URSA ENGAGE PROGRAM

FACULTY MENTOR SUMMARIES

2019-2020

OFFICE OF UNDERGRADUATE RESEARCH, SCHOLARSHIP, & THE ARTS

Oregon State University
Office of Undergraduate Education
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Mentor: Sushma Naithani

Department: Botany and Plant Pathology

Research Focus: I study how plant cells produce various metabolites; how stress impacts plants using big data.

Potential Student Project:
- curate a plant metabolic pathway
- study evolution of a gene family
- study evolution of a metabolic pathway across the plant kingdom.

Attributes/skills/background sought in undergraduate: Interest in data science, familiarity with excel sheets and coding.

Mentoring Plan: I am available to meet with the student 1-2 times per week for 1-hour duration onsite or by scheduling an online meeting.

What I expect of students: I would like to establish a calendar for our meeting and reporting during first 2 weeks and expect student to inform me if they cannot meet in 1 days in advance. I want students to be meticulous in record keeping and encourage them to ask questions.

What students can expect of me: They can ask as many questions about the subject, flexibility in schedule, and advance notice of cancelation of a prescheduled meeting. I can show them how things work and get additional help from colleagues if required.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: naithans@oregonstate.edu, 541-737-8022

*Willing to mentor a distance student*
Mentor: Paul Hughes

Department: Food Science and Technology

Research Focus: To provide practical innovations and insights for the beer and spirits industries

Potential Student Project:
1. Development of flavor standards to facilitate sensory training in beer, wines and spirits
2. Develop novel testing options that can be included in a "$1000 laboratory" to facilitate production and product management in small breweries and distilleries
3. Hybrid and ab initio modeling of tautomeric structures of hop-derived acids to enhance understanding of their reactivity
4. Alternative approaches to the classification of alcoholic beverages, especially applying fuzzy clustering methods

Attributes/skills/background sought in undergraduate:
1 and 2 require basic chemistry lab skills (eg weighing, volume measurement)
3. Familiarity with standard computational chemistry methods (eg B3LYP, APFD, CBSQB3), ideally using Gaussian 64
4. Some familiarity with the concept of fuzzy clustering

Mentoring Plan:
1. Schedule a mutually-convenient time for a regular weekly meeting (of video-conferencing session for remote students)
2. Provide guidance and one-to-one lab instruction as required
3. Introduce students to the graduate student cohort in FST to enhance inclusivity and provide additional expertise and perspectives

What I expect of students: I'm delighted to guide students that are enthusiastic about their chosen project. I expect them to ask for help when needed but also to try and develop problem-solving skills

What students can expect of me: My management style is informal, with a focus on ends rather than means. Students working with me can expect to be probed about their work and progress, although I'm not in the habit of putting people on the spot. On the flip side if we plan to meet I expect students to be punctual and prepared

Workshop Dates: November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM

Contact: paul.hughes@oregonstate.edu, 541-737-4595

*Willing to mentor a distance student*
Mentor: Sheri Cole

Department: Food Science and Technology

Research Focus: I lead a Dairy Continuing Education Program focused on training for existing industry employees.

Potential Student Project: My background is primarily in the food industry. I've had leadership roles in research and development in many areas all of which could enable student mentoring. Included are program development and leadership, research programs in different scientific disciplines, strategy development, change management, leadership training, new product development and innovation.

Attributes/skills/background sought in undergraduate:
curiosity (P)
ambition (R)
collaboration (R)
work ethic (R)
critical thinking
effective communication (P)
conflict management (P)
leadership (P)
technical skills in discipline of interest

Mentoring Plan: I'm primarily based in Portland but am on the Corvallis campus weekly. I can flex my schedule to meet face to face with a Corvallis based student. Weekly meetings are fine.

E-Campus - I would use ZOOM to facilitate a face to face interaction.

What I expect of students: I'd expect them to have specific goals that would focus our interaction (e.g. strength to exercise differently or challenges to address), commit to a scheduled plan of interacting, be open to feedback and be respectful and candid.

What students can expect of me: Commit to a mutually agreed to meetings, respect and candor in interactions, be focused on the student's goals and success, have fun. In my experience, building trust is the first step to effective mentoring.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: sheri.cole@oregonstate.edu, 847-612-4227

*Willing to mentor a distance student
Mentor: Carlos Ochoa

Department: Animal and Rangeland Science

Research Focus: Land use (forestry, agriculture, urban) effects on water resources and the environment.

Potential Student Project:
Field data collection of water, soil, and vegetation samples.
Assembly, testing, and installation of environmental monitoring equipment (for example, weather stations and monitoring wells).
Water quality sampling and lab analysis.
Assessment of vegetation, soil, and water feature using UAV (drones) and GIS techniques.

Attributes/skills/background sought in undergraduate:
Strong desire to learn research skills (required).
Strong work ethics (required)
Hard-working (required)
Likes to work outdoors and also in the lab (desired)
Proficient in XLS and other MS software (desired)
Experience with image processing, short videos (desired)

Mentoring Plan: The student will meet with the advisor once a week.
The student is expected to communicate constantly with other students (graduate and undergraduate) in our team to coordinate for specific research activities.

What I expect of students: Commitment to actively engage in the different tasks assigned. Behave responsibly and communicate any issues that may prevent the student from meeting and/or participating in the work assigned.

What students can expect of me: Provide mentorship including guidance and assignment of tasks that will enrich the student's research learning experience.

Workshop Dates: Neither

Contact: 541-737-0933, Carlos.Ochoa@oregonstate.edu
Mentor: Rachael Orben (Hatfield Marine Science Center, Newport, OR)

Department: Fisheries and Wildlife Sciences

Research Focus: We focus on seabirds as indicators of ocean health at Yaquina Head Outstanding Natural Area.

Potential Student Project:
1) Common murre reproductive ecology. You would assist with the monitoring effort and identify a component of the project that is most interesting (2-3 day/wk, mid-May-Jul).
2) Common murre chick diets. You would focus on photographing fish delivered by adult murres and identify the prey (daily Jul).
2) Western gull reproductive ecology and monitoring. You would be responsible for monitoring western gulls nests along with a focused research project within this system (2 days/wk May-Aug).

Attributes/skills/background sought in undergraduate:

Required:
Valid driver’s license (US, any state)
Team player, good communicator, excellent attention to detail
Enthusiasm for fieldwork in all weather conditions
Exceptional enthusiasm for early mornings in cold, wet, windy conditions, and patience to identify nest contents.
Physical ability to lift 30 lbs, climb several flights of stairs, use optical equipment

Preferred:
Background in wildlife/animal sciences/biology/marine biology or related field
Prior experience with databases (e.g., MS Access) and spreadsheets (e.g., MS Excel)
Interest in learning basic programming (e.g., R)

Mentoring Plan: I plan to meet one-on-one 2-3 times from Mar to May 2018 with additional correspondence via email. The student will be part of the 2-hour field season kick-off meeting, approximately 1 May. During the field season (approx. 15 May-15 Aug) the student will interact with other undergraduate students, interns, and researchers as part of this project 2-3 days a week. We will work with the intern to fill out a learning contract identifying specific personal, professional, and academic goals, including how our team can help the student achieve these. Finally, in preparation for either (or both) of the OSU-sponsored undergraduate research symposia (Undergraduate Summer Research Symposium - Sept, Celebrating Undergraduate Excellence) I plan to interact via email and in-person up to 5 hours/week during the two weeks leading up the symposia. For both projects, the intern would be required to reside in Newport (or commute from Corvallis) 2-3 days a week during the summer breeding season.
*What I expect of students:* Early mornings, good communicator via email, & independent worker.

*What students can expect of me:* I will help the undergraduate researcher identify a project using our monitoring data that aligns with their interests. I will be available to meet via Skype (Mar-May) to provide project background information and guide project selection. Through the field season, the intern will work with the field crew leader to coordinate fieldwork (murres) or work independently (western gulls). I will communicate via email to provide project guidance. I expect the intern to provide a draft of their research poster two weeks before the presentation deadline in order to incorporate feedback from lab members and other interns.

**Workshop Dates:** Neither

**Contact:** rachael.orben@oregonstate.edu

*Willing to mentor a distance student*
**Mentor:** Michelle Kutzler

**Department:** Animal and Rangeland Sciences

**Research Focus:** My research focuses on animal reproduction and veterinary science.

**Potential Student Project:** As a veterinarian, I am very interested in researching any clinically relevant topics, but here are a few ongoing projects in our laboratory: 1) Identification of new targets for contraception in wild horses and burros; 2) Use of genomic testing in beef cattle for heifer replacement selection; 3) Effects of intrauterine administration of platelet rich plasma on endometrial cytokine gene expression in beef cattle; 4) Function of luteinizing hormone receptor activation in non-reproductive tissues.

**Attributes/skills/background sought in undergraduate:** Undergraduate mentees should be honest and dependable (required) with a basic knowledge of animal reproductive physiology and mechanisms of disease (preferred).

**Mentoring Plan:** I will work closely with the undergraduate mentee, meeting at least once weekly to review progress, set goals, and develop timelines for completion. The mentee will have my cell phone number so that he/she may call/text me any time with concerns or questions. In addition, I will meet with the mentee and other students working in my laboratory 5 times each term during regularly scheduled lab meetings. On a daily basis, the mentee will also be able to interact closely with other undergraduates and graduate students working in the lab.

**What I expect of students:** I expect the undergraduate research student to set a schedule to complete his/her research.

**What students can expect of me:** The undergraduate research student should expect me to check in with him/her weekly on their progress and provide ideas of ways to modify the project to stay on schedule.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** [michelle.kutzler@oregonstate.edu](mailto:michelle.kutzler@oregonstate.edu), 541-740-1434

*Willing to mentor a distance student*
Mentor: Ivan Arismendi

Department: Fisheries and Wildlife Science

Research Focus: We have several opportunities in the lab from sampling prep, data entering and fieldwork

Potential Student Project: Example of projects include:
1. Extracting size distribution of animals from digital photography
2. Reconstructing streamflow regimes from camera traps
3. Revealing rearing conditions of salmon from inner ear structures
4. Examining diversity and inclusion on journal editorial boards
5. Assessing the distribution of pebble sizes for salmon spawning habitat
6. Monitoring thermal regimes of urban streams
7. Developing a database of trophic relationships among stream dwelling aquatic insects

Attributes/skills/background sought in undergraduate:
Required
- Attention to detail
- Responsible
- Enthusiastic about science

Mentoring Plan: I have weekly lab meetings as well as regular individual face to face meeting with each lab member

What I expect of students: I expect open and honest communication

What students can expect of me: I am very responsive and do not hesitate to invest time mentoring and talking about science or any aspect of the life as college student.

Workshop Dates: Neither

Contact: ivan.arismendi@oregonstate.edu

*Willing to mentor a distance student
**Mentor:** Stacey Harper

**Co-mentor:** Bryan Harper ([bryan.harper@oregonstate.edu](mailto:bryan.harper@oregonstate.edu))

**Department:** EMT & CBEE

**Research Focus:** Our laboratory investigates the environmental health and safety impacts of nanotechnology.

**Potential Student Project:** The fate and effects of micro- and nanoplastics in the aquatic environment.

**Attributes/skills/background sought in undergraduate:** None required.

**Mentoring Plan:** The URSA Engage student will work closely with the Harper laboratory research coordinator and other students in the laboratory to conduct research. Dr. Harper holds weekly team meetings during which the students share what they found that week and what their next steps are the following week. This 1 hour block is also used for troubleshooting any research issues that students may be running into. The student will also meet with Dr. Harper one-on-one monthly to assess progress and set future goals that are aligned with the student's interests.

**What I expect of students:** Communication with the faculty mentor is critical. It is expected that the student will advocate for their interests and work with Dr. Harper on projects of interest.

**What students can expect of me:** Direct communication and support for the student's long-term success.

**Workshop Dates:** Neither

**Contact:** stacey.harper@oregonstate.edu
Mentor: Ryan Contreras

Department: Horticulture

Research Focus: Woody plant breeding and genetics - developing better trees and shrubs for nursery and landscapes.

Potential Student Project: Genome size analysis of germplasm collections including but not limited to Philadelphus, Spiraea, Allium, and Potentilla. This analysis provides foundational knowledge on these genera and supports the applied breeding program by informing us on any obvious hybridization barriers presented by large differences in genome size, which presumably would be due to differences in chromosome number/ploidy. Depending on interest and ability, cytogenetic studies to count chromosomes may be included.

Attributes/skills/background sought in undergraduate:
Required attributes: inquisitive, dedicated, self-motivated, organized

Required skills: ability to follow instructions in laboratory analysis and carefully use advanced equipment.

Background: biological sciences preferred but not required.

Mentoring Plan: Weekly meetings with the mentor - likely during the student's time in the lab conducting the analysis. During this time, we will discuss sample analysis, data processing, and interpretation of results including impact on the mentor's applied breeding program.

What I expect of students: Weekly communication conducted in a professional manner. Check email daily. Show up to meetings on time and be able to devote sufficient time to the research endeavor.

What students can expect of me: The student should expect me to show up on time, be available to answer questions in a timely fashion, provide sufficient training to complete the research, and familiarize the student with the larger research program such that they understand WHY they are conducting the analyses.

Workshop Dates: Neither

Contact: ryan.contreras@oregonstate.edu
Mentor: Dana Sanchez

Department: Fisheries and Wildlife

Research Focus: I am a wildlife ecologist. I study mammals & work with people to prevent & manage wildlife conflicts

Potential Student Project: Wildlife ecology and management in hazelnut groves: Potential projects could include and/or combine: a) Erecting and monitoring nest boxes for barn owls; b) live-trapping, marking, and releasing small mammals (esp. voles) to estimate relative population size; c) testing methods to document small mammal damage (gnawing) to young hazelnut trees; d) using trail cameras to document occurrence of mammal species (from voles to deer/elk) in hazelnut groves.

Others to be discussed at Nov 7 mixer.

Attributes/skills/background sought in undergraduate: Required: curiosity, thoroughness in completion of tasks whether literature review or building owl boxes, flexibility, professional communication skills (verbal, written), tenacity, ability to self-start and self-motivate through adversity or repetition, careful attention to details, commitment to absolutely impeccable data collection and management, ability to successfully and competently manage one's calendar and time commitments.

Mentoring Plan: I work with undergraduate researchers to arrange weekly meetings face-to-face or via Zoom (or phone conference) according term-by-term schedule demands and location needs. We establish a term's worth of appointments and then agree on how and when to notify the other if a conflict arises.

What I expect of students: I expect to work with URSA researchers as colleagues. Therefore, I expect a mutual respect for the value of time in our over-busy, demanding professional lives. I expect us both to come prepared to maximize productivity, efficiency, and professionalism during times we spend in meeting, out in the field, and in communication with collaborators or partners. Finally, URSA provides an important and valuable growth opportunity, so I expect participants to ask for what they need to perform well at the task and to grow as a professional. So yes, expect that you'll need to improve some skills and to stretch yourself into learning others.

What students can expect of me: As an URSA researcher you can expect that I'll be fully present when we're sharing time in-office/lab/field. To make that possible however, you will have to work with me to plan meetings/sessions in advance so we can each protect that time and come prepared. I will always operate on the assumption that you are a capable, mature, smart, and self-motivated adult who will ask questions as needed. If I don't receive a question, I will either not know you need help or I'll be hesitant to "butt in" while you're working through your learning process. I am a big fan and practitioner of strategic planning and weekly planning, as
opposed to "hopeful expecting that things will get done." That means I expect us to have timelines for specific tasks and products to get done, and I expect those things to get completed.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** Dana.Sanchez@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Christy Anderson Brekken

Department: Applied Economics

Research Focus: Designing environmental policies to improve energy efficiency and reduce greenhouse gas emissions.

Potential Student Project: We will investigate the Pay As You Save (PAYS) model for financing energy efficiency upgrades for renters and homeowners, in which the payments for efficiency upgrades are less than the savings on their electricity bill. Energy efficiency in homes saves people money, reduces energy use, and reduces greenhouse gas emissions.

There are several areas to research to determine if this will be an effective policy in Oregon and to estimate the GHG reduction. Focus area selected by student(s).

Attributes/skills/background sought in undergraduate: Strong interest in environmental policy and environmental justice, comfort with basic economic concepts and calculation, attention to detail, commitment to completing tasks in a timely manner, curious and flexible approach to problem solving, growth mindset.

Preferred: Environmental Economics and Policy (EEP) majors in Applied Economics or related majors.

Mentoring Plan: I will meet weekly with the student(s). Initial meetings will determine mutual expectations and goals—both for the project and the student's experience. Together we determine the scope of the student's tasks for the overall project. By the spring quarter, students will have primary ownership over their project tasks, meeting once per week for check-ins, questions, and next steps for project task completion and to reflect on the research process and student goals.

For all students, I am available by email continuously in addition to weekly meetings for immediate questions or concerns. Ecampus student meetings can be done via videoconferencing if preferred over regular email check ins.

What I expect of students: Interest in environmental policy, comfort with basic economic concepts, attention to detail, dedication to a research plan and schedule, with a flexible growth mindset.

What students can expect of me: I will provide open communication and mentoring to help the student understand the research process and proceed in an organized way toward project tasks. I will give the student(s) space to define their part of the research project, and coordinate between different parts of the research if several students are working together.

Workshop Dates: November 13, 5:00 to 6:30 PM
Contact: christy.anderson.brekken@oregonstate.edu

*Willing to mentor a distance student*

**Mentor:** Javier Fernandez-Salvador

**Department:** Crop and Soil Sciences

**Research Focus:** Developing new techniques for Strawberry and Olive production in the Willamette Valley

**Potential Student Project:** Projects focused on Strawberry: 1) Vertical substrate systems for fresh-market production 2) Evaluating low-tunnels for season extension in Organic fresh-market production 3) Optimizing plant renovation timing for day-neutral production Projects focused on Olive: 1) Orchard establishment and management practices 2) Winter cold injury evaluation 3) Weed management practices in Organic production 4) Emerging pests in Oregon olive production

**Attributes/skills/background sought in undergraduate:** Required: Willingness to learn, growth mindset Problem-solving attitude Good communicator Attention to detail Flexible schedule / can plan consistent schedule for term in advance Physical ability to lift 30 lbs Preferred: Previous experience with agricultural systems Interest in strawberry or olive production and Organic production Valid driver's license Enthusiasm for fieldwork in all weather Experience with R for data analysis

**Mentoring Plan:** I hold team meetings once per week during the school year, at OSU's Corvallis campus during a time that works for everyone. You will join these meetings, and I will also meet with you one-on-one as necessary. We will be in constant communication by email and text to coordinate specific research activities at the Corvallis campus and at the Aurora field station (North Willamette Research and Extension Center). Most of your work will take place at NWREC. We typically coordinate the commute among team members, and if you have a car and/or a driver's license this will be beneficial. I may be able to reimburse gas costs.

**What I expect of students:** I expect my students to be eager to learn, be able to stay in regular communication with the entire research team (other undergrad and grad students), and to keep thorough records of all data and meeting notes. Students must be available at least one day per week for field work at NWREC in Aurora. I also expect a longer-term commitment to the lab beyond spring term, for the summer field season and/or the following school year, for which we will apply for additional sources of funding.

**What students can expect of me:** My team consists of 1 technician, 1 graduate student, and 4-8 undergraduates at any given time. I love to be a mentor to new students, so you can expect me to regularly teach you new techniques and skills - from hands-on, agricultural techniques to experimental design, data analysis, and scientific writing. I communicate regularly by phone call, text, and What's App.

**Workshop Dates:** November 7th, 5:00 to 6:30 PM, November 13th, 5:00 to 6:30 PM

**Contact:** Javier.F-S@oregonstate.edu, 541-231-8854
**Mentor:** Massimo Bionaz

**Department:** Animal and Rangeland Sciences

**Research Focus:** Nutrigenomics in dairy animals (i.e., nutrient-genome interaction)

**Potential Student Project:** We are looking for an undergraduate student(s) to work in projects with a PhD student. The aim of the projects is to study the effect of fatty acids (the main component of fat in the diet) on bovine cells (in vitro) and in live animals (in vivo).

**Attributes/skills/background sought in undergraduate:**

Required: availability to spend time in the laboratory/ availability and capability to work with live animals/ reliability/ prompt and clear communication/ ability for team work

Preferred: excellent pipetting skills/ flexible schedule

**Mentoring Plan:** I plan to have a weekly meeting with the student/s. The student/s has/have also the option to sign up for credit class (ANS401). The student/s will be trained and work with a PhD student.

What I expect of students: I will clarify my expectations and a strategic plan with the student/s during our first meeting. Together with the student/s will set up a weekly plan with specific tasks to make sure that we can accomplish the goal. The fulfillment of the tasks, including the quality, will be discussed during the weekly meeting. I will expect the student to communicate promptly with me and the PhD student.

What students can expect of me: The door of my office is always open, so to make me available for the students; thus, students can freely request to meet with me anytime during the day, if they need. Students should expect a direct and prompt communication regarding their project by me, either via e-mail, msm, or (preferentially) face-to-face.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** massimo.bionaz@oregonstate.edu 5417379507
Mentor: Tiffany Garcia

Department: Fisheries and Wildlife

Research Focus: I study how waterborne contaminants can impact behavior and development of freshwater organisms.

