Rachel Jones  
College of Agricultural Sciences  
Student Engagement Coordinator

Contact info:  
[mailto:rachel.jones@oregonstate.edu](mailto:rachel.jones@oregonstate.edu)  
Strand Ag Hall 148  
541-737-7410

My role:
- Coordinate 3 CAS undergraduate research programs:  
  - Beginning Researchers Support Program  
  - Continuing Researchers Support Program  
  - Branch Experiment Station Research Internships  
- Assist students with finding research opportunities in CAS  
- Deliver workshops and trainings for CAS undergraduate students engaging in research
FWCS VIEW Fellowship

“Vanguarding an Inclusive Ecological Workforce”
Dept. of Fisheries, Wildlife, and Conservation Sciences

- Supports professional development of future ecologists from underrepresented communities
- 10-weeks of paid, mentored research with FWCS faculty + professional development activities with their cohort
- No previous experience required! Open to students of all majors who identify as from an underrepresented community, first gen, health conditions, LSAMP/TRIO/CAMP,…
- Will host 8 students in 2024. $15/hr + housing!
- Submit your interest form now! Student applications open in February.

fwcs.oregonstate.edu/view
Shalynn Pack, FW.internship@oregonstate.edu

I would tell any students interested in the program to simply send it and apply. Your experience is valid, your background gives you character, and you have plenty to offer as a VIEW Fellow. - Nat, 2022 Fellow
How do bacteria exchange DNA?

How do pathogens spread?

How do new pathogens emerge?
Agrobacterium
Crown gall of grapevine

EVOLUTION OF PLANT-MICROBE INTERACTIONS
MOBILE GENETIC ELEMENTS
GENOMIC EPIDEMIIOLOGY
PATHOGEN EMERGENCE

WEISBERG LAB
Whitney Stone, PhD
she/hers
Assistant Professor of Agricultural Sciences and Natural Resources Communications

Research Interests:
• Mental health in agricultural and natural resource communities
• Messaging about mental health/resources
• How we talk about the topic (social media, visuals, and interpersonal communication)
• Arts-based research methods

Email me: whitney.stone@oregonstate.edu
Dr. Quincy Clark, Assistant Professor of STEM Education
College of Education and College of Agricultural Sciences
Quincy.Clark@OregonState.edu; www.RAD4STEM.com

STEM Education Retention, Attraction, & Diversity

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**RAD 4 STEM Lab**

**PERSONALIZATION**
- eNotebook
- Pathway
- STEMulate K-12
- ENGR + MEAs

**SUSTAINABILITY**
- Food Loss & Waste
- Smart Compost Bin
- Hemp Education

**MENTORSHIP**
- RCR
- URSs

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**Research Areas**
- Problem Identification
- Problem Solving
- Personalization
- Educational Technology
- Behaviors and Attitudes
- Self-Regulation
- Indigenous Education
- What are your interests?

**Courses Taught**
- Introduction to Statistics
- Quant Research Design
- Critical Pedagogy
- Learning Theory
- Funds of Knowledge
- Multicultural Education
- eTeaching and eLearning
- Educational Methods

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1 of 2
STEM Education Retention, Attraction, & Diversity

Dr. Quincy Clark, Assistant Professor of STEM Education
College of Education and College of Agricultural Sciences
Quincy.Clark@OregonState.edu; www.RAD4STEM.com

Undergraduate and Graduate Research Opportunities

Ag Ed Undergrad Research Team

Food Loss and Waste Management

Research Objectives
• Examine the behaviors and attitudes towards household food loss and waste (FLW), identify the contextual factors influencing these attitudes and behaviors, and explore strategies to leverage these factors for encouraging FLW reduction and educational material.

ENGR Ed Undergrad Research Team

First-Year Engineering Students

Research Objectives
• Investigate the impact of exposure to environmental and social issues on first-year engineering students' problem-identification and problem-solving abilities. Examining growth mindset development.

Graduate Research Team

Hemp-Based Education

Research Objectives
• Investigate the design, development, and field testing of a hemp-based K-20 curriculum, teacher development tools, and community education modules that support the development of a hemp-based economy with Northwestern Native American tribes.
Smoke, Wine, and Grapes (SWAG) Analytical Chemistry Lab

D. Cole Cerrato, Ph.D.
Assistant Professor Senior Research

Department of Food Science and Technology
Oregon State University
The SWAG Lab

- In 2020 Portland had the worst air quality in the world for metropolitan regions!

