative, or mixed). Currently, 20 transcripts representing 100 websites have been coded, with a goal of coding 73 transcripts by the end of the academic year. These codes will be integrated with questionnaire responses to ensure that qualitative comments converge with quantitative ratings.

Noah, Angela
University of Oregon
Mentor(s): Jennifer O'Neal O' Neal, Kirby Brown
Conscious Threads or Threads of Meaning

Fabrics as Archives: Indigenous Fashion and Storytelling at UO

The Young Elders Presents: Fabrics as Archives is an interdisciplinary storytelling project that explores Indigenous fashion, resistance, and presence at the University of Oregon. Through regalia making, a curated fashion show, and the Young Elders Podcast, this project weaves together personal, tribal, and historical narratives. Each outfit in the show is an Apache-style camp dress representing a significant date in Indigenous history, paired with a pinned number-similar to powwow dancers-connecting moments like 1491, the rise of MMIW awareness, and the founding of the White Mountain Apache Tribe. As both artist and researcher, I use regalia as a living archive and a method of Indigenous data sovereignty. This project aims to reclaim space, uplift youth voices, and restore intergenerational connection through visual storytelling and audio interviews. At the symposium, I will share reflections from the fashion show, excerpts from the podcast, and stories about Indigenous visibility at UO, emphasizing how Indigenous knowledge systems thrive through fabric, memory and community.

Nowicki, Claire
University of Oregon
Mentor(s): Chandler James, Daniel Tichenor
Poster Session #069

The Transformation of Tradition: Analyzing Changes in U.S. Presidential Debates Norms (2000-2024)

Since 1976, presidential candidate debate norms have been established over time despite changes in candidates, moderators, and formatting. This research investigates what American general election

presidential candidate debate norms have been upheld and how they have changed in the 21st century. Few studies examine long-term patterns of multiple election cycles. However, in a study of the 1960-2000 debates it concluded that single-moderator debate formats affected candidate behavior and encouraged moderators to accentuate differences between candidates. Those findings were foundational for this study's investigation of debate norms from 2000 to 2024. Using content analysis, I examined variation of individual appearances, behavioral civility, moderator and audience engagement, and changes influenced by prior debates. At the individual appearance level, feminine attire broke the precedent of traditional masculine presentation norms. Civil behavioral norms such as the discussion of personal lives, interruptions, and audible audience reactions became more common. Debate formats evolved reactively, but single-moderator formats contributed to candidate incivility and diminished moderator control. In 2024, audience participation was removed, and debate sponsorship changed for the first time in 36 years. Shifts to debate structure in the 21st century reflect broader political transformation, and new precedents are being set for future presidential elections.

O'Connell, Shannon
University of Oregon
Mentor(s): Robert Schofield, Ryan Garrett
Poster Session #237

Nurturing the Next Generation: Raising Leaf Cutter Ant Colonies and Their Vital Role

The process of raising leafcutter ant colonies highlights the critical symbiotic relationship between leaf-cutter ants and blackberry leaves. Leafcutter ants derive their energy from plant leaves. They cut large parts of the leaves to feed a fungus in the family Lepiotaceae. With this fungus, leafcutter ants can cultivate their own gardens, they use this fungus to nourish themselves. Understanding their environmental needs is crucial, not only for maintaining ant colonies that contribute to the Schofield lab's investigation of unique biomineralization in their mandibles but also for understanding other invertebrates. Raising the next generation of leaf-cutter ant colonies ensures that the Schofield lab can continue its research. This research creates a better understanding of how ants have evolved to adapt complex behaviors.

O'Donnell, Rebecca
University of Oregon
Mentor(s): Estelle Berger
Poster Session #145

Associations Between Poor Sleep and Non-Suicidal Self-Injury in Adolescent Girls

This project explores the relationship between sleep quality and non-suicidal self-injurious behaviors in a sample of adolescent girls. Adolescence is a developmental period where individuals' sleep behaviors

undergo drastic changes due to biological and social demands. Poor sleep quality is related to various psychopathologies and their corresponding behaviors. Presently, there is a gap in the literature on how sleep and self-harm change across adolescence. Using data from a longitudinal study, this project examines sleep quality and non-suicidal self-injury across five waves of data collection. This research attempts to delineate the longitudinal relationship between sleep and self-harm in adolescent girls.

O'Hearn, Daisy
University of Oregon
Mentor(s): Dan Tichenor, Elaina Barker
Virtual

From Policy to Practice: Analyzing Oregon's Drug Decriminalization in Comparison to Portugal

This project analyzes Oregon's Measure 110, America's first statewide drug decriminalization law, and its repeal through House Bill 4002. It investigates why the policy struggled, highlighting issues like delayed funding, limited treatment infrastructure, and public frustration over rising overdose deaths. Through testimonies, policy comparison, and health data, the study addresses three core questions: What were the key challenges and successes in implementing Oregon's Measure 110, particularly considering its repeal under House Bill 4002? How can Portugal's and Switzerland's decriminalization models inform improvements in Oregon's approach to drug policy? What have been the public health, treatment, and social outcomes of Oregon's Measure 110 compared to those in Portugal and Switzerland? Portugal and Switzerland provide useful comparisons. In 2001, Portugal decriminalized drug possession, replacing criminal charges with treatment through dissuasion commissions. Switzerland, facing a heroin crisis, introduced heroin-assisted treatment and supervised injection sites. Both countries show that decriminalization works best with healthcare and harm reduction. Oregon's failure wasn't in decriminalization itself, but in rushing it without proper planning or support. This research shows that with enough preparation, public support, and ongoing investment, drug decriminalization can succeed. It's a long-term commitment to public health and social equity, not a quick fix.

Oh-Keith, Gabriel
University of Oregon
Mentor(s): John Halliwill, Brandon Gibson
Poster Session #194

Histamine Modulates the Vasodilatory Response to Resistance Exercise

Co-Author(s): John Halliwill, Brandon Gibson, Kieran Abbotts, Karen Needham, Anh-Thi Pham

Histamine is released during exercise to promote widening of arterial vessels and ease the resistance to blood flow. Following aerobic exercise, histamine's actions persist and contribute significantly to reduced blood pressures that are not often observed following resistance exercise. However, models of resistance exercise that include high-intensity and short inter-set rest, tend to promote modest post-exercise reductions in blood pressure. In this way, histamine release may be sensitive to resistance exercise. To assess this, we recruited ten participants (4F, 6M, 22±2.9 y; 24.3±3.6 kg·m-2) to undergo a traditional back squat protocol (6 sets x 10 repetitions set at 70% of their 1-repeition maximum and separated by 2-minutes of rest between sets) with combined oral H1- and H2-receptor antagonism (fexofenadine, famotidine, respectively) versus a placebo-control. We calculated the change in vascular conductance (mL·min-1·mmHg-1) from femoral blood flow (mL·min-1) and arterial blood pressure measurements (mmHg) captured before and every 30-minutes after exercise for 2h. Immediately following exercise, vascular conductance was greater in the placebo-control condition compared to blockade. Compared to baseline, mean arterial blood pressures were reduced for 30-minutes after placebo-control exercise only. These findings suggest that histamine is sensitive to more intense models of resistance exercise and is partially responsible for post-exercise vasodilation and hypotension.

Olds, Charlotte
University of Oregon
Mentor(s): Brice Kuhl, Lindsay Rait
Poster Session #159

Context Similarity Shapes Recall Organization

Episodic memory involves forming memories for individual events and linking memories to the context (e.g., where or when) in which they occurred. This is complicated by the fact that many experiences occur in similar contexts. The similarity of contextual features makes it difficult to distinguish between similar experiences, creating memory interference. It is unknown how interference shapes what is remembered and how memories are organized during recall. In two experiments, we investigated how context similarity affects free recall. In Experiment 1 (n=35), participants studied words paired with scenes that were either similar or unrelated. At the end of the blocks, participants had two minutes to recall as many words as

possible. Participants were more likely to make recall transitions (successive item recalled) between two similar scenes, compared to transitioning between a similar and an unrelated scene or two unrelated scenes. The goal of Experiment 2 was to determine whether being able to distinguish highly similar scenes would reduce interference and influence later memory. To do this, we provided participants initial experience with the scenes, where participants learned and matched faces with scenes before completing the rest of the task. Planned analyses will determine how the addition of experience with scenes affects the order the words were recalled. Collectively, these results demonstrate that similar experiences are likely to be grouped together in memory.

Ong, Alfie
University of Oregon
Mentor(s): Joyce Chen
Historical Musical Performance & Collegium Musicum

Solo Harpsichord Performance: J.S. Bach's Well-Tempered Clavier Book I (1722)

I'm a sophomore at the University of Oregon, double majoring in Comparative Literature and Music Performance. Originally from Hong Kong, I began piano at two and a half and made my debut at Hong Kong City Hall at age ten. I later earned my high school diploma in piano performance from the University of North Carolina School of the Arts, where I studied with Dr. Dmitri Shteinberg. I've performed across the U.S., including at Yale University and UNC-Chapel Hill.

At UNCSA, exposure to a conservatory environment and music scholarship sparked my interest in musicology. At Oregon, that deepened through courses in Hegel and critical theory, leading me to explore music and society through modern continental philosophy–especially critical theory, hermeneutics, and aesthetics. I'm particularly interested in intersections of music, literature, disability studies, and modernism.

As a comparatist, I believe cultural interpretation can challenge prejudice and foster empathy. This perspective also informs my interest in early music. I first encountered the harpsichord at UNCSA and began formal study in Fall 2025 in Introduction to Historical Keyboards with Dr. Chen. Since then, I've studied historical improvisation, accompaniment, and performance practice through weekly harpsichord lessons and independent research.

Orhai, Miriel
University of Oregon
Mentor(s): Ignacio Lopez Buson
Virtual

Ecological Mapping for the Enhancement of Amazon Creek

Amazon Creek, the 12-mile urban waterway that receives most of Eugene's stormwater and has been channelized within Eugene's urban center since 1956, has been a focal point for city-led restoration efforts seeking to curb waterborne pollutants and enhance urban wildlife. In February 2024, the city was awarded a $2.7 million FEMA grant to dechannelize and re-wild a four-block section in South Eugene. The creek is central to Eugene's urban ecology and features diverse flora where it is not constrained to a concrete channel. While the City of Eugene Urban Forest provides public information on creekside tree species, there is no public survey of understory vegetation. This project served as a study of Amazon Creek's understory flora, with collected data serving to inform a structural and ecological redesign of the creek's concrete channel near downtown Eugene. Other goals included time-based photo documentation celebrating the ephemeral ecology of the creek as part of Eugene's urban vernacular landscape.

Orman, Tucker
University of Oregon
Mentor(s): Karleigh Bradbury, Andrew Lovering
Poster Session #204

Core Temperature Changes in SCUBA Divers in Cold Water is Driven by Suit Type and Anthropometrics

Co-Author(s): Makayla Perez, Tim Grosshennig

SCUBA divers are often exposed to extremely cold water temperatures, which can decrease core temperature (Tc). While the maintenance of Tc is vital for the health of the SCUBA diver, little research has been done exploring the influence of suit type, sex, and anthropometric characteristics on ΔTc during real-world SCUBA diving scenarios. The purpose of our investigation was to determine the impact of these factors on the ΔTc and thermal sensation (Ts) during SCUBA diving in cold water (~10 °C). We measured Tc and Ts in 62 participants (30M, 32F) before and after non-decompression SCUBA dives in cold water at varied depths and durations. Twenty-three participants wore drysuits, and 39 participants wore wetsuits. Tc was measured via telemetric pill and Ts with a visual sensation sheet. There was a significant effect of suit type on ΔTc/min (p < 0.05), with those in wetsuits having a greater Tc decrease than those in drysuits. However, there was no effect of suit type on ΔTs/min (p > 0.05). In both wetsuit and drysuit divers, BSA/BM was negatively correlated with ΔTc/min, and both BMI and BM were positively correlated with ΔTc/min (p < 0.05). There

were no sex differences in ΔTc/min or ΔTs/min (p > 0.05). These results suggest that, regardless of sex, drysuits offer greater thermal protection compared to wetsuits, and divers with higher BSA/BM, lower BMI, and lower BM would benefit from using thicker wetsuits or drysuits to maintain Tc during cold water dives.

Ortega, Elena
University of Oregon
Mentor(s): Jessica Vasquez-Tokos
Resisting Borders: Migration and Activism

Mapping Resistance: Latine Activism Against Immigration and Customs Enforcement

This project investigates how Latine communities use geospatial media to organize resistance and mutual aid in response to Immigration and Customs Enforcement (ICE) activity during the Trump Administration. This study focuses on Latine communities and undocumented Latine individuals. Focusing on community engagement, mapping platforms, and location-based social media, this research explores how grassroot networks mobilize spatial information to protect the Latine community. While geospatial tools enhance organized efforts and help raise awareness, it simultaneously exposes communities to potential surveillance and digital vulnerabilities. This study examines the ethical risks of mapping communities where visibility can be both a survival tool and a source of harm. By centering community-driven practices, this project offers insight into the digital resistance under immigrant surveillance regimes. Drawing on the frameworks of counter-mapping, spatial justice, and digital sanctuary, the project highlights how Latine activist groups engage with digital tools to regain control over community representation and resistance within physical and digital spaces. Using data from GIS mapping and media content analysis, I examine patterns of ICE activity and their connection to the increased deportation of Latine individuals during this period.

Owusu-Hienno, Valerie
University of Oregon
Mentor(s): Dare Baldwin
Works in Progress: Science

Effect of Maternal Thiamine Supplementation on Mothers' Positive Interactions with Their Infants

Co-Author(s): Dare Baldwin, Jeffrey Measelle, Andromeda Blair, Hou Kroeun, Kylie Whitfield

Thiamine (Vitamin B1) is an essential micronutrient crucial for multiple physiological processes. Deficiency is common in areas where diets depend heavily on polished white rice. Sub-clinical levels of thiamine deficiency undercut infants' neurocognitive development, with negative consequences for health and socio-cognitive functioning. My project is conducted within the context of a recent randomized, controlled

trial in rural Cambodia. 335 breast-feeding mothers received daily thiamine supplementation of either 0mg (placebo), 1.2mg, 2.4mg, or 10mg from 2 to 24 weeks post-partum. Findings confirmed that maternal thiamine supplementation protects at-risk infants' neurocognitive development. What remains uninvestigated is how thiamine supplementation may influence playful mother/infant interactions, which are known to benefit infants' health and well-being.

Mothers and infants participated in the Primary Engagement Task (PET) at 2, 12, and 24 weeks post-partum; mothers attempted to coax a smile from the infant with graduated cues to playful engagement. Mothers' playful engagement is rated on six dimensions. We predict a significant quadratic pattern in mothers' engagement ratings across the PET, and higher maternal engagement ratings as infant age and thiamine dose increase. Results of this project hold the potential to shape health policy by bolstering the case for population-level intervention to prevent thiamine deficiency in at-risk regions globally.

Pandhoh, Jai
University of Oregon
Mentor(s): Derek Brandow
Film Screening Session

under the mask

This documentary is strategically created for individual interpretation. It starts with a boy in class sitting on his desk. He starts to feel an overwhelming amount of emotion. These emotions will be shown through his expressions and through sound. The viewers could possibly tie these emotions to ones they have felt in the past, if not, then they can at least feel what the boy is feeling. The short film ends with the boy running. I know this seems too simple and unclear. But it is a way to show the viewers the freedom the boy feels when he escapes his mental tolls.

Pargeter, Jake
See "Contreras, Ada"
Old Growth, New Connections: Climate Science Education Strengthens Relationships with Nature

Park, Anna
See "Goodman, Audrey"
Shifting Shores: Investigating the Coastal Impacts of Rising Sea Level Using Satellite Imagery

Park, Anna
See "McClain, Harper"
Gatekeepers of the Home: How Housing Intermediaries Shape Accessibility

Parker, Shayna
University of Oregon
Mentor(s): Kym Rohman, Derek Brandow
Poster Session #030

How sustainability is perceived and prioritized in the visual branding of bamboo paper products

Research explores how design and advertising strategies shape the perception and success of sustainable brands within the self-care market, specifically in bamboo paper products. At its core, this research highlights how effective branding can influence not only eco-conscious consumers but also those with low environmental concern, demonstrating that strategic, concrete communication of sustainability can widen a brand's audience and impact. The central hypothesis argues that for sustainable brands to achieve broader market reach, they must move beyond abstract visual identities and instead embed clear sustainability messaging into their branding and design. This study employs a literature review, case study, and brand analysis to investigate how these strategies function in practice and affect consumer behavior. Findings reveal that transparency and intentional design not only boost brand trust and engagement but also shift the culture of consumption toward sustainability. Ultimately, this work emphasizes the unique and often underrecognized role designers and advertisers play in shaping public perceptions of sustainability, calling for greater recognition of their influence in creating cultural and behavioral change through commerce.

Pascoal, Variel
University of Oregon
Mentor(s): Wagner Dantas
Poster Session #218
Mind Over Muscle: Memory, Muscle, and Aging

Reversing Sarcopenic Obesity by Restoring Mitochondrial Function and Antioxidant Response via Mito-Q

Co-Author(s): Wagner Dantas

Sarcopenic obesity is an age-related condition characterized by the coexistence of sarcopenia (loss of muscle mass and strength) and obesity (excess adiposity). It is increasingly prevalent among older adults and poses a major public health concern due to its association with frailty, cardiovascular disease, fractures, dementia, cancer, and increased mortality. Despite its impact, it often remains underdiagnosed and mistreated due to unclear mechanisms. Mitochondrial dysfunction has been proposed as a key factor in its development. This study investigated the effects of a mitochondria-targeted antioxidant, mitoquinone mesylate (Mito-Q), to restore mitochondrial bioenergetics and improve muscle function in sarcopenic obesity.

Seventy-six-week-old mice (human equivalent of ~50s) were randomized by body weight into low-fat (LFD) and high-fat diet (HFD) groups. After 4 weeks, each group was further randomized to receive either Mito-Q or a placebo (dTPP) for 8 weeks. At weeks 0, 4, and 12, measurements included body composition (NMR), intake, treadmill performance, and grip strength. At week 12, mitochondrial function was assessed via high-resolution respirometry. Mito-Q treatment led to improvements in body weight, fat and lean mass, grip strength, time to exhaustion, and frailty index. These effects may be explained by the enhanced oxidative phosphorylation capabilities, reducing oxidative stress, suggesting its potential as a remedial approach for sarcopenic obesity.

Patel, Krishan
University of Oregon
Mentor(s): Judith Raiskin, Linda Long
Poster Session #021

Radical Faerie attraction and imitation of indigenous culture

This project explores the spiritual and cultural ideologies of Nomenus Inc., an organization deeply connected to Radical Faerie traditions, and its similarities with Indigenous beliefs. Through primary sources from Special Collections and University Archives at the University of Oregon, as well as secondary sources, this project examines how Nomenus Inc.'s appreciation for land, astrological celebrations, spiritual beliefs, communal values, and resistance to mainstream societal norms closely mirror Indigenous angles. Members of Nomenus viewed their sanctuary as an extension of their identity, emphasizing land preservation much like Indigenous communities. Their spiritual gatherings, including celebrations such as the Harmonic Convergence, demonstrate a collective reverence for nature and celestial cycles akin to Indigenous rituals. Furthermore, their rejection of mainstream LGBTQ+ assimilation and commitment to a countercultural identity echo Indigenous struggles to preserve their traditions against societal pressures. By analyzing these connections, this paper highlights how Nomenus Inc. serves as an example of a modern movement embodying Indigenous-aligned values through spiritual practice, land stewardship, and communal resistance to authoritative social structures.

Payne, Alex
University of Oregon
Mentor(s): Frances White
Poster Session #095

The Malinow Howlers: Illuminating Ethical Concerns of an Influential Study through Osteology

Co-Author(s): Sara Cotton, Skye Grubb

In the mid-1960s, a study was conducted by M.R. Malinow in which over 300 black howler monkeys (Alouatta caraya) were killed in the wild for biological research. A portion of the A. caraya specimen collection from this study is now housed in UO'S Primate Osteology Lab. In examining this collection of 40 skeletal specimens, we intend to confirm the specimens' identification as A. caraya morphologically based on the genus Alouatta's distinctive skeletal features, such as their characteristic enlarged, hollow hyoid bone. In addition to identifying these morphological features, we will also examine any damage to the specimens, several of which have visible bullet damage. Examining the damage to the specimens illuminates the ethical concerns related to how the specimens were acquired for the Malinow study. Finally, we intend to photograph the specimens in the collection to be uploaded to an educational website on the Malinow collection and A. caraya, which will emphasize and disseminate our findings. Our methods include literature review on the Malinow study and A. caraya morphology in addition to morphological analysis of the specimens. Through our analysis of the specimens in the collection we hope to highlight the unethical nature of the Malinow study despite its important contributions to research on A. caraya biology.