Potential Student Project: Mercury (Hg) contamination continues to jeopardize important habitats, biological communities, and environmental services. Dragonflies are ideal bioindicators for Hg pollution in aquatic food webs, but little is known about bioaccumulation rate and toxicity in larvae. This project will quantify the Hg accumulation rate from invertebrate prey to larval dragonfly predators over time. We will conduct feeding trials for 8 weeks, assessing feeding rate, body size, and mercury concentration weekly.

Attributes/skills/background sought in undergraduate:
- Punctuality
- Attention to detail
- Interest in aquatic ecology
- Interest in ecotoxicology
- Interest in predator/prey dynamics

Mentoring Plan: I expect the URSA Engage student to attend weekly lab meetings and meet with me each week during a one-on-one meeting. This student will be working closely with a graduate student and will interact with him 3 times each week.

What I expect of students: I expect this student to be an engaged part of this research program, which means they should be timely, inquisitive, responsive, and dependable.

What students can expect of me: An undergraduate mentor can expect open communication and transparency from me. We will meet regularly to discuss how things are going and the experience can be improved. I’m happy to mentor to the needs of the student and expect that a strong interest in ecological research will guide our conversations.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: tiffany.garcia@oregonstate.edu
Mentor: Don Lyons

Department: Fisheries and Wildlife

Research Focus: Seabird science and conservation, with this project focused on Aleutian terns in Kodiak, Alaska.

Potential Student Project: 1) Aleutian tern nesting ecology - This project involves processing images from nest cameras to gain more information about the behavior of adult terns at nests. There are multiple questions that the undergraduate researchers could investigate. 2) Aleutian tern foraging ecology - The project uses imagery from nest cameras to describe Aleutian tern chick diet, identifying fish brought back to the chick by adults. Another method uses chemical analysis of eggshells to determine diet

Attributes/skills/background sought in undergraduate: Required
- Team player, good communicator, excellent attention to detail
- Comfortable working independently
Preferred:
- Background in wildlife/animal sciences/biology/marine biology or related field
- Prior experience with spreadsheets (e.g., MS Excel)

Mentoring Plan: A graduate student on the project will plan to meet one-on-one with the student for 30-minute weekly meetings approximately 1 Feb to 30 April 2020. The graduate student will meet with the student via phone from 1 May through June 2020. I will meet with the student 2-3 times a quarter. Both myself and the graduate student will work with the undergraduate student during preparation for presenting research at one (or both) of the undergraduate research symposiums on campus.

What I expect of students: We expect an undergraduate worker to be committed to working the 5 hours per week that is stated in the URSA Engage description. Also, we expect that the student be communicative (i.e. seek assistance) with us about any questions or issues that arise during the research.

What students can expect of me: The student should expect exposure to the scientific research process, an active bird research and conservation project, inclusion in lab technical and social gatherings, and an introduction to other wildlife researchers. We also commit to timely responses from us as questions or issues with their research project arise, in addition to the dedicated time to meet.

Workshop Dates: Neither

Contact: jill.tengeres@oregonstate.edu
Mentor: Owen Premore

Department: Art About Agriculture

Research Focus: Research focused on the "A" in STEAM (Science, Tech., Eng., Art, Math) w/ regards to Agriculture.

Potential Student Project:
- Develop project and/or exhibition with OSU's new student club, Seminarium (Art-Sci club)
- Research + develop STEAM programming for Ag Extensions to help build vibrant communities that include creative & artistic appreciation.
- Research+ develop arts and creativity programming within the Ag in the Classroom program
- Research + develop exhibition related to Art About Agriculture Permanent Collection that speaks directly to STEAM
- Research strategies to bring A in STEAM to under-served audiences

Attributes/skills/background sought in undergraduate:
Arts experience-i.e. visual art, theater, music, film/video (preferred)
Program development (very preferred)
Agriculture background (ideally) and/or science background (preferred)
Good writing skills (required)
Good verbal communication skills (required)
Empathetic to diverse perspectives (required)
Equity and inclusion mindful (required)

Mentoring Plan: I will meet with the URSA Engage Awardee at least once a week. It is worth noting that I am .5 FTE professional staff, on-campus 2-3 days per week. My schedule has some flexibility and will adjust to accommodate the undergraduate researcher's schedule as needed.

What I expect of students: Good email communication (professional, courteous, clear), respectful to all people, not afraid to ask questions, willing to initiate conversations and interviews

What students can expect of me: Same as above plus be supportive yet honest, collaborative thinking partner when needed yet encourage the researcher towards self-sufficiency. Provide guidance to help ensure the research is meaningful to the researcher and meaningful to the program.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: owen.premore@oregonstate.edu, 541-737-5534
**Mentor:** Laurent Deluc

**Department:** Horticulture

**Research Focus:** The mentee will join a team studying the regulation of fruit ripening in grapevine

**Potential Student Project:** The mentee will be involved in the tissue culture set up to induce the expression of a series of three transgenic grapevine lines under the control of a synthetic promoter. This induction experiment will take place in tissue culture condition and will involve the chemical induction of the plants, sample collection, RNA extraction, cDNA synthesis, and Real-Time PCR assays. Each step of this project can be seen as a sub-project in which the student will be involved as much as he/she can.

**Attributes/skills/background sought in undergraduate:** The undergraduate student should be highly motivated, eager to learn new techniques in plant sciences mostly in molecular biology. Experience in the lab is preferred. Background in biochemistry and/or biology is required.

**Mentoring Plan:** The mentee will be under the direct supervision of a post-doctoral research associate during his/her stay in the lab. The progress in the tasks will be evaluated every week with the post-doc with a weekly meeting with the PIs. Two other undergraduate students work with the post-doc on similar projects. So, the applicant will join a team of three team mates with a specific assignment.

**What I expect of students:** The mentee will join a team of three people (2 UG and one Post-doc) for which the coordination in the tasks to conducted and work ethics will be clearly communicated up-front.

**What students can expect of me:** The undergraduate researcher should expect a friendly and collaborative environment to learn about molecular biology and advanced techniques of Genetic Engineering in plants. During his/her stay in the lab, he/she can expect having access to educational and research resources from a common secured server to learn basics of molecular biology, plant biology, genetic engineering, and genome editing and bioinformatics. The undergraduate student will also be informed of all the other projects in the lab through a lab meeting taking place every week.

**Workshop Dates:** Neither

**Contact:** laurent.deluc@oregonstate.edu
**Mentor:** Laurent Deluc

**Department:** Horticulture

**Research Focus:** The undergraduate student will be involved in developing CRISPRi lines of grapevine.

**Potential Student Project:** The Deluc Lab is currently developing vectors for generating transgenic lines with an activated Cas9 fused to a transcriptional repressor in order to CRISPR-based Interference silencing lines. As proof of concept, we do have transgenic grapevine lines expressed Green Fluorescent Proteins and we aim to develop a CRISPR vector targeting the promoter region of the expressed GFP. The undergraduate student will be involved in the cloning step of the vector before the transformation of the microvine.

**Attributes/skills/background sought in undergraduate:** The undergraduate student should highly motivated, eager to learn new technics in plant sciences mostly in molecular biology. Experience in the lab is preferred. Background in biochemistry and/or biology is required.

**Mentoring Plan:** The mentee will be working with a PhD student during his/her stay in the lab. The student and the PhD student will report on their progress each week to the PIs. The project is complementary to another team in place with a Post-Doctoral Research associate and two Undergraduate students. Both groups will potentially collaborate for any troubleshooting.

**What I expect of students:** Because two groups will be working together, the undergraduate student should be forthcoming in his approach to communicate and interact with the two groups. Work ethics and accountability will also be important.

**What students can expect of me:** The undergraduate researcher must expect a friendly and collaborative environment to learn molecular techniques, genetic engineering, and bioinformatics not only through their interaction with the junior and senior scientists in the lab, but also by accessing a secured server in the lab with educational and research resources related to the various techniques he/she will be applying.

The undergraduate student will also be informed of all the other projects in the lab through a lab meeting taking place every week.

**Workshop Dates:** Neither

**Contact:** laurent.deluc@oregonstate.edu
Mentor: Laurent Deluc

Department: Horticulture

Research Focus: The undergraduate student will work on a Transgene-Free RNAi technology for crop protection.

Potential Student Project: The Deluc lab has received funding for developing a Spray Induced Gene Silencing methodology to combat Grape Powdery Mildew in grapevine. Target gene in grapevine (MLO-susceptibility related genes) and pathogens related genes (Dicer-Like genes) were selected and amplified from existing material in the lab. The undergraduate students will be involved in the next step is to generate double-Stranded RNAs to check the efficiency of the RNA sequence stretches selected to silence the target genes.

Attributes/skills/background sought in undergraduate: The undergraduate student should be highly motivated, eager to learn new techniques in plant sciences mostly plant pathology and in molecular biology, and new concepts.

- Experience in the lab, and background in plant pathology is preferred.
- Background in biochemistry and/or biology is required.

Mentoring Plan: The mentee will be working in strong collaboration with the PIs and another undergraduate student (Senior) already working a similar project. The mentee's project will complement the 4-year student's project. Both will report to the PI and potentially collaborate for any troubleshooting.

What I expect of students: The mentee will interact with the older undergraduate students. The PI expects full commitment from the new mentee to work as binome for his/her project with the other students.

What students can expect of me: The mentee will put a very favorable environment for learning by working with a senior undergraduate student working in the lab for the past four months on a similar project. The mentee will have the opportunity to meet with both the undergraduate and the PIs once a week to discuss progress of the task and concerns.

Workshop Dates: Neither

Contact: laurent.deluc@oregonstate.edu
Mentor: Jennifer Duringer

Department: Environmental and Molecular Toxicology

Research Focus: Safe feed-studying secondary fungal metabolites that naturally contaminate food and feed

Potential Student Project:
- Quantifying mycotoxins (fungal metabolites) in a survey of forage grasses from the southeast United States using liquid chromatography-mass spectrometry; identify prominent compounds and associate them with livestock toxicity
- Quantifying ergot alkaloids in morning glory used as a natural pest deterrent against the potato psyllid
- Validation of a new method for detection of ergot alkaloids by liquid chromatography-mass spectrometry

Attributes/skills/background sought in undergraduate:
Required
- Natural curiosity for chemistry and how it impacts living organisms
- Commitment to project

Preferred
- Background in chemistry, biology, toxicology and/or animal sciences
- Experience with analytical chemistry instrumentation (lab course is fine)

Mentoring Plan: I work in and near my laboratory, so I will be present each day the URSA mentee engages in research, or at least once a week. There are two technicians who may interact with or help the student on occasion, but it will be myself for the most part.
I will develop a project and timeline with the mentee; we will check in at the start of each week regarding how things went last week and develop a plan for the next seven days. We will check in with our overall project plan each week to make sure our progress is on track with what we determined to accomplish.

What I expect of students: I expect undergraduate researchers to be open and honest, to tell me when things go wrong or they get to a place that they need help. Appropriate behavior that respects every person in the lab and upholds the OSU Mission and Values is of utmost importance. I appreciate any and all feedback and contribution of ideas, so want students to feel that I am approachable.

What students can expect of me: I try to make myself as available as possible through email and phone if something comes up, and in person for day-to-day research activities. This is a team effort, and I want the student to feel that they have some say and a stake in the work that is done. I like students to understand the larger impact of what they are doing, how the problem
they are solving/question they are answering adds a little piece to a greater puzzle. And how that information will be used by various groups of people.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** [jennifer.duringer@oregonstate.edu](mailto:jennifer.duringer@oregonstate.edu), 5417379414
**Mentor:** Gerrad Jones

**Co-mentor:** Dr. Brooke Penaluna, brooke_penaluna@usda.gov

**Department:** Biological and Ecological Engineering

**Research Focus:** My research centers on decoding aquatic chemical signatures to understand ecosystem health.

**Potential Student Project:** All the projects my students work on rely on field work, lab work, and advanced data analysis. I am looking for a student to collect water samples from various watersheds and to identify the chemical signatures that correspond to different ecosystem health metrics. These metrics include quantifying fish communities as well as macro-invertebrates. Ultimately, we can collect a single water sample from a watershed and quantify the health of the entire ecosystem.

**Attributes/skills/background sought in undergraduate:**

**Required Skills:** students must be creative, excited, and willing to fail. For me, ~80% of research is problem solving. Most ideas don’t work as originally planned, but with creative out-of-the-box thinking, we can overcome any problem we encounter. It is important for students to take control and be invested/excited about their project. Otherwise, students will not be able to find creative solutions to move forward.

**Learned Skills:** at the end of this research experience, students will be familiar with general environmental chemistry concepts (e.g., chemical fate and transport) as well as basic organic chemistry laboratory techniques. In addition, students will get exposure to advanced statistical analysis tools that are relatively easy to code in Python. The ultimate goal is to improve water quality, so students will use these skills to make sustainable management recommendations that can be used to minimize pollution inputs to surface bodies of water.

**Mentoring Plan:** I regularly meet with all my students ~1x per week in my office. I believe it is important to foster good social relationships with my students to lower barriers for interaction and open communication, so as a lab, we get together ~2x per month off campus (e.g., lunch). During both meetings, students talk about research, data, upcoming work, and together, we develop strategies for moving forward. The student for this project will work with a PhD student on all aspects of field work, lab work, and data analysis.

**What I expect of students:** In general, I expect students to be safe, courteous, and enjoy themselves. While lab work and field work are fun, negligence can result in dangerous situations for students and their coworkers. Therefore, I expect students to be safe and follow lab operating procedures at all times. In addition, I strongly encourage open communication, especially when mistakes are made. I've made a lot of laboratory mistakes, and these mistakes shouldn't be hidden. Therefore, I strive to cultivate a positive and comfortable atmosphere where open communication is encouraged, especially when it comes to laboratory safety.
Students must treat the lab and their coworkers with respect. We will get farther by working together and lifting one another up. Finally, I expect students to take ownership of their projects. I don't have all the answers, and I need creative out-of-the-box thinkers to help me break down scientific road blocks.

*What students can expect of me:* Working with students is the most rewarding part of my job. I get a lot of fulfillment working with students, and I am grateful for the opportunity to do so. You can expect me to be enthusiastic that you are here!

I am your mentor, and you should expect me to help give you guidance on a wide variety of topics (class, research, and life). Mentoring is a lifelong commitment. You can expect me to give you strong, sound, and objective advice to help you move forward, both now and in the future.

Getting a degree can be very challenging and very emotional. Sometimes there are tears, sometimes life throws unexpected curve balls, and sometimes you will have I-don’t-give-a-darn moments. I get it, I’ve been there. It is my job to help you navigate this time. You can expect me to be encouraging, supportive, and respectful during your best times and your worst.

I will do my best to provide you with opportunities to do cool research, to explore your interests, and to let you fail. Yes, failure is important. Everybody struggles in science, and only those who can overcome failure will succeed. You can expect me to look for and provide opportunities for you.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** Gerrad.Jones@oregonstate.edu, 541-737-4534
Mentor: Chet Udell

Department: Biological and Ecological Engineering

Research Focus: OPEnS Lab Director: open-sensing.org
IoT, Environmental Sensing, 3D printing, Microprocessors, Arduino

Potential Student Project: Environmental sensor assembly, deployment specialist.
Assemble, calibrate, and deploy a variety of next-generation environmental sensor technologies
around the OSU campus and go on field deployments.

eGreenhouse Tech Assistant
As climate change creates rising uncertainty in agricultural growing conditions, Greenhouses
are of a rising importance. We develop smart greenhouse technologies for environmental
monitoring and automation and want students from mechanical, electrical, and CS to assist.

Attributes/skills/background sought in undergraduate: We are looking for self-driven
individuals from backgrounds across mechanical, electrical, computer science disciplines to
assist with developing new environmental sensing technologies. Experience working within
collaborative teams is desired. Honors college students are especially encouraged to apply. A
love for the outdoors is recommended.
Experience can be combination of:
3D printing, CAD modeling
Arduino (or other microprocessor programming)
C/C++
Javascript
Sensors
IoT
MongoDB, InfluxDB, Plot.ly, or other database systems

Mentoring Plan: You will spend 5 hours per week over 15 weeks (mid-winter to end of spring
term) working in the OPEnS Lab with a dynamic community of undergraduate students from
electrical and computer engineering, computer science, mechanical engineering, and bio-eco
engineering. Dr. Udell is available in the lab during most business hours for informal check-ins,
and you will formally check in weekly for 30min to 1hr to for mentorship meetings. A successful
URSA scholar will be self-driven, feel empowered to make decisions and take risks, and take full
ownership of their learning experience and end products.

What I expect of students: Collaborative communication is desirable and you may reach Dr.
Udell through the lab Basecamp and email. Weekly progress updates will be posted to the lab
wiki and used for discussion points during weekly mentorship meetings.

What students can expect of me: Dr. Udell mentors over 30 undergraduate researchers across
20 ongoing projects. While this looks like a lot, he has come up with a system where
communication is ample. His office is the OPEnS Lab, and is present much of the time. The lab is
a bustling community of students from a variety of disciplines and they are available to answer your questions as well.

**Workshop Dates:** [udellc@oregonstate.edu](mailto:udellc@oregonstate.edu)

**Contact:** udellc@oregonstate.edu
Mentor: Desiree Tullos

Department: Biological and Ecological Engineering

Research Focus: Sustainable management of rivers, including habitat restoration resilient water infrastructure

Potential Student Project: Students may work on field sampling and literature review around Harmful Algal Blooms (HABs), which have been occurring with increasing frequency and severity. In particular, this work will involve reviewing literature about the triggers and treatment of HABs, and potentially collecting water samples in the field, to identify the environmental triggers and hydraulic conditions that lead different cyanobacteria strains to bloom.

Attributes/skills/background sought in undergraduate:

Required: Curiosity and willingness to learn, interest in environment/water resources, ability to manage data and generate plots with Excel, willingness to review/summarize technical literature,

Preferred: GIS, interest in field work

Mentoring Plan: As with all undergraduate students working in my lab, I treat them like graduate students. We have 30-minute individual meetings on weekly basis, and they participate in my lab meetings every other week. My mentoring of undergraduates typically involves meeting management (e.g. agenda setting, effective materials), communicating ideas and results, effective literature reviews, documenting data and analysis, and other professional development discussions.

What I expect of students: I begin each mentoring relationship with a conversation on expectations. Mine typically involve regular communication (e.g. responding to emails within 24 hours), asking questions and disclosing issues early, establishing a workplan that includes timelines with deliverables, doing some independent troubleshooting before asking questions, and coming to meetings prepared.

What students can expect of me: Students should expect me to be responsive to emails (within 24 hours), be a resource on career development, and supporting them to a) assess and build their interests, strengths, and weaknesses, b) develop the project workplan, c) finding resources to achieve the project objectives and complete the workplan.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: desiree.tullos@oregonstate.edu
Mentor: Claudia Maier

Department: Chemistry

Research Focus: Investigation of biological activities and systems by employing mass spectrometry methods

Potential Student Project: 1) Mass spectrometry for analyzing metabolites in bio-specimen samples including brain tissue samples. 2) Mass spectrometry for analyzing metabolites with possible relevance to the gut brain axis. 3) Mass spectrometry for analyzing plant phytochemicals in botanical extracts for neuroprotection and cognitive enhancement

Attributes/skills/background sought in undergraduate: Ability to work accurately and precisely in an analytical laboratory; good quantitative skills, interested in learning new things, familiarity with common software

Mentoring Plan: A key aspect of our mentoring plan includes teaming of the URSA Engage awardee with a postdoctoral scholar and/or advanced graduate student for day-to-day mentoring. The URSA awardee will also be encouraged to join our group meetings which are usually held once a week. In addition, the project team will meet with the PI at least every other week to discuss project progress and challenges. These meetings shall help to ensure project progress and assist in the preparation of scholarly work (e.g. posters). The URSA awardee is also encouraged to present the research in our group meetings and at local scientific conferences and symposia (including the Oregon Academy of Science Symposium).

What I expect of students: Professional behavior and communication, we are an analytical lab; rigor in science is a must.

What students can expect of me: We work as a team and professional communication within our team is essential for success.

Workshop Dates: Neither (advertise on website only)

Contact: claudia.maier@oregonstate.edu
Mentor: Junfang Deng

Department: Accounting

Research Focus: Corporate tax avoidance

Potential Student Project: No one likes paying taxes, so do corporations. U.S. corporations avoid more than 100 billion of taxes each year. However, little is known about how tax avoidance affects their reputation. Some people (shareholders) say avoiding taxes is good because business costs will go down. Others (customers) say the practice is not socially responsible, leading to boycotts of the company’s products. In this project, we will hand-collect corporate reputation data and run a series of analyses.

Attributes/skills/background sought in undergraduate: The researcher must be (1) good at Microsoft Excel, (2) able to collect data from the Internet with accuracy, and (3) dedicated to the project.

Mentoring Plan: I plan to meet with the mentee at least once a week.

What I expect of students: I expect my researchers to be able to effectively communicate findings and manage time wisely.