- Wineries and grape growers had nowhere to send their samples or had exorbitant wait times to measure smoke impacts

Corvallis, OR – OSU
The SWAG Lab

- Measure chemicals making Oregon wine taste smoky using state-of-the-art instruments
- Find **new** chemicals making wine taste smoky
- Field work to make smoky wine and ferment that wine
- Measure and find chemicals in a variety of foods and beverages, such as nutraceuticals, flavor and aroma chemicals, faults that make foods/beverages taste unpleasant
Saving Oregon’s Vibrant Hazelnut Industry

Eastern Filbert Blight

Jay W. Pscheidt - Extension Plant Pathologist
Dept. of Botany and Plant Pathology
Jay.Pscheidt@oregonstate.edu
Boxwood Blight

Laser-Guided Air-Assisted Sprayer
SEE BOOTH #29

Game Changing Nursery Research
Landscape Plant Breeding

- Objectives
  - Reduced seedling production
  - Market/consumer appeal
  - Resilience to climate change
  - Disease resistance
  - Production efficiency

- Methods
  - Ploidy manipulation
  - Mutagenesis
  - Molecular genetics
  - Crossing
Determining chemical toxicity
By all means zebrafish
To protect humans and the environment

Transgenic Lines

Behavioral Assays

Morphology

Contacts:
Dr. Robyn Tanguay - PI
robyn.Tanguay@oregonstate.edu

Dr. Lisa Truong - Director
Lisa.truong@oregonstate.edu

Christian Rude – grad student
Christian.rude@oregonstate.edu
2023 Faculty Research Showcase

Sustainable Groundwater Quantity and Quality Innovation Lab

Dr. Salini Sasidharan
(Assistant Professor | Sustainable Groundwater Management Engineer)
Department of Biological & Ecological Engineering, College of Agriculture Science and College of Engineering
Salini.Sasidharan@Oregonstate.edu

Research for Building a Climate-Resilient Water Resource Management

Design Innovative Managed Aquifer Recharge (MAR) Engineering Systems

- Ag and Flood MAR
- Aquifer Storage and Recovery (ASR)
- Infiltration Basin
- Drywells

- Sustainable groundwater management
- Secure water supply
- Compensate climate change
- Maintain the quality of groundwater bodies
- Limit the pollution of surface water
- Improved reservoir design to limit evaporation losses
- Passive management of saltwater intrusion
- Groundwater-stream water exchanges
- Mitigate flooding
Potential Research Topics

• Development pre- and post treatment systems
• Groundwater modeling for drywell-MAR
• Comparison of various MAR techniques
• Alternative water for groundwater recharge
• Use of geophysical tool for site characterization
The OWRI Erath Family Foundation Undergraduate Scholars Program

- **Potential Research Areas** – Viticulture, Enology, Wine Economics, and supporting disciplines
- **Paid** undergraduate research experience
- **Includes travel** to one research conference
- **Nine scholars** will be selected this year
- **Apply** Feb. 12 to March 15
- **Funding timeframe** – July 1, 2024 to June 30, 2025
- **To learn more** - QR code for link to program website
INNOVATIVE
- Electric
- Steam
- Pulse Electric Field

Weed Science Research and Extension
Perennial Horticultural Crops
Moretti Lab

Crop
- Tree Fruit & Nuts
- Hops
- Ornamentals
- Small Fruit
- Vineyards
- Cover crops & pollinator habitat

HERBICIDE RESISTANCE MANAGEMENT
- Selection for resistance begins with the first spray
- Quality and profit

IR-4 PROJECT & New Solutions for Growers

Linda.brewer@oregonstate.edu
College of Forestry
Undergraduate Research & Mentoring Programs

• Mentored Employment Program (MEP)
  • Paid undergraduate student research with a faculty mentor
  • Fall application & hire; winter and spring work

• Summer Undergraduate Assisted Research (SUGAR)
  • Paid undergraduate research with a graduate student mentor (summer term work)

• Experiential Learning Funds
  • Limited college funds awarded to undergraduate and graduate students who would like to attend a conference, seminar, training, or similar experience.