Peakes, James
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #072

A Study on the increase power and influence of the AfD

The Alternative for Germany (AfD) has experienced a rise in popularity in recent years. In this project, I explore the increase in populism that swept the AfD into local and national parliaments in Germany. I will also trace their continuing popularity and influence since the country's last election cycle to speculate which effects the AfD's increased profile could have on Germany's future. In the project, I discuss the controversies surrounding the AFD, and why they are causes for concern for Germany today. Analyzing recent election data and examining the current political situation in Germany, I hope to discover and learn why the AFD has captivated so many, and why many are worried about the changed political landscape which left one of the most stable democracies in Europe in upheaval. Furthermore, I explore the AFD's agenda to decipher what the

party's goals could mean for the country if they continue to gain further influence in Germany's parliament. This could have profound implications for Germany's democracy as well as other democracies in Europe and in the Americas.

Pearse, Gabi

See "Eubanks, Sam"

Aves Compartidas 2025: Place-Based Education Through Migratory Birds

Peña Rosales, Tomas

University of Oregon
Mentor(s): Faith Barter

Poster Session #016

HURF'ing Through Culture, Identity and Power

Themes of Ownership and Re-purposing in African American Literature

My proposal is a research paper titled "Themes of Ownership and Re-purposing in African American Literature" and it explores how African American Literature has been able to reframe African American identity. The primary text is *Song of Solomon*, by Toni Morrison, and the secondary text would be *Sing, Unburied, Sing*, by Jesmyn Ward. Both texts deal with the concepts of ownership and re-purposing, for they both embark on themes of replacement and exchange. *Song of Solomon* tells the story of Macon Dead III and his family, Macon Dead III –also known as Milkman¬ – becomes closer to his aunt to learn more about his family's history, and overarching themes of the story are self-discovery and the quest for freedom. *Sing, Unburied, Sing* tells the story of Jojo and his family; this story accounts with three narrators: Jojo, Leonie – Jojo's mother, and Richie –a ghost; some overarching themes in this story are renaming and self-discovery. The concept of denitrification is a concept developed by Franz Fanon in his ethnographic book *Black Skin, White Masks*; this concept prompts the alienation of African American identity and the historical burden placed on race and its implications at the moment of taking ownership of a self "objective examination" (Fanon, 112)as well as re-purposing one's role within family and society.

Perez, Clarissa

See "Clark, Dylan"

By Youth, For Youth: Transforming Mental Health Through Youth Leadership

Perla, Giancarlo
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #044

El Salvador: Can a Wrong Make a Right?

This project explores the direct effects that Nayib Bukele's problematic policies have had on El Salvador's economy, focusing especially on tourism. Although there haven't been many studies in recent years on the effects of Bukele's policies, this project analyzes specialized research on Latin America: it considers research by The U.S. embassy in El Salvador, The U.S. government, related research from International Universities, as well as first hand sources from video journalists. Initially focusing on Bukele's mass criminalization policies there have been unique outcomes that have stirred El Salvador into a growing nation from a global view. While human rights have been severely violated, Bukele's policies have elevated El Salvador's image for tourism. With this dark shadow of the media focused over El Salvador, I intend to seek a silver lining, exploring how El Salvador is reacting to make good on the terrible sacrifices that have been made. Nayib Bukele's main focus of criminalization has led to a need for internal markets to grow in order to lift the country out of debt. Based on his policy directions, large investment in tourism and El Salvador's beaches could be its saving grace on an international level. I intend to focus on El Salvador's infrastructure and the effects that such controversial policies could have to uplift a nation.

Petrik, Charles
University of Oregon
Mentor(s): David Meek
Poster Session #055

U.S. Socio-territorial Movements from a Comparative Perspective

Co-Author(s): Bernardo Mançano Fernandes, Joel Matheson, Fred Paiva, Maria Mironova, Danna Rubesh

This comparative analysis of the socio-territorial and socio-spatial movements in the U.S. context calls for a careful reconsideration of what constitutes several spatial and territorial institutions, pulling from data collected in 2023 and 2024. In the US, we found that organizations, who band together to advance social change, primarily include nonprofits, coalitions, tribes and trusts. There were five thematic factors driving movements mobilization in the United States. First, a broader indigenous-led coalition in relation to land sovereignty. Second, the contestation of urban space, as a means towards advancing food sovereignty continues to define US-based food politics. Third, farmer well-being is increasingly a major call to action, given the US's aging farming population and lack of mental health support. Fourth, environmental concerns continue to rise, with movements emphasizing conservation agriculture and regenerative farming. Finally,

there are increasing calls for actions meant to improve equity in agrarian spaces in relation to the government as an institution and there is a direct relationship between the movements' struggles and the SDGs in the US. These reflections are being actively reshaped through the 2024 analysis of the US context and consider the development of data in 12 different countries conducting the same methodology.

Pham, Anh-Thi
University of Oregon
Mentor(s): Brandon Gibson, John Halliwill
Poster Session #193

It's leg day - Examining the Role of Histamine on Hemodynamic Regulation during Resistance Exercise

Histamine release supports an increase in blood flow and skeletal muscle perfusion during aerobic exercise; however, it remains unknown if histamine is a necessary signal released during resistance exercise to similarly increase blood flow and skeletal muscle perfusion. Therefore, the purpose of our investigation was to assess the role of histamine on skeletal muscle perfusion by measuring the change in skeletal muscle oxygenation (%SmO2) and femoral artery blood flow (FBF) during resistance exercise. We hypothesized %SmO2 and FBF will be decreased in response to resistance exercise with histamine receptor blockade (combined oral H1- and H2-receptor antagonism with fexofenadine and famotidine) versus placebo. 11 participants (4 women and 7 men) (Age: 22 ± 2.9, BMI 24.2 ± 3.6) completed 6 sets of 10 repetitions set at 70% of their 1-repetition maximum (1-RM). %SmO2 measured via near-infrared spectroscopy throughout exercise in each condition, and FBF (measured via doppler ultrasound) was determined at baseline (BL) before exercise, immediately post-exercise (IP), and 30-, 60-, 90-, and 120- minutes after exercise. During exercise with blockade %SmO2 was decreased below placebo-control values achieved during sets 4, 5, and 6, and FBF was reduced immediately after exercise by ~150%. This data supports the idea that histamine receptor activation contributes to the perfusion of skeletal muscle during and after resistance exercise.

Poblete, Malia
University of Oregon
Mentor(s): Derek Brandow
Film Screening Session

Reignite

Being in a new place with new people wasn't intimidating and anxiety inducing at first, yet I found myself lost for the first time in a long time. I lost my spark. By waiting a few short months I have found some of the best humans, great places, and have formed some amazing memories. This is my love for the new life I've created

wrapped into a one-minute display. I hope that after you watch this it'll ignite a sense of hope, comfort, and will remind all of you watching that you are right where you need to be.

Podrabsky, Dylan
University of Oregon
Mentor(s): Jo Weaver, Josh Snodgrass
Health Stigma, and Ethics in Homelessness

Empathy & Bridge-building: Anthropological ethics and the capacity for change

Anthropology is situated in a multidisciplinary nexus within academia, bridging and engaging with the social and natural sciences. The discipline's opportunities for biocultural research which integrates biological sciences with cultural anthropology can meld with community-based research to create a dialogic space wherein science, research, and community engagement can create new paths forward. Homelessness in the United States is an increasingly salient issue, with almost 750,000 people experiencing homelessness nationwide on a given night in 2024. This is a 15% increase from 2023; an increasing trend which is expected to continue. Despite its prevalence, little is known about the health of people experiencing homelessness and the impacts of stigma and the lack of cultural empathy on this community. Anthropological research, rigorous ethics, and community engagement offers us the chance to imbricate the space of research, science, and academia with the daily practice of being human. In doing so, anthropology works as a way to practice the methodology of science and logic of quantitative data analysis whilst bridging the divide between other ways of knowing. Ultimately, creating avenues for joint action and meaningful change. This talk will engage with the anthropological praxis of doing community engaged work, the ability of our field to span the gap between seemingly disparate spaces, and how anthropology offers a way to practice empathetic action in our current society.

Podrabsky, Dylan
University of Oregon
Mentor(s): Jo Weaver
Health Stigma, and Ethics in Homelessness

Symbolic Violence, Embodied Consequences: Stigma, Homelessness, and Health

Co-Author(s): Jo Weaver, Claire Herbert, Josh Snodgrass

People experiencing homelessness (PEH) are constantly exposed to symbolic violence–individual or collective actions which reify and reproduce internalized understandings of social values and hierarchies–and stigmatization in ways which come to directly impact their ability to survive and find housing. This presentation draws on interviews conducted with PEH in a US city with a high rate of unsheltered

homelessness, using the experiences of participants to both highlight the symbolic violence and stigmatization which PEH experience as well as to analyze possible interventions which would be meaningful to the community. Thematic analysis revealed that symbolic violence and stigmatization become embodied in PEH, leading to disproportionate health risks and further marginalization. These acts of symbolic violence and stigma become so widespread in the experience of PEH that they are functionally unable to escape the felt experience of social devaluation. This presentation seeks to illuminate how symbolic violence and stigma exist in an entangled and mutually reproductive manner, how this relationship becomes embodied by PEH, and how this social devaluation is translated into unequal embodied and material consequences.

Polk, Marcus
University of Oregon
Mentor(s): Sean Brudney
Poster Session #250

SPUD: Spectroscopy for Ultralight Dark Matter

One of the most important scientific goals of the next century is to uncover the nature of Dark Matter (DM), a hypothetical form of matter which would explain mass discrepancies observed in galaxies and the large-scale structure of the universe. Several DM models within the very low mass regime (well below 1 eV) are thought to be detectable by table-top atomic, molecular, and optical experiments. These ultralight particles carry a mass small enough to produce interactions with Standard Model particles which can be measured as fluctuations in the fundamental constants (FCs) of nature. Spectroscopy experiments are attractive platforms for observing such fluctuations because the structure of atoms is determined largely by the values of these FCs. We have designed the experiment Spectroscopy for Ultralight Dark Matter (SPUD) to improve measurements correlated to fundamental constants and enable the search for ultralight bosonic DM in the 10-7 to 10-4 eV range. We conduct precision measurements of variations in the absorption spectrum of Hydrogen Cyanide vapor to compute bounds on the strength of DM coupling to the Standard Model. To improve measurement sensitivity, we employ an optical filter cavity to reduce laser frequency noise. This work expands upon previous similar experiments conducted with an Iodine (I2) system. In summary, SPUD aims to use molecular spectroscopy as a probe for detecting potential dark matter particles.

Price, Maren
See “Kadovitz, Olivia”
Transgenic Zebrafish Reveal Relationship Between Vasopressin and Sexual Behavior

Primack, Micah
University of Oregon
Mentor(s): Zachary Wallmark
Poster Session #164
Beats of Belonging- Identity in Motion

Measurement of Musical Identity to Tailor Music Therapy for Mental Health

Co-Author(s): Zachary Wallmark

Music therapy (MT) may help curb the global epidemics of depression and anxiety. Tailoring of MT interventions to participants' Musical Identity (MI)—a construct adapted from previous work that assesses an individual's emotional and physical connection to music—may substantially increase the effectiveness of MT. We developed and tested an exploratory scale for assessing MI and determined associations between components of MI and sociodemographic and mental health outcomes. We surveyed a national sample of 1512 U.S. adults aged 30–70 years. We assessed depression using the validated Patient Health Questionnaire (PHQ-9) and anxiety using the validated Generalized Anxiety Disorder Assessment (GAD-7). A new 12-item MI Inventory (MII) assessed MI. Principal Components Analysis (PCA) using Varimax rotation determined the factor structure. We examined sociodemographic and mental-health differences across MII components using X2 analyses. PCA yielded a strong two-factor solution (λ1=4.9; λ2=2.4) with MII subscales focused on Experience with Music Performance and Emotional Connection to Music. Higher scores on both subscales were associated with younger age (p<0.001), greater educational attainment (p<0.001), and being employed (p<0.001). Anxiety was significantly associated with both subscales, while depression was significantly associated with only Experience with Music Performance. Categorizing individuals based on subscale placement may be useful in tailoring MT modalities.

Ramasamy, Tarini
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #113

Assessing the Effect That Increasing Surface Temperature Has Had on Coastal Ecosystems

In recent years, increasing surface temperature has become a pressing global threat to a variety of ecosystems. Specifically, coastal environments have become vulnerable to harm. Due to rising temperatures, many of these environments have experienced large loss of vegetation, sea level rise and morphological changes. These impacts have put the overall health of these coastal ecosystems at great risk. Our research will use satellite imagery to better understand the relationship between rising surface temperature and

morphological changes in two locations. The first location that will be researched will be the Great Barrier Reef located off the northwestern coast of Australia which is home to the world's largest coral reef system. This area will be analyzed from 2000 to 2016 to assess morphological and sea surface temperature changes during one of the world's largest mass coral bleaching events. The second location will be the Pichavaram Mangrove Forest located in Southern India home to protective salt-tolerant mangrove trees. This area will be analyzed from 2019 to 2024 to assess how rising land surface temperatures along the coastline have caused changes in vegetation health and densities. Overall, our research aims to demonstrate that policy and actions geared towards mitigating climate change should be rooted in conservation and protection of existing biodiversity rather than human adaptation subject to unintended negative consequences.

Ramirez, Brithani
See "Gonzalez, Thomas"
Then and Now Zine

Ramirez, Mariano
University of Oregon
Mentor(s): James Brau, Chris Potter
From Colliders to Supernova - Chasing Particles

Analyzing Cluster Shapes in the SiD Digital Electromagnetic Calorimeter to Improve Energy Resolution

Co-Author(s): Harsh Gautam, Harper Rich, Paul Song

In 2012 at CERN (the European Center for Nuclear Research) the Higgs boson was discovered by physicists from the ATLAS and CMS collaborations - including researchers from the University of Oregon. Fifty years prior, Peter Higgs, and others, had theorized the existence of a particle that gave mass to other fundamental particles. He believed that this particle could explain symmetry breaking in electromagnetic and weak nuclear forces through the mass differences of their force carriers. This theory eventually led to the discovery of the Higgs boson, marking a critical turning point in the field of particle physics. In addition, studying the Higgs boson could potentially reveal hints about dark matter - a mysterious substance comprising around 85% of the matter in the universe that has yet to be directly observed. By accurately measuring the properties of the Higgs boson, we can test the boundaries of the Standard Model of particle physics and potentially figure out dark matter. For this purpose, the International Linear Collider (ILC) was proposed as a Higgs factory - a particle accelerator designed to generate Higgs bosons cleanly and effectively. My group's research focuses on optimizing one of the subsystems of an ILC detector, namely the Electromagnetic Calorimeter (ECal) of the SiD (Silicon Detector). Where I'm analyzing the shapes of clusters of hits caused by particles in the SiD ECal in an attempt to improve the energy resolution.

Ramirez, Mariano
University of Oregon
Mentor(s): James Brau, Chris Potter
Poster Session #241

MAPS Technology in the SiD Digital Electromagnetic Calorimeter to Optimize Higgs Boson Measurements

Co-Author(s): Harsh Rich

In 2012 at CERN (the European Center for Nuclear Research) the Higgs boson was discovered by physicists from the ATLAS and CMS collaborations, including researchers from the University of Oregon. Fifty years prior, Peter Higgs and other physicists had theorized the existence of a particle that gave mass to other fundamental particles. He believed that this particle could explain symmetry breaking in electromagnetic and weak nuclear forces through the mass differences of their force carriers. This theory eventually led to the discovery of the Higgs boson, marking a critical turning point in the field of particle physics. In addition, studying the Higgs boson could potentially reveal hints about dark matter–a mysterious substance comprising around 85% of the matter in the universe that has yet to be directly observed. By accurately measuring the properties of the Higgs boson, we can test the boundaries of the Standard Model of particle physics and potentially figure out dark matter. For this purpose, the International Linear Collider (ILC) was proposed as a Higgs factory–a particle accelerator designed to generate Higgs bosons cleanly and effectively. Our research focuses on optimizing one of the subsystems of an ILC detector, namely the Electromagnetic Calorimeter (ECal) of the SiD (Silicon Detector). We propose upgrading the calorimeter's current analog pixels into digital Monolithic Active Pixel Sensors (MAPS) for finer granularity and improved resolution.

Reff, Colette
University of Oregon
Mentor(s): Francis White, Nelson Ting
Poster Session #093

Genetic characterization of an Alouatta specimen in the Primate Osteology Collection

Within the University of Oregon's Primate Osteology Collection, there are a number of specimens with unknown origins. One such specimen, a fleshed, fully articulated leg, was thought to be from a howler monkey (Alouatta caraya) based on osteological identification. This specimen is also believed to have a possible association with the historical Malinow howler studies, a series of studies taking place in Northern Argentina in the 1960's in which over 300 Alouatta caraya individuals were shot and dissected for anatomical research. Through this current research project, we hope to genetically confirm the species of the specimen and

trace its geographic origin using mitochondrial DNA sequencing. By comparing cytochrome b and control region sequence fragments to published regionally distinct Central and South American Alouatta caraya sample haplotypes, we hope to be able to associate the sample with Northeastern Argentina where the Malinow howler studies took place, thus confirming our theory regarding the origin of this specimen. Our approach utilizes DNA extraction, amplification through polymerase chain reaction (PCR), and agarose gel electrophoresis to sequence and align known mitochondrial region to compare with GenBank sample data. It is our hope that the results of this research will provide further historical and evolutionary context to the primate osteological collection and the Malinow howler studies.

Reitan, August
University of Oregon
Mentor(s): Joey Wanczyk
KIDDing with Language and Poetry

Lost Lives Poetry

Writing poetry in the Walter and Nancy Kidd Creative Writing Workshop has been an exceptional experience. This program has helped me take the chaos that I would commonly approach my work with and instead channel it into something I am truly proud to share. The revision process has helped me shorten works that were previously all over the place. Rather than having concepts and metaphors piling over each other, it has become easier for me to focus on a single idea within a poem. I will be reading three poems, titled “Road Kill”, “As You Are”, and “Tasting Petroleum”. I am quite fond of these works; they are all inspired by some form of irreplaceable loss and decay. I am drawn to these ideas, as I feel that finding concepts of death in the real world is so horribly disturbing; but to find them in works of poetry allows one to dive into the harsh reality while still being an arm’s length away. This way we can shift through heavy topics with more digestible approaches. Rather than being confronted with the difficult truths, we can handle them in thoughtfully crafted sentences and must not see directly what has been lost. This can help not only with the process of healing when you are grieving but also with depicting the consequences of one’s actions. I am extremely grateful for this opportunity to share my writing with a larger audience and present works that showcase my time in the program.

Reynaud, Mateo
University of Oregon
Mentor(s): Zoë Gamell Brown
KIDDing the Norms- Women, Identity, and Non-Traditional Narratives

What Makes a Man? Poetry as a Mode in Queering Masculinity

Mateo Reynaud is a chronic starer-out-of-windows, lover of anything sesame, and multidisciplinary artist and poet. In his work, he embraces liminal spaces in an introspective an humorous manner, drawing from his own negotiations of queerness, transness, and Latinidad. His project is a collection of poetry that incorporates found photographs to question what, exactly, masculinity is. How does colonialism engage with how we define and imagine masculinity? How does our collective understanding of masculinity influence how we interact with one another and the environment? By gathering found photos of people at thrift stores, garage sales, and his own family photo albums, Mateo noticed that he reflexively labelled certain subjects as "men." Through poetry inspired by these photographs, he hopes to analyze and queer the makings of "a man."

Ribeiro, River
University of Oregon
Mentor(s): Angela Long
Poster Session #036

Exploring Student Neurodivergent Health Equity in Higher Education: University of Oregon's 2024 NCHA

The University of Oregon (UO) participates in the National College Health Assessment (NCHA), administered by the American College Health Association (ACHA). UO University Health Services (UHS) began conducting ACHA-NCHA in 2007, with biennial administration since 2010. It is a self-reported survey-based assessment of student health habits, behaviors, and perceptions. In 2024, 731 students participated in the survey, and an analysis of NCHA data was conducted. UHS partnered with the Health Equity Action Project of the Student Health Advisory Committee (SHAC) to conduct additional analyses regarding students who indicated they have been diagnosed or self-identified as neurodivergent.

A qualitative review of the 2024 NCHA data suggests the need for improved support of neurodivergent students, including those with attention-deficit hyperactivity disorder (ADHD) and/or autism spectrum disorder (ASD). These students experience increased mental and physical health disparities such as anxiety and depression, chronic pain, irritable bowel syndrome (IBS), and eating disorders. Neurodivergent students also reported lower levels of flourishing and belonging, and higher levels of loneliness, compared to their neurotypical peers.

The SHAC Health Equity Action Project recommends that UO implement changes to increase access to health, mental health and well-being resources to support the success of UO's neurodivergent student population based on these identified disparities.

Richard, Danielle
University of Oregon
Mentor(s): Faith Barter
Stories That Shape Us

Fungibility as a Site of Liberation in Jordan Peele's *Us*

This project engages with fungibility as it presents itself in Jordan Peele's 2019 film *Us*. Fungibility is a concept from Black Feminist scholarship that refers to the treatment of the Black body, in the time of chattel slavery and after, as an interchageable commodity. The doppleganger trope allows for a conspicuous depiction of fungibility, as the protagonist and her double switch places at the beginning of the film. In my research, I brought in scholarship by Tiffany Lethabo King and other Black Feminist theorists to explore how *Us* not only depicts the horror of fungibility, but also the ways that fungibility can be a site of liberation as a means of escaping systems of oppression.