What students can expect of me: I’m an easy going person and willing to spend more time explaining things if they are difficult to understand.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: junfang.deng@oregonstate.edu
Mentor: Sandra Neubaum

Research Focus: Provide students with access to culturally diverse information on professional work attire.

Potential Student Project: Meeting with and gathering input from representatives from cultural centers across campus
Surveying students
Surveying employers
Creating a website on professional dress
Creating a Pinterest page on professional dress
Creating a slide deck for use in classroom presentations
Instagram page on professional dress

Attributes/skills/background sought in undergraduate:
- Strong interest in diversity and inclusion; required
- Interest in workplace etiquette; required
- Strong interest in social media; required

Mentoring Plan: For on campus students - face to face meetings weekly (preferably over tea) at a time that works for us both. If needed, I can make meetings at night and on the weekend. For online students, a similar schedule but conference calls.

I also anticipate asking my mentee to engage with employers, other folx across campus and students to gather information and ideas on the project.

If I am unable to meet, then a member of my team will engage with the student to discuss the project.

What I expect of students: Show up, be engaged and committed to the project. To be professional when engaging with folx as we seek input on the project. To be timely in responses.

What students can expect of me: Open communication, a willingness to be receptive to their ideas and, to the best of my ability, flexible meeting times.

Workshop Dates: Neither

Contact: sandy.neubaum@oregonstate.edu, 541.713.8046

*Able to mentor a distance student
Mentor: Marcella Flores

Department: Business, Student Engagement

Research Focus: The focus of this research will be to review and assess best practices in Student Academic Success.

Potential Student Project:

- Meeting with and gathering input from representatives from other academic support resources across campus and/or on other college campuses
- Researching best practices on academic success
- Surveying the academic needs of College of Business students, current student employees and faculty
- Creating a potential job description & hire/training timeline of Academic Student Success Coaches
- Creating a survey tool to assess Academic Success Coach positions and student learning
- Many more options!

Attributes/skills/background sought in undergraduate:

- Interest in supporting students
- Ability to gather information and make meaning
- Interest in making a difference & implementing programs to see change

Mentoring Plan: Meet with the mentee at least 1 time, per week, during office hours or when schedules align.

Grad/PostDoc students would be bi-weekly, just to check in on progress and support however needed.

I am willing to mentor an ECampus student, we can meet via phone or zoom and I am flexible to timing (depending on their work/life schedules).

What I expect of students: Open/Honest and Transparent communication. I expect punctuality, self-motivated, and organized. I expect this student to be curious, to ask a lot of questions, and be engaged throughout the entire process. I also expect the student to challenge assumptions, and always try to keep our goal in mind (which will all be "how do we support students?")

What students can expect of me: The mentee can expect that I will be very transparent in my communication, that I will help establish goals and outcomes and continue to support organization and timelines overall. They can expect that I'll ask some challenging questions to get them to think but also to help their overall project flourish. They can expect that it will be a fun learning environment and that they'll get to meet a variety of people in the College of
Business, across campus AND that they'll be asked to connect with folks at other institutions too!

**Workshop Dates:** Neither

**Contact:** [Marcella.flores@oregonstate.edu](mailto:Marcella.flores@oregonstate.edu), 5417370953

*Willing to mentor a distance student*
**Mentor:** Amy Neuman

**Research Focus:** Further develop the College of Business's Dean's Academy programming and community development

**Potential Student Project:**
- Survey current Dean's Academy students to gauge interests
- Conduct Focus groups or listening sessions with Dean's Academy students
- Use data gained to assist in developing and piloting programming targeted to meet the needs of this particular group
- Use data gained to plan events for Dean's Academy students
- Develop assessment tools to assess the new programming
- Reevaluate as needed

**Attributes/skills/background sought in undergraduate:**
- Interest in Event planning and/or project management
- Interest in leadership development
- Attention to detail
- Business Writing skills
- Coachability

**Mentoring Plan:** I am able and planning to meet with this student once per week at a minimum. Face-to-Face meetings will occur unless web conferencing is required due to the location of the student. If I have an E-campus student, I am comfortable meeting with the student using the Zoom platform for web conferencing.

**What I expect of students:** I will meet with my mentee early on in the process to develop a plan in coordination with the student. In general, we will set meeting schedules for the term in advance and will create a communication process that works for both of us and also provides training for the student as it relates to future professional communication and development.

**What students can expect of me:** I will be available to my mentee for our hour-long weekly meetings to answer questions and help guide them through the process. I will also be available for drop-in appointments for additional times as needed. I have served as a mentor to students in other roles and am confident that I will be able to guide students through the process. My role will be to train the students on professional communication and behaviors so they are better prepared for future endeavors.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** amy.neuman@oregonstate.edu, 5417373417

*Willing to mentor a distance student*
Mentor: Omar Trinidad

Research Focus: This research will focus on ways to improve international student academic and professional success.

Potential Student Project: Research challenges that international students experience

Collaborate with OIS, INTO, Cultural Centers, student organizations, and other stakeholders to identify challenges and best practices to combat it

Research best practices and benchmarks to measure success

Engage with international students to support their academic success

Develop a survey tool for assessing international students

Develop and promote academic resources in other languages

There are many more possibilities

Attributes/skills/background sought in undergraduate:
Required:
- Interest in International Students
- Ability to work with people from various cultures
- Value for diversity and inclusion

Preferred:
- Excellent interpersonal skills
- Writing skills
- Ability to analyze quantitative and qualitative data

Mentoring Plan:
On-Campus Students: once a week meeting to discuss research project goals and progress.
Online Students: once a week meeting through Zoom conference calls to discuss research project goals and progress.

What I expect of students: I expect punctuality, transparency, and honesty. This student should respond to emails and other forms of communication within 24 hours, unless a different time-frame was discussed. The student should have an interest in the research subject and must be open to questioning results.

What students can expect of me: Student mentees can expect honest, respectful, clear, and direct communication from me. They should also expect a fun and professional research
experience full of dialogue and guidance. I will question their findings and thought processes, but in a way that will help them develop their research method.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** omar.trinidad@oregonstate.edu

*Willing to mentor a distance student*
**Mentor:** Dale McCauley

**Research Focus:** Recruiting entrepreneurial high school students to enroll at OSU adds start companies in college.

**Potential Student Project:** Meeting with and gathering input from potential and current students  
Surveying students  
Surveying entrepreneurs  
Creating a website / marketing materials for entrepreneurial and innovative students  
Creating a slide deck for use in classroom presentations and events  
Developing an analysis on how innovative students determine university choice

**Attributes/skills/background sought in undergraduate:**  
- Strong interest in innovation; required  
- Interest in understanding high school student decision making; required

**Mentoring Plan:** Meeting face-to-face in my office or over coffee/tea. Flexible on meeting times to make arrangements that work for both me and course schedule. Expectation will be weekly meetings.

*What I expect of students:* I expect that mentees show up, are on time, and come with creativity and a willingness to create new things.

*What students can expect of me:* I am accessible - open door policy on my office, feel free to stop by any time I am there. I use email for most communication.

**Workshop Dates:** Neither

**Contact:** dale.mccauley@oregonstate.edu, 5417138042
**Mentor:** Lauren Caruso

**Department:** Student Engagement

**Research Focus:** The impact of financial illiteracy on individuals, households, and societies globally

**Potential Student Project:** Assist in developing out content for a new course in contemporary global issues through researching topics; finding credible articles, case studies, and videos; and developing assignments

Topics include but are not limited to the impact of financial illiteracy on inequalities in standards of living, health care inequities, challenges of dealing with an aging population, and access to credit.

**Attributes/skills/background sought in undergraduate:**
Required: interest in contemporary global issues related to financial literacy

Preferred: background knowledge in personal finance topics

**Mentoring Plan:** We will meet once a week. For Ecampus students, we will meet virtually using Zoom.

*What I expect of students:* I expect my undergraduate mentee to be prepared for weekly check-ins with progress updates and questions for next steps. I expect that my mentee can take direction, but I also hope for someone that will think about the subject matter and be self-directed and curious.

*What students can expect of me:* I will meet weekly with my undergraduate researcher and provide insights and thoughts into their work. I will provide direction and ideas but will encourage the student to move in directions they find interesting as well. I'll be available via email or for ad-hoc meetings in-between scheduled check-ins.

**Workshop Dates:** Neither (advertise on website only)

**Contact:** lauren.caruso@oregonstate.edu, 541-737-1671

*Willing to mentor a distance student*
**Mentor:** Jennifer Villalobos

**Research Focus:** Assess technology and resource challenges of students and develop creative solutions.

**Potential Student Project:** Assess technology challenges of students such as navigating canvas, the website, mydegrees, registration, top hat, handshake, linkedin, etc through surveys and meeting with students and then propose and implement creative solutions to these problems such as customized how to videos and/or instruction sheets.

Create social media/podcast/how to videos to address common student questions that were identified through research of both students and faculty.

Many more options!

**Attributes/skills/background sought in undergraduate:**
- Ability to gather information and analyze the data (Preferred)
- Strong Excel Skills (Required)
- Video Projection Skills (Preferred)
- Strong Communication Skills (Required)

**Mentoring Plan:** For undergraduate mentees, weekly meetings in person at a time that fits both of our schedules. For an Ecampus student, we can meet via zoom or phone calls once a week based on an agreed upon time. I will also be available for questions via email or phone call throughout the project.

**What I expect of students:** Be engaged, take initiative, and be curious throughout the project. Consistent communication is key. I am looking for someone who is dedicated, driven, organized, likes challenges, and loves to find creative solutions.

**What students can expect of me:** I will be available when they have questions and will serve as a sounding board for their ideas, I will provide resources as needed and will support and encourage them throughout the process. I will challenge them, provide opportunities to develop their skills and will introduce them to new concepts and new people throughout the College of Business.

**Workshop Dates:** Neither (advertise on website only)

**Contact:** [jennifer.villalobos@oregonstate.edu](mailto:jennifer.villalobos@oregonstate.edu), 5417135323

*Willing to mentor a distance student*
Mentor: Pamela Sullivan

Department: Geology and Geoscience

Research Focus: how water moves through the Earth and the processes that influence the structure of soil

Potential Student Project: We have a range in topics

--Story map on development of soil in Oregon (online tool)
--Collection of soil and water data
--Analysis of data from sensors

Attributes/skills/background sought in undergraduate: Creative (preferred)
Inquisitive (preferred)
some experience with graphing or coding (preferred)

Mentoring Plan: Myself and/or my postdoc can meet with the awardee weekly over the period of the award.

What I expect of students: clear communication, goal setting, and reflection

What students can expect of me: clear and timely communication, constructive advice, and support with educational growth

Workshop Dates: November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM

Contact: pamela.sullivan@oregonstate.edu

*Willing to mentor an Ecampus student
Mentor: Frederick Colwell

Research Focus: We investigate the ecology of microorganisms in different ocean and terrestrial environments.

Potential Student Project: An example project would involve extracting and sequencing DNA from microbes sampled from one of the earth environments that we study (e.g., deep marine sediments, wetland sediments). After sequencing the student would learn how to use computational techniques to identify the microbes and study the sequences from the different microbes in the samples and detect patterns that may be controlled by environmental characteristics of the sample locations.

Attributes/skills/background sought in undergraduate:

- Minimum: 1) willingness to dedicate time needed to learn lab techniques to carefully extract DNA (we will teach you how to do this); 2) ability to work safely in a "shared" lab environment and take instructions; 3) interest in learning about microbiology and the environmental conditions under which microbes survive; 4) curiosity about the natural world and commitment to ask questions; 5) interest in refining lab and scientific skills
- Optimum: previous microbiology experience.

Mentoring Plan: I will meet with the URSA mentee a minimum of 3 times during the quarter if the graduate student working with me can meet weekly with the student. If the graduate student cannot meet with the student then I can meet weekly with the URSA student.

What I expect of students: Clear, direct communication with me and others working in our group. Professional behavior including respect for all members of the lab group. The student will need to complete environmental health and safety training as needed to work in our lab.

What students can expect of me: The undergraduate researcher should expect that I provide clear guidance related to performing research in our laboratory including what is required for completing a successful research project and how to report the results of the research.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: rcolwell@coas.oregonstate.edu, 5417375220
**Mentor:** Ed Brook

**Research Focus:** I reconstruct the history of greenhouse gases and their connections to climate using ice cores.

**Potential Student Project:** Reconstruct early Holocene nitrous oxide atmospheric concentration using ice from the South Pole, Antarctica.

Fully optimize and characterize a new system for measuring N2O concentration in ice core samples.

**Attributes/skills/background sought in undergraduate:**
Required: Attention to detail, interest in Earth/Environmental science.
Preferred: Laboratory experience.

**Mentoring Plan:** I will meet with my student at least 4 times throughout the quarter. My postdoc, Andy Menking, intends to meet with the student at least 1-2 times per week. In reality Andy or I will meet with the student multiple times per week since we are in the laboratory almost every day and make it a habit to speak with everyone working in the lab. The student will also be incorporated into weekly lab meetings and have the opportunity to present their work to the group.

**What I expect of students:** Attention to detail, ability to work with others and independently, strong interest in Earth science.

**What students can expect of me:** Training in laboratory techniques, advice/mentorship for research

**Workshop Dates:** Neither

**Contact:** brooke@geo.oregonstate.edu
**Mentor:** Brodie Pearson

**Department:** Physics of Oceans and Atmospheres

**Research Focus:** I study the movement of the ocean using a combination of computer models, observations, and math.

**Potential Student Project:** Student projects could investigate how the ocean mixes properties like energy and tracers (temperature or algae). This may involve testing out cutting-edge tools for observing mixing at the ocean surface using satellite observations and/or computer models. Students could also probe how properties like heat and momentum get redistributed in the upper ocean by mixing, which would affect an array of things like sea ice melt and the transport of buoyant materials.

**Attributes/skills/background sought in undergraduate:**
[Required] Willingness to learn some computer programming
[Preferred] Experience with basic calculus
[Preferred] For some projects, prior experience with Matlab or Python would be helpful

**Mentoring Plan:** I will schedule meetings with awardee(s) once per week for at least an hour (at a time that is convenient for both of us), to help with any challenges that students may be facing in their project, to discuss their results, and to provide guidance on next steps.

These meetings would be face-to-face for on-campus students, and via Skype (or other video conferencing) for Ecampus students and for times when either myself or a student is not on campus.

I will be contactable by email before and throughout the project period to make sure students can ask questions or bring up issues more frequently than our in-person meetings, so that students can maximally engage in their projects. I am a new faculty member at OSU, so I will not be available to meet in person until January (although I will be at the Nov 13th Informational Workshop and available by email until I arrive in Corvallis).

**What I expect of students:** Attendance of weekly meetings (or equivalent contact). Regularly setting out short-term project goals. Reaching out to me if you run into any issues you don't think you can solve yourself.

**What students can expect of me:** Over the course of the project my aim is to ensure that you find the project interesting, are continually progressing, and that you understand the purpose of your project in the wider context of science and society (tailored to your interests!).

**Workshop Dates:** November 13, 5:00 to 6:30 PM
Contact: pearsbro@oregonstate.edu, November 13, 5:00 to 6:30 PM

*Willing to mentor a distance student*
**Mentor:** Peter Ruggiero

**Research Focus:** We are monitoring a dune restoration project in Pacific City via field data collection and analysis.

**Potential Student Project:** Help us collect beach topographic data in Pacific City, OR using GPS equipment. Collect beach grass information with ecologists. Analyze coastal change data collected over the last year using matlab code written by other students. Help with report writing and communicating our findings. We are basically interested in understanding beach dune ecomorphodynamics and the efficacy of various dune management strategies presently being implemented along our coastline.

**Attributes/skills/background sought in undergraduate:** Good communicator-required
Enjoys the beach - required
comfortable being quantitative - required
experience with matlab - preferred
surfer – preferred

**Mentoring Plan:** I will meet with the mentee at least twice a month while my graduate students will meet with the mentee once a week. We will also participate in field work with the mentee at least once per quarter.

**What I expect of students:** open communication is most important. Let me know what is working and what is not working

**What students can expect of me:** I have an open door policy and am happy to answer questions at any time. I have a vibrant lab of graduate students who are going to help mentor the student.

**Workshop Dates:** Neither

**Contact:** pruggier@coas.oregonstate.edu
Mentor: Cory Buxton

Research Focus: Support STEM teachers working with multilingual learners to integrate language, culture & knowledge

Potential Student Project: An example project would involve helping the research team test and revise our model of Language, Culture, and Knowledge-building through Science (LaCuKnoS). This could involve assisting in data collection in local K-12 classrooms, assisting in data analysis of observations, interviews or focus groups with teachers and students, assisting in preparing workshop materials for training teachers in the LaCuKnoS model.

Attributes/skills/background sought in undergraduate:

- interest in k-12 STEM education (required)
- interest in multilingualism (required)
- some knowledge of Spanish (preferred)

Mentoring Plan: Our research team meets weekly and URSA Engage students working on the project will attend these meetings. If an e-campus student, this meeting can be joined over Zoom. Additional mentoring activities will be tied to the research activities of the group such as data collection and data analysis meetings. The two doctoral students working on the project will also provide support for any URSA students.

What I expect of students: Undergraduate researchers are expected to do some background reading about the project and to learn how to use Dedoose qualitative data analysis software to assist in data analysis. Students should be willing to attend our weekly project meeting as often as possible and be willing to spend a total of around 5 hours/ week on the project during winter and spring terms.

What students can expect of me: Undergrad researchers should expect to be treated as valuable team members of our project team, to get the training they need to do the work that is expected, and to have questions answered in a timely way.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: buxtonc@oregonstate.edu

*Willing to mentor a distance student
Mentor: Rebekah Elliot

Department: Mathematics Education

Research Focus: Math + CS Project - Designing curricular tools for learning about math & computational thinking

Potential Student Project: The Math+ CS Project is a Google-funded project to design curricular tools that integrate math, computational thinking with computing for undergraduates and for new teachers to use with middle or high school students. Potential student projects include working with video and audio technologies in data collection, using coding skills to design middle/high school experiences with computing, evaluating mathematics tasks to consider computing practices, and supporting classroom visits.

Attributes/skills/background sought in undergraduate:

- Interest in STEM or Education courses or career (required)
- Interest in mathematics and learning (preferred)
- Skills with video recording or computing (preferred)
- Interest in innovative tool design and use (preferred)

Mentoring Plan: I would plan to meet weekly with the student for approximately one hour with a plan to engage the student in our weekly standing meetings (approximately 1.5 hours) of the Math + CS team of graduate students and faculty. If the student is working at a distance, these meetings can be via ZOOM or Google Groups.

What I expect of students: It would be important for the student to feel comfortable working and communicating with a team. It also would be important to let the mentor know in advance if a responsibility for the project needs to be renegotiated or if additional support is needed. Punctuality and dependability at important for participating in the team.

What students can expect of me: I will return email communication within 48 hours. I'm available online and on-campus as needed for meetings. I appreciate students who can anticipate tasks and processes when working collaboratively and can work with uncertainty when designing new products or engaging in new ideas.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: elliott@oregonstate.edu

*Willing to mentor a distance student*
COLLEGE OF ENGINEERING

**Mentor:** Bradley Camburn

**Department:** MIME

**Research Focus:** New product design. Research in: simulation, prototyping, AI aided design. Application: aerospace

**Potential Student Project:**

1) **Computer Aided Ideation:** "How can we automate the earliest stages of design?"

   machine learning, graph based, and probabilistic modelling to support design synthesis in early design stages.

2) **Innovation Models:** "How can we model successful product development?"

   study of and empirical modeling of prototyping, social behavior, and business models

3) **Phenomena Informatic:** "How are new discoveries made using physical tests?"

   systems modeling, reverse engineering, empirical similitude

**Attributes/skills/background sought in undergraduate:**
Simulation
Advanced fabrication
Ethnography

**Mentoring Plan:** Weekly meeting, timing to be agreed upon to accommodate student and faculty schedule

**What I expect of students:** To set and complete a project milestone within an agreed on timeline

**What students can expect of me:** Guidance, insights, and when necessary detailed technical guidance to complete project. I believe in career mentorship.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** bradley.camburn@oregonstate.edu, 541-745-9436

*Willing to mentor a distance student*
Mentor: Xue Jin

Department: CBEE

Research Focus: Development and application of novel membrane and nano technologies in water purification

Potential Student Project:
1. Optimizing membrane drinking water treatment process
2. Aerobic granular membrane bioreactor for wastewater treatment
3. Nutrients and Clean Water Recovery for Sustainable Food Production
4. Microalgae harvesting by forward osmosis

Attributes/skills/background sought in undergraduate: knowledge in chemistry and modeling is preferred

Mentoring Plan: I will meet with the mentee once a week

What I expect of students:
I hope you learn
• How to do good science along with how to do your specific project
• Creative problem solving and a sense of fearlessness about technical issues and new ideas
• Technical writing and presentation skills, a sense of professionalism and project management
• To support colleagues and value a collegial, challenging, fun and interdisciplinary environment
• Transferrable skills to be applied in future endeavors in academia or industry, wherever you choose to go

What students can expect of me:
My top priority is for both of us to communicate and set mutually-agreed-upon goals and then both do our best to make those goals into reality. As one of my students, I plan to treat you as a junior colleague who is maturing into a professional engineer or scientist. This means that you can actively co-create opportunities to meet your goals, and also puts a large responsibility on your shoulders to live up to the expectations of performance that are required of a colleague.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: xue.jin@oregonstate.edu, 5417377968
Mentor: Stacey Harper

Co-mentor: Bryan Harper (bryan.harper@oregonstate.edu)

Department: EMT & CBEE

Research Focus: Our laboratory investigates the environmental health and safety impacts of nanotechnology.