Brooke Harrington
Student Engagement & Scholarship Programs
116 Peavy Forest Science Center
brooke.Harrington@oregonstate.edu
(541) 737-1593
<table>
<thead>
<tr>
<th>Teaching</th>
<th>Contact Information</th>
</tr>
</thead>
</table>
| • TRAL 432: Economics of Recreation & Tourism | Professor  
|                   | Applied Economics         |
|                   | Email: r.rosenberger@oregonstate.edu |
|                   | Room 201H, Richardson Hall |

<table>
<thead>
<tr>
<th>Research Foci</th>
<th>Undergraduate Research Opportunities</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Economic tools and concepts applied to:</td>
<td>• Health Benefits Estimator Tool</td>
</tr>
<tr>
<td>• Recreation &amp; Tourism</td>
<td>• Pending grant application</td>
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<tr>
<td>• Environmental Conservation</td>
<td></td>
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<tr>
<td>• Community Development</td>
<td></td>
</tr>
<tr>
<td>• Health Benefits</td>
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</tbody>
</table>
Health Benefits Conceptual Model

Environment
- New trail system

Behavior
- Increased walking / biking on trails

Exposure
- Reduces relative risks of diseases

RR

Health Outcome
- Decrease in health care expenditures
## Teaching

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>FOR 346</td>
<td>Topics in Wildland Fire</td>
</tr>
<tr>
<td>FOR 436</td>
<td>Wildland Fire Science and Mgt</td>
</tr>
<tr>
<td>FOR 441</td>
<td>Silviculture Principles</td>
</tr>
</tbody>
</table>

## Contact Information

**Professor of Silviculture and Fire Management**

john.bailey@oregonstate.edu

541-737-1497

## Research Foci

- Sustainable Forest Management
- Fuels Treatments
- Prescribed Fire
- Wildland Fire Risk

## Undergraduate Research Opportunities

- Summer field technicians
- Dendrochronology lab
# Teaching
- WSE 111 - Wood Innovations for Sustainability
- WSE 240 - Fungal Decay in your World
- WSE 544 - Wood Chemistry

# Research Foci
- Wood Durability
- Liquid Fuels from wood
- Bioremediation
- Wood composites durability

# Undergraduate Research Opportunities
- Conversion of plant biomass using fast pyrolysis
- Remediation of plastics from agriculture using physical and biological treatments

# Title & Discipline
- Assistant Professor
- Department of Wood Science and Engineering
- gerald.presley@oregonstate.edu
Current Research Opportunities

Fast pyrolysis of slash for renewable liquid fuels

- Carbon Intensity?
- Feedstock and process variables effects on products?
- Pyrolysis oils alternative uses?

Degradation of polyethylene films using physical/chemical pretreatments and decay fungi

Fast pyrolysis → Hydrotreating, distillation → Wood Treating

Bio Oil

Sonication

Fungal treatment

Decomposition
**College of Forestry**  
**Faculty Research Showcase**  
*Wenjia Wang*

<table>
<thead>
<tr>
<th><strong>Teaching</strong></th>
<th><strong>Title &amp; Discipline</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>WSE 250 Computer Aided Design of Wood Products</td>
<td>Assistant Professor in Advanced Manufacturing</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Research Foci</strong></th>
<th><strong>Contact Information</strong></th>
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</thead>
</table>
| 3D printing of renewable materials (e.g., wood-based composites):  
  - use extrusion-based 3D printing technique,  
  - control of printing process,  
  - study the quality of the printed products,  
  - process optimization and modeling  
Damage behavior of wood structures, etc. | Department of Wood Science and Engineering  
Office: Richardson Hall 114  
Email: wenjia.wang@oregonstate.edu |

<table>
<thead>
<tr>
<th><strong>Undergraduate Research Opportunities</strong></th>
</tr>
</thead>
</table>
| • Setup a 3D printer  
• Printing of fungi-wood composites, optimize the process parameters, e.g., mixture content, waiting time, extrusion pressure, layer height, nozzle size, etc.  
• Control fungal growth and drying of composites  
• Properties testing/characterization of the final products |
<table>
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</thead>
<tbody>
<tr>
<td>• Wood Products Manufacturing</td>
<td>• Nondestructive wood characterization</td>
<td>• Testing and characterization of thermally modified wood (TMW)</td>
</tr>
<tr>
<td>• Advanced Manufacturing II</td>
<td>• Applied machine learning</td>
<td>• Performing mechanical test on TMW</td>
</tr>
<tr>
<td>• Wood Structure</td>
<td>• Smart quality control</td>
<td>• Nondestructive assessment of TMW</td>
</tr>
<tr>
<td>• Anatomy of Woody Plants</td>
<td>• Data-driven manufacturing</td>
<td>• Developing predictive models using data analytics and machine learning tools</td>
</tr>
<tr>
<td>• Biology, Structure, and Utilization of Woody Plants</td>
<td>• Wood quality</td>
<td></td>
</tr>
</tbody>
</table>
Teaching

WSE322 Physical & Mechanical Properties of Wood
WSE465 Wood Products Field School
WSE543 Scientific Methodology & Planning for Grads

Research Foci

Sustainable bio-based materials (wood & al.)
Structure-property relations in bio-based composites
Mechanics of wood and wood composites
Wood-water relations in products & structures

Mass timber panels (MTP): technology, supply chains, use in structures, opportunities, barriers, future (CLT, MPP & al.)