Rico Carvajal, Natalie
University of Oregon
Mentor(s): Kristen Lee, Chris Doe
Virtual

The Role of Hunchback in Regulating Drosophila Brain Development and Behavior

Understanding neuronal function is essential for addressing movement disorders like Parkinson's, tremors, and Tourette's. The fruit fly, Drosophila, shares many genes with humans that regulate brain development, including transcription factors (TFs) that control gene expression. This project demonstrates how the TF Hunchback (Hb) affects brain development and function using the well-characterized Mooncrawling Descending Neuron (MDN), which controls backward locomotion. Previous work showed MDN expresses Hb, so we investigated whether this TF impacts MDN morphology and function. Knockdown of Hb revealed distinct morphological changes: increased dendritic and axonic complexity compared to controls. Additionally, Hb knockdown increased backward locomotion upon MDN activation, indicating Hb's crucial role in regulating behavior. MDN activates descending A18b neurons during backward locomotion. When Hb was knocked down, MDNs' axon extended to lower abdominal sections and formed more synaptic connections with A18b neurons in these regions, explaining the increased backward locomotion observed. Drosophila neural studies provide insights into neurological development across species, which could inform targeted therapies for

neurological disorders. Our findings reveal how a single transcription factor can influence both neuronal structure and function, highlighting the importance of genetic regulation in neural circuit development and behavior.

Rinehart, Aiden
University of Oregon
Mentor(s): Alex Denton, Michael Hahn
Poster Session #178

Impact of Simulated Quadriceps Strain Injury on Muscle Stiffness, Strength and Plyometric Performance

Co-Author(s): Alex Denton, Michael Hahn

Quadricep muscle strains are a common sports injury that can impede athletic training progress and competitive development. Despite acute lower limb muscle strain injuries association with greater active muscle stiffness, changes in passive muscle stiffness (PMS) may be less evident. This pilot study examined the effect of simulated quadriceps muscle damage on PMS, knee extensor muscle strength, and plyometric performance.

Three healthy untrained participants (1M/2F) underwent unilateral electrically stimulated (300 μs single-pulse, 35 Hz, 100 mA) eccentric vastus lateralis (VL) muscle contractions (3x20 - 30°/s & 3x20 - 180°/s) to mimic muscle lengthening associated with strain injuries. Passive longitudinal VL stiffness was estimated using ultrasound shear wave elastography and isometric knee extensor strength was measured at 60° flexion (Biodex Medical Systems). To assess plyometric performance, participants performed drop jumps until fatigued, defined as three consecutive jumps below 90% of their initial jump height.

Preliminary analysis suggests a positive correlation between pre-fatigue jump height and plyometric jump duration, as well as a negative correlation between post-fatigue jump height and PMS.

The potential relationship between post-fatigue jump height and PMS may be due to an accumulation of residual healing factors altering the mechanical properties of the quadriceps. Moreover, PMS may be useful as a biomarker for assessing muscle recovery post-injury.

Robertson, Harry
University of Oregon
Mentor(s): Jun Li
Virtual

Procuring a Blockchain-Based Chain-of-Custody Solution for Civil Discovery

In the discovery phase of a civil trial, both litigating parties amass large quantities of prospective evidence. While this process occurs, the submission of evidence, transfers of ownership, and other processes must

be accounted for. The record of such transactions is called the "chain-of-custody." If this chain-of-custody becomes broken, the integrity of the case denigrates. Such an occurrence can lead to mistrials, acquitted, or dismissal of the case. The properties that allowed Blockchain to flourish as a consequential technology provide for a unique solution to this problem. Blockchain's inherent immutability and security allow for a system robust to digital tampering or fraud. My thesis explores what such a system would look like, while analyzing its benefits and costs. The thesis provides a high-level overview of the architecture, as well as specific details on each of the modules. It will be tested on a small-scale to understand the compute necessary to execute and maintain the system. The thesis focuses on civil cases, to minimize scope. A partial implementation of the system will be completed to understand its computational feasibility, and its potential upon further iterations. Furthermore, the system will be designed in accordance with the Oregon Rules of Civil Procedure. If successful, this system, and others like it, could provide security and peace of mind to practicing attorneys, minimizing incidents of fraud or malice within civil litigation.

Rosato, Carter
See "Dehmer, Sam"
Sharing Our Space with Wildlife: the Politics of Poop at the Howard Buford Recreation Area

Rose, Madeline
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #057

Historicizing Housing Resistance: NIMBYism and Fairmount Neighborhood Opposition

NIMBYism is a persistent barrier to addressing housing shortages and homelessness, as community opposition frequently delays or blocks the development of affordable housing and shelter projects. Though often viewed as justified due to concerns of safety and property values, NIMBYism has significant consequences on a city's ability to provide housing and services to specific communities by limiting access to essential services and stable housing. This research investigates the historical roots of NIMBYism and examines a specific example in Eugene, Oregon and its impact on housing policy and development. Using a combination of historical analysis, local policy review, and a case study of residential housing development at the University of Oregon, this research identifies common patterns of local opposition and their impact on planned developments. Findings from the case study illustrate how neighborhood concerns over traffic, pedestrian safety, and the preservation of residential character reflect classic NIMBY dynamics, with public opposition centered on fears of institutional encroachment and the erosion of past agreements. To address housing needs and create more equitable housing opportunities, this research shows how cities like Eugene and institutions like the University of Oregon should prioritize collaborative planning processes between the institution and affected community that encourage support for inclusive developments.

Rosello, Payton
University of Oregon
Mentor(s): Mahala Ruddell
Poster Session #077

Painting the Narrative: Engaging with The Core Values of American Archivists

To establish a society that values itself on access to diversity, knowledge, and accessibility, those engaging with some of the most essential documentation of history must hold themselves to distinct values. As archivists, certain standards define the work they immerse themselves in including advocacy, preservation, and sustainability. These core values are defined by the Society of American Archivists as the "Core Value and Code of Ethics" of archival work. Throughout my time working in Special Collections and University Archives (SCUA), I was exposed to the various standards archivists engage with daily to uphold a more accessible field of research across academia. While processing the Department of Biology records, I employed elements of selection to decide which documents to hold onto to showcase the core values of the institution, responsible stewardship to hand select what form of preservation will allow the records to have long-term use, a new lens of historical and memory-based information circulation to create a finding aid which anchors the department into the chronology of the university, and accountability through exhibit presentation as a means of fostering transparency established by bringing hidden institution documentation to the light. Each one of these values highlights the true societal importance of archival studies in creating a world that allows history to exist within the public sector and tell the stories often neglected by the broader narrative.

Rosenberger, Claire
University of Oregon
Mentor(s): Elizabeth Bates
Strategies for Stronger Communities

Integrated Interventions for Low-Income Families in Pediatric Primary Care(PPC): A Scoping Review

Co-Author(s): Elizabeth Bates

Standard healthcare models operate with independent providers focusing on a patient's health and often lack coordination linking services and other providers, causing poor patient outcomes and increased barriers to services. Integrated care interventions are care models aimed at improving health outcomes and addressing health and service disparities. This review seeks to explore the cross-sector and two-generation PPC-based interventions for low-income families and identify the interventions' strengths and challenges.

A systematic search was done using various search databases, following PRISMA-ScR guidelines. Eligible studies focused on PPC-based integrated models with cross-sector or two-generation interventions that

served low-income families and reported on family outcomes. Two reviewers independently screened titles and abstracts and assessed full texts for eligibility.

Overall, most interventions that serve low-income populations integrate home visitation services or social services within PPC. Evidence suggests that these interventions provide preventive care and education, helping reduce emergency healthcare utilization and improve various health outcomes. However, these interventions face implementation challenges, limited funding, and are still in early testing.
There is a gap in understanding these interventions, their effectiveness, and who they serve. This review aims to fill the gap and work to guide future research and development of integrated interventions.

Rozendal, Tanner
University of Oregon
Mentor(s): Daniel Hulsey, David McCormick
Poster Session #255

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.

Rozendal, Tanner
University of Oregon
Mentor(s): Anita Chari
Strategies for Stronger Communities

Prison Health Reform: Integrating Medical School Rotations to Address Healthcare Deficiencies

Incarcerated individuals are among the most medically vulnerable and underserved in the US, facing high rates of chronic illness, mental health disorders, and substance-use conditions. Yet, healthcare infrastructure remains minimal due to the punitive structure of the carceral system.

This project grew from my experience in the Inside-Out Program at the University of Oregon, which fosters dialogue between college students and incarcerated individuals. Motivated by that experience, I held informal interviews with incarcerated people, physicians, and medical school admissions officers. Each conversation explored the feasibility of a medical school rotation in correctional healthcare centered on somatic and trauma-informed practices – the first of its kind in the US. The proposed rotation aims to improve care access for incarcerated patients while training future physicians in the unique challenges and ethics of carceral medicine. A preliminary implementation framework has been developed, outlining curricular integration, clinical partnerships, and safety considerations. By equipping medical students with experience serving vulnerable populations and to the realities of healthcare in correctional settings, this initiative seeks to transform clinical education and improve health equity. It challenges institutions to extend the reach of care, and the responsibility of medicine, into the spaces that need it most.

Rud, Logan
University of Oregon
Mentor(s): Mathias Vogel
Poster Session #074

The American involvement in the Russo-Ukrainian war

Ukraine has been at war with Russia since February 2022, and ever since the war broke out, the United States has posed itself as an adamant supporter of the Ukrainian government. The Biden Administration expressed this support by consistently providing diplomatic and financial support to Kiev. The purpose of this research is to analyze if the United States has been a major factor in Ukraine's relative success in the war or if they could have succeeded without their help. The United States so far has promised to send around $175 billion in aid in total, which would account for approximately 41% of the total aid sent to Ukraine. It also rallied a good portion of the international community to sanction Moscow, leading to over half of Russia's central banking assets being frozen. This accounts for more than $330 billion in assets to be frozen. The sanction

also led to limiting the import and export of goods to and from Russia, leading them to scramble to develop a less diverse portfolio of trade partners. So overall, yes, the United States' support is a major factor in the reason why Ukraine has been able to resist a country that is supposedly in the top 5 of greatest militaries in the world. The significance of supporting the Ukrainians cannot be understated, as the world's current global hegemon protecting those whose aggressors violate the international order we set up is of paramount importance.

Rueda, Andres
See "Gonzalez, Thomas"
Then and Now Zine

Ruhnke, Rose
University of Oregon
Mentor(s): Daniel Rosenberg
Poster Session #294

Let Me Die: *Marriage A-la-Mode* and Female Vernacular in Restoration Theatre

John Dryden's 1672 tragi-comedy *Marriage A-la-Mode* was a wild success in English Restoration Theatre. Written when women were first allowed on stage, Dryden's time was a period in which playwrights paid special attention to writing female roles. The eighteen-year-long ban on theatre, Dryden's own tense marriage, and the appearance of women on stage came together to make Restoration theatre an opportunity like no other to study broader gender dynamics of the time. Within this play is a rich example of seventeenth-century female vernacular. The play uses its character Melantha for her exaggeratedly feminine speech. By implicitly and explicitly mocking the way she speaks, Dryden reaps comedic success. This example of women's speech opens the door to understanding men's opinions of female vernacular and, by extension, their anxieties about women's agency. Existing scholarship theorizes that Melantha's way of speaking is more than one of the play's comedic features; rather, it is the way she tries to control the outcome of social situations. In my research, I've found that Melantha's speech prompts such severe responses in surrounding men as the desire to inflict sexual violence upon her. The reactions to women's speech by male characters, which I believe were meant to be relatable and not social commentary on the part of Dryden, are my main point of intrigue. I question if they can be understood as indicative of male opinions about female agency itself in the seventeenth century.

Russo, Logan
University of Oregon
Mentor(s): Cathy Wong
Poster Session #236

Synthesis and Simulation: Investigating Halide Segregation in Perovskite Quantum Dots

Perovskites are a class of crystalline materials that are promising for applications in solar cells and LEDs. One subset of perovskite is the mixed-halide quantum dot (QD); praised for their quantum yield and tunability, these QDs can be used to make LEDs of any color and solar panels that absorb light with high efficiency. In particular, the QD we study is cesium-based and contains a mixture of iodide and bromide.

Problematically, when illuminated, these materials undergo structural transformations that change their emissive properties. To further complicate this issue, these transformations are reversed when the perovskites are placed in the dark. This problem can be attributed to halides within the QD rearranging to form distinct single-halide regions in a process often called halide segregation. The mechanism of halide segregation is still not fully understood.

To elucidate such a mechanism, we aim to investigate this problem from two approaches: synthesis and simulation. Using a model in Python, we predict the behavior of these halides on a microscopic scale. We also explore various synthetic techniques for creating shelf-stable QDs, such as purification and air-free encapsulation. Through this work, we hope to gain insight into preventing halide segregation, enabling innovation in light-generating and -harvesting technology.

Russo, Stella
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #025

Impacts of the 2016 Rio Olympics: Mapping a Future of Community Enrichment through Sustainability

This research explores how Brazil can leverage the infrastructure from the 2016 Summer Olympics in Rio de Janeiro and the potential impacts this could have on tourism, environmental sustainability, and the political landscape. Through examining current challenges and studying the strategies used by other countries to repurpose Olympic venues, we identify key barriers faced by Brazil, such as political instability and financial constraints. As of 2024, efforts are underway to repurpose some Olympic facilities for purposes like schools and event venues, offering significant benefits to the city. However, there remains much to be done to fully capitalize on the opportunities for long-term economic and social development. This study highlights both the progress made and the ongoing challenges in maximizing the legacy of the 2016 Games.

Ryan, Em
University of Oregon
Mentor(s): Laura Jeanty
Poster Session #239

Test Stand Construction for Data Acquisition

To understand how the universe works on the smallest scale, particle physicists have built the Standard Model, a mathematical model that explains interactions between fundamental particles. The Standard Model isn't complete, however, as it doesn't include gravity and dark matter. One way to investigate physics beyond the Standard Model is to collide particles at close to the speed of light and measure the results. The Large Hadron Collider (LHC) at CERN collides protons at 13.6 trillion eV, and the ATLAS experiment studies those collisions to search for new physics. Starting in 2026, the LHC will undergo an upgrade to increase the luminosity, which will increase the collision rate, and as such, the amount of data that goes into the detector. In tandem, ATLAS is developing an improved detector to efficiently collect the larger dataset. As a part of the upgrade, I constructed a test stand at the University of Oregon to develop and commission the new data acquisition system for the Inner Tracker, the innermost part of the upgraded detector. I am now using this test stand to contribute to the data acquisition development.

Saccio-Devine, Josaphine
University of Oregon
Mentor(s): Katie Lynch, Libby Bridges
Earth Vibes Only

Natures Classroom: Getting Students Outside Strengthens Communites

Co-Author(s): Jai Shah, Iris Duxbury, Ruby Burke, Alaina Sharp, Lily Ornelas, Julie Streett

Wild Wanderers sparks curiosity for the natural world through hands-on outdoor education packed with exciting activities for elementary learners. Nature exposure has proven beneficial to students' mental health, while bolstering personal and academic development. Our team works with first and second graders at three Lane County elementary schools in partnership with 90by30 and Mt. Pisgah Arboretum. Mt. Pisgah Arboretum serves as our outdoor classroom, where we can facilitate hands on learning. 90by30 is a local initiative that aims to reduce child abuse and neglect in Lane County by 90% by the year 2030. Our team worked closely with this initiative group in order to develop our own community cafés. These cafés are outreach events designed for the parents and guardians of the learners who enter our program. Our overarching goal is to teach students and their families about the importance of getting outside and to foster environmental awareness that leads to action in the community. Through experiential learning, habit building, and nature journaling, students foster their own place-based connection to the environment. The team facilitates a

series of classroom lessons, field trips, and parent/community cafés, working with over 300 students and their families to cultivate stewardship and empathy for oneself and the natural world. Our program supports local schools and families by nurturing relationships with the more-than-human world.

Samaniego, Gabriella
University of Oregon
Mentor(s): Erin Beck
Poster Session #060

Explaining False Pleas and Wrongful Convictions

When envisioning the judicial process, we mostly think of lengthy trials that lead to convictions. Surprisingly, trials make up a small number of convictions, with most convictions being a result of plea deals. The goal of my project was to explore how plea deals can lead to false guilty pleas and wrongful convictions. My proposed question was what factors lead to a defendant accepting a plea offer from a prosecutor for a crime the defendant did not commit. Through a literature review and meta-analysis of common factors among false guilty pleas, I established three significant factors that produce false guilty pleas. These factors are misconduct in interrogation and investigation, inadequate legal defense and advisory, and lastly, incentive plea deals. Special thanks to the Center for Undergraduate Research and Engagement for funding this research with the First Year Research Experience Award and to Dr. Erin Beck for being my guiding mentor.

Sanborn, Chloe
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #051

Mental Illness, Homelessness, and Policing

Police contact has been known to have a negative impact on homeless populations, especially those who suffer from mental illness. The purpose of our research is to examine connections between mental illness and homelessness, as well how these factors interact with the criminal justice system. We examine CAHOOTS as a potential alternative to police contact with the homeless population in Eugene. CAHOOTS, also known as Crisis Assistance Helping Out On The Street, is a program started in Eugene which is designed to prioritize positive mental health outcomes and de-escalation techniques. We investigate this topic through reviewing the existing literature within the field of homelessness, mental illness, and policing; as well as using local sources such as newspaper articles and an interview with a professional within the Eugene Police Department to look at CAHOOTS. This research is aimed to provide guidance for potential mental health focused initiatives for homeless people.

Sapp, Emily
University of Oregon
Mentor(s): Steven Brence
HURF'ing Through Culture, Identity and Power

Masculinity, Misogyny, and the Mafia: a Critical Analysis of Identity and Gender in *The Sopranos*

This project aims to critically analyze the themes of misogyny and masculinity within the acclaimed television series *The Sopranos*, exploring its reflection of the gangster genre's evolution. The analysis will begin by examining the archetype of the gangster, referencing early representations such as Rico in the 1931 film *Little Caesar*, before focusing on Tony Soprano and the complexities of his journey and the specific type of masculinity that is necessitated by his lifestyle. His therapy sessions with Dr. Jennifer Melfi contains a dynamic that not only highlights a personal crisis in masculinity but also contributes to an ongoing dialogue about gender dynamics from the show's original airing (1999-2007) to contemporary society.

The relevance of this research is underscored by the growing discussions regarding masculinity and misogyny today. By investigating the show's portrayal of these themes, I seek to discern whether it acts as a catalyst of societal attitudes or merely reflects existing cultural norms. Through pivotal episodes and scenes of the show, my analysis will illuminate the intricate relationship between pop culture media representations and societal perceptions of gender and power. This exploration not only aims to enrich the discourse surrounding the series but also contribute valuable insights into the implications of media portrayals of masculinity and misogyny within the gangster genre.

Sappal, Jaisel
University of Oregon
Mentor(s): David Frey
Poster Session #169

Development of a hyaluronic acid-based coating for enhancing the longevity of neural implants

Co-Author(s): Marian Hettiaratchi, David Frey

Neural probes are microelectrode systems inserted into nervous tissue, allowing for high resolution of neural events from regions deep within the brain. Neural implants have enabled the development of highly sophisticated brain-computer interfaces, which process brain activity and allow the user to transmit signals to an external device. While this technology seeks to revolutionize therapeutic strategies for neurological ailments such as Parkinson's disease, long-term reliability of neural probes is hindered by a chronic inflammatory response and encapsulation by thick scar tissue. To resolve inflammation , thin film coatings

composed of various polymeric materials have been employed to provide a protective barrier between the device and local immune cells. Synthetically derived polymer films have helped decrease inflammation around the implant, but degrade over time and may secrete byproducts that have adverse effects. Hyaluronic acid (HA) is a polymer found in the brain tissue and has been shown to regulate inflammation, making it a promising material for neural engineering applications. We are developing an HA-based coating to improve the longevity of neural implants. Our work describes the fabrication of HA films. We will evaluate their ability to dampen neural inflammation, opening new paths for enhancing the safety and reliability of neural implants.