Potential Student Project: The fate and effects of micro- and nanoplastics in the aquatic environment.

Attributes/skills/background sought in undergraduate: None required.

Mentoring Plan: The URSA Engage student will work closely with the Harper laboratory research coordinator and other students in the laboratory to conduct research. Dr. Harper holds weekly team meetings during which the students share what they found that week and what their next steps are the following week. This 1 hour block is also used for troubleshooting any research issues that students may be running into. The student will also meet with Dr. Harper one-on-one monthly to assess progress and set future goals that are aligned with the student's interests.

What I expect of students: Communication with the faculty mentor is critical. It is expected that the student will advocate for their interests and work with Dr. Harper on projects of interest.

What students can expect of me: Direct communication and support for the student's long-term success.

Workshop Dates: Neither

Contact: stacey.harper@oregonstate.edu
**Mentor:** Skip Rochefort

**Co-mentor:** Kostas Goulas [kostas.goulas@oregonstate.edu](mailto:kostas.goulas@oregonstate.edu)

**Department:** CBEE

**Research Focus:** The lab is focused on polymers, plastics recycling, and hydrogels in ChE, BioE, EnvE applications.

**Potential Student Project:** Examples of current projects - all polymer based (Note: this is a dynamic list - new projects crop-up all the time):
1) Waste and Ocean Plastics to Fuel in local communities - PTF Reactor design, scale-up and operation (this is a major focus area for the lab)
2) Wildfire Resistant Roof using SAP technology (bringing roof design to market)
3) Hydrogels for delivery of botanicals
4) 3D printing (FDM) materials applications
5) Microwave curing of polymer systems (NEW Variable Freq Microwave)

**Attributes/skills/background sought in undergraduate:** Required:
- Enthusiasm, sense of humor, ability to work with others, reliability, communication, commitment.....and a love of the sciences.
Preferred:
- The work is primarily experimental so some basic laboratory and mechanical skills....or a willingness to learn.

**Mentoring Plan:** Research group (entire research lab with faculty) once per week.
Project Team meetings (with faculty) once per week and as needed
Project Team research, 2-3 times per week as needed in lab.

**What I expect of students:** Enthusiasm, commitment, sense of humor, ability to work with others, reliability, communication.

**What students can expect of me:** Commitment to undergraduate research and mentoring. Enthusiastic interest in research projects. Lots of emails about research group and opportunities.

**Workshop Dates:** November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM

**Contact:** skip.rochefort@oregonstate.edu
Mentor: Patrick Donnelly (Cascades Campus)

Department: Computer Science

Research Focus: Machine understanding of music and sound.

Potential Student Project: Sentiment analysis of musical discourse (text-mining, database, data science) Simulating deafness with audio filters (web, streaming audio, signal processing) Sound-based classroom response system (mobile, microphones, cloud api) Music instrument dataset curation (database, data science, signal processing/analysis) Evolving digital musical instruments (web, genetic algorithms, sound synthesis) Solar-powered microphone with radio (raspberry pi, solar, sensors, signal analysis) Your sound+AI idea!

Attributes/skills/background sought in undergraduate:

[Required] basic programming (CS 162); strong Google-fu; willingness to learn
[Preferred] data structures (CS 261); love of music
[Bonus] web-programming (CS 290), ability to read music

Mentoring Plan: I will meet with students once per week, via Zoom. I will travel to Corvallis once per term to meet with students in person. I am available via email/zoom throughout the week.

What I expect of students: I look for motivated undergraduate researchers with strong communication and organizational skills. I expect the researcher to be able to carry out weekly subtasks independently, while seeking out information whenever needed.

What students can expect of me: Students can expect clear communication, strong organization, clarity in project goals, and ample high-level guidance. Each week students will attend the weekly meeting, bringing 2-3 slides to document progress, show results, or posit research questions/problems for guidance.

Workshop Dates: November 13th, 5:00 to 6:30 PM

Contact: patrick.donnelly@osucascades.edu, 541-706-2071

*Willing to mentor a distance student*
Mentor: Kevin Brown

Department: Pharmaceutical Sciences and CBEE

Research Focus: I am a complex systems scientist, with focus areas in biology, neuroscience, and cognitive science.

Potential Student Project: A selection of current projects include: (1) Mathematical modeling of cellular signaling (breast cancer, growth factor responses); (2) The structure of the mental lexicon: graph theory applied to cognitive science; (3) Computational prediction of coevolving amino acids in protein families. (4) Distributional semantic models and the semantic relations they encode; (5) Prediction of bioactive natural products from mass spectrometry/NMR data.

Attributes/skills/background sought in undergraduate:

- Some experience with computer programming (required)
- Python language experience (preferred)
- Differential equations (preferred)
- Linear algebra (preferred)
- Basic statistics (preferred)

Mentoring Plan: I meet with my mentees for at least one-half to one hour per week. If not much has happened, this can be a brief check-in, or more substantial when there are results to discuss or problems to solve. If the student is an Ecampus student, then we will conduct this weekly meeting via Google Hangout or Skype. Students can always reach me outside of regular meeting times via the Slack app; I give all my students of any rank an account in my Lab Slack channel.

What I expect of students: Frequent communication with me is important, so the student does not "disappear" or remain stuck on something I could help them resolve.

Workshop Dates: Neither

Contact: kevin.brown@oregonstate.edu, (541) 737-8251

*Willing to mentor a distance student*
Mentor: Zhenxing Feng

Department: CBEE

Research Focus: The student will perform materials synthesis, battery test and certain amount of writing.

Potential Student Project: Aqueous lithium/sodium ion battery. Current lithium-ion batteries use organic electrolytes which are flammable. This raises safety concerns. In this project, an aqueous (water-based) lithium/sodium ion battery will be explored as the alternative safe and cost-effective energy storage devices.

Attributes/skills/background sought in undergraduate: Good chemistry/physics background, and good communication and presentation skills

Mentoring Plan: URSA undergraduate will involve in experimental research in my groups. In particular, they will work closely with Master and/or PhD students to finish the project. All students will need to attend my weekly group meeting for project discussion and process reports. Presentations are needed to give a summary in front of all other group members. In additions, undergraduates will meet with me to discuss the progress and make detailed plans.

What I expect of students: The student should be passionate about what he/she is working on and be patient on experiments. The student will be independently searching for answers.

What students can expect of me: Through weekly communications, I will train the undergraduate in profession to handle scientific projects, how to interpret data in research standards, in addition to knowledge he/she will learn.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: zhenxing.feng@oregonstate.edu
Mentor: Chet Udell

Department: Biological and Ecological Engineering

Research Focus: OPEnS Lab Director: open-sensing.org
IOt, Environmental Sensing, 3D printing, Microprocessors, Arduino

Potential Student Project: Environmental sensor assembly, deployment specialist.
Assemble, calibrate, and deploy a variety of next-generation environmental sensor technologies around the OSU campus and go on field deployments.

eGreenhouse Tech Assistant
As climate change creates rising uncertainty in agricultural growing conditions, Greenhouses are of a rising importance. We develop smart greenhouse technologies for environmental monitoring and automation and want students from mechanical, electrical, and CS to assist.

Attributes/skills/background sought in undergraduate: We are looking for self-driven individuals from backgrounds across mechanical, electrical, computer science disciplines to assist with developing new environmental sensing technologies. Experience working within collaborative teams is desired. Honors college students are especially encouraged to apply. A love for the outdoors is recommended.
Experience can be combination of:
3D printing, CAD modeling
Arduino (or other microprocessor programming)
C/C++
Javascript
Sensors
IoT
MongoDB, InfluxDB, Plot.ly, or other database systems

Mentoring Plan: You will spend 5 hours per week over 15 weeks (mid-winter to end of spring term) working in the OPEnS Lab with a dynamic community of undergraduate students from electrical and computer engineering, computer science, mechanical engineering, and bio-eco engineering. Dr. Udell is available in the lab during most business hours for informal check-ins, and you will formally check in weekly for 30min to 1hr to for mentorship meetings. A successful URSA scholar will be self-driven, feel empowered to make decisions and take risks, and take full ownership of their learning experience and end products.

What I expect of students: Collaborative communication is desirable and you may reach Dr. Udell through the lab Basecamp and email. Weekly progress updates will be posted to the lab wiki and used for discussion points during weekly mentorship meetings.

What students can expect of me: Dr. Udell mentors over 30 undergraduate researchers across 20 ongoing projects. While this looks like a lot, he has come up with a system where communication is ample. His office is the OPEnS Lab, and is present much of the time. The lab is
a bustling community of students from a variety of disciplines and they are available to answer your questions as well.

**Workshop Dates:** udellc@oregonstate.edu

**Contact:** udellc@oregonstate.edu
Mentor: Desiree Tullos

Department: Biological and Ecological Engineering

Research Focus: Sustainable management of rivers, including habitat restoration resilient water infrastructure

Potential Student Project: Students may work on field sampling and literature review around Harmful Algal Blooms (HABs), which have been occurring with increasing frequency and severity. In particular, this work will involve reviewing literature about the triggers and treatment of HABs, and potentially collecting water samples in the field, to identify the environmental triggers and hydraulic conditions that lead different cyanobacteria strains to bloom.

Attributes/skills/background sought in undergraduate:

Required: Curiosity and willingness to learn, interest in environment/water resources, ability to manage data and generate plots with Excel, willingness to review/summarize technical literature,

Preferred: GIS, interest in field work

Mentoring Plan: As with all undergraduate students working in my lab, I treat them like graduate students. We have 30-minute individual meetings on weekly basis, and they participate in my lab meetings every other week. My mentoring of undergraduates typically involves meeting management (e.g. agenda setting, effective materials), communicating ideas and results, effective literature reviews, documenting data and analysis, and other professional development discussions.

What I expect of students: I begin each mentoring relationship with a conversation on expectations. Mine typically involve regular communication (e.g. responding to emails within 24 hours), asking questions and disclosing issues early, establishing a workplan that includes timelines with deliverables, doing some independent troubleshooting before asking questions, and coming to meetings prepared.

What students can expect of me: Students should expect me to be responsive to emails (within 24 hours), be a resource on career development, and supporting them to a) assess and build their interests, strengths, and weaknesses, b) develop the project workplan, c) finding resources to achieve the project objectives and complete the workplan.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: desiree.tullos@oregonstate.edu
**Mentor:** Tala Nava-Daneshmand

**Department:** CBEE

**Research Focus:** Characterization of enteric bacteria in the environment and the associated treatment processes

**Potential Student Project:** Investigating the prevalence of antibiotic-resistant bacteria in wastewater treatment facilities across Oregon. In this study we will characterize wastewater influent, treated effluent and biosolids from treatment facilities as well as other parameters such as antibiotics, heavy metals, and several physical/chemical parameters. Student working on this project will take over the measurement and analyses of one or more parameters.

**Attributes/skills/background sought in undergraduate:** enthusiastic, motivated, eager to learn, as well as organized and professional

**Mentoring Plan:** I will meet with the undergraduate mentee weekly to discuss the progress of the project. The student mentee will have regular meetings with a graduate student working in the lab. The grad students will train the undergrad mentee with me overseeing. The student mentee will start helping the grad student and will eventually take over a part of the project. We hold weekly group meetings, where students present their work every week. In these group meetings we also review and discuss recently publish journal papers. The undergraduate student will be precipitating in the meetings and presentations to gain oral presentation skills.

**Workshop Dates:** Neither (advertise on website only)

**Contact:** tala.navab@oregonstate.edu
Mentor: Kyle Niemeyer

Department: MIME

Research Focus: Computational modeling of combustion and fluid flows; open source software and data.

Potential Student Project: - Programming models for ocean biogeochemistry in Python and applying model reduction methods.
- Helping build a database of measurements from combustion experiments, and using those data to validate and improve models for fuel combustion.
Any student-driven project that aligns with diversity and social justice issues could be supported and developed via this program.

Attributes/skills/background sought in undergraduate:
- Programming in Matlab or Python (preferred)
- Comfort working with Linux (preferred)

Mentoring Plan: URSA Engage students would meet with me once a week on average, some weeks potentially meeting with a PhD student or senior undergraduate researcher working on a similar project or joining in on the overall group meeting. In addition, all team members use Slack for instant messaging and immediate feedback to questions.

What I expect of students: I expect undergraduate researchers to update me and be in contact regularly about their progress (as opposed to me having to reach out and ask).

What students can expect of me: I will make myself available for meetings on a regular basis, and to answer questions (electronically or in person) as quickly as possible.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: kyle.niemeyer@oregonstate.edu
Mentor: Thomas Miller

Department: CCE

Research Focus: Analysis/design/load testing of wood buildings. Seismic response of structures. Cold-formed steel.

Potential Student Project: OSU BUILDINGS IN DESIGN/ANALYSIS CLASSES: A continuation of a previous project where building plans information and photos were collected from the Corvallis campus. Additional data would be compiled and analysis/design examples would be developed for CE 381 - Structural Theory I and CE 489 - Seismic Design Fundamentals courses. These examples and calculations will help to make the courses more obviously relevant to the students by showing applications to structures they see every day.

Attributes/skills/background sought in undergraduate: CE juniors or seniors. CE 381 pre-requisite (required). CE 383 or CE 481 co-requisite (strongly recommended). A or B grade in these classes. Strong interest in structural engineering.

Mentoring Plan: I will meet weekly for 1 hour with the student to discuss the progress on the project and related concepts.

What I expect of students: I expect a student would be able to work independently and collect building information from plans and apply it in the analysis of different structures.

What students can expect of me: I will develop the overall plan for the project and select buildings to investigate and provide general approaches for each one.

Workshop Dates: Neither (advertise on website only)

Contact: thomas.miller@oregonstate.edu, 541-737-3322
Mentor: Lewis Semprini

Department: CBEE

Research Focus: The research focuses on bioremediation for the clean-up of toxic chemical in the environment.

Potential Student Project: The project will involve using pure cultures of bacteria and a process known as aerobic cometabolism. Remediation systems are being developed where the bacteria are encapsulated in a hydrogel capsule along with a slow release substrate. The hydrogel capsule can be added to soils and groundwater to transform a broad range of contaminants. The students will conduct studies in groundwater and soil microcosms where the hydrogel capsules will be added and the process performance will be monitored.

Attributes/skills/background sought in undergraduate:
- Required: Excel Spreadsheets
- Required: First year chemistry
- Required: Calculus
- Preferred: Analytical Lab experience

Mentoring Plan I will meet every other week individually. The students are also welcome to attend my weekly group meeting with all of my students.

The student(s) will be mentored directly in the lab by a graduate student.

What I expect of students: Develop a data management plan. Graph data so it can be discussed in meeting.

What students can expect of me: Individual meetings and the ability to participate in the research group meetings.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: lewis.semprini@oregonstate.edu
**Mentor:** Zhongkun "Frankie" Ouyang

**Co-mentor:** Matt Evans, matt.evans@oregonstate.edu

**Department:** Civil and Construction Engineering

**Research Focus:** Using field test and data analytics to accurately evaluate engineering properties of geomaterials

**Potential Student Project:** 1. Develop and calibrate data for field geotechnical test evaluations. This project will explore different ways to analyze large datasets using statistical analyses. 2. Analyze offshore oil drilling platform foundation strength data to provide automated methodology assess undrained shear strength of marine clay using advanced test equipment

**Attributes/skills/background sought in undergraduate:** Required: Student who has a base computer skill for Word, Excel, Powerpoint. Required: STEM Major and good communication

**Mentoring Plan:** I intend to meet my mentee once a week for 30 min to 60min

**What I expect of students:** Initiative and active in reading scientific articles; willingness to fail a bit but also willing to keep trying (determination).

**What students can expect of me:** Good communications and sense of humor. Believe technology can help human to achieve happiness

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** zhongkun.ouyang@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Hector Vergara

Department: MIME

Research Focus: Design, analysis, and optimization of systems that produce and deliver goods and services.

Potential Student Project: Characterizing supply chains for different industries in Oregon and evaluating the effects of disruptions in those supply chains using mathematical modeling and/or simulation approaches. Potential industries include: Forest products, Vineyards/Breweries, Semiconductors, etc.

Attributes/skills/background sought in undergraduate:
Required: Good mathematical, computer and communication skills; organization and self-motivation
Preferred: Familiarity with coding/programming

Mentoring Plan: I will mentor the student in a one-on-one setting. We will meet on a weekly basis to review accomplishments, discuss challenges and plan next steps. The student will have to write a meeting report in advance to the meeting and come prepared with additional materials such as research notes, reviewed journal papers, analytical models, computer code, etc. I will share suggestions on how to perform certain research tasks and inform the student of available resources. The student will write a final report summarizing research activities and results. The writing of the report will start relatively early in the project and drafts will be reviewed by me every two or three weeks. The student will receive timely feedback on the content and style of the report. Finally, the student will have the opportunity to interact with graduate students and learn about their research and experiences.

What I expect of students: Professional communication via email, phone and in person. Be respectful of others.

What students can expect of me: Professional communication via email, phone and in person. Only available during office hours. Respectful of others.

Workshop Dates: Neither

Contact: hector.vergara@oregonstate.edu
**Mentor:** Cindy Grimm

**Co-mentor:** Bill Smart ([Bill.Smart@oregonstate.edu](mailto:Bill.Smart@oregonstate.edu))

**Department:** MIME

**Research Focus:** Establishing appropriate levels of trust in robots and helping people reason correctly about them

**Potential Student Project:** Most of this research involves setting up studies where participants interact with the robot in different ways and/or are presented with different information about what the robot can see or do. These studies can involve making videos of different robot scenarios, creating different robot-human interactions, or creating educational materials about how robots "see" and "think". These educational materials can be "hands on" (eg, play with toy cars and different sensors).

**Attributes/skills/background sought in undergraduate:**

One (or more) of the following:
+ Hands-on electronic skills (for making educational scenarios)
+ Video/content creation skills (for making educational/robot scenario videos)
+ Psychology (for designing studies)
+ Programming/robotics (for creating live robot interaction scenarios)

**Mentoring Plan:** I use a two-level mentoring plan. My graduate student, Sogol Balali, will meet at least once a week with the student and be available for questions as needed. I will attend those meetings when I am in town/not required to be elsewhere.

*What I expect of students:* I expect my students to make steady progress, and to know when to ask for help. My goal is for every student to be working on publishable research, and to have a paper submission as a target.

*What students can expect of me:* I try to find projects that are both doable and will teach my students skills they are looking to learn. I try to provide both research guidance and general life-skills, when necessary (eg, should I do an internship? How do I balance classes and work and research?). I enjoy mentoring and working with undergraduates, but also have a lot of constraints on my time (hence the two-tiered mentoring).

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** grimmc@onid.oregonstate.edu, 5419084735
**Mentor:** Cindy Grimm

**Co-mentor:** John Morrow, morrowjo@oregonstate.edu

**Department:** MIME/Robotics

**Research Focus:** Improving robotic manipulation through the use of "human" controllers and experimental design

**Potential Student Project:** Students are expected to help model, build, program, and then evaluate robotic hands through human "puppeteering". We provide training/help on the technical aspects of the project, and try to match skill set with task (eg, more programming if the student has experience programming, more SolidWorks/3D printing if the student has that skill). Past projects include designing new joints, new measurement strategies, and performing manipulation experiments.

**Attributes/skills/background sought in undergraduate:** Hands-on experience with one (or more of)
- 3D printing/modeling
- Wiring/using sensors and/or motors
- Arduino-level and/or matlab/Python scripting/programming
- Experience with creating and using molds (for making finger parts)

**Mentoring Plan:** I use a two-tiered mentoring plan; but I try to meet with the students when I am in town/not tied up. My graduate student is generally available for day to day consulting/questions.

John is currently mentoring a STEM student, BTW, and also has mentored REU students over the summer, so he's pretty experienced.

What I expect of students: I expect students to show up, tackle problems, and come to me or John when they're stuck

What students can expect of me: I try to mentor both on the research project and also more general life skills - how do you balance research/class time, graduate school, etc

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** grimmc@onid.oregonstate.edu
Mentor: Gerrad Jones

Co-mentor: Dr. Brooke Penaluna, brooke.penaluna@usda.gov

Department: Biological and Ecological Engineering

Research Focus: My research centers on decoding aquatic chemical signatures to understand ecosystem health.

Potential Student Project: All the projects my students work on rely on field work, lab work, and advanced data analysis. I am looking for a student to collect water samples from various watersheds and to identify the chemical signatures that correspond to different ecosystem health metrics. These metrics include quantifying fish communities as well as macro-invertebrates. Ultimately, we can collect a single water sample from a watershed and quantify the health of the entire ecosystem.