Title & Discipline Contact Information

Professor in Wood Science & Engineering
T +1 541 737-9479
E lech.muszynski@oregonstate.edu
LI lech-muszynski-356001b3

Undergraduate Research Opportunities

Connecting the dots:
Mapping supply chain elements in mass timber panel (MTP) industry (the WHATs, the WHEREs and the HOWs)
Developing a database of global MTP industry
Erin Lieuallen, M.S.

Courses
- Internship credit
- Internship non-credit
- Research credit
- Research non-credit
- Thesis credit

CEOAS Undergraduates

CEOAS Experiential Learning
- Internships
- Research
- CEOAS ELF (Experiential Learning Funding)
- Mentoring Programs

Deadlines
- ELF Funding for research costs due Friday Week 2
- Academic credit for research or internship due Wednesday Week 1
- Non-credit for research or internship due Wednesday Week 1
- Mentor of the Year Nominations due Feb 15

See ‘Beyond the Classroom’
Title & Contact Information
- USGS: Research Physical Scientist
- OSU: Courtesy Research Associate
- jay.alder@oregonstate.edu
- Burt 108

Undergraduate Research Opportunities
- Data mining large climate projection datasets for novel impact assessments (changes in extreme events and hydroclimatology)
- Using climate models to interpret paleo proxies
- All require coding experience

Research Foci
- All things climate modeling
- Climate model data analysis and best practices (Dept of Interior guidance)
- Climate projection visualization
- Regional modeling and downscaling
- Paleoclimatology modeling and data-model comparison
Andrea Jenney
Assistant Professor, Atmospheric Science
Andrea.jenney@oregonstate.edu
Burt 316

Teaching
Climate Science (ATS 201)
Climate Modeling (ATS 421/521)

Research Foci
Clouds & storms in the tropics
Climate
Weather forecasting 2-4 weeks ahead*

Undergraduate Research Opportunities
2 full-time paid summer research positions:
(1) Looking for a computer science student or a student with equivalent experience to help optimize a python software package
(2) Looking for a climate science student (or student interested in climate science) with at least one term of coding experience to explore changes in model forecast skill
**Teaching:** Estuarine Ecology, Biological Oceanography, Aquatic Microbial Ecology

**Research:** Microbial communities in aquatic systems (coastal ocean, estuaries, rivers, lakes)
- Microbial diversity (who they are)
- Microbial function (what they do)
- Microbial ecology (why they do it)

**Microbial genomic diversity**

**Microbial metabolism**

**Organic matter chemical diversity**

**Undergraduate Research Opportunities**
- Microbial metagenomics of rivers
- Arctic permafrost microbes
- Seagrass microbiomes

ROMEO
“River Organic Matter and Ecological ‘Omics”

Weniger 518A, 529
Byron.Crump@oregonstate.edu
**Jim Lerczak**

Physics of Oceans & Atmospheres (POA)
Coastal & Estuarine Oceanography
Jim.Lerczak@oregonstate.edu

- Estuary Physics & Estuary Health,
- Field Measurements, Data Analysis, Numerical Modeling.

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**Two Undergraduate Opportunities:**

1. Research in Yaquina Bay estuary (physical oceanography, biogeochemistry, habitat health).
   - Data analysis, possible field work,
   - Interdisciplinary collaborations.

2. Cormorant Oceanography Project ([https://www.osudashcams.com](https://www.osudashcams.com))
   - Oceanographic measurements from tagged birds,
   - Measurements made around the world,
   - Analysis of diverse data sets, and possible field work.
Intro to Geospatial Sciences (Geog 201)
Geographic Information Systems I (Geog 360)
Cartography (Geog 370)
Conflict, Cooperation & Control of Water in the U.S. (Geog 440)

Research:
Plant-river interactions & river restoration
How can plants drive river evolution?
How does river hydrology & environment drive plant species patterns?
Middle Fork John Day River, Santiam Basin, Willamette, McKenzie, Umpqua

Undergraduate Research Opportunities
Topo-bathymetric channel surveys
Riparian plant surveys
Remote sensing of key species expansion
Monitoring of river restoration projects using aerial imagery & field sampling
Your ideas?
Student jobs with an OSU research lab

Help us map forest cover change with satellites!

Work remotely on your own schedule  $17 / hr – 10-20 hrs / week

Apply on OSU’s student employment site

Position closes 1/26/24

Apply now!

check out our lab web page: emapr.ceoas.oregonstate.edu for more information