Sarason, Natalie

See "Wooler, Kit"

First Offense, Lasting Impact: Early Justice Involvement and Juvenile Recidivism

Sargent, Sophia

See "Crandall, Chase"

Females Still on Top: How Small Group Size and Hand-Rearing Impact Bonobo Hierarchies

Sastry, Rishi

University of Oregon
Mentor(s): Chundi Xu, Chris Doe

Neural Blueprint- From Molecules to Movement

Homeodomain Protein Codes in Newborn Neurons Specify Neuronal Diversity

Co-Author(s): Chundi Xu, Chris Doe

The human brain comprises a vast diversity of neuron types essential for generating complex neural circuits, however, neuronal loss due to disease or injury presents a significant challenge. Neuron regeneration offers a promising therapeutic approach, but progress is hindered by limited knowledge of the transcriptional codes generating distinct neuron types. Techniques like single-cell RNA sequencing (scRNA-seq) have been used to map diverse neuron types across many species, from drosophila to humans, but how can we harness these transcriptome data to uncover the codes that generate diverse neuron types? The lamina of the drosophila visual system is an ideal model for tackling this question. From scRNA-seq data, we found pan-lamina as well as differentially expressed homeodomain transcription factors (HDTFs) across the five newborn lamina neuron types. Scro, a pan-lamina HDTF, is responsible for ending lamina progenitor proliferation and initiating differentiation into lamina neurons (LNs). Expressed within these newborn LNs are distinct HDTFs further differentiating neuron subpopulations: Zfh1 specifies L1 and L3, Dve specifies L2, and Bsh specifies L4 and L5. Furthermore, we found that LNs without their specific HDTFs revert to a different neuron type, possibly an

ancestral phenotype: Dve loss changes L2 to L3, and Bsh loss changes L4 and L5 to L3 and L1, respectively. HDTFs in newborn neurons provide the essential codes to specify unique neuron types.

Sathya, Ashish
University of Oregon
Mentor(s): Chenya Warner, Troy Houser
Poster Session #071

Differences in Categorization Strategy between Conservatives and Liberals

Co-Author(s): Chenya Warner, Troy Houser, Dasa Zeithamova

Evidence has shown that liberals' and conservatives' political beliefs govern where they live, who they have relationships with, and their social identity. Despite that, there is little research to discover how the individuals in these groups categorize information. Using two experiments, this study aims to determine if liberals and conservatives have different categorization strategies. Both experiments' results have shown that participants could learn and apply the category structures well. We used the Pew Political Typology survey to assess political typology in experiment 1, which showed no correlation between the strategy used and affiliation. In experiment 2, however, the Social Economic Conservatism Scale, another political affiliation measure, showed that the higher the final score (i.e., the more conservative someone is), the more likely they were to use a prototypical categorization strategy as opposed to participants who scored lower (i.e., more liberal) who were more likely to use the exemplar strategy. Given the findings, this paper exemplifies that more research should be done in political psychology to understand the cognitive differences between liberals and conservatives.

Sattler, Addison
University of Oregon
Mentor(s): Michael Pluth, Keyan Li
Poster Session #233

Metal 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 metal centers.

Schroeder, Esben
University of Oregon
Mentor(s): Hans Dreyer, Helia Megowan
Poster Session #198
Hormones, Heat, and Muscle Power Unveiled

3-Dimensional Myonuclear Analysis on Single Muscle Fibers using Imaris

Co-Author(s): Adam Fries, Mahathi Sridhar, Lia Godino, Payton Gavaldon, Madeline Luu, Bennett John, Jake Searcy

At the cellular level, "muscle memory" is attributed to myonuclei previously gained during resistance training and available once training has stopped, thus allowing for a faster increase in performance upon return to exercise. New findings suggest that myonuclear shape is influenced by exercise status; high-performance exercisers exhibited predominantly spherical myonuclei while sedentary individuals had elongated, non-spherical myonuclei. We seek to study the change in myonuclear characteristics in response to 60g/day essential amino acid (EAA) supplementation and six blood flow restriction (BFR) training sessions over the course of two weeks. Single muscle fibers isolated from human biopsies of the vastus lateralis muscle were fixed, stained for myonuclei (DAPI), fiber-type composition (MyHC1), and nucleoli (nucleolin). Z-stacks of single muscle fibers are acquired using a Leica Thunder widefield microscope for efficient myonuclear quantification, and a Zeiss 880 LSM confocal microscope for accurate shape analysis. 3D representation of single fibers is achieved using Imaris image analysis software, allowing for myonuclear quantification with the Spots tool, fiber length quantification with the Filaments tool, and myonuclear morphology with the Surface Creation tool. This protocol offers a more efficient method of single fiber analysis with significantly greater confidence along the length of each fiber and the capacity for 3D morphological assessment of myonuclei.

Schwing, Emma
University of Oregon
Mentor(s): Kristin Yarris
Poster Session #064

Beyond the Law: Public Awareness, Healthcare Access, and Reproductive Justice in Mexico

After engaging in GLBL 465: Global Reproductive Health with Professor Kristin Yarris, we decided to analyze Reproductive Justice (RJ) from the lens of health equity, forced sterilization, and biopower, and were given numerous resources to assist in our further research on RJ in Mexico. While abortion was decriminalized

in Mexico City (2007) and Oaxaca (2021), access remains deeply unequal, with conservative resistance maintaining barriers across many states. We researched the important social justice movements that ignited a national reckoning, forcing the country to confront the realities of reproductive oppression. RJ is important to be understood because according to Ginsberg and Rapp (1991), total fertility cases are declining globally and could reach below replacement level (2.1 births). This research examines how social justice movements have reshaped public discourse and driven legal reform–yet, the battle is far from over. As reproductive rights continue to be restricted worldwide, Mexico's fight serves as both a warning and a blueprint for global advocacy.

Scoble, Champe
University of Oregon
Mentor(s): Kayla Conde
KIDDing with Language and Poetry

The Lyricist as the Poet: Why the Songwriter is an Inseparable Figure from the Literary Landscape

Humans have needed to write since the inception of the first language systems. There is an indomitable spirit of creation that words have been the vessels for, across cultures, because writers have felt things that need sharing. Music, before words, has been humanity's universal language. When the two artforms merged and gave birth to the songwriter, the poet gained the gift of melody. But at the core of songwriting is the molten iron of writer's blood, flowing fragmented to chords and tunes.

In 2016 Bob Dylan won the Nobel Prize in Literature stirring up dust around what makes a poet; what makes a writer. Adrianne Lenker is a working singer-songwriter whose writing draws on classic themes like love, heartbreak, the physical world, and space and takes us into a deeply intimate place where by getting to know her we better understand ourselves. Gjertrud Schnackenberg is a poet whose use of language captures a unique fascination with the world and human relationships that reflects, like a mirror, our own interior and exterior landscapes where, like Lenker's writing, we can locate ourselves within it. By examining the poems of Gjertrud Schnackenberg and the songs of Adrianne Lenker and the lineages the two writers come from, I will determine how and why the lyricist is an inseparable figure from the greater literary picture and should not be discredited in spite of her melodic tendencies.

Scott, Ava
University of Oregon
Mentor(s): Jennifer Pfeifer, Yalda Asmatey
Poster Session #161

Female Adolescents and COVID-19

The current research examines how personality moderates the relationship between childhood trauma and coping mechanisms in the context of female adolescents and COVID-19. Investigating the unique impact of COVID-19 on female adolescents is pertinent, since evidence suggests that female adolescents were disproportionately affected by the pandemic. Additionally, as global temperatures rise, environmental research suggests that the likelihood of pandemics will only increase. Thus, action must occur to identify who was significantly impacted by COVID-19 to inform intervention efforts for future pandemics. The data used to complete this research originated from the Transitions of Adolescent Girls (TAG) study, currently being conducted at the University of Oregon. TAG is a longitudinal study examining both the physical and mental changes that accompany female adolescents through a variety of measures, including hormonal analyses, Magnetic Resonance Imaging (MRI), and mental health questionnaires. The current study utilizes questionnaire data from the Big-5 Personality Inventory (BFI-10), the KidCOPE, and the Childhood Trauma Questionnaire (CTQ). The study hypothesizes that there will be a relationship between personality and coping mechanisms.

Shaffer, Gabby
University of Oregon
Mentor(s): Alison Carter
Poster Session #088

Pottery from Prasat Baset, Cambodia: Preliminary Results from a Study of Earthenware Rim Forms

This project will present preliminary 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 historically been studied less than Angkorian stonewares. Earthenware vessels and rims were sorted by composition and decoration, measured, and drawn for comparison within the collection. The findings will 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.

Shaffer, Gabby
See "Towles, Baylee"
Analyzing the Impacts of Inland Flooding Events on Agriculture Using Satellite Imagery

Shriver, Hannah
University of Oregon
Mentor(s): Barbara Muraca, Katie Lynch
Poster Session #130

Analyzing the Presence of a Relational Framework in Environmental Education Resources in Oregon

Community building and relationship development are impactful components of environmental education experiences. The relational aspect of learning in the outdoors significantly affects students, however, it is often not explicitly acknowledged. Many fields have seen a relational approach being used in recent years, and others such as feminist care ethics and Indigenous ethics have emphasized the importance of relationships through relational frameworks for a long time. While this knowledge has been used thoroughly in other aspects of environmental studies, the understanding of the extent to which a relational framework has been used in environmental education is limited.

My research seeks to address this knowledge gap by answering: How do relational frameworks manifest in environmental education resources in Oregon and what does this bring to the field? To answer this question, I articulate a relational framework and then conduct a literature analysis of seven environmental education resources, such as curriculum guidelines and conceptual frameworks, used in Oregon. I expect this thesis will conclude that while components of a relational framework are found in environmental education documents in Oregon the full extent of a relational framework is not truly represented. A more thorough integration of a relational framework in environmental education could help further the impacts that have been observed by educators and researchers alike.

Shuaib, Adam
See "Luu, Madeline"
Automated Pipeline Method for Serial Image Analysis of Muscle Biopsy Cross-Sections

Siegler, Cole
See "Knudsvig, Olivia"
From Co-Management to Land Back: (Re)Imagining Mesa Verde National Park

Siegler, Hannah
University of Oregon
Mentor(s): Parisa Hosseinzadeh
Poster Session #172

Computational Design of a Cyclic Peptide for HRAS

HRAS is a GTPase that functions as a molecular switch in key signaling pathways and is frequently mutated in human cancers. Due to its shallow surface and conformational flexibility, HRAS has long been considered "undruggable." Cyclic peptides offer advantages over linear peptides and small molecules, including increased stability, specificity, and reduced immunogenicity, making them a reasonable approach for targeting HRAS. This research presents a computational pipeline for designing high-affinity cyclic peptides for HRAS. Using a tryptophan anchor residue placed in a binding pocket of the switch region, we generated eight-residue cyclic peptides through backbone design and side chain optimization. Peptides were filtered based on energetic and geometric criteria, including ΔΔG, hydrogen bonding, shape complementarity, and hydrophobic interactions. Stable candidates were folded and passed through molecular dynamics (MD) simulations to assess rigidity and binding persistence under applied force. Top peptides demonstrated stable conformations and strong binding throughout 100 ns MD trajectories. These candidates will be tested for HRAS binding using biolayer interferometry. This work illustrates a viable strategy for targeting HRAS with cyclic peptides and advances peptide-based approaches for inhibiting previously undruggable proteins.

Simmons, Pippa
University of Oregon
Mentor(s): Raoul Lievanos, CJ Pascoe
Poster Session #018
Data, Identify and the Politics of Being Seen

To Be Seen–Gender Presentation with Gender Nonconforming Individuals

To be social is to be human. Identity is built off of social interactions and one of the largest sources of identity creation is the social classification of gender. Yet little work has been done on analyzing how individuals outside the gender binary interact with identity and presentation. This study analyzes how gender norms and social settings impact the presentation of gender nonconforming individuals. People who identified outside the binary were asked in-depth questions on their presentation and responses were compiled into overarching themes. This study found the weight that cultural, social, and gender norms have on gender presentation as a whole. A comfortable situation, a neutral situation, and a negative situation have an impact both on the methods of presentation and the freedom that a participant feels with their own gender identity. Cultural norms create an expectation that can impact the way that gendered labels

can affect individuals. Gender norms build off of pre-existing labels to craft a fluid gender identity and a tool for constructing a preferred gender identity for interpretation in a social situation. Entwining these concepts together presents the forces impacting gender nonconforming identity and presentation. As a whole, this analysis illuminates a previously relatively unstudied identity group and expands upon how social interactions depend on gender and culture presentation.

Simon, Sam
University of Oregon
Mentor(s): Soroush Mirjalili, Brice Kuhl
Poster Session #259

Optimizing Memory Discrimination Using Rhythmic Brain Stimulation

Have you ever confused two similar things, like mixing up names of people who look alike? This happens because our brain sometimes struggles to keep similar memories separate, causing "memory interference". This study proposes a novel approach to reducing memory interference using "neural entrainment". Neural oscillations, particularly in the theta range (~5 Hz), play a crucial role in human memory processes. Previous research suggests that entrainment–inducing rhythmic brain activity through external stimuli–can modulate memory-relate neural activity. This study aims to test whether entrainment at 5 Hz can improve memory discrimination by reducing interference effects, a discovery that could have profound implications for learning, cognitive therapy, and age-related memory decline.
This study represents the first attempt to resolve memory interference using neural entrainment. If successful, it could establish a groundbreaking non-invasive approach to improving memory accuracy, with potential applications in education, rehabilitation, and cognitive enhancement. By demonstrating that brain waves can be harnessed to refine memory processes, this research could pave the way for innovative strategies to mitigate memory-related cognitive challenges across diverse populations.

Simoni, Sabrina
University of Oregon
Mentor(s): Joey Wanczyk
Poster Session #297
KIDDing the Norms- Women, Identity, and Non-Traditional Narratives

My Existence is a Scandal: Embodying Queerness in Poetry

In using first person narrative within queer love poems, the speaker invites the audience to inhabit the mind through a queer lens. Specific pronouns of "you" and "I" turns the reader into the addressed, forcing us to now embody the "you". This poetic shift not only fosters empathy and identification for the reader but also

challenges heteronormative perspectives. These authors encourage passivity through urging readers to experience love, desire, and intimacy from a queer standpoint. In pulling examples from both contemporary poetry and established poems, I will dissect and compare creative writing through a LGBTQ perspective.

Smith, Alexandre
University of Oregon
Mentor(s): Johan Gilchrist, Josef Dufek
Poster Session #108

Estimating volcanic mass eruption rate using satellite observations & analog laboratory experiments

Explosive eruptions generate umbrella-shaped ash clouds that spread radially for thousands of kilometers. The glass shards (volcanic ash) and aerosols in these clouds pose hazards to aviation, cause ashfall in nearby communities, fertilize phytoplankton in the ocean, and impact global climate. Remote measurements of umbrella cloud spreading rates enable estimates of Mass Eruption Rate (MER), a key parameter for predicting volcanic hazards. However, the accuracy of MER estimates depends on assumptions in the model linking spreading rate to MER. Physics-based models predict a power-law relationship between cloud radius and time, with exponents ranging from 2/9 to 1. To test which exponent best matches observations, I compare multiple spreading rate models to satellite data from historic eruptions and to scaled water tank experiments simulating umbrella clouds. I find that exponents between 1/2 and 3/4 best match observations, suggesting that spreading is governed by buoyancy and mass conservation, with resistance transitioning from inertia to viscous drag at the cloud-air interface. These results improve the reliability of real-time MER estimation by reducing uncertainty in radius-time scaling and clarifying dominant physical processes. This study supports more accurate forecasting of umbrella cloud evolution and associated volcanic hazards.

Smith, Brynn
University of Oregon
Mentor(s): Judith Eisen, Laura Desban
Poster Session #267

Exploring the Mutualistic Relationship Between Host Social Behavior and Microbiome Acquisition in Zebrafish

Co-Author(s): Judith Eisen, Laura Desban

The microbiome is a hallmark for host health and development, with growing evidence linking it to neurodevelopmental and behavioral outcomes, including Autism Spectrum Disorder (ASD). Research has increasingly shown that the composition of the gut microbiome can influence brain development and

behavior, highlighting the importance of microbial communities in neurotypical development and what can go awry when there is microbial dysbiosis.

Recent studies, including our observations in zebrafish, suggest that social behavior and interactions are critical drivers of microbiome composition and variation. Social exchanges may shape microbial communities through mechanisms of microbial transmission, indicating a bidirectional relationship between social environment and microbial dynamics.

In this project, we are investigating this reciprocal relationship, exploring how social interactions influence the gut microbiome and how the microbiome, in turn, impacts social behavior. By integrating complementary approaches, including the use of fluorescently labeled bacteria and germ-free zebrafish, we aim to shed light on the underlying biological mechanisms that connect microbiome composition with social behavior and neurodevelopment.

Smith, Parker
University of Oregon
Mentor(s): Elizabeth Skowron, Kate Kwasneski
Poster Session #140

Early Adversity and Self-Regulation Skills Among Children in The Child Welfare System

Adverse Childhood Experiences (ACEs) are associated with poorer child outcomes ranging from mental illness to premature death (Felitti et al., 1998). Previous meta-analyses have established the connection between child maltreatment and deficits in inhibitory control, the ability to control immediate and initiate an adaptive, appropriate response (Lund et al., 2020). ACEs may predict deficits in inhibitory control, which can lead to lifelong challenges. This study examines the relationship between ACEs and inhibitory control as measured by the Zoo Go/No Go Task (Zoo GNG) (Grammer et al., 2014). The study sample consisted of 204 children ages 3 to 7 (M = 4.8, SD = 1.4) in families involved with child welfare services, and data were drawn from a larger randomized clinical trial. Parents completed the Adverse Childhood Experiences (ACE) scale documenting their child's exposure to 10 ACEs, with children's ACE scores ranging from 0 to 8 (M=3.44, SD= 1.92) ACEs exposures. To measure inhibitory control children completed the Zoo GNG task. They were instructed to click a button as quickly as they could every time a zoo animal appeared on the screen (Go trials) but inhibit their response when a zoo-keeper's assistant appeared on the screen(No-go trials).Based on the existing literature, we hypothesize a moderate negative correlation between children's ACE scores and their performance on the Zoo GNG task, with higher child ACEs predicting lower inhibitory control scores.

Smith, Phoenix
University of Oregon
Mentor(s): Timothy Herrera, Dee Jolly
Works in Progress: Culture, Society & Politics

The Pain of Systemic Discrimination: The Barriers of Chronic Pain Diagnosis in America

My research is centered around exploring the cultural perception of pain in America and how our implicit biases (whether encoded into our interactions through genetics, evolution, or cultural upbringing) contribute to the lack of chronic pain diagnoses in America. This was first centered around one key fact: that pain is inherently subjective. There are very few methods of quantifying pain that work with enough accuracy to provide adequate treatment for individuals. Although there have been recent inventions that aim to bring "objectivity" into pain management such as the AlgometRx Nociometer, this technology is still very new. Most doctors rely on their own subjective observations, and the word of their patient in order to treat their pain. As I dug deeper into why this system didn't work for a majority of patients, I discovered three different forms of pain discrimination: Internal, external and systematic. All of which have ties to historical medical treatments, the War on Drugs, our current laws surrounding medical school in America, the "American Dream", misogyny, racism, among many other systemic issues. It's for all of these reasons and more that our culture of pain needs to discussed and critically examined, so that one day, we may hopefully finally ease the pain of systemic discrimination.

Smith-Drysdale, Tetianna
University of Oregon
Mentor(s): Lauren Hallett, Carmen Watkins
Poster Session #098

Mycorrhizal Networks and their Importance in Plant Facilitation

Co-Author(s): Carmen Watkins, Lauren Hallett

Arbuscular Mycorrhizal Fungi (AMF) form symbiotic relationships with plants, providing nutrients like Nitrogen (N) or Phosphorus (P) in exchange for carbon while at times alleviating plant stress from the environment. Plants can regulate AMF colonization in response to soil nutrients or competitive plant interactions, but it is unclear whether facilitative plant interactions or water availability also alter colonization. We tested how AMF colonization in the roots of an invasive grass species, Bromus hordeaceus, changed with the presence of a native legume, Acmispon americanus, and under drought in a greenhouse experiment. We hypothesized that legume presence would reduce AMF colonization in the grass roots, as legumes can increase soil N through symbiotic N fixation, and that drought would increase AMF colonization, reflecting increased dependence on AMF with environmental stress. We measured AMF colonization, plant interactions, and aboveground

biomass and found that there was no change in AMF colonization with legume presence, possibly because A. americanus had a weakly facilitative to neutral effect on B. hordeaceus. During drought, grass biomass declined but AMF colonization did not change, indicating that mycorrhizal dependence did not increase during drought or stop declines in plant productivity. As AMF can bolster plant success, characterizing changes to colonization in the roots of an invasive grass can help identify mechanisms promoting invasive grass success.

Solorio, Diego
University of Oregon
Mentor(s): Alissa Phillips
Film Screening Session

Bien Pretty: A Mexican American Love Story

Co-Author(s): Anthony DiStasio, Alexandra Borjas, Isabel Lopez, Juan Castillo Delgado

"Bien Pretty" is an unofficial adaptation from a short story by Sandra Cisneros, directed by Diego Solorio. It is a Mexican American Love Story about Lupe Arredondo, a Chicana photographer who finds herself caught up in a whirlwind romance with Flavio, a Mexican poet and exterminator. The project is an exploration of one woman's journey towards self-love and was adapted by the student filmmakers as a practice of honing their narrative storytelling skills accumulated while enrolled at the University. The film is bilingual, many parts spoken in English but features Spanish dialog and original Spanish music; additionally, the film is subtitled in English and Spanish so that it can be enjoyed by more than one kind of audience. The filmmakers felt that it was important to create a work which celebrated an authentic Mexican American experience - an experience that considers two countries, two cultures, two languages and yet is something entirely new all together. This mission was especially important to the director, who is troubled by the lack of Latin/Hispanic representation in Hollywood, despite the global hub of cinema production taking place in Los Angeles, a predominately Latin/Hispanic city. Now with the heightened aggression towards Latin American citizens and immigrants in the United States, it has become more important than ever to tell stories from our communities.