Attributes/skills/background sought in undergraduate: Required Skills- students must be creative, excited, and willing to fail. For me, ~80% of research is problem solving. Most ideas don’t work as originally planned, but with creative out-of-the-box thinking, we can overcome any problem we encounter. It is important for students to take control and be invested/excited about their project. Otherwise, students will not be able to find creative solutions to move forward.

Learned Skills- at the end of this research experience, students will be familiar with general environmental chemistry concepts (e.g., chemical fate and transport) as well as basic organic chemistry laboratory techniques. In addition, students will get exposure to advanced statistical analysis tools that are relatively easy to code in Python. The ultimate goal is to improve water quality, so students will use these skills to make sustainable management recommendations that can be used to minimize pollution inputs to surface bodies of water.

Mentoring Plan: I regularly meet with all my students ~1x per week in my office. I believe it is important to foster good social relationships with my students to lower barriers for interaction and open communication, so as a lab, we get together ~2x per month off campus (e.g., lunch). During both meetings, students talk about research, data, upcoming work, and together, we develop strategies for moving forward. The student for this project will work with a PhD student on all aspects of field work, lab work, and data analysis.

What I expect of students: In general, I expect students to be safe, courteous, and enjoy themselves. While lab work and field work are fun, negligence can result in dangerous situations for students and their coworkers. Therefore, I expect students to be safe and follow lab operating procedures at all times. In addition, I strongly encourage open communication, especially when mistakes are made. I’ve made a lot of laboratory mistakes, and these mistakes shouldn’t be hidden. Therefore, I strive to cultivate a positive and comfortable atmosphere where open communication is encouraged, especially when it comes to laboratory safety.
Students must treat the lab and their coworkers with respect. We will get farther by working together and lifting one another up. Finally, I expect students to take ownership of their projects. I don't have all the answers, and I need creative out-of-the-box thinkers to help me break down scientific roadblocks.

What students can expect of me: Working with students is the most rewarding part of my job. I get a lot of fulfillment working with students, and I am grateful for the opportunity to do so. You can expect me to be enthusiastic that you are here!

I am your mentor, and you should expect me to help give you guidance on a wide variety of topics (class, research, and life). Mentoring is a lifelong commitment. You can expect me to give you strong, sound, and objective advice to help you move forward, both now and in the future.

Getting a degree can be very challenging and very emotional. Sometimes there are tears, sometimes life throws unexpected curve balls, and sometimes you will have I-don’t-give-a-darn moments. I get it, I’ve been there. It is my job to help you navigate this time. You can expect me to be encouraging, supportive, and respectful during your best times and your worst.

I will do my best to provide you with opportunities to do cool research, to explore your interests, and to let you fail. Yes, failure is important. Everybody struggles in science, and only those who can overcome failure will succeed. You can expect me to look for and provide opportunities for you.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: Gerrad.Jones@oregonstate.edu, 541-737-4534
Mentor: Naomi Fitter

Department: MIME

Research Focus: My research involves human-robot interaction, touch, robots in education, and robotic entertainers.

Potential Student Project: Socially assistive robotics: We study how small and low-cost robots can encourage frequent computer users to take breaks and be more active during the workday.

Robot-mediated infant interventions: Limited options are available for young children who require motion interventions. We think assistive robots can help tackle this problem.

Robot art: As robots become more common in everyday spaces, studying robotic art and other robots in the wild can help us understand perceptions of these systems.

Attributes/skills/background sought in undergraduate: Required: It's important to me that my undergraduate mentees take initiative in reading about my lab's work (https://osusharelab.com/ is a good place to look) and ask good and interesting questions about past and ongoing work. Looking through our research projects can help students to identify what interests them and what types of skills they would want to learn through undergraduate research with us.

Preferred: Experience with programming, rapid prototyping (3D printing, building circuits, etc.), mechatronics (e.g., using sensors, microcontrollers, and motors together in a system), and things like Robot Operating System/computer vision/machine learning can come in handy in my lab's research, but it's okay if students only have experience in a small subset of these areas. I aim to help students develop new skills through work with me, and I value having a team with a wide breadth of skill sets.

Mentoring Plan: I meet with my undergraduate researchers once a week, and I like to connect all of my students with one another via a weekly lab meeting as well. Undergraduate researchers are invited to attend this meeting, along with my PhD and MS students.

What I expect of students: I expect undergraduate researchers to be motivated to allotting an average of 5 hours a week to research and to be responsive to email. My students typically complete responsible conduct of research and human subjects research trainings to help us conduct our work in an ethical manner. Lab members are also expected to treat one another with mutual support and respect.

What students can expect of me: Outside of weekly meetings with my students, I communicate most commonly using email. It is important to me that all students in my lab gain skills to help prepare them for their future goals. If students aspire to future steps in academia and/or research, this training usually includes conducting research that we can share with the
community through publications at academic conferences/journals, exhibitions at workshops/conferences/performances, and/or outreach activities.

**Workshop Dates:** Neither

**Contact:** [naomi.fitter@oregonstate.edu](mailto:naomi.fitter@oregonstate.edu)
Mentor: Tyler Radniecki

Department: CBEE

Research Focus: The development of sustainable biological treatment systems to clean contaminated waters.

Potential Student Project: We are actively looking at how to redesign bioswales to effectively treat contaminated stormwater. A major focus of this activity is to understand what role, if any, plants have in these treatment systems. Experiments will be conducted to determine if and how plant speciation and stormwater loading rates influence stormwater contaminant removal. Experiments will be carried out in OSU greenhouses and at the OGSIR bioswale field site, located next to Avery Park.

Attributes/skills/background sought in undergraduate: No formal lab experience is required. It is preferred if the students have had at least one college-level chemistry course. Students must be detail oriented, willing to keep a detailed lab notebook, show up on time, communicate with other labmates, have the ability to remain focused on the task at hand and have an eagerness to learn new lab skills. All other skills will be taught as needed for the project.

Mentoring Plan: The URSA Engagement mentee will partake in weekly lab meetings where he/she will have the opportunity to present their work, ask questions and learn more about the other projects going on in the lab.

I will also meet with the mentee once a week outside of lab meeting to discuss the project. Additionally, the mentee will be working closely with other senior undergraduate researchers and graduate students on the project.

What I expect of students: I expect the URSA Engagement mentee to be punctual to meetings and scheduled lab periods. The USRA engage mentee should maintain open and constant communication with their supervising students and myself if they cannot honor their commitments. I expect the URSA Engagement mentee to be supportive with others around them and do their part to be a dependable labmate.

What students can expect of me: I will meet with the URSA Engagement mentee a minimum of once per week and will be prompt in answering emails from the mentee. I will be respectful of the mentee's time and, given proper notice, I will be flexible with scheduling based on the mentee's course load and other outside factors.

Workshop Dates: Neither

Contact: tyler.radniecki@oregonstate.edu
Mentor: Matt Johnston

Department: EECS

Research Focus: We build new sensor systems, including wearable devices and stretchable electronics.

Potential Student Project: This project is part of an ongoing effort at OSU to build stretchable electrical interconnects between electronic components using 3D-printed wires. This approach enables multi-layer "stretchable PCBs," and it provides the ability to print sensors and passives using the same material. Specifically, the project will focus on characterizing material reliability, along with the development of printable circuit, sensor, and system demonstrations.

Attributes/skills/background sought in undergraduate: Interest in electrical systems and sensors (required)
Experience in building simple circuits (preferred)
Experience with microcontrollers or Arduino systems (preferred)
Experience with data analysis using MATLAB, etc. (preferred)

Mentoring Plan: I meet with my undergraduate researchers at least once per week in project groups (3-4 people, including both undergraduate and graduate students), and I also meet with them 1:1 a few times per term. While I occasionally work with an undergraduate researcher in the lab space, more often they will also meet 1-2 times per week with one of my graduate students for lab-based work. Once comfortable and more independent, the students will often then work on their own lab schedule.

What I expect of students: As outlined at the beginning of our work together, I expect attendance at least one weekly research meeting (there are usually 2-3 options to fit schedules), a weekly summary update email in a week where there is no in-person meeting, and regular in-person presentations of research updates at weekly meetings. Given that undergraduate researchers often have high course loads, allowances are of course made that some weeks will be more productive, and some weeks will be less productive (due to exams, etc.); students are usually good about keeping the rest of the team informed of these ebbs and flows.

What students can expect of me: An undergraduate researcher can expect that I will meet with them in project groups ~weekly and 1:1 at least twice per term, and that I will be responsive to email and in-person requests making sure that they have the guidance and materials needed for their research. This will often involve working directly with a graduate student, but nonetheless they can expect regular contact with and input from me to make sure that the process is working as smoothly as possible.

Workshop Dates: Neither
Contact: matthew.johnston@oregonstate.edu, 541-737-3320
Mentor: Konstantinos Goulas

Department: CBEE

Research Focus: I am interested in the chemistry of catalytic transformations of waste plastic and biomass

Potential Student Project:
- Reduction of waste nylon to polyamines
- Oxidation of waste polystyrene to benzoic acid
- Dimerization and oligomerization of alcohols to lubricant and cosmetic precursors

Attributes/skills/background sought in undergraduate:
- Lab skills
- CBEE student or Chemistry student
- Independence
- Desire to learn

Mentoring Plan: I expect to meet with the student(s) weekly.

What I expect of students: I expect adherence to the safety rules, professional demeanor in lab and in meetings, spending appropriate time in lab and independent thinking

What students can expect of me: I will be available by email at all times, I will work with them to develop a research plan

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: goulask@oregonstate.edu
Mentor: David Hendrix

Department: EECS/Biochemistry and Biophysics

Research Focus: The Hendrix lab studies a large array of different topics related to biological sequence analysis.

Potential Student Project: Recent publications from our lab have demonstrated that deep recurrent neural networks can learn context-specific rules that may impact translational efficiency, including special codons and motifs. The undergraduate who works on this project will learn basic programming and scripting skills, especially in Python and the command line. They will also understand principles of machine learning and biological sequence analysis to help uncover subtle mutations affecting the regulation of translation.

Attributes/skills/background sought in undergraduate: Python programming. Critical thinking. Familiarity with the GNU/Linux command line. Strong foundation in biology.

Mentoring Plan: The Hendrix lab is a diverse group of students from both biochemistry and computer science backgrounds. We bring together a wide-range of expertise, and complement each other well. My lab is an excellent atmosphere for students working in computational biology. I will work directly with the student, through weekly one-on-one meetings evaluating code and figures. In addition to independent work, the student will also work directly with NSF Graduate Research Fellow Nathan Waugh, to trouble shoot and discuss ideas for different analyses. Nathan will also perform experiments to test the predictions of the student. The student will also have opportunities to participate in lab meetings, and in the writing of manuscripts related to this work.

What I expect of students: I expect regular meetings, and I expect detailed documentation of all work done. I request that students should plan ahead and schedule meetings with me in advance, and once we start meeting we will schedule the next meeting at the end of the current meeting.

What students can expect of me: The undergraduate researcher can expect to learn a lot of skills. Work often begins by trial and error, and then refining approaches through meetings and discussions. Students should expect me to be engaged with the work and discuss details with them.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: david.hendrix@oregonstate.edu, (541) 737-6224

*Willing to mentor a distance student*
COLLEGE OF FORESTRY

Mentor: Steven Strauss

Department: Forest Ecosystems and Society

Research Focus: Plant biotechnology and genetic analysis with the goal of improved productivity and sustainability.

Potential Student Project:

1) CRISPR editing of floral genes in trees to prevent invasiveness and avoid gene flow (see my web site for more information: http://people.forestry.oregonstate.edu/steve-strauss/).

2) Genomic (GWAS) analysis of genes that affect genetic engineering capacity (NSF funded) in poplar trees.

3) Use of developmental genes to enable "intelligent" genetic engineering (more efficient and science based -- the efficiency of genetic engineering is a big limiting factor).

Attributes/skills/background sought in undergraduate: Attributes/skills/background sought in undergraduate:

- Passion for the study and use of genetics and biotechnology approaches to produce wood, energy, food, and improve environmental quality.
- Strong interest in genetic science and technology for their careers.
- Excellent communication and teamwork skills, and high ethical standards.
- Ability to do science successfully based on courses, experience, organization, and work ethic.

Mentoring Plan: Students working in the lab will meet with me or a secondary mentor (to guide them in the lab day to day) weekly, and also interact extensively every day they work in the lab with postdocs, grad students, and undergraduate researchers. All in the lab meet at least once per week in a laboratory-wide review and discussion meeting.

What I expect of students: I expect them to be passionate, committed, punctual, ethical, hardworking, and excellent communicators.

What students can expect of me: See the mentoring plan above. These are highly customized to fit students’ schedules and interests. We have hosted numerous undergraduates for training and research projects, often leading to professional presentations and scientific publications.
Workshop Dates: Neither

Contact: steve.strauss@oregonstate.edu

*Willing to mentor a distance student
Mentor: Gerald Presley

Department: Wood Science and Engineering

Research Focus: Understanding substrate specificity in wood-degrading fungi as it relates to biofuel production

Potential Student Project: Lignin is a polymer by-product of biofuel production from woody biomass and can be converted to value-added chemicals through biological processes. Wood degrading fungi are masterful at converting wood into value-added energy sources, but it is currently unclear if most of these organisms convert lignin into a source of energy. 1) Screen our culture collection for the capacity to degrade lignin monomers, 2) Reconstruct biological pathways by tracking metabolite production in fungal cultures

Attributes/skills/background sought in undergraduate:
1) experience working with biological cultures (preferred)
2) HPLC (preferred)
3) some knowledge of biology (required)
4) an interest in working with fungi (required)
5) ability to use sterile technique with microbial cultures (preferred)

Mentoring Plan: I plan to meet with the student at least once a week. In addition, the student is welcome to attend our regular lab meetings to learn about the research our group is engaged in. These meeting are also an excellent opportunity for the student to practice their presentation skills by presenting their own results once they have had time to generate some data. The student will also have the opportunity to learn from two well-trained and experienced faculty research assistants in our lab as well as experienced undergraduate students that currently work in our group.

What I expect of students: I expect that the students keep clear, well-organized notes of their experiments in the lab.

What students can expect of me: I plan on being available for student support and offer guidance on learning new lab techniques that the student may need to complete their research. At our regular meetings I will clearly state my expectations and where the student's work fits within the broader goals of our group and the existing scientific literature.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: gerald.presley@oregonstate.edu, 541-737-7147
Mentor: Kevin Lyons

Department: Forest Engineering, Resources, & Management

Research Focus: My research areas include; engineering, human factors, and forests

Potential Student Project: I am developing a mountain bike trail engineering course. For this course I need to determine whether it is possible to use our existing road design software when designing mountain bike trails.

Collect topographic information for an existing mountain bike trail with identifiable design problems.

Enter the topographic information into RoadEng (software), model the existing trail configuration, and propose a virtually redesigned trail that mitigates the problems identified in the field.

Attributes/skills/background sought in undergraduate: Students working on this project must be prepared to spend part of their time working in the field. Surveying skills are a definite advantage, but for a motivated student I will instruct them as part of the project. The students should be comfortable working with computers. The software uses a graphical interface so programming skills are not required. Being active in mountain biking is an asset but being active in forest recreation is sufficient.

Mentoring Plan: This project will have both field and computer lab components. For the field component I will be working directly with the students until they are comfortable collecting the data. For the lab component I will be helping the students setup the model templates and with entering and analyzing the data. Thus, my contact time with the students will vary depending on their experience. At a minimum we will meet once a week to review their progress, and to identify where they require additional assistance.

What I expect of students: Given this project includes both field and office work there is a need for the students to manage their own time well and to make room for this work throughout the term.

What students can expect of me: I will provide detailed assistance to ensure the students are able to collect at least a minimum level of data and to analyze this data. However, the scope of this project could expand depending on the students research capabilities in this area, and in this case I will perform more of a supervisory role.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: kevin.lyons@oregonstate.edu, 541-737-5630
**Mentor:** Michael Wing

**Department:** Forest Engineering, Resources, & Management

**Research Focus:** Manipulation and analysis of Lidar and unmanned aircraft system (UAS) spatial databases.

**Potential Student Project:** The student’s primary duty will be maintaining and manipulating robust geospatial datasets. These datasets are primarily Lidar point clouds or high-resolution UAS-collected imagery but also include vector and raster layers. The student will process Lidar point clouds of the study area to extract snag variable metrics including height and stand density. Similar work will occur with the UAS imagery but for seedlings. Most of the student work will involve using geospatial software.

**Attributes/skills/background sought in undergraduate:** The student will have foundational GIS, remote sensing, and/or programming experience. Students with advanced experience working with Lidar or large imagery datasets are preferred.

**Mentoring Plan:** A graduate student will provide mentoring at least once a week. I will provide mentoring at least several times during every quarter.

**What I expect of students:** Progress in creating and analyzing spatial databases.

**What students can expect of me:** Experience in working with large and complex spatial databases.

**Workshop Dates:** Neither

**Contact:** michael.wing@oregonstate.edu, 5417374009
**Mentor:** Fransisco Mauro

**Co-mentor:** Temesgen Hailemariam

**Department:** Forest Engineering, Resources, & Management

**Research Focus:** My main focus of research is developing forest inventory methods assisted with remote sensing data

**Potential Student Project:** As an OSU Research Associate in the College of Forestry I develop methods to improve forest inventories using remote sensing data. The output of most of the projects I develop are products that can be displayed as maps. One potential project for the mentee is to develop a web page where users can see and retrieve some information from the created maps. This information can include small data visualizations or tabular summaries.

**Attributes/skills/background sought in undergraduate:** First/second year courses in computer science (Required)  
Statistics background (Required, at least one course on the topic)  
Basic web development knowledge (Required, at least one course on the topic)  
Basic knowledge of cartography/mapping (Preferred)

**Mentoring Plan:** My plan is to meet for 1.5 hours weekly with the mentee. During the meetings the plan is to revise the work from the previous week and set goals for the next meeting. During the first sessions I expect an interaction where I would take a more active role focused on explaining some details of the project. As the project evolves I expect this interaction to change. In the last stages of the project the mentee is expected to have a more active role communicating the advances performed during the previous week and proposing possible changes and ideas.

**What I expect of students:** I expect the undergraduate researcher to have a strong will to 1) learn new topics and 2) try and test different ideas.

**What students can expect of me:**  
Full commitment with his/her development as a researcher.  
Advice regarding study materials.  
Flexibility and a positive working relationship.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** FRANCISCO.MAURO@OREGONSTATE.EDU, 5412244857
**Mentor:** Kevin Bladon

**Department:** Forest Engineering, Resources, & Management

**Research Focus:** Wildfire and post-fire forest management effects on water quantity, quality, & aquatic ecosystems.

**Potential Student Project:** (1) A comparison of runoff and erosion from different post-fire land management strategies (e.g., wildfire, salvage logging, slash placement). This research project will use high resolution photographs from before and after the use of overland flow simulations to determine micro-scale erosion with structure-from-motion photogrammetry techniques.

(2) An investigation of the rain-out effect in soils of a coastal redwood forest, using water stable isotope data.

**Attributes/skills/background sought in undergraduate:** (a) be detail oriented (required), (b) positive attitude (required), (c) passion for learning (required), (d) self-motivated (required), (e) problem solving skills (required), (f) interest in computer analysis of previously collected field data (required), (g) interest in forest hydrology (preferred).

**Mentoring Plan:** The proposed research will necessitate a one hour, face-to-face meeting, once a week. Preliminary meetings will be used to discuss the project objectives and methods and to develop a timeline for completion of the project. Subsequent meetings will be used to follow up on progress, discuss challenges and solutions, and mentor the student on foundational concepts.

**What I expect of students:** The undergraduate research must: (a) be detail oriented, (b) maintain a positive attitude, (c) have a passion for learning, (d) be self-motivated, and (e) work to develop their problem solving skills.

**What students can expect of me:** As a mentor, I endeavor to provide students with a positive learning experience that allows students the latitude to explore problems on their own to find solutions. I am a firm believer in completing quality research over quantity, so would rather students learn to be meticulous in performing their research, rather than rushing against a compressed deadline. I also like to provide young scientists with the opportunity to engage and interact with the graduate students in my group, which provides different insights into research and career opportunities.

**Workshop Dates:** Neither (advertise on website only)

**Contact:** bladonk@oregonstate.edu
Mentor: John Simonsen

Department: WSE

Research Focus: Developing a novel process for manufacturing 3D printing materials for SLS printing

Potential Student Project: We will be dissolving polymers and then precipitating them under controlled conditions to make a specific particle size distribution and particle shape that is optimized for selective laser sintering (SLS) 3D printing.

Attributes/skills/background sought in undergraduate: General chemistry, including the lab course, is a prerequisite for this position. Also, the student needs to be comfortable working in a lab environment with hazardous chemicals in the lab. The project itself may involve handling some relatively hazardous organic solvents that will need to be kept in the fume hood. The student will be required to wear appropriate PPE (personal protective equipment), such as gloves, safety glasses, lab coat, etc. NO shorts or sandals are allowed in the lab.

Mentoring Plan: This project will be primarily lab work, so extensive time will be spent in the beginning bringing the student up to speed on lab safety and procedures and also procedures for the specific project. In addition, the student will attend weekly lab group meetings and also a one-on-one weekly meeting with me.

What I expect of students: I expect the student to be alert and aware in the lab, keep themselves safe and keep me informed of any issues/problems/developments.

What students can expect of me: I will always be available by email and usually by office phone. Plus the student should expect me to show up for scheduled meetings and to help them when they ask for help, plus to check in with them on the progress on the project.

Workshop Dates: Neither

Contact: john.simonsen@oregonstate.edu, 5417374217
Mentor: Bogdan Strimbu

Department: Forest Engineering, Resources, & Management

Research Focus: The focus is: development of remote sensed inputs assisting in forestry decision making process.

Potential Student Project:
Other projects that I am coordinating and could interest the students are:
1) impact of algorithms on identification of ground from point clouds
2) development of nonlinear models for environmental applications
3) representation of forest ecosystems with fractals

Attributes/skills/background sought in undergraduate:
Good communicator - required
Enjoys the beach - required
comfortable being quantitative - required
experience with matlab - preferred
surfer - preferred

Mentoring Plan:
The project has three components: production of input data for computer vision/machine learning applications in forestry, flying UAV for estimation of forest parameters relevant to local communities, and development of forest management scenarios using a spatial explicit model. The mentee will start with the machine learning component, by classifying point clouds, followed by the scenario development, and conclude with the UAV flights. I will meet with the mentee once a week to assess the progress, identify areas with difficulties, and set up new directions, when needed. At each change of component, I will spend at least 2 hours with the student explaining not only the tasks but also the overarching objective of the project. In the spring, we will travel for two days in east Oregon to fly UAV, time when we will spend speaking about the project as a whole.

What I expect of students:
The undergraduate should be consistent in completion of the tasks as assigned. Additionally, the student should complete the FAA training as a pilot (I will support the costs associated with certification)

What students can expect of me:
The student should expect the following from me:
1) Clear description of the tasks
2) access to all the resources needed for completion of tasks
3) availability for discussions outside the preset weekly meetings
4) inclusion in the conversation of the labs that I coordinate, Modeling, Algorithms, and Remote sensing
**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** bogdan.strimbu@oregonstate.edu, 541 737 1604
**Mentor:** Regan Gurung

**Department:** Psychological Science

**Research Focus:** [https://liberalarts.oregonstate.edu/sps/asc-lab](https://liberalarts.oregonstate.edu/sps/asc-lab)

**Potential Student Project:**
- What clothing can reduce prejudice?
- How can students study in large classes to succeed?
- See some of my research on CV here: ReganGurung.org

**Attributes/skills/background sought in undergraduate:** Commitment. Conscientiousness. Effort.

**Mentoring Plan:** Weekly (F2F or online if eCampus)


**Workshop Dates:** Neither

**Contact:** Regan.Gurung@OregonState.edu, 920 819 8888

*Willing to mentor a distance student*
Mentor: Kenneth Maes

Department: Anthropology

Research Focus: Global Health, Community Health Workers, Food and Water Insecurity, Mental Health, Caregiving

Potential Student Project: Analyzing survey data and qualitative interviews conducted with unpaid community health workers in Ethiopia, to understand the challenges they face in their work and lives.

Analyzing household water insecurity data from Ethiopia, and improving the way we measure water insecurity around the world.

Analyzing data to evaluate the impacts of community health workers on population health in Oregon.

Improving the way we evaluate the impacts of community health workers in the US and globally.

Attributes/skills/background sought in undergraduate: Required: willingness to read background literature, readiness to take on challenges involved in the research process Preferred: interest in human rights, gender equality, health equity, and social justice

Mentoring Plan: I like to meet once per week, or every other week depending on the student's schedule. I arrange for 1 of my graduate students to also meet with URSA awardees, and to work collaboratively. During meetings, we will discuss the research process, data analysis, and assigned reading related to the research topic.

Workshop Dates: Neither

Contact: kenneth.maes@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Kristen Macuga

Department: Psychological Science

Research Focus: Use virtual reality to study learning/training, body representation, or pedestrian behavior

Potential Student Project: Using virtual reality to investigate changes in body representation following tool use (e.g., after using a tennis racquet or a baseball bat)

Examining how drivers and pedestrians respond to automated vehicles.

Investigating what perceptual factors influence how people move in crowds (e.g., evacuating a building).

Attributes/skills/background sought in undergraduate:
Ability to work well with others (required)
Responsible and punctual (required)
Motivated (required)
Good written and oral communication skills (required)
Some familiarity with the scientific method and experimental psychology (preferred)
Computer programming and/or computer graphics/3D modeling (preferred)
Statistics knowledge (preferred)

Please don’t be deterred if you don’t have all the skills listed; this is a learning opportunity, so you’ll acquire more skills as you go.

Mentoring Plan: I plan to meet with the student once per week. There will also likely be an opportunity to meet with a postdoc, graduate student or other team members, depending on the selected project.

What I expect of students: Asking questions, maintaining open and honest communication, setting and achieving deadlines, and reporting on progress

What students can expect of me: Working towards a common goal that benefits both parties, creating an atmosphere where mentee feels comfortable and supported within the lab group, clarifying expectations, and providing constructive feedback

Workshop Dates: Neither

Contact: kristen.macuga@oregonstate.edu, 541-737-1374
**Mentor:** Frank Bernieri

**Department:** Psychology

**Research Focus:** I study face-to-face interaction processes, emotional intelligence, and impression formation.

**Potential Student Project:** The full list of my research projects can be found on my lab’s websites:

https://liberalarts.oregonstate.edu/school-psychological-science/isl

https://liberalarts.oregonstate.edu/school-psychological-science/isl/research-projects

**Attributes/skills/background sought in undergraduate:** I need people who are conscientiousness, responsible, and who have integrity. I'll teach them everything else.

**Mentoring Plan:** I will meet with each URSA Engage awardee in both weekly scheduled meetings, and often in research team meetings associated with their project. I will also use a "buddy" system to pair each up with a senior RA in the lab for day-to-day training and supervision. My office door is open so that students who need immediate supervision can drop in any time to talk with me.

*What I expect of students:* My lab currently has over 10 undergraduate RA’s, which requires an explicit set of lab/behavior norms. I expect them to work during the hours they schedule, follow instructions when provided, and ask question whenever they are not clear on something.

*What students can expect of me:* They can expect same day replies to all emails, lengthy explanations of why we do things the way we do, and answers to all of their questions. Students can also expect me to give them opportunities to do more advance work and be a work/academic reference for them.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** Frank.Bernieri@oregonstate.edu, 5417371373
**Mentor:** Melissa Cheyney

**Department:** Anthropology

**Research Focus:** Doulas’ experiences of providing care to Medicaid priority populations using an advocacy model

**Potential Student Project:** Undergraduate researchers will help to code de-identified transcripts from interviews. They will engage in consensus coding with other members of the team and help to develop relevant literature reviews. Students will also be invited to participate in activities related to the project including doula trainings, data entry gatherings, peer review and professional networking meetings. These activities will enable student researchers to better understand the larger context from which data emerge.

**Attributes/skills/background sought in undergraduate:** Reliability, collaboration, commitment to reproductive/social justice

**Mentoring Plan:** We will meet once per week over the course of the project and more often if needed. Meetings can be in person or by virtual platform. I am willing to mentor an Ecampus student. A graduate student will also participate in our meetings.

**What I expect of students:** I expect professionalism and respect for confidentiality. Students are expected to complete work on time or to clearly communicate when there is a delay. Students are a welcome part of the research team and are encouraged to weigh in and engage fully in project planning and implementation.

**What students can expect of me:** I will communicate the needs of the project clearly and help the student to come up with a timeline that works with their course schedule and other commitments. I believe in the value of learning by doing and see this as an opportunity to learn research skills through an apprenticeship.

**Workshop Dates:** November 13, 5:00 to 6:30 PM

**Contact:** melissa.cheyney@oregonstate.edu, 541-737-3895

*Willing to mentor a distance student*
**Mentor:** Mei Lien  

**Department:** School of Psychological Science  

**Research Focus:** Studying attention, memory, emotion, and aging using behavioral and EEG (brain activity) measures.  

**Potential Student Project:** Potential projects involve understanding how our brain reacts to external objects. For instance, one brain potential component known as N170 was found to be evoked by faces. It has been suggested that N170 reflects a holistic/global processing. One project will examine how attention to the global or the local level of the objects modulates the N170. Other projects will look into whether attention can be captured or memory can be enhanced by various facial emotions.  

**Attributes/skills/background sought in undergraduate:** Lab research experience (required), statistical skills (preferred), computer programming (preferred)  

**Mentoring Plan:** I will meet with the undergraduate mentee twice on the weekly basis (a total of 2 hours per week) - one is the individual meeting focusing on the progress of their research project (e.g., article discussions, data analyses) and another one is the group, lab meeting focusing on the progress of their experiment and lab activity.  

**What I expect of students:** Attending weekly meetings, be respectful, responsible, well-organized, and always on top of everything  

**What students can expect of me:** Always there for students and help them optimize their educational/research experience - providing help, advice, information, and encouragement that they need.  

**Workshop Dates:** Neither  

**Contact:** mei.lien@oregonstate.edu  

*Willing to mentor a distance student*
**Mentor:** Jonathan Kaplan

**Co-mentor:** Stuart Sarbacker ([stuart.sarbacker@oregonstate.edu](mailto:stuart.sarbacker@oregonstate.edu))

**Department:** School of History, Philosophy, and Religion

**Research Focus:** Philosophy and transhumanism; religion, spirituality, and human augmentation.

**Potential Student Project:** Philosophy and the Ethics of Human Engineering / Human Enhancement

AI, Singularity, and Uploading: Promises and Perils of Brain-Computer Interfaces (included the "extended mind")

Transhumanism as Philosophy and Religion

Spirituality and Science: The Development of Contemplative Technologies

Technoscience and the Future of Humanity

Philosophy, Science Fiction, and Transhumanism -- "Beyond the Human"

**Attributes/skills/background sought in undergraduate:** Background in religious studies, philosophy, or technology (preferred)
Experience in writing and research (preferred)
Interest in transhumanism, human enhancement, etc. (required)
Ability to work independently (required)
Excellent organizational skills (required)
Excellent communication skills (required)

**Mentoring Plan:** Our plan is to meet together weekly with our URSA Engage Awardee(s) to provide regular guidance and oversight. This will begin with a process of orienting the student to our collaborative work on Transhumanism and the larger parameters of research on human technological augmentation. As we move into the main phase of the project, the student will be expected to have prepared a report each week on an assigned topic, which will be discussed with faculty mentors. At the end of each meeting, the student will be given an updated assignment that will provide focused guidance for the next week of research. In the final phase, the mentors will guide the students in preparing a final report, which will be a culmination of their week-to-week progress over the term of the award.

**What I expect of students:** Along with curiosity about transhumanism and human augmentation, we expect a commitment to developing a professional acumen, including being well-prepared and organized.
What students can expect of me: An undergraduate researcher would expect consistent, professional, and enthusiastic guidance throughout the URSA term from both mentors. We anticipate weekly in-person meetings and frequent communications via email.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: jonathan.kaplan@oregonstate.edu
Mentor: Benita Blessing

Department: SLCS

Research Focus: Behind the Scenes: Running an Academic Conference

Potential Student Project: Students will help develop new strategies for increasing graduate student and faculty attendance from underrepresented minority groups and women at an academic conference. Examples include: Collaborating on outreach projects through social media, designing mentoring activities to take place during the conference itself, and researching local history of the conference location.

Attributes/skills/background sought in undergraduate:
Required:
A commitment to social justice, desire to create inclusive and diverse spaces for both young and established scholars, good organizational skills, willingness to engage with new ideas, interest in global issues.
Preferred:
Interest in major event planning, familiarity with a second language other than English at any level (beginning to fluent) with preference for German, good writing skills.

Mentoring Plan: The student(s) will meet with me weekly in my office; ecampus students will "Zoom" in so that if there is more than one student, they can all work together. We will communicate between sessions per email and on the messaging and organizational software "Slack." OSU students have safe and secure access to both Zoom and Slack, and this system worked very well for my URSA Engage project this past year with 2 on-campus and one ecampus student.

What I expect of students: Students will schedule all weekly sessions with me during our first meeting together. Students and I will agree on expectations together in a co-constructed mentoring curriculum, so that they, too, can identify needs and expectations. Students should at no point let this URSA project interfere with their academic work; nor should it stand in the way of a work-life balance. We will post this "mentoring contract" on our Slack page so that we may refer to it as necessary. There will be a "mid-term" self-evaluation session with each student and me; I will ask for a final self-evaluation meeting with each student as well.

What students can expect of me: Students can expect of me that I will reply to emails and Slack messages within 24-48 hours; that I will clearly define goals for the project; that I will work with them to support their mentoring experience so that it is part of their academic and professional growth. I have a good understanding of available resources on campus to help support students academically and in terms of their health. Students can expect me to be responsive to their needs and should also expect that I will reach out when I sense that they need help.

Workshop Dates: November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM
Contact: benita.blessing@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Alina Padilla-Miller

Department: New Media Communications/School of Arts and Communication

Research Focus: My focus is on content creation, critical thinking and producing quality work for publication.

Potential Student Project: With a focus on creating content, branding, and dissemination, students working with me will take a concept/topic of interest to explore and create content on their topic. The content being created will include writing as well as other forms of multimedia. This experience will help students apply knowledge about social currency, triggers, emotions and how to utilize SEO when trying to attract an audience to their content.

Attributes/skills/background sought in undergraduate: This mentorship is intended for driven students who have an interest in exploring effective methods for online publication of their work. Students interested in working with me must already be creating content (this can be writing, photo, video, audio, animation, art) and understands the value of time management and deadlines.

Mentoring Plan: I am willing to meet once a week for a mentee on the Corvallis campus or once a week via Skype/Google Hangout or other similar virtual meeting space (teleconference) for Ecampus students. In addition to face-to-face or virtual real time corresponding, I like to stay in touch via email or using a system like Slack.

What I expect of students: Good communication skills. Time management focused. Driven and eager to work on the task in front of them. Excited for opportunities.

What students can expect of me: Proficient communication and clear direction. Dedication to help support student success. Provide opportunities to help future endeavors.

Workshop Dates: Neither

Contact: padillal@oregonstate.edu

*Willing to mentor a distance student
Mentor: Michael Boonstra

Department: Art, School of Arts and Communication

Research Focus: I am an artist interested in how we see landscape, environmental phenomena, and public space.

Potential Student Project:
- community-based/collaborative art projects
- creating installations/environments utilizing site-specific parameters
- creating projects that examine public space
- fabricating sculptural objects/furniture
- using environmental phenomena as a collaborative element in creative projects
- exploring new ways to use a specific material

Attributes/skills/background sought in undergraduate: This largely depends on the project, but having some experience with creative projects and ideation processes is preferred. Being motivated to pursue your project is required. If your project requires technical/fabrication expertise you don’t already have, make sure to include that in your proposal.

Mentoring Plan: Once a week meetings in person and/or updates over email with possible site visits depending on project parameters.

What I expect of students: Timely and thorough communication, open to collaborative and constructive ideas, hard working, and a positive representative of OSU when working in the community.

What students can expect of me: I try to balance my level of communication with students self-directed motivations. As a mentor I am here to facilitate student ideas and questions into tangible projects they feel are important.

Workshop Dates: Neither

Contact: michael.boonstra@oregonstate.edu

*Willing to mentor a distance student*
**Mentor:** Michael Trevathan

**Department:** Political Science

**Research Focus:** My research focuses on the processes of conflict and cooperation over natural resources (water).

**Potential Student Project:** I would like to facilitate student learning and research in the area of the politics of natural resources and the environment. Potential projects could include data collection, data analysis (econometric or spatial models), developing a conference paper(s), conference participation and presentations at regional or national political science conferences.

**Attributes/skills/background sought in undergraduate:** Software skills in R/Rstudio; Stata; ArcGIS - preferred

Taken a research methods course - preferred

Self motivated and task oriented

**Mentoring Plan:** For Corvallis campus students I would like to have a dedicated weekly meeting that would last for approximately one hour per meeting. During the first few weeks of the project I would expect to meet with the student about twice a week for the first two to three weeks. The duration and number of the meetings may vary depending on the project's progress and the student's academic schedule. When the project nears completion, additional meetings, or longer meetings may be necessary to assist the student in preparation for conference travel/presentation preparation. Additional meetings and mentoring can also be accomplished via Skype or similar media if necessary/desired.

Distance-learning mentees should expect the same schedule as described above, but the mode of interaction will be via Skype, Google Hangouts, or a similar mode of communication, in addition to emails.

**Workshop Dates:** Neither

**Contact:** michael.trevathan@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Michelle Inderbitzin

Department: Sociology/School of Public Policy

Research Focus: Juvenile justice, prisons & youth correctional facilities, prison culture, transformative education

Potential Student Project: Project 1: Research on higher education in prisons and youth facilities in Oregon, across the country, and in Europe. This would entail collecting data on existing programs and classes, looking at their effectiveness as perceived by staff and prisoners, identifying educational needs of different prisons, and discussing potential for new programs.

Project 2: Research in a county-level juvenile department, evaluating effectiveness and challenges of juvenile justice programs and interventions.

Attributes/skills/background sought in undergraduate:
Required:
- intellectual curiosity
- interest in topic
- willingness to learn
- dependability
- strong reading, writing, and communication skills

Mentoring Plan: I will meet with URSA Engage awardees once a week to discuss progress, answer questions, and map a plan for the following week(s). If it as an Ecampus student, we can communicate and check in weekly by email and/or web chats.

What I expect of students: I expect us to learn together and for the student to be enthusiastic about the project and the work that we will do. Dependability and strong communication skills are required.

What students can expect of me: I am open to discussion and good ideas. I have been teaching college classes in state prisons and youth correctional facilities for 13 years, and I have a deep passion for working with those inside prison walls.

Workshop Dates: Neither

Contact: mli@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Evan Baden

Department: School of Art and Communication

Research Focus: My research focuses on documentary photographic projects--youth culture or social practices/rituals

Potential Student Project: Any photographic project that deals with documentation of aspects of human society / social or cultural impact.

Attributes/skills/background sought in undergraduate: Mentee should be studying photography in some capacity (major or minor) at Oregon State University.

Mentoring Plan: I plan on meeting with my mentee once a week throughout the project. Each meeting should last approximately an hour and would be for reviewing work done the previous week or discussions about direction of the project.

What I expect of students: I expect the mentee to be consistently working on their project and meeting with me regularly.

What students can expect of me: I plan on meeting with my mentee on a weekly basis. These will be in-person meetings.

Workshop Dates: Neither

Contact: evan.baden@oregonstate.edu
Mentor: Cindy Grimm

Co-mentor: Bill Smart (Bill.Smart@oregonstate.edu)

Department: MIME, College of Liberal Arts

Research Focus: Establishing appropriate levels of trust in robots and helping people reason correctly about them

Potential Student Project: Most of this research involves setting up studies where participants interact with the robot in different ways and/or are presented with different information about what the robot can see or do. These studies can involve making videos of different robot scenarios, creating different robot-human interactions, or creating educational materials about how robots "see" and "think". These educational materials can be "hands on" (eg, play with toy cars and different sensors).

Attributes/skills/background sought in undergraduate:

One (or more) of the following:
+ Hands-on electronic skills (for making educational scenarios)
+ Video/content creation skills (for making educational/robot scenario videos)
+ Psychology (for designing studies)
+ Programming/robotics (for creating live robot interaction scenarios)

Mentoring Plan: I use a two-level mentoring plan. My graduate student, Sogol Balali, will meet at least once a week with the student and be available for questions as needed. I will attend those meetings when I am in town/not required to be elsewhere.

What I expect of students: I expect my students to make steady progress, and to know when to ask for help. My goal is for every student to be working on publishable research, and to have a paper submission as a target.

What students can expect of me: I try to find projects that are both doable and will teach my students skills they are looking to learn. I try to provide both research guidance and general life-skills, when necessary (eg, should I do an internship? How do I balance classes and work and research?). I enjoy mentoring and working with undergraduates, but also have a lot of constraints on my time (hence the two-tiered mentoring).

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: grimmc@onid.oregonstate.edu, 5419084735
Mentor: Cindy Grimm

Co-mentor: John Morrow, morrowjo@oregonstate.edu

Department: MIME/Robotics, College of Liberal Arts

Research Focus: Improving robotic manipulation through the use of "human" controllers and experimental design

Potential Student Project: Students are expected to help model, build, program, and then evaluate robotic hands through human "puppeteering". We provide training/help on the technical aspects of the project, and try to match skill set with task (eg, more programming if the student has experience programming, more SolidWorks/3D printing if the student has that skill). Past projects include designing new joints, new measurement strategies, and performing manipulation experiments.

Attributes/skills/background sought in undergraduate: Hands-on experience with one (or more of)
+ 3D printing/modeling
+ Wiring/using sensors and/or motors
+ Arduino-level and/or matlab/Python scripting/programming
+ Experience with creating and using molds (for making finger parts)

Mentoring Plan: I use a two-tiered mentoring plan; but I try to meet with the students when I am in town/not tied up. My graduate student is generally available for day to day consulting/questions.