Song, Paul
See "Ramirez, Mariano"
MAPS Technology in the SiD Digital Electromagnetic Calorimeter to Optimize Higgs Boson Measurements

Sorenson, Tapley
University of Oregon
Mentor(s): David McCormick, Kevin Zumwalt
Poster Session #269

Assessing Cortical Noradrenergic Activity Across the Sleep-Wake Cycle in a Mouse Model

Activity in the noradrenergic system is critical for modulating an animal's levels of attention and arousal while awake, though far less research has been carried out by examining noradrenergic activity during sleep. While the understanding of the functional organization of the noradrenergic system is still evolving, it has been established that it is capable of broadcasting information both globally, to all the regions of the central nervous system that it innervates, as well as locally, only to specific destinations. Additionally, female animals have been shown to experience systemic disruptions to their sleep due to hormonal fluctuations when compared to males. We will use two-photon microscopy and genetically encoded calcium indicators (GECI) to record noradrenergic axons across brain states throughout the cerebral cortex, categorizing sleep states with EMG, EEG, and pupillometry. We will retrospectively compare the results to determine whether there is a significant difference in noradrenergic synchrony across sleep states by biological sex. Two-photon microscopy allows for simultaneous measurement of activity between individual neurons, such that we can assess the heterogeneity of sleep patterns across multiple cortical regions of interest. Sleep patterns are generally conceptualized as broad oscillatory signals, but that is based on global recordings suggesting that there could exist a greater variance in activity across localized brain regions.

Sowles, Alanna
University of Oregon
Mentor(s): Chris Doe, Shawn Lockery
Neural Blueprint- From Molecules to Movement

Investigating Novel Psychoplastogenic Mechanisms

Emerging evidence suggests that psychedelics are effective in treating intractable psychiatric diseases by acting as psychoplastogens, or substances that induce neuronal growth. Despite the therapeutic potential of psychedelic compounds, the mechanisms underlying their effects remain unclear. This activity may be independent of hallucinogenic activity, but more research is needed. We investigated the psychoplastogenic properties of serotonergic psychedelics in developing neurons, using the fruit fly Drosophila melanogaster as a model organism. Drosophila Class 1 mechanoreceptor neurons (C1Ns) exhibit psychoplasticity in response to 2,5-dimethoxy-4-iodoamphetamine (DOI) through evolutionarily conserved mechanisms. During larval development, dendrites in C1Ns extend and retract with bias toward overall growth. We hypothesize

that psychoplastogens increase this bias in C1Ns, and sought to accelerate mode of action studies in Drosophila by improving experimental design. We performed in vivo confocal imaging of developing larvae exposed to DOI or a control, using a transgenic strain that labels C1Ns with a fluorescent probe. Segmentally repeated C1N arbors were digitally reconstructed and analyzed to compare any morphological differences between treatment groups. We anticipate DOI will produce significant increases in the rate and area of dendrite growth in C1Ns. This research contributes to the identification of molecular pathways and genetic mechanisms of psychoplasticity.

Sparling, Cherish
University of Oregon
Mentor(s): Marina Guenza
Poster Session #230

A computational study of the diffusive behavior for large molecules in liquid solution

Co-Author(s): Alexander Batelaan, Micah Taylor-Rosenberg

Large molecules like DNA and polymers serve important roles in our daily lives and biological systems. As such the study of their movement, such as diffusion, is of importance to many different areas of science. In this research the subdiffusive behavior of such molecules are explored. Subdiffusive diffusion is the behavior of a large molecule to diffuse slower than would normally be expected by Brownian motion. As temperature is lowered we would expect the subdiffusive behavior at small time steps to be more pronounced, this hypothesis is due to the polymer approaching the glass transition at lower temperatures. The glass phase is where a polymer becomes very rigid and hard. Using molecular dynamics simulations of polyethylene run on the supercomputer, talapas, and analyzing the resulting trajectory for the mean squared displacement this hypothesis can be tested. By varying the temperature of these simulations it was found that the subdiffusive behavior did become more pronounced at lower temperatures for polyethylene. These findings can be used to further our understanding of plastics and their decomposition process, and in turn their effect on the environment. As polymers are the primary component of many plastics, including polyethylene.

Spezialy, Crystal
University of Oregon
Mentor(s): William Cresko, Shannon Snyder
Poster Session #283

Reproduction Under Predation: Gene Expression and Multigenerational Defense in Daphnia lumholtzi

Daphnia lumholtzi, the African spiny water flea, is used as a model for the epigenetic regulation of multigenerational phenotypic plasticity. Kairomone, a chemical cue from the predatory stickleback fish,

induces protective head and tail spine elongation in Daphnia. These changes are passed to the next generation with or without continued kairomone exposure. Offspring shed multiple membranes before being released from the mother's brood chamber with defenses in place. This suggests similar gene expression, perhaps without direct exposure being necessary.

Daphnia reproduce sexually and asexually, allowing expression of genes to be compared through parthenogenic daughters. Rearing daughters of naïve mothers in untreated media or media treated with kairomone reveals significant phenotypic differences. Treated Daphnia mature quicker, reproduce faster and produce more offspring than Daphnia not exposed to kairomone. In correlation with these differences, gene expression under predation is explored through RNA sequencing. Matured Daphnia in untreated media serve as a baseline transcriptome to compare changes induced through both kairomone exposure and brooding to observe unique epigenetic change to prepare the next generation for predation.

By uncovering genes that differ in expression, the developmental pathways leading to defenses and increased fecundity may be revealed in further studies. This may pinpoint maternal signals or loading patterns affecting the next generation.

Spiegel, Owen
University of Oregon
Mentor(s): Matthias Vogel
Poster Session #045
Power, Policy, and Global Shifts

El Salvador under Nayib Bukele: trading liberty for security

Under President Nayib Bukele, El Salvador has "traded security for liberty" by relinquishing civil liberties for enhanced security against organized crime in the country. My project juxtaposes two contrasting interpretations of Bukele's actions. In one interpretation, Bukele's actions represent the will of the people and necessary measures against an extreme threat that had destroyed El Salvador. On the other hand, democracy is not just a fair election, but the protection of people against the overreach of government and certain freedoms from the abuse of power. I use news articles and the reports of NGOs to paint a picture of the situation in El Salvador, and how Bukele's actions are evaluated differently by people of different opinions. As Americans, our government has often disapproved of popularly elected leaders because they do not fit our interpretation of democracy and used force or manipulation to overthrow them, especially in Latin America. Democracy is at the heart of modern government. What it means and how it's interpreted has great implications for the world we live in.

Spriggs, Andrew
See "Fillo, Peter-George"
Genius Loci (Spirit of Place)

Springer, Katie
See "Lopez, Ilsi"
The Impact of Extreme Weather on Eugene's Unsheltered Population and the Lack of Resources Available

Sridhar, Mahathi
See "Godino, Lia"
EAA and BFR Treatment to Induce Muscle Resilience Prior to Eccentric Damage

Stahl, Ella
See "Fehringer, Isabella"
Surveying Oregon Ash Habitat in Preparation for Emerald Ash Borer

Stewart, Zach
University of Oregon
Mentor(s): Clara Rehmann
Poster Session #280

Structural Variation in the Proteomes of Related Species

As species diverge, changes in genomic sequences accumulate due to evolutionary forces such as drift or adaptation. Such divergence can result in protein-level changes in biochemical properties, such as binding strength, rate of enzymatic reaction, or inhibition by small molecules such as drugs or insecticides. While the impact of adaptive evolution on protein coding genes can be quantified with statistics such as the McDonald-Kreitman test, it remains unclear how these metrics relate to downstream effects, mainly structural changes. Using modern computational approaches such as AlphaFold3 that can predict protein structure from amino acid sequences, we have the ability to examine the contribution of nucleotide divergence to structural differences between diverging proteins on a genomic scale. Using the genomes and proteomes of two well characterized model systems, Drosophila melanogaster and Drosophila simulans, we will examine the relationship between levels of genetic adaptation and divergence in the protein structures ultimately encoded for. This relationship can give insight into the evolution of the proteome between related species and the biochemical consequences of speciation events.

Struble, Lydia
See "Fouts, Madeline"
Investigating Memory Retrieval and Perceptual Processing with Steady-State Visual Evoked Potentials

Stueland, Siena
University of Oregon
Mentor(s): Ashley Walker, Skylyn Ferguson
Poster Session #212

How APOE, Large Artery Stiffness, and High Pulse Pressures Effect Endothelial Function

Co-Author(s): Kennedy Krajack

With age, vascular stiffening results in endothelial cell stress that increases the risk of vascular dysfunction and Alzheimer's Disease (AD). Currently, the greatest known genetic risk factor for AD is the apolipoprotein Eε4 isoform (E4), yet the mechanisms are unclear. We aimed to research cerebrovascular endothelial function after exposing our mice with APOE genotype to high pulse pressure (PP). We hypothesized greater large artery stiffness (LAS) and higher PP results in lower vasodilation in E4 mice compared to E3 mice. We studied mice of both sexes carrying the humanized amyloid-precursor protein gene and either the humanized E3 (E3/hAβ) or E4 (E4/hAβ) gene (n=14, 6 months). Ex vivo cerebrovascular endothelial function was assessed with pressure myography for endothelium-dependent vasodilation using acetylcholine doses in the posterior cerebral arteries (PCA) after exposure to static, low, and high PP. LAS was assessed with pulse wave velocity (PWV) and the β-stiffness index. We found a trend in E4/hAβ mice for higher PWV (p>0.05) and PCA β-stiffness index (p=0.0002). E3/hAβ and E4/hAβ mice showed lower vasodilation after high PP, but there was a stronger genotype effect in E4/hAβ mice (p=0.02). Overall, we found a genotypic effect of reduced endothelial vasodilation and higher vascular stiffness in E4/hAβ compared to the E3/hAβ mice. This research furthers our understanding of how APOE genotype effects vascular function to explore future therapeutic targets for AD.

Sverdrup, Emily
University of Oregon
Mentor(s): Nick Willett, Nicholas Pancheri
Next-Gen Healing Biomedical Innovations

Investigating an encapsulated pro-resolving lipid mediator for the treatment of osteoarthritis.

Osteoarthritis (OA) is a chronic joint disease characterized by pain and impaired joint mobility. The chronic nature of OA is associated with unresolved, low-grade inflammation. Resolvin D1 (RvD1) is a pro-resolving

lipid mediator that promotes inflammation resolution and tissue regeneration. This study aimed to test the potential of RvD1 as a therapeutic for OA. We hypothesized that RvD1 would reduce TNF-α and nitrite production (inflammatory markers) in macrophages in vitro, and decrease OA pathologies in vivo, with enhanced effects when encapsulated in polyethylene glycol (PEG) microgels. RAW 264.7 macrophages were pre-treated with RvD1, stimulated with lipopolysaccharides and co-treated with RvD1, then fixed and stained for TNF-α. Spent media was analyzed for nitrite levels. Male Lewis rats (n=3-6/group) received either anterior cruciate ligament rupture (ACLr) or a Sham procedure, followed by intra-articular injection of saline, RvD1 (100 ng), or RvD1 in PEG microgels. Joint structural changes were quantified via contrast-enhanced μCT and functional effects were analyzed via Bioseb Dynamic Weight Bearing assay. In vitro, RvD1 had no significant effect on TNF-α and nitrite production, potentially due to the immortalized cell line used. In vivo, RvD1 improved cartilage quality and reduced cartilage erosion. Further studies are needed to confirm these findings, but this preliminary work suggests that RvD1 may have potential as a treatment for OA.

Swanson, Joseph
University of Oregon
Mentor(s): Barbara Mossberg
Film Screening Session

Foul Play

Co-Author(s): Colin Scales, Caden Keston

When the brilliant students Seth, Johnny, and Nick form a group for a project, they all expect an easy A. But when they receive a bad grade from the ruthless professor Howard, their dreams of graduating are crushed. Convinced that the grade was more personal than academic, the trio embarks on a journey for revenge. Under the guidance of biology student Johnny, the group meets to brainstorm ways to strike back. The group does not want an ordinary prank; Professor Howard deserves something far worse. After countless hours of research and debate, far longer than they spent on the group project, the students decide on their plan of revenge: a stink bomb so powerful and inescapable that it will turn Howard's life into a waking nightmare. Chemistry prodigy Seth takes the lead in crafting what can only be described as a biological weapon. His obsession with perfection makes the concoction more than a simple prank–his formula is so volatile and revolting that it has the potential to be lethal.

In the next phase of the plan, Johnny, moving in darkness, must plant the bomb in Professor Howard's home without being seen. Every second counts as the group risks everything for their revenge. But as the stench begins to spread, chaos ensues, and they are faced with an unsettling realization: have they gone too far? What started as an act of petty retribution spirals into something far more sinister, with consequences they never could have imagined.

Swanson, Joseph
University of Oregon
Mentor(s): Jessica Atencio
Poster Session #203

Physiological Responses to Prolonged Heat Exposure in Young and Older Adults

Co-Author(s): Jessica Atencio, Rauchelle Richey, Juliana Esquivel, Lindan Comrada, John Halliwell, Christopher Minson

As climate change increases the frequency and severity of heat events, effective regulation of thermoregulatory processes becomes crucial to health and well-being. Older adults have an increased risk of heat-related illness due to age-related impairments in thermoregulation; aging is associated with diminished sweat production and altered cardiovascular regulation, resulting in impaired heat dissipation. The purpose of this investigation is to examine differences in thermoregulatory and hemodynamic responses between young (18-35 y) and old (60-80 y) adults during a 6-hour simulated heat event (42°C, 20% humidity). We hypothesize that older adults will experience higher core and skin temperatures, and a lower heart rate, blood pressure, and total sweat loss response compared to younger individuals. Participants will exercise every 45 min for 15 min at an intensity of 3 METS to simulate activities of daily living and are permitted to drink water (3 ml/kg of bodyweight) every hour. Core temperature, skin temperature, heart rate, and blood pressure will be measured throughout the 6-hour heat exposure. Whole body sweat loss will be calculated as: (pre-heating body mass – post-heating body mass) + water consumed. We anticipate these results will provide insight into the age-related differences in physiological responses to prolonged heat exposure. Furthermore, our findings will help improve public health strategies to reduce heat-related risks in older adults.

Sweeney, Morgan
University of Oregon
Mentor(s): Kristin Perry
Growth Spurts and Brain Bursts

The Effect of Parenting Styles on Relational Aggression in Children

This systematic literature review examined the effect of different parenting styles on relationally aggressive behavior in children aged 3-18. Relational aggression is the intent to harm others through damage to the relationship and often occurs at school and with peers. There are four types of parenting styles; authoritative, authoritarian, permissive and uninvolved, which are rated on dimensions of warmth, control, demandingness, responsiveness, and acceptance. Authoritative parenting is categorized by a high responsiveness and clear boundaries for children. Uninvolved parenting involves little support and low demand in the child's life. Permissive parenting involves high levels of responsiveness, warmth,

and acceptance but low levels of demand. Authoritarian parenting encompasses high demand and low responsiveness, aiming to create a rigid structure with clearly defined rules. The goal of this paper was to understand how parenting styles are related to relational aggression. Findings indicated that the authoritative parenting style was not positively correlated with relational aggression. Both permissive parenting and authoritarian parenting have a positive correlation with relational aggression. These findings can help identify specific strategies that parents and teachers can use to reduce children's and adolescents' relational aggression.

Symons, Tom
University of Oregon
Mentor(s): John Leisure
Poster Session #039
Works in Progress: Culture, Society & Politics

The Yasui Family of Hood River Oregon and Japanese Internment during WW2

This is a work in progress research project about the Yasui family, a Japanese-American family that attended UO before and after the Japanese internment that occurred during WW2. I strive to explore the atmosphere and reactions to Japanese-Americans here at the U of O following Pearl Harbour and how the Yasui family reacted and adjusted to the changing environment. It is important to know this history of internment in America especially considering how it often gets pushed to the background in American history and how this history is especially relevant to the West coast.

Tabor, Kat
Lane Community College
Mentor(s): Dr. Kimberley Parzuchowski
Poster Session #012
Changing Spaces, Shaping Places

Sundowner Eugene:The Case of Ferry Street Village, Eugene, Oregon

"Sundowner Eugene: The Case of Ferry Street Village" investigates the erasure of Eugene's only historically Black neighborhood, which was forcibly displaced in 1948 to make way for the development of today's four-lane Ferry Street Bridge spanning the Willamette River near Alton Baker Park. Ferry Street Village was home to 101 residents–65 Black and 36 white–many of whom were denied homeownership due to racially restrictive covenants and sundown laws that criminalized Black presence in the city after dark. Despite lacking basic infrastructure like electricity and running water, the community fostered resilience, cultural identity, and mutual support.

This project explores the ethical dimensions of that displacement through the frameworks of John Stuart Mill's utilitarianism and John Rawls' theory of justice, questioning whether public progress can ever justify the destruction of marginalized communities. It also examines the absence of institutional accountability–from Lane County's 2021 acknowledgment of the displacement to ongoing delays in constructing a public monument, a project now led by the Black Cultural Initiative.

Through archival research, historical documentation, and present-day advocacy, the project traces the lasting effects of racialized urban planning and its modern echoes in gentrification and redlining. It challenges dominant narratives of "progress," amplifies erased histories, and calls for remembrance rooted in justice.

Tagwerker, Lola
University of Oregon
Mentor(s): Michael Aronson
Poster Session #301

Eyes on Ireland

It was an honor to study abroad in Ireland this summer, to learn about its rich history and for it to ultimately play a part in my own.

Eyes on Ireland is a love letter to all I never thought I'd be able to see. In shades of gray and green, this collection of images are from a few of my favorite moments. And while the laughter, untimely inside jokes, and carelessness of youth cannot be heard from beyond the frame, I hope to share an ounce of the beauty this place afforded me with in my first collection of photography.

Talus, Reed
University of Oregon
Mentor(s): Scott Hansen, Emma Drew
Poster Session #175

Investigating the membrane kinetics of SHIP1 autoinhibition and dimerization

Co-Author(s): Emma Drew, Hunter Nyvall, Matthew Parson, John Burke, Scott Hansen

Cell signaling via networks of macromolecules enables spatial organization and response to external stimuli. Phosphatidylinositol phosphate (PIP) lipids on the plasma membrane are integral to these networks, allowing human neutrophils to detect pathogens and migrate to the site of infection. Misregulation of the phosphorylation of PI(4,5)P2 to PI(3,4,5)3 catalyzed by Phosphatidylinositol-3 kinase (PI3K) can be fatal as PI3K is the second most mutated protein in cancer. Src homology 2 (SH2) domain containing inositol polyphosphate 5-phosphatase 1 (SHIP1) is a negative regulator of PI3K, responsible for the

dephosphorylation of PI(3,4,5)P3 to PI(3,4)2 and therefore has been noted as a potential cancer drug target. While SHIP1 activity assays have demonstrated autoinhibitory behavior and dimerization, the structural features enabling this function have not yet been studied. Our research found increased SHIP1 activity–indicating relief of autoinhibition–upon mutation of specific residues identified within the CBL1 motif via total Internal Reflection Fluorescence (TIRF) microscopy. Single molecule imaging of SHIP1 also revealed disruption of dimerization upon removal of the Rho binding domain (RBD). These results provide new insight into the structural mechanism of SHIP1 autoinhibition and dimerization. This new knowledge of how SHIP1 structure informs function enhances drug researchers' ability to determine how SHIP1 may be significant for developing new cancer treatments.

Tamashiro, Mia
University of Oregon
Mentor(s): DeShea Chasko, Gabriella Lindberg
Poster Session #187

Characterizing osteogenic potential of patient-specific stromal cells in 2D culture and 3D hydrogels

Co-Author(s): DeShea Chasko, Gabriella Lindberg

Bone marrow-derived mesenchymal stromal cells (BMSCs) play critical roles in differentiating into adipocytes, chondrocytes, and osteoblasts. Specifically, BMSCs can be driven to undergo osteogenic differentiation using cell culture media components such as dexamethasone, ascorbic acid, and β-glycerophosphate. While osteogenic cell culture media is commonly used to differentiate BMSCs in 2D culture, it remains a challenge to differentiate BMSCs in physiomimetic 3D models. Therefore, this project aims to characterize the osteogenic potential of donor-specific BMSCs cultured in 2D and in 3D methacryloyl gelatin (GelMA) hydrogels using a combination of biochemical and colorimetric assays. To characterize osteogenic differentiation, Alizarin Red S staining detects calcium deposits as a marker of osteogenesis. Cellular metabolic activity (alamarBlue) and viability (live/dead staining, >70%) monitor overall cellular health. Alkaline Phosphatase assays measure the amount of an early marker of osteogenic differentiation. Finally, DNA is quantified to confirm the amount of cellular material in our GelMA hydrogels. These complementary assays and stainings provide a comprehensive view of BMSC viability, proliferation, and differentiation throughout the osteogenic culture timeline (2-4 weeks). Results from this study optimizes culture conditions for enhanced donor-specific osteogenic differentiation in 2D and 3D and support the use of GelMA as a scaffold for bone tissue engineering.