John is currently mentoring a STEM student, BTW, and also has mentored REU students over the summer, so he’s pretty experienced.

What I expect of students: I expect students to show up, tackle problems, and come to me or John when they're stuck

What students can expect of me: I try to mentor both on the research project and also more general life skills - how do you balance research/class time, graduate school, etc

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: grimmc@onid.oregonstate.edu
Mentor: Kim McAloney

Program/School: Educational Opportunities Program (EOP), School of Language, Culture & Society

Research Focus: My research area is around mentorship, first gen college students, & utilizing critical pedagogies.

Potential Student Project: This project is conducting research on academic counseling through a liberatory mentorship model. This could look like examining literature, engaging in conversations and interviews with academic counselors and students who utilize the program, and pulling the findings together in interesting and engaging ways.

Attributes/skills/background sought in undergraduate:
experience working with diverse communities
excellent communication
ability to work independently and as part of a team

Mentoring Plan: I'll meet with the student weekly in person or virtually through Zoom. I'm also available by email.

What I expect of students: From you, I expect your best work. I expect you to ask (or learn to ask) for what you need and if you are not getting what you need from me, you ask for clarification. I expect honesty, integrity, and authenticity.

What students can expect of me: My goal is to make this a safe environment for you to do excellent work and to grow personally and professionally. From me, you can expect your goals and development to be a priority. I will provide you with autonomy in projects and will provide you with honest feedback. With my acquired knowledge, I will work to provide you with necessary tools that you may need to navigate student affairs and higher education. Being that this is a learning environment, you can expect from me continual effort to learn new approaches and practices. As your mentor, I will challenge you in hopes that you will grow and apply new knowledge, and am open to the same expectation.

My role is to provide you with learning experiences that will foster your growth particularly around OSU’s Learning Goals for Graduates (self-awareness and life-long learning, critical thinking, collaboration, communication, social responsibility and sustainability). My desire is for this to be a safe space for you to work and grow. My hope is that you either know what you need in a mentor and can ask for that or that you can use this experience to help you figure this out. I believe that you are in this program because you have the ability, talent, and desire. With this in mind, I strive to provide you with autonomy in your project(s).

Workshop Dates: November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM
Contact: kim.mcaloney@oregonstate.edu
*Willing to mentor a distance student
Mentor: Jason Dorsette

Office/School: The Office of Academic Achievement, School of Language, Culture & Society

Research Focus: My research agenda focuses on issues of access and equity for underrepresented students.

Potential Student Project:
- Factors that impact graduation and retention rates of college male students of color.
- A comparative study on male of color mentoring programs at two 2 year colleges and two 4 year universities located in the Pacific Northwest region of the United States.
- A phenomenological study of college male students of colors and the “Prove the Wrong Syndrome” intrinsic motivations for success.
- Utilizing students of color mentoring programs as a tool to equalize student success.

Attributes/skills/background sought in undergraduate:
- Conduct literature reviews (required)
- Research and collects data through complex techniques and procedures, library research, structured interviews or other project specific methodology (required)
- Interprets, synthesizes and analyzes data. (required)
- Develop research proposals, prepare progress reports and assist in publication opportunities (required)
- Schedules, organizes and reports on status of research activities (preferred)
- Plans and modifies research techniques, procedures, tests, equipment or software management (preferred)

Mentoring Plan: I can commit to meeting with an URSA Engage Awardee at least once a week for 45 minutes to 1 hour. In the case that I am asked to mentor an Ecampus student, I plan on utilizing Zoom or Skype software to interactive with the undergraduate student.

What I expect of students: I expect timely responsiveness to communication and a strong commitment to active engagement in co-curricular and curricular learning opportunities that will be established by me (mentor) and the undergraduate researcher (mentee).

What students can expect of me: The undergraduate researcher should expect frequent and open lines of communication and committed academic coaching.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: jason.dorsette@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Kevin Brown

Department: Pharmaceutical Sciences and CBEE

Research Focus: I am a complex systems scientist, with focus areas in biology, neuroscience, and cognitive science.

Potential Student Project: A selection of current projects include: (1) Mathematical modeling of cellular signaling (breast cancer, growth factor responses); (2) The structure of the mental lexicon: graph theory applied to cognitive science; (3) Computational prediction of coevolving amino acids in protein families. (4) Distributional semantic models and the semantic relations they encode; (5) Prediction of bioactive natural products from mass spectrometry/NMR data.

Attributes/skills/background sought in undergraduate:
- Some experience with computer programming (required)
- Python language experience (preferred)
- Differential equations (preferred)
- Linear algebra (preferred)
- Basic statistics (preferred)

Mentoring Plan: I meet with my mentees for at least one-half to one hour per week. If not much has happened, this can be a brief check-in, or more substantial when there are results to discuss or problems to solve. If the student is an Ecampus student, then we will conduct this weekly meeting via Google Hangout or Skype. Students can always reach me outside of regular meeting times via the Slack app; I give all my students of any rank an account in my Lab Slack channel.

What I expect of students: Frequent communication with me is important, so the student does not "disappear" or remain stuck on something I could help them resolve.

Workshop Dates: Neither

Contact: kevin.brown@oregonstate.edu, (541) 737-8251

*Willing to mentor a distance student*
Mentor: Andriy Morgun

Co-mentor: Natalia Shulzhenko

Research Focus: Studying the interactions between the gut microbiome and the host that influence disease progression

Potential Student Project: Projects students will be working on includes analyzing interactions between microbes and the host (i.e. the genes of the human, mouse, etc. being studied). These interactions potentially cause diseases and we would like a student to help in finding and understanding these interactions. Students can expect to do a decent amount of computational work in the lab, with the possibility of transitioning into other work on extra projects in the future (if desired).

Attributes/skills/background sought in undergraduate: Preference will be given to students that have experience with at least one of the following: R, Python, Java, Perl, C++, or any other programming language.

Requirements include the ability to communicate with others and have at least some background in biology. Applicants should have an interest in learning about the gut microbiome, immunology, and/or network biology.

Students are encouraged to apply even if they do not have experience in programming but are interested in computational biology.

Mentoring Plan:
- Meet at least once a week with me
- Be in contact with a graduate student or postdoctoral scholar throughout the week (either in a meeting or via video calls).

What I expect of students: Communicate well with the graduate students and have results and/or questions to discuss regularly

What students can expect of me: I will be in contact with the student over the week, contacting them via email or in-person.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: Andriy.Morgun@oregonstate.edu
**Mentor:** Maude David

**Co-mentor:** Christine Tataru (PhD student)

**Department:** Microbiology

**Research Focus:** How does the gut microbiome impact behavior, and new computational methods for microbiome analysis

**Potential Student Project:** Learning properties of microbiomes using machine learning and public datasets: The student will learn how to access data from publicly available databases, process and clean data, design and deploy production level code on a server, and try their hand at algorithm design (all incredibly marketable skills!).

**Attributes/skills/background sought in undergraduate:** Strong interest in learning about machine learning and computational techniques in the context of biology - required

Ability to commit 8 hrs on a regular weekly basis to lab work - required

Basic familiarity with some coding language – preferred

**Mentoring Plan:** Dr. David will meet with the student 3 times per quarter. The student will also be under the supervision of a second year graduate student, Christine Tataru, who will be helping to coach and mentor the student. She will have once a week check-in meetings to answer any questions and ascertain there are no unnecessary roadblocks to the project. She will work with them on computing skills as well as some basic computational microbiology knowledge. The student will sit in the open space, near Christine. I will meet with the student once a week in the beginning, and biweekly as the student becomes more comfortable asking for help when they need it.

*What I expect of students:* Knowing when to ask for help and when to persevere independently is a very valuable skill. If there is a logistical or conceptual problem that is taking more than a few hours to overcome, the student should feel confident in asking for assistance rather than wasting time. I expect students to be upfront about their failures and problems, as well as their successes. They should make a regular weekly physical appearance in the lab (8h/week), or should explicitly notify me about their circumstances (finals, family issues, etc.). Most importantly, they should be excited about participating in science and devoted to learning the new skills they are presented with. They should also be active in asking questions in lab meeting and seeking to understand all the projects going on in lab.

*What students can expect of me:* Students should expect that I will be committed to their personal and professional growth. I will schedule regular meetings with them, but am also available to address problems that arise between official meetings. They should expect me to be upfront about things like authorship and potential for paid work. I will do my best to continue to find opportunities to ensure that they are successful in lab, including
undergraduate funding opportunities and assistance in publishing should that be relevant to them.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** [maude.david@oregonstate.edu](mailto:maude.david@oregonstate.edu)
**Mentor:** Maude David

**Department:** Microbiology

**Research Focus:** Gut-brain axis, autism, behavior, neuroscience, microbiology.

**Potential Student Project:** DNA extraction for 16S sequencing: From various biological sources such as honey-bees and mice, the student will follow a detailed protocol to prep the samples to be sent for sequencing. MIA mouse-model behavior testing: The student may gain some experience in working with mice performing behavior tests, feeding and other skills. Development of biosensors for stormwater management: The student may aid in a project developing biosensors that would include tasks such as processing water sample.

**Mentoring Plan:** The student will be mentored by myself, and the team in charge of the web lab and mice work. A second year graduate student, Grace Dietlzer, as well as the lab technician, Alex Phillips, will be helping to coach and mentor the student, especially in the animal facilities and wet lab, and meet and work with the student at least once a week. All the protocols will be reviewed with Dr. David.

What I expect of students: This project requires to work with mice, including behavior experiment, wellbeing, dissections. The student is expected to come 8h per week to help with the mice work, to be reliable and very meticulous especially when working with animals.

What students can expect of me: Students should expect that I will be committed to their personal and professional growth. I will schedule regular meetings with them, but am also available to address problems that arise between official meetings. They should expect me to be upfront about things like authorship, and summer schedule for potential paid work. I will do my best to continue to find opportunities to ensure that they are successful in lab.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** maude.david@oregonstate.edu
Mentor: Larry Gilley

Department: Health Management and Policy

Research Focus: How leaders/mgrs. use a systematic methodology to search and critically appraise empirical studies.

Potential Student Project: Awardees will complete, a Rapid Evidence Assessment (REA) that provides a balanced assessment of what is known (and not known) in the scientific literature about an intervention, problem or practical issue in healthcare (HC) leadership and management by using a systematic methodology to search and critically appraise empirical studies.

The URSA Mentor will assign awardees an REA project that is known to be a common intervention, problem, or practical issue in the HC industry (public/private).

Attributes/skills/background sought in undergraduate: There are no other attributes required, other than those already mentioned in the mentoring plan.

Mentoring Plan:

1) A mentor, graduate student, post doc, or research associate will meet with each URSA awardee or (zoom with each E-campus student) once per week.
2) The mentor will meet with each awardee or (zoom with each E-campus student) at least 2-3 times a quarter.
3) The mentor, graduate student, post doc, or research associate will ensure each awardee has a 1-15 week meeting schedule on the first or no later than the second week into the winter term.
4) Each awardee, will receive a specific, comprehensive packet of information, with details about their healthcare (HC) leader/manager rapid evidence assessment (REA) project, at the first weekly meeting (1 of 15).

What I expect of students: 1) They treat their mentors with respect 2) They follow the URSA Awardee/Mentor Communication Plan 3) They follow all the guidelines given for completing the REA - Rapid Evidence Assessment

What students can expect of me: 1) They treat their awardees with respect 2) They follow the URSA Awardee/Mentor Communication Plan 3) They ensure that all the guidelines given for completing the REA - Rapid Evidence Assessment are clear and followed by all awardees

Workshop Dates: November 7, 5:00 to 6:30 PM
Contact: Larry.Gilley@OregonState.edu, 1-541-737-5462

*Willing to mentor a distance student*

Mentor: Sarah Rothenberg

Department: School of Biological and Populational Health Science

Research Focus: My research is focused on environmental pollutants, especially mercury.

Potential Student Project: This fall, clams were collected in the vicinity of a paper mill, and ~10 miles downstream from the paper mill. Our preliminary analysis suggests higher mercury levels in clams closer to the paper mill. One project concerns comparison of the clam microbiome, in samples collected near and far from the paper mill.

Attributes/skills/background sought in undergraduate: I hope to mentor students with an interest in environmental pollution and health. Lab experience is required.

Mentoring Plan: I hold a weekly lab meeting with my students, which the mentee will be required to attend. I also meet with students individually each week, as needed.

What I expect of students: I expect undergraduate students to make time to work in the lab, and to engage during lab meetings.

What students can expect of me: I am always available to help students with their project(s)-my door is always open.

Workshop Dates: Neither

Contact: sarah.rothenberg@oregonstate.edu
**Mentor:** Cathleen Brown Crowell

**Department:** Kinesiology/Biological and Population Health Sciences

**Research Focus:** I use human motion analysis to study forces related to injuries in athletes and older adults.

**Potential Student Project:** Students could participate in several ongoing projects. They may collect biomechanical data on recreational athletes with previous injuries. They may process data assessing landing forces, joint power, and ligament laxity in recreational athletes with chronic ankle instability. They may screen data on the epidemiology of overuse injuries in Division I athletes in an injury registry. Students will receive a broad experience in data collection, processing, and analysis for human subjects.

**Attributes/skills/background sought in undergraduate:**

Preferred:
Coursework in human anatomy and biomechanics
Interest in sports medicine and human movement

**Mentoring Plan:** The URSA Engage student will have weekly interactions with the mentor and research team including weekly group lab meetings, individual meetings with the faculty mentor every 2 weeks, regular meetings with the PhD student, and working alongside members of the research team in the lab.

**What I expect of students:** Respond to questions and concerns quickly, be a good listener, accept that setbacks and challenges are a part of research

**What students can expect of me:** Detail oriented, responsive, professional, ability to adapt to challenges

**Workshop Dates:** Neither

**Contact:** Cathleen.Crowell@oregonstate.edu, 541-737-5491
Mentor: David Dallas

Department: Nutrition

Research Focus: Milk protein digestion in infants, bioactive antimicrobial and immunomodulatory peptides, mass spec.

Potential Student Project: Identification of bioactive peptides from human milk and digested human milk samples from term and preterm infants. The student could be involved in our ongoing research isolating peptides released from human milk proteins. We will analyze these peptide fragments with mass spectrometry and perform data analysis. We will test human milk and digestion samples for antimicrobial and immunomodulatory activity using bacterial and cell assays. We will then fractionate active samples using prep-LC.

Attributes/skills/background sought in undergraduate:

Preferred:
- Having taken basic chemistry, biology or nutrition courses
- Any lab experiences

Mentoring Plan: I will meet with the student once a week. The student will also be individually mentored by five post-doctoral fellows and four graduate students in my lab.

What I expect of students: Attend weekly meetings, provide weekly written feedback on progress and spending sufficient time in lab.

What students can expect of me: I will always be available to discuss the research with the student.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: dave.dallas@oregonstate.edu
**Mentor:** Diana Rohlman

**Department:** Environmental and Occupational Health

**Research Focus:** My research focuses on how our environment can impact our health, both negatively and positively.

**Potential Student Project:** HOW we study disasters is just as important as What and Who we study. Students can evaluate ethical research and develop research methodologies for use after disasters.

The way we talk determines how well our message is understood. Students would help develop public health messaging around disasters, wildfires and air pollution.

Learning about your exposure to chemicals can be scary. This project evaluates how we can present data to help people make healthy decisions and reduce their risk.

**Attributes/skills/background sought in undergraduate:**

**Attributes**
- Efficient with attention to detail
- Familiarity with Microsoft office products (Word, Excel, Powerpoint) (required)

**Background**
- Familiarity with Microsoft office products (Word, Excel, Powerpoint (required)
- Basic knowledge of building tables, charts and graphs – preferred

**Mentoring Plan:** I like to meet weekly with students. At the beginning of the term (first 3 weeks), we will set up a timeline for the project, as well as the products that we hope to complete within that time frame. In following meetings, we will discuss the work completed in the previous week, and set goals for the upcoming week. These meetings will also cover topics necessary to complete the work. For example, primers on how to cite scholarly articles, or how to organize literature searches, or adhere to IRB guidelines. These topics will be identified in the first 2-3 weekly meetings, and can be added as needed throughout the project.

**What I expect of students:** I expect that my undergraduate researchers complete their work on time, or provide notice if a project is taking longer than usual. I expect that researchers will attend a weekly check-in meeting (in person, Zoom or phone) and that they will provide updates on work they completed, challenges they are facing with the work, and future plans. Most importantly, I expect that all researchers in my lab know when to ask for help. Part of research is learning how to find answers on your own, but after trying your best to figure something out, I hope that my researchers will describe the problem to me, and request assistance.
What students can expect of me: An undergraduate researcher should expect that I will be involved in the project at all stages. It is my role to provide students with the resources they need to complete a project. If a student needs help conducting a statistical test for example, I will provide training and resources for conducting and interpreting the test. I hold weekly meetings, and respond promptly to emails. If additional training or meetings are needed, I schedule them accordingly. I will provide constructive criticism on projects, with the goal of helping undergraduate researchers develop better writing, research and presentation skills.

Workshop Dates: Neither (advertise on website only)

Contact: diana.rohlman@oregonstate.edu, 541-737-4374

*Willing to mentor a distance student*
Mentor: Sam Logan

Department: Kinesiology

Research Focus: Technology and training to young children with mobility disabilities to encourage mobility and play.

Potential Student Project: 1) Effect of a body-weight support harness system on the mobility, social, and object-related behaviors of young children with and without disabilities.
2) Review of existing research on toys designed to facilitate mobility of young children
3) Effect of a parent-centered intervention to reduce perceived barriers and increase self-efficacy to encourage opportunities for children to use a modified ride-on car

Attributes/skills/background sought in undergraduate: Interest in child development and disability studies (required)

Compelling reason why conducting research is important to their professional development and/or career goals (required)

Mentoring Plan: I will be responsible for mentoring and interacting with the Engage Student during the research experience. I will meet individually with the Engage Student on a bi-weekly basis to check in on her progress (30 minutes), and a graduate student will meet with the Engage Student on a weekly basis (30 minutes). I believe in using a scaffolding mentoring approach. I will ensure that Engage Student completes research activities throughout the funding period that provide a challenge in order to provide opportunities for success, while simultaneously encouraging them to expand their knowledge and research skill set. This will ensure the Engage Student has a positive experience that contributes to their professional development. The Engage Student and I will co-create a timeline of activities to be completed. The Engage Student will attend and participate in weekly lab meetings that includes myself, as well as graduate and undergraduate research assistants (60 minutes). This will provide the Engage Student with experience in a collaborative research setting and provide an opportunity for her to explain her progress since the last meeting and ask questions.

What I expect of students: Undergraduate researchers are expected to communicate weekly and provide a summary with progress updates and upcoming plan for progress. It is important for students to be dependable and committed to their project.

What students can expect of me: I will communicate with the undergraduate researchers on a regular basis and provide them with the skills and tools required to be successful.

Workshop Dates: Neither (advertise on website only)

Contact: sam.logan@oregonstate.edu, 5417373437
**Mentor:** Jay Kim

**Department:** Occupational Health

**Research Focus:** This research will focus on human interaction with augmented and virtual reality.

**Potential Student Project:** Current projects are listed below and the awardee will be able to get hands-on experiences for all the projects.

I: Evaluating biomechanical loading during VR/AR interactions.


III: Determining feasibility of Inertial Measurement Unit (IMU) sensors to characterize biomechanical risks associated with commercial fishing.

IV: Evaluating the effects of vehicle vibration on postural balance.

**Attributes/skills/background sought in undergraduate:**

- **Required**
  - Strong verbal/written communication skills
  - Good quantitative skills
  - Good attitude toward Science

- **Preferred**
  - Programming skills
  - Laboratory experience

**Mentoring Plan:** The awardees will be expected:

- To meet with me twice a week to check their progress and/or needs;
- To meet with my graduate students in the lab to learn about the data collection and analysis.

If they want to develop their own research plans, we will provide them support and resources.

**What I expect of students:** I expect that they will professionally communicate with me and my graduate students, respect each other, participate in the lab meetings on a weekly bases, and support data collection in the lab twice a week on average.

**What students can expect of me:** The awardee can expect weekly emails and face time from me. My students and I will provide educational support and resources related to their interest in research. I have open-door policy so that they can reach me at any time during my work hours.
Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: jay.kim@oregonstate.edu, 541-737-2166
Mentor: Barbara Brody (Malheur County Extension Service)

Department: Extension-FCH, 4-H, SNAP-Ed

Research Focus: Policy, systems, and environment work in a rural, diverse, high poverty community.

Potential Student Project: Some of the potential projects could focus on:
- Obesity prevention
- Nutrition education
- Farm-to-school education with school local districts
- STEM advocacy and engagement
- Workforce Development for underserved youth
- Increasing physical activity opportunities for low-income populations
- Food insecurity systems

Attributes/skills/background sought in undergraduate: Strong writing skills-preferred
- Communication skills-written and verbal-required
- Positive attitude and willingness to work hard-preferred
- Ability to think and work independently-required
- Knowledge and ability to use Excel and other programs for documentation and reporting-required

Mentoring Plan: At the initial meeting, we would discuss the best date and time to meet. Because I my location being in a community and off campus an Ecampus student may be a good fit but I am willing to mentor any student. The plan would be to use Zoom, email, and phone to interact and communicate with the mentee. I would be willing to come to campus and meet as well when needed.