Tambur, Kaitlyn
University of Oregon
Mentor(s): Stephanie Wiley, Raoul Lievanos
Strategies for Stronger Communities

Do Reentry Employment Agencies Reduce Recidivism? A Case Study of Opportunity Oregon

This study investigates the impact of reentry employment agencies on reducing recidivism, using Opportunity Oregon as a case study. The central question driving this research is: Do reentry employment agencies reduce recidivism rates? To explore this, I am analyzing data from Opportunity Oregon participants, comparing their demographic profiles and employment outcomes to those of the general public. By examining rates of reoffending and employment stability, this research evaluates whether such programs are effective in supporting formerly incarcerated individuals as they reintegrate into society.

Inspired by themes of rehabilitation and community reintegration, this project emphasizes the importance of empowering individuals with the resources needed to build stable, productive lives post-incarceration. The findings aim to highlight how targeted support programs can not only improve individual outcomes but also contribute to broader social benefits by reducing criminal behavior and promoting safer communities.

Taylor, Kyrie
University of Oregon
Mentor(s): Isabella Crame, Channel Meyers
Poster Session #165
Asian Studies Event

Perceptions in Position: Mapping Race and Stereotype on Campus

Co-Author(s): Channel Meyers, Isabella Crame

Previous work from Zou & Cheryan (2017) examines the perceptions and stereotypes of minority groups in society. The two-axis model explores the perceived racial stereotypes on the group's ability to be seen as American vs. foreign and superior vs. inferior. This theory is used to understand race relations between racial groups in America, plotting racial groups along two axes according to their corresponding stereotypes. The racial positioning model (Zou & Cheryan, 2017) suggests that African Americans are seen as American but inferior, and Asian Americans are foreign but superior. Our first aim is to replicate the findings from Zou & Cheryan (2017) with the University of Oregon student body. Our second aim is to examine groups beyond Black and Asian, specifically disaggregating the Asian category to determine whether racial positioning of specific Asian subgroups, which includes Southeast Asian, Central Asian, and South Asian, maps onto the broader Asian category. We predict that the findings with our UO sample will replicate past work. This work

will provide an essential replication of the racial positioning model with a sample at UO, as well as extend the initial research by disaggregating the Asian category to uncover whether unique stereotypes emerge across Asian subgroups. This work enhances understanding of racial perception and has implications for understanding how various racial groups may share dimensions of stereotypes, which may fuel interminority solidarity.

Thaut, Maycie
University of Oregon
Mentor(s): Matthew Norton
Poster Session #061

Defining Success in Post-Incarceration Reentry Programs in Oregon

With 1.9 million people currently incarcerated, the justice system in America has resulted in mass incarceration that leaves many exiting adults in custody facing the daunting task of reentering society after their prison sentence is complete. Annually in Oregon, about 143,640 men and 45,181 women are released from the state's jails and prisons, many encountering obstacles that make a successful reentry difficult. Societal reentry programs assist in helping people overcome the barriers that come along with a past prison or jail sentence. Reentry programs mainly assist with housing, employment, building interpersonal skills, and mental health/drug treatment. The main research questions for this study are: What defines "success" for reentry programs? How do reentry programs reduce rates of recidivism and promote positive change for those previously incarcerated? What methods do different organizations use to establish "success" for the people utilizing these resources? This study is based on qualitative analysis of four semi-scripted interviews with Oregon-based reentry programs as well as a comparative analysis between prior literature and the topics discussed during the interviews.

Thomas, Christina
University of Oregon
Mentor(s): Kirby Brown
Poster Session #041

Indigenizing Resources at the University Of Oregon

Co-Author(s): Yazzie Chee

The title of my research is 'Indigenizing Resources At The University Of Oregon'. I was incorporated into this already ongoing project started by my peer Yazzie Chee. Our goal with this work is to introduce qualitative data to the University of Oregon policy makers about what is working well for NAIS students on campus, and what needs improvement. Each Native student on campus comes here with a different story, different needs–

but are all at an overall disadvantage attending this predominantly white institution, often far from home, with inadequate support. My goal for the future of this project is that it will eventually push the University Of Oregon to progressively pass policy for a more low-barrier education along with strategic resources intended to be utilized by Native communities. The initial intention has, and will always be that this project is passed down (never 'owned' by a singular student) so NAIS students can continue to advocate for themselves and their future. New barriers will always arise and this is just an organized way for our communities to combat them.

Thum, Ying
University of Oregon
Mentor(s): Christina Bollo
Poster Session #005

Bridgewater Grove

This neighborhood in Oakridge is nestled in the Willamette National Forest. It is designed to serve Oakridge's main demographics, including a growing mountain biking community, young families, and the elderly community. Tucked away from the more active part of town, this community will bridge the gap between social and private realms in Oakridge. Needing to further activate their communities, a versatile housing mix will encourage this needed growth. Thus, incorporating a mix of row houses and low rise apartments can alleviate the needed density increase while still creating communal spaces within the neighborhood. Activating the exterior site along the main road invites interaction between residents and nearby neighbors. With curated common spaces, the neighborhood provides a place for community interaction and engagement to flourish. A sense of ease is created by having daily interaction amongst neighbors, while achieving an overall sense of security throughout the entire community. With the existing site conditions, access to water and drainage is vital for our neighborhood's functionality. Creating a natural progression point for both communities to coexist, a swale is proposed to stretch across the middle of our site to help manage stormwater drainage while creating a beautiful focal point for the landscape. Thus, capturing nature and views from all public realms is a priority for building a welcoming and positive connection to the surrounding landscape.

Tippetts, Keegan
University of Oregon
Mentor(s): Joey Wanczyk
KIDDing with Language and Poetry

Weathering: Poems

In the preface to "The Unfollowing," Lyn Hejinian describes her process in creating a sequence fourteen-line poems constructed of non-sequiturs to act elegy, the natural extreme of the "open" writing concept presented in her talk-turned-essay "The Rejection of Closure." In "Weathering¸" it was my intention to borrow the essentials of her form: sonnets constructed on the exterior of logical progression, but rather than being in reaction to loss, "Weathering" struggles with collecting the experiences of being human. The conflict between my empirical self and the version of myself I intended are at the center of the poems I've written this year in the Kidd Workshop. Writing these poems now, I feel myself deviating from who I used to be as a poet. I can see my growth, how I am getting to the space between the real and the abstract where, I hope, there is truth. At times these poems adopt a playful absurdism, but at the core of each is a sense of dread thriving on the coattails of an abstract universe. If "The Unfollowing" used this form to lament the things we leave behind, "Weathering" uses it instead to grapple with the things that stay with us. But, as Hejinian says, "Poems can't achieve all of this, of course–perhaps not even any of it."

Tomich, Maddy
See "Contreras, Ada"
Old Growth, New Connections: Climate Science Education Strengthens Relationships with Nature

Tomlinson, Zoe
See "Maxwell, Colin"
Vegetation and Water System Changes Over Time in Southeastern U.S. Watersheds

Tomlinson, Zoe
University of Oregon
Mentor(s): Matthew Nardoci, James Murray
Poster Session #253

Using Machine Learning to Understand Sound Processing in the Brain

Co-Author(s): Matthew Nardoci, James Murray, Santiago Jaramillo

The brain is made up of several distinct regions, each responsible for interpreting different aspects of the world around us. Among these, the auditory cortex plays a key role in processing sound. While the primary

auditory cortex is known to interpret basic sound features, the functional roles of its secondary subregions, particularly the dorsal and ventral areas, remain less clear. These subregions are thought to handle more complex sounds, but their specific functional roles are less well understood. In this study, we utilized machine learning techniques on neuronal populations to investigate how subregions of the auditory cortex encode sound. We found that neuronal activity patterns were more consistent within individual subregions than between different ones, indicating that each area contributes uniquely to auditory processing. Our analysis also showed that subregions responded preferentially to different sound frequencies and types, suggesting functional specialization across the auditory cortex. These insights advance our understanding of sensory encoding and speech perception, with potential applications in brain-computer interfaces and hearing technologies.

Torrellio, Rodrigo
See "Hoke, Madeleine"
Zip Code FC: Does Geography and Wealth Shape Competitive Soccer in Eugene?

Torrey-Payne, Beckham
University of Oregon
Mentor(s): Linda Long, Judith Raiskin
Poster Session #019

Radical Faeries and Nihilism: How the Faeries Escaped Assimilation Through Publications

Since the mid-80s, Nomenus, a Radical Faerie Organization, has held and operated a sanctuary outside of Grants Pass, Oregon. It stands as a sanctuary in which, "gay males [can] explore subject-SUBJECT consciousness together" (Nomenus.org) and to "respond to the emptiness of both the straight establishment and assimilated gay society" (Timmons 248-249). In a circle meeting, Mica Kindman explained that the goal of the sanctuary was to create a "previously unimagined [level] of civilization" (1989, Nomenus, inc. Records, Box 4, Folder 46). Throughout the development of their "way of life" (Timmons 250), their publications, among other, smaller zines, helped spread foundational ideas through their communal nature with letters and poetry. They worked to build the Faerie way of life and move away from the perceived "emptiness" of assimilating into a more acceptable, or "straight-like," culture of "he-men" (249). Their ideas on the larger LGBTQ+ Movement(s) saw them as a reflection of what could be described as a Kierkegaardian nihilist philosophy, that understands assimilation as a creation of an equality in identity to reach an equality in rights. They believed that, to be gay, was not "to not be straight;" that there was something completely exclusive to being gay that does not exist for those that are straight. In the leveling that occurs during the act of assimilation, it "stifles and impedes" (Kierkegaard 84) their identity as Radical Faeries.

Tovar, Oscar
University of Oregon
Mentor(s): Denicia Aragon
Poster Session #136

Exploring the Impact of Self-Ascribed Social Roles on Future Self-Perception

Social identities, such as "daughter" or "friend," may influence how individuals perceive their future selves. Social roles are tightly linked to one's general self-concept (Roberts & Donahue, 1994), but it is not yet known how they influence future self-concept. We sought to examine how current social roles also shape one's future self-concept. Students (N = 794) completed a future-self identification scale (Bixter et al., 2020) and provided open-ended descriptions of congruent social identities at various points in time. Open-ended responses were coded by two independent raters. We expect that individuals who report consistent social roles across both current and future time points will have a more positive future self-concept compared to those whose relationships change. This research seeks to better understand the impact of social roles in shaping future self-perception.

Towles, Baylee
University of Oregon
Mentor(s): Kristin Rahilly
Poster Session #120

Analyzing the Impacts of Inland Flooding Events on Agriculture Using Satellite Imagery

Inland flooding can occur due to increased precipitation, snowmelt, and water-management infrastructure failing and overcoming capacities of natural and built systems in place. We will examine two case studies of inland flooding via satellite imagery: the March 2019 flood of the Platte River in south-central Nebraska and changes in flood frequency at Tonle Sap in central Cambodia. In the first case study, we investigated the effects of the Platte River March 2019 floods on surrounding vegetation and agriculture in Nebraska. Loss of farmland and vegetation near the Platte was affected by the flooding of the river. We analyzed the changes over a one-year timespan to follow how farmland recovered. The second case study, the Tonle Sap, is home to the world's largest inland fishery and surrounded by important agricultural areas; it has faced deforestation, drought, fire, and human intervention through dam construction. We analyzed satellite imagery over 20 years with a focus on flooding and the presence and changes to agricultural land. Climate change-related flooding and drought has an impact on agricultural presence and health in these case studies. Rainfall impacts the success of crops and vegetation grown in an area. Flooding not only affects the health of crops but also the built environment.

Townsend, James
University of Oregon
Mentor(s): Claire Herbert, Solmaz Kive
Poster Session #050

The Importance of Social Networks in Off-Campus Housing Decisions

Social networks have been found to be a driving factor in many Americans' housing decisions. Living with family and friends can lead individuals to look past safety, price, and other factors. With the social basis of college, we decided to focus our research on the importance of social networks as a driving factor of housing decisions for college students, with a specific focus on University of Oregon students who live in off-campus housing. The research highlights the importance of social networks when finding housing in respect to other factors. Students are often more focused on their social connections in housing than other factors like quality, price, and proximity.

Our research was driven by an anonymous Qualtrics survey distributed to University of Oregon students over the span of 3 weeks. This survey included questions on where respondents live, how much they pay in rent, their reasoning for their housing choices, and the biggest problems they face in their current living situations. Using statistical analysis software, we analyzed these responses to find common themes in responses and create conclusions about the importance of factors when choosing off-campus housing. We will illustrate these results through charts, graphs, and tables.

Tredennick, Ryan
See "Crawford, Cordelia"
Hot Spots Project: Connecting Extreme Heat, Worker Exposure, and Corporate Supply Chains

Tresnit, Sadie
See "Knudsvig, Olivia"
From Co-Management to Land Back: (Re)Imagining Mesa Verde National Park

Trinh, Kristina
University of Oregon
Mentor(s): Alex Dillard, Matthias Agne
Poster Session #223

Human Thermoception Across Material Interfaces

Co-Author(s): Alex Dillard, Matthias Agne

Understanding human thermal perception- the ability of humans to sense temperature or temperature changes in the surfaces they come in contact with-and its relation to material properties opens the door

to the development of novel localized heating and cooling solutions, prosthetic temperature feedback systems, and temperature preceptive reactive materials. Minimal research has gone into the relationship between material properties and human perception of those properties. Despite common perceptions that conductivity or effusivity affect human perception, neither has been demonstrated as being the driver. Using human subject testing, we showed a perceived temperature difference of 4.6 ± 0.9 °C between temperature-controlled copper and glass surfaces at the same temperature of 22 °C. The human trials were compared to a modeled value for this perceived difference using material thermal effusivity and natural variations in human palm temperature, which predicted 4.4 ± 1.2 °C and thus corresponded well. These preliminary results provide a foundation for continued investigation of the relationship between material properties and human perception, thermal conductivity, and thermal effusivity. A complete understanding of how material properties affect human thermal perception allows for the engineering of novel materials for human comfort, efficient local heating and cooling solutions and improved temperature feedback systems for prosthetics.

True, MaryJane
University of Oregon
Mentor(s): Mariah Kornbluh, Raquel Amador
Poster Session #141

The Benefits of Implementing Civic Education In K-5

Early implementation of civic education is vital in nurturing informed, responsible, and engaged citizens. Introducing civic learning at a young age helps students build a foundational understanding of democratic principles, government functions, and their roles within a community. The infographic that I will be creating will provide research on the benefits of beginning civic education in elementary school. This infographic will be distributed to educators while also including educator voices who advocate for early implementation. It has been found that early exposure fosters essential civic competencies–such as critical thinking, communication, collaboration, and ethical reasoning–that directly support academic achievement across subjects. As students engage with real-world issues through discussion, debate, and problem-solving, they develop literacy, research, and analytical skills that enhance their overall educational experience. Furthermore, cultivating civic knowledge and a sense of agency from an early age promotes long-term civic engagement, including voting, community participation, and advocacy. By embedding civic education throughout a student's academic journey, schools can play a transformative role in developing not only proficient learners but also active, thoughtful contributors to a healthy democracy.

Turner, Violet
University of Oregon
Mentor(s): Paul Wallace, Lissie Connors
Poster Session #107

Tracing magma evolution in the East African Rift using electron probe microanalysis of clinopyroxene

Persistent volcanic activity within the East African Rift System threatens the millions of people that live in its proximity, yet the unique characteristics of this volcanic system poorly constrain our understanding of eruptions. Recent petrologic studies of Nyiragongo and Nyamulagira – two of the most active volcanoes in this rift system – use geochemical and thermobarometric analysis to determine the history of magma crystallization and migration within the crust. This provides deeper insight on how previously unconsidered subsurface processes affect the behavior and compositional diversity of these volcanoes.

My research operates within the context of these findings and utilizes similar methodologies to determine the geochemical evolution and crystallization history of clinopyroxene crystals from Nyiragongo and Nyamulagira volcanoes. Electron probe microanalysis (EPMA) of these crystals was performed in University of Oregon's CAMCOR laboratory to obtain data on the major elemental oxides present throughout the crystals to track their compositional evolution. This data, when related to what is known about depths of magma crystallization and magma fractionation patterns beneath these volcanoes, contextualizes the evolutionary history of these clinopyroxene.

Urias, Madeline
University of Oregon
Mentor(s): Scott Fisher
Poster Session #252

Establishing Global Relationships: Pine Mountain Observatory's International Collaborations

Co-Author(s): Liam Biesty, Kate Nelson, Scott Fisher, James Imamura

The University of Oregon Department of Physics operates the Pine Mountain Observatory (PMO) as a center for undergraduate research in observational astronomy. Modern astronomy is inherently collaborative, thus we hope to build an international collaboration of midsized observatories. As part of this effort, we have established partnerships with the Kobe University in Japan, the Teide Observatory in the Canary Islands, and Las Campanas in Chile. The main purpose of these partnerships is to expand research opportunities for UO faculty and undergraduate students. Specifically, having this array of telescopes distributed around the planet will open up a broader range of observational projects for PMO. With the addition of Las

Campanas, this distribution of telescopes grants us access to both the northern and southern hemisphere skies. The secondary purpose is to engage a broad range of academic majors in the world of astronomy. Indeed, our international collaborations will continue to reinforce PMO's transnational presence, leverage the connections of UO faculty within the world of astronomy, and provide a range of interdisciplinary opportunities for non-STEM students such as myself to engage in astronomy research.

Valdovinos, Sienna
University of Oregon
Mentor(s): Kristen Rahilly
Poster Session #111

The Effects of Southern California Wildfires on Vegetation Index (NDVI) and Infrastructure (NDBI)

Climate change results in an increasing rate and severity of natural disasters such as wildfires, impacting nearby communities. The occurrence of wildfires in the U.S has nearly tripled since they were first recorded in the 1980's, highlighting how the changing landscape of global warming has increased the probability and frequency of wildfire events. We will analyze the land surface impacts from two wildfire events in Southern California: the 2003 San Diego wildfires and the 2025 Los Angeles wildfires. We will do so by gathering vegetation (NDVI) and built up area (NDBI) index values from satellite imagery to quantify presence of vegetation, urbanization, and infrastructure damage. The timescale for LA will be starting in December 2024 and ending in early February 2025. For San Diego, we will be starting in October, 2003 and ending in December, 2003. We hypothesize that, following the wildfires in Southern California, the NDVI and vegetation values will decrease alongside a similar decrease in NDBI values due to the impacts of burned vegetation, homes, and other infrastructure. The outcomes of wildfires not only affect the lives and health of the surrounding community, but it also causes an increase in budget allocation to help restore these destroyed areas. The cost to rebuild destroyed land, infrastructure, and vegetation can range from millions to billions of dollars.

Vaughn Brown, Mason
University of Oregon
Mentor(s): Austin Ricci, Damien Callahan
Poster Session #199

Fatiguing Effects on Patellar Tendon stiffness

Co-Author(s): Austin Ricci, Damien Callahan

Musculotendinous stiffness influences the transmission of muscular forces and has implications for injury risk. Specifically, greater stiffness is associated with an increased risk of muscle strains, whilst lower

stiffness leads to reduced joint stability. Acute prior loading is known to reduce stiffness in connective tissue and some evidence suggests it reduces stiffness in muscle tissue. Other studies demonstrate the impact of chronic loading, such that resistance training enhances tendon stiffness. However, acute impacts of prior loading have been studied primarily in males. Impacts of prior loading have largely been described at the Achillies tendon, but not tendons surrounding the knee. The purpose of this study was to examine the effects of acute loading and chronic training, in the stiffness of the patellar tendon (PT) using ultrasonography in both male and female non-trained (NT) and resistance trained (RT) young adults, prior to and following an acute bout of maximal voluntary knee extensions. At baseline, muscle composition and size were assessed via ultrasound by measuring echogenicity and transverse cross-sectional area (CSA). We divided the force placed on the PT during isometric contractions at 25% and 50% MVIC by the resultant elongation of the patellar tendon to calculate stiffness before and after fatiguing exercise. There were no differences in PT stiffness between NT and RT, but males had higher stiffness than females.

Vieyra, Jazmin
University of Oregon
Mentor(s): Chantelle Russell, Sarah Ebert
Poster Session #148
Works in Progress: Human Experience

Filtered Perceptions: Fitness Media's Role In Adolescent Mental Health

This meta analysis of research reflects on the relationship between the exposure of fitness media and mental health outcomes in adolescents. With rising social media addictions and celebrated beauty standards, it is important that research be done on the health of young adults who are increasingly vulnerable to having their self image turn into insecurities. I aim to spread awareness of the influences of social media as well as research the relationship between fitness content on social platforms with body image, depression, and anxiety. Reviewed studies are using similar methodologies by using quantitative data via surveys and self reports to find possible correlations between social media use and mental health. Findings are consistent in indicating that there is a correlation between fitness media exposure and increased symptoms of depression, anxiety, and body image. Through these similar methodologies came limitations that can be resolved in future research. A longitudinal study looking at specific platforms can eliminate overgeneralization and find lasting effects on mental health. Also implementing objective cell phone data can limit self reporting fallacies. Research on how adolescents are being affected by fitness media exposure needs to be studied more critically. A deeper understanding of these behaviors is essential for learning how to provide effective interventions, promoting media literacy, and protecting mental health in an increasingly digital world.

Vinson, Tag
See "Miller, Gillian"
Monitoring Restoration: Native Plant & Pollinator Recovery in Riparian & Post-Fire Habitats

Viveros, Isabella
University of Oregon
Mentor(s): Kieran Abbotts, John Halliwill
Poster Session #206

Antihistamines do not alter expired gases during cycling exercise

Co-Author(s): Kieran Abbotts, John Halliwill

Antihistamines are used to relieve allergy symptoms but have also been shown to impair exercise performance. The cause of the worsened performance is unknown, but it may be that antihistamines alter exercise metabolism. This investigation tested the hypothesis that when compared to placebo, antihistamines will alter whole-body metabolism during exercise, as measured by the composition of expired gases. Following screening, a graded exercise test, and a familiarization trial, 17 participants (8M/9F, 29 ± 8 yr, VO2peak 60.0 ± 7.5 ml/kg/min, mean ± SD) completed cycle ergometer exercise on two separate occasions, after ingesting antihistamines or placebo, in a double-blind randomized crossover protocol. Exercise consisted of four 3-min stages of increasing intensity with 2-min active recovery, then a fifth stage lasting until task failure. Expired gases were collected continuously throughout exercise for the determination of oxygen uptake (VO2), carbon dioxide production (VCO2), respiratory exchange ratio (RER), and ventilation (VE). All expired gas variables increased with intensity (p<0.05), but there were no differences in VO2 (p=0.95), VCO2 (p=0.41), RER (p=0.76), or VE (p=0.56) between placebo and antihistamines. These findings indicate that antihistamines do not influence whole-body metabolism or ventilation during exercise. This information may benefit athletes, coaches, and practitioners by providing new insights surrounding allergy management and exercise performance.

Vives, Alexis
University of Oregon
Mentor(s): Ben Farr, Jaxen Godfrey
Poster Session #249
Works in Progress: Science

Semi-Parametric Modeling of the Effective Spin Distribution and the Formation of Binary Black Holes

There are two ways in which Binary Black Holes (BBHs) are thought to form – through the isolated evolution of two stars in a binary, or through dynamical formation, as seen in dense stellar environments. An isolated

formation channel would produce BBHs with spins relatively aligned with the orbital angular momentum of the system, while dynamical formation would have no preferred alignment. I utilize Hierarchical Bayesian inference to fit a semi-parametric model to the population of BBHs reconstructed with gravitational wave data. The components of my model should suggest distinct formation channels.

Vogel, Jillian
University of Oregon
Mentor(s): Susie Bassham, Bill Cresko
Poster Session #288

Sperm Cryopreservation in the Three-spined Stickleback

Co-Author(s): Susan Bassham, William Cresko

The Three-spined Stickleback (Gasterosteus aculeatus) is widely used in laboratories studying evolutionary genetics, evolutionary biology, and population genetics due to its adaptability and well-characterized genome. Preserving reproductive material from model organisms is vital for research continuity, genetic resource banking, and conservation, but a reliable method has yet to be established for this species specifically. Because cryopreservation efficacy varies between species, several parameters were tested to identify an optimal protocol tailored to the Three-spined Stickleback. This study aimed to develop a reproducible method for whole testis vitrification, an approach with potential to improve long-term sperm storage and recovery. To optimize cryopreservation, we tested multiple vitrification procedures prior to cryogenic freezing, including variation in cryoprotectant type, concentration, and incubation duration. Post-thaw sperm quality was assessed using three key characteristics: morphology, fertilization capacity, and DNA fragmentation. Our findings contribute to the development of standardized protocols for germline preservation in fish, supporting future research, aquaculture, and biodiversity conservation efforts.

Volz, Skylar
See "Knudsvig, Olivia"
From Co-Management to Land Back: (Re)Imagining Mesa Verde National Park

Walker, Ryan
University of Oregon
Mentor(s): Rachel Weissler
Poster Session #011
Works in Progress: Human Experience

American English speaker attitudes towards unfamiliar languages

Language perception is not neutral. We are constantly indexing information about ourselves and others during conversation to make conclusions about the world. These judgments can be positive or negative and have the potential to perpetuate linguistic discrimination. Linguistic judgments made by American English speakers can have substantial, international impact on linguistic attitudes and thus the treatment of language varieties in society. In the absence of semantic understanding, what influences attitudes towards an unfamiliar language and its speakers? Do those attitudes change when we are told what language we are about to hear? Is this change greater when a language is more frequently exposed to non-speakers?

This study examines these questions through a survey of American English speaker attitudes towards unfamiliar language audio stimuli in Italian or Romanian, two Romance languages with contrasting representation and speaker populations in the United States. Attitude variation depending on whether participants are informed of the language beforehand supports the hypothesis that subjective, socially-influenced ideas about language impact "objective" acoustic perception. Attitude variation between the languages supports the hypothesis that passive language exposure in society impacts perception.

These findings aim to increase understanding about language attitudes and the factors which influence linguistic bias in order to combat language-based discrimination.

Walker, Samara
See "Le, Asiana"
Are they just a racist?: Looking at the correlation of manifestations of prejudice

Walton, Zach
See "Bokovoy, Claire"
Affordable Housing Scarcity and Impacts on Homelessness in Eugene, Oregon

Weber, Sarah
University of Oregon
Mentor(s): Matthew Polizzotto
Poster Session #122

Quantifying the Impact of Water Management on Sediment and Streamflow in the Blitzen River

Co-Author(s): Matthew Polizzotto

Malheur National Wildlife Refuge, located in southeastern Oregon on the edge of the Basin and Range Province, spans 187,000 acres of high desert wetlands, riparian areas, wet meadows, and sage-steppe uplands. Managed for native wildlife and as a key stop on the Pacific Flyway, much of the refuge's habitat depends on water diverted from the Blitzen River by a series of dams. The river is the largest tributary to Malheur Lake, which has been in a degraded and turbid state since the 1990s, primarily due to invasive carp. However, recent studies indicate that sediment from the Blitzen River also contributes to lake turbidity, complicating restoration. Limited monitoring of the river has restricted the assessment of how water management or other factors may affect sediment loading to the lake. To address this, we monitored five sites along the Blitzen River from March to September 2024, segmenting the river into reaches and assessing water quality changes from upstream to downstream. Using in-situ sondes, streamflow measurements, and water samples, we collected data on turbidity, temperature, suspended sediment, and streamflow. Results show sediment increases in specific reaches during summer baseflow, influenced by both water management and other inputs. Our findings will support refuge management by informing current water quality conditions, prioritizing future rehabilitation efforts, and contributing to a broader understanding of watershed-scale water quality dynamics.

Weber, Suzie
University of Oregon
Mentor(s): Julie Voelker-Morris
Poster Session #131

Equity and Disability Inclusion in Eugene Parks

I am researching the disability community's perceptions of how inclusive or exclusive Eugene parks are for people with disabilities. My park research subjects are Amazon Park and University Park. After physical park audits and connecting with Eugene's disability community through interviews and public surveys, I am uncovering how neighborhood parks can be more accessible and equitable. Historically, certain bodies and abilities have not been welcomed in outdoor spaces, so it is vital to learn from Eugene's disabled population and plan parks that serve everybody.

Weber-Provost, Emery
University of Oregon
Mentor(s): Kristin Yarris
Poster Session #066

"My Body, My Choice"–Mexico's Reproductive Justice Movement

This poster visually represents Mexico's Reproductive Justice Movement, with the goal of highlighting the distinctions in reproductive justice across different countries. Specifically, it explores how other nations, particularly the United States, can learn from and implement the successes of Mexico's movement. To inform my research for this poster, I consulted two key articles: Free Abortion Across Borders by Zoé Van Gelder, and The Long Quest for Reproductive Justice in Mexico: Feminist Legal Strategies and Challenges to Changing Abortion Precedent in Federal Systems by Alma Baltrán y Puga. These authors detail the lengthy and challenging journey of Mexico's reproductive justice movement, sharing insights from abortion acompañantes (activists who provide support and guidance for self-managed abortions) to offer a first-hand perspective on the campaign. Drawing from these experiences, I created a poster that encapsulates the broader context of the movement. However, it's important to note that this poster only scratches the surface of the many complexities and smaller details that contributed to the movement's success.

Webster, Chloé
University of Oregon
Mentor(s): Julie Voelker-Morris
Mind the Gap: Research Meets Practice

Leadership for the Student: Understanding How Universities Can Prepare Young Leaders

As university students step into leadership roles, their development as a leader becomes shaped by the ideologies upheld in their learning environments. In a time of increasing social diversity yet pressured erasure of DEI efforts in education, this study seeks to holistically analyze leadership as a discipline in order to understand how universities can best teach and support students who aspire to be–and in many cases, already are–leaders of the 21st century.

In order to accomplish this, there were three primary stages of qualitative research. First, a literature review provided a groundwork understanding of traditional leadership ideology and emerging concepts from diverse voices to critically consider the discipline of leadership in a holistic lens. Next, this collective knowledge was then synthesized into arguments and conclusions about what is needed from leaders and leadership spaces now and beyond. These were then applied to current university student leadership training programs to review and analyze their content. Ultimately, the conceptual understanding, synthesized

conclusions, and program analysis will be utilized to create a student-focused leadership training module for universities who seek to prepare leaders.

In this oral presentation, the audience will learn about the research and arguments that shaped the student-focused leadership module and experience some of the module itself.

Weeks, Kass
University of Oregon
Mentor(s): Kory Russel
Poster Session #119

Structural Racism and Environmental Risk: A Multi-City Analysis of Redlining and Water Quality

This study explores how historical redlining has contributed to present-day environmental health disparities, particularly drinking water contamination in marginalized communities. Lower-graded areas, often home to Black and other marginalized groups, tend to be located near industrial zones, highways, and polluted sites. These redlined areas continue to suffer the legacy of structural racism through inadequate infrastructure, poor environmental quality, etc. This study aims to correlate drinking water contamination and redlining through unregulated private wells, which are not subject to the same federal safety standards as public water systems, placing low-income and racially marginalized populations at greater risk of exposure to harmful contaminants. Using a mixed-methods approach, this study overlays historical HOLC maps with modern demographic, zoning, and environmental data in ArcGIS Pro to assess spatial correlations in ten major U.S. cities. By mapping industrial zones, water sources, and race/income demographics, the analysis reveals overlaps between redlined areas and zones of high environmental risk. Drawing on literature from environmental justice, public health, and structural racism, the findings support the argument that environmental racism persists in contemporary infrastructure and policy. This research underscores the need for intersectional, data-driven strategies to achieve equitable access to clean water and environmental protection for all communities.

Welburn, Aubrey
See “Ribeiro, River”
Exploring Student Neurodivergent Health Equity in Higher Education: University of Oregon’s 2024 NCHA

Welburn, Aubrey
University of Oregon
Mentor(s): Christina Karns
Mind the Gap: Research Meets Practice

Healthcare Accessibility for Autisitic and Otherwise Neurodivergent College Students

Co-Author(s): Izzi Khan

Neurodivergent college students, particularly those who are autistic, face health disparities that negatively impact both their well-being and academic success. These inequities are often exacerbated by inadequate clinician training, inaccessible environments, and challenges navigating major life transitions. At the University of Oregon, University Health Services (UHS) offers a wide range of on-campus services, including primary care and mental health support. Given its accessibility, UHS serves as an ideal setting to examine how university healthcare systems can better support neurodivergent students.

This case study gathered insights from two key stakeholder groups: neurodivergent students and UHS clinicians. Students described significant barriers to accessing care, including difficulty making appointments, sensory and communication challenges, and anticipatory anxiety related to negative healthcare experiences. Clinicians discussed gaps in training and identified specific needs for development of support. Based on these findings we developed targeted recommendations, including online appointment systems, a need for continued medical education, the creation of a dedicated neurodivergent care team, and improved processes for disclosure and accommodations. By applying universal design to healthcare, UHS is working to improve care for all students and serve as a model for how university health centers can better support the success of neurodivergent communities.

Wessel, Ava
University of Oregon
Mentor(s): Jeff Diez
Earth Vibes Only

Assessing Phenological Sensitivity to Climate Change in Prairie Species Using Citizen Science Data

Phenology, the timing of life cycle events, is a key trait in understanding an organism's response to environmental variables. Shifts in phenology, especially in plant species, are critical for predicting how climate change will affect biodiversity and ecosystem dynamics. Utilizing plant phenology data, relationships between the synchrony of life-stages, seasonal climate conditions, and spatial variations can be explored. Using over 20,000 citizen science observations from the iNaturalist platform, I assess the phenological sensitivity of 28 prairie species within the Willamette Valley-Puget Trough Ecoregion. A Bayesian hierarchical

model was used to identify key environmental drivers, such as temperature and latitude, and evaluate species-specific responses to these changes. Life-history strategies, particularly the distinction between annual and perennial species, were incorporated to assess how these traits influence phenological shifts. Preliminary findings suggest that temperature and precipitation are key drivers of phenological timing, with potential implications for the broader ecological network. Findings also demonstrate the potential to use citizen science platforms to develop reliable models to assess flowering phenology. This research provides insights into the capacity of plant species to adapt to climate change, offering valuable implications for conservation strategies and ecosystem management in the Pacific Northwest.

Westerdahl, Giselle
University of Oregon
Mentor(s): Ahmar Zaman
Poster Session #143

The Impact of Roper v. Simmons on Juvenile System Contact: A Quantitative Analysis

The United States Supreme Court case, Roper v. Simmons (2005), banned the death penalty for juveniles under the Eighth Amendment protection against cruel and unusual punishment. The case marked a significant turning point for juvenile justice, especially in the framework by which juveniles are prosecuted. If Roper v. Simmons (2005) represented a shift from punitive to rehabilitative justice for juveniles, can this shift be observed quantitatively? This study compares two time periods–pre-Roper (1996–2004) and post-Roper (2006–2014)–using national data from Evans et al. (2020). Four variables are examined: 1) the count of youth in facilities as part of court order disposition, 2) the count of youth in facilities awaiting trial, 3) the count of youth voluntarily admitted to the facility in lieu of adjudication, and 4) the total count of youth in facilities. Independent samples t-tests were conducted using SPSS to compare the two timeframes. The results show significance for the decline after Roper v. Simmons (2005) in the count of juveniles within facilities as part of court order disposition and the total count of youth in facilities. These findings suggest that a shift away from retributive justice may correlate with reduced juvenile system contact. Future research should explore whether Roper v. Simmons (2005) directly influenced the development of rehabilitative juvenile justice policies.

Westerhout, Ethan
University of Oregon
Mentor(s): Lan Chen, Victor Salpino
Poster Session #221

Synthesis of Phenanthroline-containing Cycloparaphenylene for Post-synthetic Modifications

Cycloparaphenylenes (CPPs) are cyclic structures comprised of para-connected phenylene units with unique photophysical and chemical properties. Various functional units have been successfully incorporated into the CPP backbone to tune its properties and enable post-synthetic modifications. Herein, this project focuses on the synthesis of a phenanthroline (Phen)-embedded CPP as a functional platform for post-synthetic modification and the construction of mechanically interlocked molecules. Initial efforts targeted the synthesis of F-Phen[9]CPP, which incorporated a fluorinated phenylene unit for nucleophilic aromatic substitution (SNAr). However, poor solubility and instability under strong reducing conditions hindered successful isolation of the desired product. To address this, the target molecule was shifted to a smaller CPP ring size, F-Phen[7]CPP, which is expected to be more amenable to purification and functionalization due to the improved solubility imparted by the smaller ring size. The embedded phenanthroline unit will serve as a versatile coordinating site, enabling potential applications in both active and passive metal-templated strategies for interlocked molecule formation. This work lays the foundation for a modular CPP-based scaffold that can support both covalent and non-covalent transformations toward complex supramolecular architectures.

Whalen, Corey
University of Oregon
Mentor(s): Mike Hahn, Hidetaka Hayashi
Poster Session #180

Achilles tendinopathy alters muscle activation patterns during isokinetic joint action

Muscle contraction occurs when the CNS sends a motor command to the target muscle. The force produced by the muscle is then transmitted to the bone via the tendon, producing joint motion. Achilles tendinopathy (AT) causes increased tendon compliance, potentially altering motor commands. This study aims to determine how tendinopathy affects muscle activation patterns during isokinetic joint action during both eccentric and concentric contractions, and if muscle activation patterns change during different angular velocities. Four AT subjects and three healthy controls performed maximal eccentric and concentric plantar flexion contractions at 30, 60, and 90°/sec with an isokinetic dynamometer. Before these trials, plantar flexion ramp isometric maximal voluntary contractions (MVC) were performed. During the isokinetic and isometric trials,

surface electromyograms (sEMG) were recorded from the gastrocnemius and soleus. The sEMG amplitude during MVC trials was used to normalize the average sEMG amplitude at each velocity for each muscle group. The sEMG activity for AT was higher in the gastrocnemius and soleus muscles for eccentric and concentric contractions, for all velocities besides 30˚/sec eccentric. While conclusions are limited by sample size, results indicate that AT influences how the CNS sends motor commands during isokinetic joint action. Further study will allow for a deeper understanding of how increased tendon compliance due to AT alters muscle activation patterns.

Whitcomb, Zoë
See "Reff, Collette"
Genetic characterization of an Alouatta specimen in the Primate Osteology Collection

Whitefield, Garrow
University of Oregon
Mentor(s): Cameron Moore, Danielle Benoit
Poster Session #227

Characterization & Kinetic Study of Poly(styrene-alt-maleic anhydride)-block-polystyrene (PSMA-b-PS)

Co-Author(s): Cameron Moore

The formation and reaction kinetics of poly(styrene-alt-maleic anhydride)-block-polystyrene (PSMA-b-PS) were investigated using reversible addition-fragmentation chain transfer (RAFT) polymerization. RAFT is a type of "living" polymerization that enables precise control of polymer architecture and molecular weight. The controlled synthesis of PSMA-b-PS is critical, as this amphiphilic diblock copolymer forms nanoparticle micelles for a variety of drug delivery applications. Maleic anhydride (MA) in the PSMA block facilitates the conjugation of tissue targeting ligands in the external hydrophilic corona, whereas the PS block allows for the loading of nonpolar small molecule drugs in the hydrophobic core.

To investigate our polymerization methods, we conducted three identical syntheses under an inert atmosphere and tracked monomer conversion using proton nuclear magnetic resonance spectroscopy (1H-NMR) and gel permeation chromatography (GPC). 1H-NMR results indicate linear conversion of monomers in the first 9 hours, followed by complete conversion of MA and 70% conversion of styrene by 18 hours. GPC data indicate controlled polymerization of PSMA-b-PS as represented by a molecular weight polydispersity index <1.1, verifying our polymerization methods produce polymers with a narrow molecular weight distribution. The work presented herein establishes methods to conduct future kinetic studies on RAFT polymerizations of other polymers utilized by the Benoit lab.

Wijaya, Miranda
University of Oregon
Mentor(s): Jennifer Phillips
Works in Progress: Science

Investigating the role of Kizuna protein in retinal cell function and survival.

Co-Author(s): Jennifer B. Phillips, Jeremy Wegner, Robin M. Gould, Judy Peirce, Monte Westerfield

Numerous genetic mutations can cause dysfunction in photoreceptors, the light sensing cells of the retina, leading to blindness. Currently there is no treatment for this form of vision loss. Mutations in the gene Kizuna (KIZ) have been implicated in progressively decreasing peripheral vision and undetectable responses to light by 40 years of age. Little is known about the function of KIZ in healthy eyes, nor what goes wrong when function is impaired. To investigate gene function as an avenue toward identifying treatments for KIZ-related vision loss, we generated mutations in the zebrafish orthologue of KIZ with CRISPR/Cas9. We are performing immunohistochemical and histological assays on sectioned retinal tissue to observe localization of proteins within mutant and wild-type retinas, as well as to evaluate photoreceptor morphology and retinal architecture. Previous work on zebrafish models of retinal degeneration in our laboratory shows that increased light exposure results in enhanced phenotypes. We will use this strategy to test whether elevated light levels influence photoreceptor dysfunction in kiz mutants. We will also assess visual function. We will analyze a range of stages from larval to adult to track changes over time. If we observe retinal degeneration in kiz mutants, we will add these lines to an ongoing screen for small molecules that can slow the rate of photoreceptor loss, providing preclinical data for the development of drug therapies.

Williams, Sidney
See "Crump, Madison"
Slipping vs. Tipping

Wilson, Waverly
See "Cessna, Brooklyn"
Computational Design of Protein Pathway Inhibitors

Wirhol, Jaden
University of Oregon
Mentor(s): John Leisure
Asian Studies Event
HURF'ing Through Culture, Identity and Power

Discussions of Democracy in 1920s Japan

This project investigates how a seemingly conciliatory foreign policy toward China, combined with the popularity of the military, influenced the Taishō Democracy movement (1912–1926) in Japan and set the empire on an increasingly authoritarian path. The Taishō Democracy was a movement that saw the Japanese public engaging in discourse about ideas of democracy, universal suffrage, racial equality, liberalization, and the future of the Japanese Empire going into the 1930s. My analysis centers on primary sources that reflect public opinion and political discourse at the time, including newspaper articles, woodblock prints, and published journals. Japanese intellectuals in 1920s debated trade-offs between a fast, decisive authoritarian government and a slower, but more trustworthy, democratic process. My hypothesis is that foreign policy failures in China and the military's popularity helped delegitimize the party government. As a result, military actions increasingly drove foreign policy concerns in the 1930s, and effective discussions of democracy in Japan were not seen again until after the Second World War.

Wolfe, Ashton
University of Oregon
Mentor(s): Stephanie Majewski, Tim Mathew
Poster Session #243

Photon Conversion Studies for Dark Photon Search

The Large Hadron Collider (LHC) is a proton-proton collider at CERN, in Geneva, Switzerland. The ATLAS detector at CERN measures particle collisions in an attempt to increase our understanding of the forces and matter in our universe. One of the most ground-breaking discoveries made by ATLAS was the discovery of the Higgs boson in 2012. This discovery is one of many, as the search for new particles and physics beyond the Standard Model (SM) is one of the main goals of the ATLAS detector. Our group is focusing our research on dark sector physics–a sector of potential new particles–specifically the search for dark photons through a Higgs decay. The search will use Run 3 ATLAS data with the intent to locate the hard-scatter vertex of the decay, which is one of the more challenging aspects of the dark photon search. This poster will present studies on photon conversion and understanding vertexing variables to be able to better identify the hard-scatter vertex.

Wood, Emily
See "Saccio-Devine, Josaphine"
Natures Classroom: Getting Students Outside Strengthens Communites

Wooler, Kit
University of Oregon
Mentor(s): Ahmar Zaman
Poster Session #062

First Offense, Lasting Impact: Early Justice Involvement and Juvenile Recidivism

Co-Author(s): Carlie Crowther, Keever Wuerfel

Juvenile recidivism–or reoffending–remains a key issue in the justice system, as many youth reenter the system after initial contact. Prior research suggests that justice involvement early in life and a history of family incarceration may influence recidivism, especially for youth of color (Baglivio et al., 2015). This project investigates whether age at first offense is associated with higher rates of recidivism for juveniles and whether those patterns are further influenced by family incarceration and race/ethnicity. Using data from a statewide survey of Florida youth (N = 1300) who completed probation supervision between 2015 and 2018, this project aims to understand how demographic and social factors shape justice outcomes (Wolff, 2023). Preliminary analysis suggests a significant relationship between younger ages at first offense and higher rates of recidivism, which highlights the need to better understand contributing risk factors. Findings from this research may inform early intervention practices for justice-involved youth, improving outcomes for youth of color and reducing the likelihood of reoffending.

Woolf, Jack
University of Oregon
Mentor(s): Scott Stewart, Kryn Stankunas
Poster Session #277
From Marine Life to Muscle: Exploring Growth and Repair

Cellular Impact of Calcium Signaling on Fin Outgrowth Cessation

Co-Author(s): Scott Stewart, Heather Le Bleu, Rachael Giersch, Astra Henner, Kryn Stankunas

Tissue and organs grow in scale with the rest of the body. Dysregulated organ growth causes severe, often life-threatening maladies. However, etiologies of these disease states are poorly understood. For example, mechanisms explaining how organs "know" when to stop growing as animals mature remain obscure. Adult zebrafish perfectly regenerate their limb-analogous fin appendages to the same size and shape after resection, presenting a tractable model for discovery of tissue scaling mechanisms. Our lab has identified

calcium signaling as especially important in zebrafish regeneration, citing our calcium channel cacna1g mutants whose fins grow exceptionally long and are otherwise normal animals. Determining how calcium signaling restrains overgrowth is vital to understanding the mechanism behind organ growth cessation. In this investigation, new data has led us to propose that calcium signaling causes programmed cell death in crucial growth-promoting fin cells. To test this hypothesis, we investigate how proliferation and cell death are affected by calcium signaling. Because fin growth rates in cacna1g mutants are the same as their wild-type siblings, we do not predict to find changes in cellular proliferation. Rather, we hypothesize that there is decreased cell death during fin overgrowth. In our proposed model, the failure of these proliferative pools of cells to undergo normal cell death contributes to the excessive growth of the entire fin.

Woolf, Julia
University of Oregon
Mentor(s): Abigail Vaaler Loftus, David Garcia
Poster Session #276

Investigating Genes Involved in the [BIG+] Prion Phenotype

Co-Author(s): Abigail Vaaler Loftus, David Garcia

The function of a protein is dictated by its structure. One way a protein's structure can be changed is through the formation of a prion. A prion is an alternate folding pattern of a protein that self-templates its folding pattern onto other proteins with the same amino acid sequence. Prions propagate from parent to daughter cells following patterns of protein-based inheritance. This mechanism can provide the cell a rapid, epigenetic response to stress that can be maintained across generations. One yeast prion termed [BIG+], for Better In Growth, provides an alternative folding pattern for the protein PUS4. A well-studied role of PUS4 is that it performs a conserved isomerization of uridine at position 55 on tRNA to pseudouridine, a modification believed to be important for stabilizing tRNA-ribosome interactions. When in its prion form, [BIG+], the protein maintains its well-studied activity, while also inducing faster growth and a shorter lifespan in nutrient rich conditions. While data has shown this likely occurs through an increased rate of translation, it is not known what pathways or genes are involved in the induction or propagation of the prion. This project aims to identify pathways and genes necessary to see a [BIG+] phenotype.

Wright, Lydia
See "Crump, Madison"
Slipping vs. Tipping

Wright, Nick
University of Oregon
Mentor(s): Derek Brandow
Film Screening Session

Mind The Gap

This documentary will take a look at Mind the Gap, the University of Oregon's premier mixed-voice a cappella group. Comprised of around ten talented individuals, the group brings together a dynamic range of vocal parts–from sopranos to basses. Viewers will get an inside look at the audition and rehearsal process and what it takes to be apart of this hard working group of singers.

Wuthrich, Andreas
See "Eccles, Cooper"
The Climbing Conflicts and (Re)imagining of Bear Lodge National Monument

Wynia, Tallula
University of Oregon
Mentor(s): Emily Reeve, Ashley Walker
Poster Session #210

Sex Specific Variations in Vasodilatory Protein Abundance During Arterial Aging

Co-Author(s): Emily Reeve, Abigail Cullen, Mackenzie Kehmeier

The AVP lab investigates mechanisms underlying the progression of age-mediated vascular degeneration. For this research project, elastin haploinsufficient mice were used to model arterial stiffness compared to wildtype controls. Elastin proteins have a known role in opposing vascular resistance and contributing to proper vascular function. Similarly, reduced arterial elasticity is known to exacerbate high blood pressure and arterial dysfunction in humans. It is hypothesized that our model for decreased vascular elasticity will lead to arterial dysfunction and this will manifest as distinct differences in functional protein expression.

This model compared short- and long-term exposure to LAS using both young (6 month-old) and old (24 month-old) mice, both male and female. This allowed us to compare arterial dysfunction across groups and isolate the long term effects of LAS, which is not achievable in a normal C57 mouse model. Western blot is a reliable and supported technique that was used to quantify aortic proteins known to mediate arterial vasodilation, including endothelial nitric oxide synthase (eNOS), phosphorylated eNOS (peNOS), protein kinase B (Akt), and phosphorylated Akt (pAkt).

This research explores the mechanisms underlying the long term effect of arterial stiffness on vascular dysfunction. Our research provides a model translatable to human research and will provide insight into the functional role that the progression of LAS has on vascular health.

Yamada, Ayano
University of Oregon
Mentor(s): Janet Rose
Poster Session #010

Antony McDonald's Stage Desgin

This research is about the stage designer, Antony McDonald. He is a British designer and also a director. He designs not only stages but also costumes. He is working for theatre, opera, and dance internationally. Also, he received a lot of international theatrical awards for his stage and costume designs.

In this research, I discussed about the characteristics of his design focus on that stage scale, realistic, coloring of costumes, and uncomfortable or mysterious space on the stage. I collected some photos showing his stage design, mainly of his award-winning productions. I analyzed the characteristics of his design that can be seen from those photos. From what I have found from those, I discussed the impressions and effects of these features for the audiences. In addition, I focused on the "Hansel and Gretel" among a lot of productions that he designed. In this part, I discussed about how he designed this show and his own idea and his way to attract children to this play even if the fact that it was performed in the foreign language that almost children cannot understand based on his interview. In this case, the foreign language is German, because "Hansel and Gretel" is one of the German fairy tale. Furthermore, I picked up his words from his another interview about what he thinks important when he designs and how he wants his audience when they see his designs.

Yannello, Bella
University of Oregon
Mentor(s): Jarod Forer, Nick Willett
Poster Session #181

Qualitative Histological Analysis of Achilles Tendon Rupture in a Preclinical Rat Model

Co-Author(s): Jarod Forer, Kait Link, Nick Willett, Mike Hahn

Injury to the Achilles tendon significantly reduces functional capacity and impairs quality of life. Healing outcomes are poor due to the tendon's limited vascular supply, and there is still a need to understand tendon structure in response to injury and healing. In these studies, we used histological techniques to qualitatively assess morphological changes in injured rat Achilles tendons. Female Sprague Dawley rats at 12 weeks of age underwent surgical transection of their Achilles tendon before suture repair. Tissues were harvested at 2-, 4-, and 8-weeks post-injury, then stained using Hematoxylin and Eosin (H&E), Picrosirius Red (PSR), and Alcian Blue (AB). We hypothesized that injury would initially degrade tendon structure, followed by a return to a healthy phenotype by 8 weeks. At 2 weeks following injury, PSR revealed minimal collagen

organization. At 4 weeks, H&E showed increased cellularity with rounded tenocyte nuclei, and AB indicated elevated glycosaminoglycan (GAG) content. All histological metrics began to return to a healthy phenotype at week 8 with elongated cell nuclei, improved collagen organization, and a decrease in GAGs. These early structural changes through week 4 may reflect the inflammatory and proliferative phases of tendon healing, while observations at week 8 suggest progression into the remodeling phase. Future work will focus on quantitative methods of histological analyses to further characterize the morphological response to tendon injury.

Yarbrough, Madison
University of Oregon
Mentor(s): Joey Wanczyk
Poster Session #296

Rhyme and Safety: How Sonic Stability Creates Tension Between Story and Sound

The craft element of rhyme encourages readers to expect neat conclusions, and thus, when sonic stability is utilized in poetry, the poet is more easily and slyly able to subvert expectations. In horror poetry, the public facing the expectation of reading a poem aloud may be used to force passivity onto the reader. Sonic stability enraptures a reader to be led to a conclusion inevitable and unstoppable. When the content of the poem is horrific, the experience, effect, and conclusion of the poem are all the more horrifying. Rhyme induced passivity enables the reader to have the most genuine reaction to the horrific, and the most pure moments with the poem.

Yarbrough, Madison
University of Oregon
Mentor(s): Rachel Eccleston
HURF'ing Through Culture, Identity and Power

The Removal and Reclamation of Subjectivity in Technological-Gynaehorror

This research project dissects the relationship between subjectivity and pregnancy in the horror genre. In pregnancy, subjectivity is often awarded to the fetus over its mother; specifically in the place of what this project deems "technological-gynaehorror" in Catholicism. This term encompasses all reproductive horror integrated with the use of technology. Catholicism, according to practice and tradition, sees women as mere vessels to deliver more Catholics. Technology has become more invasive and more rewarding to the fetus, while depriving the mother of her autonomy and sovereignty. Both of these microcosms of patriarchal control push women in their pregnancies to the side. Horror allows for a reclamation of this subjectivity through epic acts of self-preservation. The methods used in this project are text and film based research. The primary

texts, documents, and films used come from scholars Julia Kristeva, Barbara Creed, Carol J. Clover's, and Erin Harrington; the main films operating are Michael Mohan's Immaculate and Roman Polanski's Rosemary's Baby. The primary arguments and findings of this work are that horror is an essential route to enabling women and pregnant persons to establish their autonomy while carrying a fetus. The genre allows for dramatic, violent consequences of this forced removal of power reflected in the current event of illegalizing abortion and contraception. Gynaehorror has been and remains relevant to the politics of women's bodies.

Yellowtail, Megan
University of Oregon
Mentor(s): Rachel Fisher, Alyssa Paulson Paulson
Works in Progress: Science

Using Dark Field Single Shot Transient Absorption to Measure Charge Transfer in Solar Cells

Organic Solar Cells (OSCs) offer a potential alternative to traditional silicon solar cells due to their lightweight and flexible nature. However, OSCs are not as efficient in producing energy as traditional silicon solar cells. A limiting factor in OSC efficiency is a process called charge transfer (CT), in which an exciton splits into separate charges. OSCs are composed of a combination of charge donating and accepting molecules. When an electron in the donor is photo-excited, it forms an exciton, which travels to the donor-acceptor (D-A) boundary to undergo CT. Studying how CT evolves allows us to better understand this process. Traditional transient absorption (TA) investigates CT by using a pump pulse to excite the sample, then measuring its absorption with a probe pulse after a time delay. However, this process is lengthy and experiments can take over an hour to complete, which is longer than the films take to form. Single Shot Transient Absorption (SSTA) focuses the pump and probe pulses to lines and tilts them at an angle, spatially encoding the time delay and allowing for 30 second measurements. However, SSTA measures the dynamics of the entire sample, which makes it difficult to isolate what's happening at our domain boundaries.
We plan to create a novel instrument that combines SSTA with concepts from Dark Field (DF) microscopy. We will use DF to isolate the SSTA signal from the D-A boundaries where charge transfer takes place.

Young, Sarah
University of Oregon
Mentor(s): Gabriella Lindberg, Nataliia Shchotkina
Poster Session #184

Mechanical Loading Modulates Inflammatory Cartilage Degradation in Post-Traumatic Osteoarthritis

Co-Author(s): Gabriella Lindberg, Nataliia Shchotkina

Post-traumatic osteoarthritis (PTOA) is a painful and disabling disease characterized by inflammatory joint tissue degradation following an injury. Currently, due to a lack of understanding of the multifaceted disease progression, no disease modifying drugs exist for PTOA. Clinically, exercise is a commonly prescribed palliative treatment, but it is difficult to decouple the influence of exercise on disease progression, leading to heterogeneous outcomes. Therefore, we propose using an in vitro 3D model of PTOA to examine the effects of exercise on cartilage degradation. We hypothesize that intensive exercise will increase diffusion of disease molecules into cartilage tissue and exacerbate cartilage extracellular matrix degradation.
Cartilage spheroids were fabricated via centrifugation from human chondrocytes (14 days pre-culture), then exposed to inflammatory cytokines (IL-1β/TNF-α, 0.2 ng/ml, 5 days) to mimic PTOA onset. Spheroids underwent mechanical loading (3 days, 20 percent strain, 500 cycles at 1 Hz), either immediately following cytokine treatment (early exercise group) or 2 days post treatment (late exercise group). Biochemical analysis shows no significant decreases in glycosaminoglycan (GAG) deposition between early and late exercise groups compared to the control. Ongoing steps include histological analysis (Safranin-O, IHC:Acan/Col-I/II), and RT-qPCR to characterize changes in cartilage tissue composition.

Zaback, Alyssa
See "Fehringer, Isabella"
Surveying Oregon Ash Habitat in Preparation for Emerald Ash Borer

Zafarana, Currie
University of Oregon
Mentor(s): Corbett Upton
Growth Spurts and Brain Bursts

Educational Implications for Children with OCD: Early Intervention as a Factor for Academic Success

Research on learning disorders is sorely underdeveloped, specifically for obsessive-compulsive disorder (OCD) in young children. While classroom models and practicum are constantly evolving to best serve early

childhood development, OCD is left under-researched and often undiagnosed until adulthood. So how are students supposed to learn effectively if preliminary symptoms of OCD are not recognized by educators? And how can teachers expect their students to reach important educational milestones if their classroom environment is not fit for such disorders?

This study explores how this knowledge can be applied to an educational setting to better support students showing early symptoms of OCD in their academic careers. Through case studies, meta-analyses, and research on cognitive development and OCD, this paper describes the often-overlooked signs of early OCD and how it can disrupt learning at an early age. Research on classroom techniques and intervention for related disorders are also used to propose methods of early intervention, such as classroom-based cognitive behavioral therapy and educator awareness of OCD. A new model is proposed to help diagnose students early and implement early intervention in schools. This paper investigates early childhood OCD to support my claim that early intervention for pediatric OCD is essential for providing classroom support and promoting academic success.

Zambrano, Alex
University of Oregon
Mentor(s): Emily Sylwestrak
Poster Session #099

Assessing The Effect of Microcystin Producing Algae on The Regeneration of Dugesia dorotocephala

Water pollution poses a significant threat to aquatic ecosystems and human health. Sometimes chemical pollutants force algae to grow unstoppably and produce toxins, such as microcystin. Certain types of blue-green algae are more likely to produce toxins more than other, cyanobacteria for example are able to do this as well as absorb sunlight and oxygen which deprives aquatic organisms from receiving essential nutrients, certain bodies of water are more likely to grow larger amounts of bacteria due to runoff, or other pollutants, this is why there were varying amounts of cyanobacteria when dosing Dugesia. The model organism was maintained in limited but controlled conditions to where their growth after dosing with cyanobacteria was observed throughout the project. After dosing with cyanobacteria, the model organisms were cut after specified exposure periods. Preliminary results indicate potential effects of excessive algae growth on the planarian's ability to regrow proportionate to their initial length, exposure to the bacteria also showed significant efforts of shrinkage which illustrated the limitations the planarians had when aiming to regrow their pharynx in order to digest nutrients. For future research it would be beneficial to measure how long it takes for this model organism to fully regrow their pharynx after being cut, as well as finding new ways to mark individual sections of planarians to be able to identify each organism amongst others.

Zarate, Ri
See "Brehl, Helene"
Tubular timber: structural testing and flat pack self-shaping structural component

Zieba, Coffee
University of Oregon
Mentor(s): Alexandria Fountain
KIDDing with Time, Trees, and Human Impact

The Day the World Turned Upside Down Fiction Reading

The piece takes the form of diary entries to outline the life of a person who isn't accepted by their family. Once they are found out to be trans, their world turns upside down, and they realize they must find peace for themselves outside of their unforgiving environment.

Ziegler, Kasey
University of Oregon
Mentor(s): Cathy Wong
Poster Session #235

THT Aggregates: Decreased Fluorescence Intensity and Increased Fluorescence Lifetime

Co-Author(s): Ethan Westerhout

Thioflavin-T (ThT) binds to Alzheimer's and Parkinson's disease proteins and emits specific wavelengths of light. By probing for those wavelengths, researchers can track the proteins ofinterest and make progress towards important medical interventions.

When the Thioflavin-T molecule is allowed to rotate its planar groups to angles closer to 90°, it can achieve enough stability to avoid the emittance of photons. Importantly, the nonradiative relaxation of ThT via bond rotation can be discouraged by increasing the viscosity of solvent. However, ThT and similar fluorophores tend to show self quenching affects in higher concentrations, due to molecular collisions and aggregation.

In this experiment, we exposed varying concentrations of ThT to the necessary wavelength of light for fluorescence, then measured the fluorescence intensity of each to see how aggregation influenced the effectiveness of the fluorophore in each case.

We hypothesized that the effects of aggregation might be subtle. Our results showed however that we underestimated the effects of aggregation, and the fluorescence intensity actually decreased with each increase in ThT concentration. Another unexpected result was that we observed a corresponding increase in fluorescence lifetime with the decrease in intensity.

This experiment was performed for a final poster presentation in the Physical Chemistry Lab Course CH418 with Dr. Cathy Wong. Special thanks to her and to my lab partner Ethan Westerhout.

Zupo, Declan
University of Oregon
Mentor(s): Emily Scott
Changing Spaces, Shaping Places

The Public University and It's Space: A Case Study of the University of Oregon

This research explores the University of Oregon's transition away from a public liberal arts university through an analysis of the campus's physical development. In doing so it seeks to understand how the changing ideological landscape of higher education impacts the physical organization of university space. Although a significant amount of attention has been paid to the transition of pedagogical practice in the modern university, the reification of these practices into physical space has been largely ignored. This work contributes to this gap in existing literature through a series of case studies of the University of Oregon's physical development. By analyzing the spatial political economy of the University of Oregon and existing literature in the field of Critical University Studies this research links the corporatization and managerial governance of the University of Oregon to disparities in the physical design of its campus.