What I expect of students: Open, transparent and on-going communication. Someone who thinks broadly and works from a foundation of integrity. This opportunity is collaborative and reciprocal which will require critical conversations and dialogue. The student must be driven, organized, and willing to set deadlines that work for the team. The ability to persevere and complete tasks.

What students can expect of me: I will provide open and on-going communication. I value the knowledge, ideas, and skills others bring to the team and will work to support and build the skills through this mentoring opportunity. Integrity and commitment are two values I am committed to. There will be various opportunities for research and we will work together on projects. The student will be provided a more community-based experience due to my location and assignment.

Workshop Dates: November 13, 5:00 to 6:30 PM
Contact: barbara.brody@oregonstate.edu, 541-207-8078

*Willing to mentor a distance student*
Mentor: William Massey

Department: Kinesiology

Research Focus: The focus of our work is to examine how physical activity and play can facilitate youth development.

Potential Student Project: Project One - Mentees would be trained to help facilitate our physical activity program with homeless youth and assist in program evaluation. The program meets Tuesday evenings.

Project Two - Mentees would be trained to help facilitate recess at local elementary schools. Mentees would also help with data collection and data management as needed.

Project Three - Mentees would work on a study that aims to promote physical activity and self-regulation in middle school females.

Attributes/skills/background sought in undergraduate: Required: All students must pass a criminal history background check and complete institutional review board ethics training.

Preferred: Majoring in Kinesiology or Human Development and Family Studies

Preferred: Previous experience working with children

Preferred: Previous experience working in a research laboratory

Mentoring Plan: URSA Engage students will have a one-on-one mentoring meeting each week with a PhD student working in our lab, and three times per quarter with Dr. Massey. All of our projects involve extensive interaction, and thus more informal mentoring will take place on a regular basis.

What I expect of students: Student researchers should demonstrate strong verbal and written communication skills. As our projects work directly with various child and youth populations, student researchers must demonstrate appropriate inter-personal skills and a willingness to step out of their comfort zone. Students should be willing to take initiative and make active contributions to our lab.

What students can expect of me: Undergraduate students should expect regular communication and a professional working environment.

Workshop Dates: Neither (advertise on website only)

Contact: william.massey@oregonstate.edu
Mentor: Jennifer Beamer

Department: Kinesiology

Research Focus: This research involves preparing university students to teach and support people with disabilities

Potential Student Project: IMPACT and IMPACT for Life are physical activity and exercise programs for children and adults with disabilities. In effort to build and support inclusive practices we are looking into methods and best practices in training people to work with people with disabilities. Potential research projects include examining the effect of a service learning program on volunteers’ confidence and perceived competence toward working with people with disabilities in a physical activity program.

Attributes/skills/background sought in undergraduate: Attention to detail (required), willingness and ability to work independently (required), compelling reason for why involvement in this project would be meaningful to your academic or professional career (required), interest in motor development, adapted physical activity or disability studies (preferred).

Mentoring Plan: Students will meet with the research team (which includes myself and 1-2 graduate students) at least once per week for one hour. The Engage Student will work with the research team to develop a timeline of research activities and outputs during the initial weeks of the funding period. As project details evolve, it is anticipated that meeting time frequency may change.

What I expect of students: It is expected that the Engage Student have the skills to attend to details, organize their time effectively, and be willing to work independently. Willingness to problem solve is highly encouraged. Abilities in prompt and professional communication via email and other mediums is required.

What students can expect of me: The Engage Student can expect professional and open communications from the research team and myself. I will work to empower the Engage Student in developing their research and professional skills and model for them effective communication and collaborative practices.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: jennifer.beamer@oregonstate.edu
Mentor: Yumie Takata

Department: BPHS

Research Focus: Investigating which nutritional/lifestyle factors affect one's cancer risk using human health data.

Potential Student Project: The first project looks at whether lipids affect risk of cancer in adults. The second project looks for genes linked to one's food choices. For example, lactose intolerance is caused by lack of activity of lactase, an enzyme digesting lactose. So, we can predict one’s dairy milk consumption based on lactase gene type. You will look for other genes linked to food choices through literature search. In all projects, you will engage in literature review (no laboratory or data collection involved).

Attributes/skills/background sought in undergraduate: Interest/familiarity in nutrition and genetics (required); basic information search skills (required); good organization skills (required); strong oral and written communication skills (required); knowledge in research designs and statistics (preferred); and proficiency in MS office packages (preferred)

Mentoring Plan: As a mentor, I am available to meet once a week (or more as needed). For Ecampus students, I am available to meet virtually once a week (or more as needed) using Zoom.

What I expect of students: Integrity, excellent ability to ask questions or ask for clarifications, timely submissions of assigned projects and timely notification of schedule conflict for meeting.

What students can expect of me: Expanding the views on research and building literature search and writing skills.

Workshop Dates: Neither

Contact: yumie.takata@oregonstate.edu

*Willing to mentor a distance student
Mentor: Timothy Burnett (Cascades Campus)

Co-mentor: Heather Broughton, heather.broughton@osucascades.edu

Department: Kinesiology

Research Focus: To troubleshoot a process of muscle fiber typing at OSU Cascades using walrus muscle tissue

Potential Student Project: Given the current state of equipment and supplies of the biology lab, determining the most effective process to identify single muscle fiber type in tissue samples. This will involve working with other OSU Cascades faculty to determine what additional materials will be required and to establish a working protocol for muscle fiber typing.

Attributes/skills/background sought in undergraduate:
Required: Interest in lab techniques, problem solving, and physiology/biology.
Preferred: Wet lab experience
Unreasonably preferred: Experience with Western blot, electrophoresis, and

Mentoring Plan: Undergraduate mentee will work with the faculty mentor(s) each week to demonstrate project progression. Certain portions of the process will only require brief weekly reports, while other portions will require one-on-one trouble shooting of laboratory processes when appropriate.

What I expect of students: The mentee should be able to learn and follow proper laboratory techniques. Continuing to work autonomously on learned skills, and report weekly.

What students can expect of me: General direction and education will be provided on new laboratory techniques. If needed, additional direction will be available upon request.

Workshop Dates: Neither

Contact: timothy.burnett@osucascades.edu, 7602713813
Mentor: Slew Sun Wong

Department: Family and Community Health, Nutrition

Research Focus: Use tech to innovate nutrition education, assess diet, prevent obesity & promote outdoors & health.

Potential Student Project: You may choose >1 proj.
1) Virtual Park Ranger. Aim: Support outdoor educators in helping communities to enhance their outdoor experience that improves people and planet health.

Attributes/skills/background sought in undergraduate: Required: Completion of the Institutional Review Board human subject research ethics online training.

Preferred: Previous experience and passion in working with children, families, and/or communities.

Mentoring Plan: I will meet with individual mentee for 30min/week, then the group of mentees for another 30min/week. Whether in-person or online, our interactions will commonly include:

1. COMMUNICATION. The best way to stay in touch with me is through emails because I travel quite frequently for my work. I will encourage my mentee to follow-up with me, confirm meeting schedule, clarify assignments, and troubleshoot project challenges as needed.

2. SKILL-BUILDING: I will recommend resources to my mentee I see fit. With mutual agreement, we set learning goals together, practice and adapt along the way.

3. EXPECTATIONS: Right at the beginning, we set our expectations of each other. We will conduct mid-term and final reviews, two-way, i.e., my mentee evaluates me too. My goal is inspire my mentee to be a good person who practices integrity and excellence in whatever meaningful career they pursue.

4. CELEBRATION: I will celebrate with my mentee progress we make.

5. NETWORKING: The nature of my project is multistate and multidisciplinary. My mentee will get to know other collaborators, who are often very willing to extend their mentorship to undergraduate students who we bring onboard.
What I expect of students: My expectations for my undergraduate researcher (UR) are the following: 1. Be curious and eager to learn. Do not be afraid to make mistakes or give up easily. 2. Be professional in all communications (e.g., being punctual, courteous, thoughtful, and respectful). 3. Be ethical. 4. Be responsible for their actions. 5. Be generous to give back to the society for what they have received.

What students can expect of me: I let my mentees know that once I choose to mentor them, the mentoring is lifelong. It’s beyond the two terms. They will see that I set high expectations of them but I will also accompany them on this learning journey, to help them grow both professionally and personally. I will encourage them to aim high, such as presenting their work at a national conference or coauthor with me. I will reward their good behavior and encourage them to be mutually transparent in building each other up. At times, I may forget things or get ill. I give my mentees permission to follow-up if they have not heard back from me more than three days.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: siewsun.wong@oregonstate.edu, 5417375855

*Willing to mentor a distance student*
Mentor: Walter Loveland

Department: Chemistry

Research Focus: Nuclear chemistry research on fission and the properties of the heaviest elements

Potential Student Project: Making targets of fissionable materials
Synthesizing fluoride complexes of the heaviest elements

Attributes/skills/background sought in undergraduate: Science or engineering major

Mentoring Plan: One -two meetings per week. Additional meetings with postdoctoral fellows and graduate students

What I expect of students: Arrive at work promptly each week. Notify me of absences in advance

What students can expect of me: Weekly conferences to discuss research

Workshop Dates: Neither (advertise on website only)

Contact: 5417455496, lovelanw@onid.orst.edu

*Willing to mentor a distance student
Mentor: David Roundy

Department: Physics

Research Focus: My research focus is on computational physics, predicting equilibrium properties of fluids.

Potential Student Project: A student could work on developing Monte Carlo simulations that use the so-called broad histogram Monte Carlo approach, to apply the principles of statistical mechanics to predict equilibrium properties of materials.

Attributes/skills/background sought in undergraduate:
- Physics major (required)
- Programming experience (required)

Mentoring Plan: I would meet weekly with the student and expect the student to also attend weekly group meetings.

What I expect of students: I expect students to do research each week and have something new to report during our weekly meeting.

What students can expect of me: The student should expect me to give help when they are stuck, and guidance when they aren't sure what to do next.

Workshop Dates: Neither (advertise on website only)

Contact: roundyd@physics.oregonstate.edu, 541-602-0836
Mentor: Hoewoon Kim

Department: Mathematics

Research Focus: Navier-Stokes Equations, Partial Differential Equations, Probability, and Stability Problems

Potential Student Project: Project 1: Mathematical and physical understanding of the motion of incompressible fluids (e.g. water) in the interior and exterior of a sphere in the three dimensional space through basic differential equations such as diffusion and Laplace equations.

Project 2: Stability Problem deals with the following interesting question: “Under what conditions a mathematical object satisfying a certain property approximately must be close to an object satisfying the property exactly?"

Attributes/skills/background sought in undergraduate: 1. Basic background of ordinal differential equations of first and second order. (required)

2. Basic partial differential equations such as diffusion and Laplace equations. (preferred)

Mentoring Plan: We, me and the student, will meet up once per week in the half of the period for this program and there will be 2-3 meetings a week for the rest of it. For the distant students we'll communicate by emails, messages, and calls such as Skype for 2-3 meeting a week. In each meeting we'll talk about the summary of the previous work, progress of original research topic, and plans for the next week.

What I expect of students: The undergraduate researchers would be expected to be diligent and passionate on the topics of research.

What students can expect of me: Introduction to research topics, guidance and advices on progress and presentation of the results.

Workshop Dates: Neither (advertise on website only)

Contact: kimho@math.oregonstate.edu, 541-737-5140

*Willing to mentor a distance student*
**Mentor:** Matt Graham  
**Department:** Physics  

**Research Focus:** We use lasers to probe electron behavior in new materials (for electronics, solar, nanomaterials)

**Potential Student Project:** The proposed research resolves ultrafast (10 fs to 1 ns) electron dynamics on the ultrasmall (1 um) length scales. [1] What processes promote carrier dissociation in nanoscale solar cells? Students will acquire spectrally resolved absorption & photocurrent movies of nanomaterials. [2] Organic solar cells have large spatial inhomogeneity in their electron relaxation & transport dynamics, how can we understand and boost solar efficiency? Students determine properties with optical spectroscopy.

**Attributes/skills/background sought in undergraduate:**
- Motivated students who want a full immersion experience in the scientific process with a vibrant scientific team of graduate students  
- A basic understanding of light and electricity (preferred)  
- Interest in microscopy, electronics, quantum mechanics and/or lasers (required)  
- Comfortable with simple data analysis and graphing (required)  
- Willingness to attend and present at our weekly group meetings (required)  
- Ability to work both independently and as part of a large team of graduate students (required)  
- Studying physics or closely related field is most appropriate

**Mentoring Plan:** Student(s) will formally meet with PI mentor every 1-2 weeks (although I will often drop in on you in lab), and 1 time per week with your graduate student advisor. Group meetings are held weekly. The student will present a 5-minute short outline of their project to the group, and give a 20-minute talk at the conclusion. Students are encouraged to make a 'work-schedule' with graduate students to ensure help is available.

There is a comprehensive list of safety training requirements, including laser safety training. All work in our lab is undertaken with the intent of eventual publication. In the past, these projects have continued on as summer research projects and helped students fulfill the physics senior thesis requirements.

**What I expect of students:** Proactive in asking questions, and initiating work. Desire for sci. immersion.

**What students can expect of me:** I will not place expectations on you beyond getting exposure to science-in-action. If you want more serious responsibilities and accomplishments, please engage us!

**Workshop Dates:** November 13, 5:00 to 6:30 PM
Contact: graham@physics.oregonstate.edu, 5417374386
**Mentor:** Ryan Mehl

**Co-mentor:** Richard Cooley

**Department:** Biochemistry and Biophysics

**Research Focus:** Our lab focuses on engineering proteins with genetic code expansion allowing use of new amino acids.

**Potential Student Project:** Our lab has four research areas, two will be described here.
1) Most diseases and develop proteins nitrated at tyrosine residues. One project will make these nitrated proteins and determine their role in disease states.
2) There are many reasons that researchers want to attach chemical functionality to proteins but the majority of these coupling reactions are slow. Here new amino acids will be made that have have the fastest known coupling chemistry and then evaluated for their reactivity.

**Attributes/skills/background sought in undergraduate:** Intelligent
Motivated
Work effectively with others
Organized

**Mentoring Plan:** The undergraduate mentee will have meetings with me (Ryan Mehl) once per week. These meetings will be used to discuss results and plan future experiments. The mentee will organize an outline of the proposed work before starting and conclude the research period with a formal written document of the work.

The mentee will work closely with a graduate student or postdoc in the lab (lab mentor) until they are trained adequately to work independently. The mentee will be required to keep daily notes of the research progress which will be monitored and reviewed by both the me and the lab mentor.

**Workshop Dates:** Neither

**Contact:** ryan.mehl@oregonstate.edu
Mentor: Jaga Giebultowicz

Department: Integrative Biology

Research Focus: We investigate links between circadian rhythms, aging, and brain using fruit flies as model organism

Potential Student Project: Devices emitting blue LED light are increasingly popular but the long term effects of exposure to blue light are unknown. Prospective student may investigate how blue light affect longevity, cellular functions and gene expression in fruit flies.

Attributes/skills/background sought in undergraduate: Ability to focus on experimental task - required
Teamwork - required
Interest in genetics - preferred
Experience with handling Drosophila - preferred
Curiosity – preferred

Mentoring Plan: I will meet with awardee once a week. Additionally, awardee will participate in our weekly lab meeting to get familiar with other lab members and projects in the lab. Finally, awardee will be trained and assisted by senior research assistant in all lab routines and specific experiments.

What I expect of students: Keeping commitments to work and meeting schedule; Taking good notes; reading scientific papers related to the project

What students can expect of me: I make sure that students understand their role and know rationale for experiments they are performing. I train students in genetics and methodology. I also develop leadership skills in students and teach them how science works.

Workshop Dates: Neither (advertise on website only)

Contact: giebultj@oregonstate.edu
Mentor: Bo Sun

Department: Physics

Research Focus: How physical interactions between tumors and tissues direct the progression of tumors

Potential Student Project: Monitor tumor invasion in artificial tissues. This involves constructing lab models of tumors and imaging their progression

Attributes/skills/background sought in undergraduate: Basic wet chemistry lab skills (preferred)

Mentoring Plan: The student will be working closely with an experienced graduate student, on average once a week. I will also have one-to-one meeting with the student every other week to track the progress. The meetings will have the format of progress reports, including student prepared presentations and input from other members in the group

What I expect of students: passionate and commitment

What students can expect of me: prompt response to emails, little micromanagement

Workshop Dates: Neither (advertise on website only)

Contact: sunb@onid.orst.edu, 5417378203
**Mentor:** Claudia Maier  
**Department:** Chemistry  
**Research Focus:** Investigation of biological activities and systems by employing mass spectrometry methods  

**Potential Student Project:** 1) Mass spectrometry for analyzing metabolites in bio-specimen samples including brain tissue samples. 2) Mass spectrometry for analyzing metabolites with possible relevance to the gut brain axis. 3) Mass spectrometry for analyzing plant phytochemicals in botanical extracts for neuroprotection and cognitive enhancement  

**Attributes/skills/background sought in undergraduate:** Ability to work accurately and precisely in an analytical laboratory; good quantitative skills, interested in learning new things, familiarity with common software  

**Mentoring Plan:** A key aspect of our mentoring plan includes teaming of the URSA Engage awardee with a postdoctoral scholar and/or advanced graduate student for day-to-day mentoring. The URSA awardee will also be encouraged to join our group meetings which are usually held once a week. In addition, the project team will meet with the PI at least every other week to discuss project progress and challenges. These meetings shall help to ensure project progress and assist in the preparation of scholarly work (e.g. posters). The URSA awardee is also encouraged to present the research in our group meetings and at local scientific conferences and symposia (including the Oregon Academy of Science Symposium).  

*What I expect of students:* Professional behavior and communication, we are an analytical lab; rigor in science is a must.  

*What students can expect of me:* We work as a team and professional communication within our team is essential for success.  

**Workshop Dates:** Neither (advertise on website only)  

**Contact:** claudia.maier@oregonstate.edu
Mentor: Elisar Barbar

Department: Biochemistry and Biophysics

Research Focus: Structure/function studies of large disordered complexes involved in motility and viral replication

Potential Student Project: Protein purification involve expression in bacteria, cell lysis, affinity purification, gel electrophoresis and size exclusion chromatography. The proteins of interest are:
1) Purification of proteins related to rabies and Ebola viruses
2) Purification of proteins related to dynein motor proteins.

Attributes/skills/background sought in undergraduate: Motivated, hard worker, interested in learning new things, attention to details, have read some papers from my lab and able to discuss it.

Mentoring Plan: I interact daily with all my students. The undergraduate mentee will be working directly with a graduate student. We have weekly lab meetings that the mentee will be invited to attend. The mentee will be required to give one formal presentation to the lab at the end of each quarter and submit a progress report.

What I expect of students: The mentee will be required to give one formal presentation to the lab at the end of each quarter and submit a progress report.

What students can expect of me: I have an open door policy, and expect to have a formal meetings with students at least once every two weeks where we discuss projects and offer help whenever needed.

Workshop Dates: Neither

Contact: barbare@oregonstate.edu
Mentor: Virginia Weis

Department: Integrative Biology

Research Focus: The cell biology of coral-algal symbiosis and coral bleaching

Potential Student Project:
Project 1: Corals engage in a symbiotic relationship with algae that live inside their tissues. Rising ocean temperatures due to climate change are causing corals to release their symbiotic algae in a process called coral bleaching. The student will investigate the role of nutrient metabolism in the process of coral bleaching in sea anemones (closely related to corals). The student will conduct qRT-PCR to determine which proteins are upregulated for nutrient translocation.

Project 2: Corals depend on symbiotic algae that live in their tissues to survive. These symbioses are the foundation of coral reefs. During heat stress, corals lose these algae, a process called coral bleaching. The student will investigate the role of a protein, NADPH oxidase, during bleaching. The student will dissect small sea anemones (closely related to corals) for imaging and conduct live and/or fixed staining of these animals to examine the physiological role and localization of NADPH oxidase.

Attributes/skills/background sought in undergraduate:
- Ability to focus on experimental task, required
- Not afraid to ask questions, required
- Patience, preferred
- Interest in cell biology, preferred
- Curiosity, preferred
- Detail-oriented/thorough, preferred

Mentoring Plan: I have a large lab of graduate students and postdocs. The mentoring plan that works well with this lab structure is to pair URSA Engage students directly with a trainee. The proposal is therefore prepared by the grad student, with my approval, and the awardee will work directly with them. They will meet with them multiple times a week throughout the project. I will meet with them at the beginning and periodically throughout the time of the award.

What I expect of students: Working hard, not being afraid to ask questions, being eager to learn about basic research

What students can expect of me: Having an open-door policy to hear about successes and barriers in research project. Responding in a timely manner to emails. Being welcoming.

Workshop Dates: November 7, 5:00 to 6:30 PM
Contact: weisv@oregonstate.edu
Mentor: Molly Burke

Department: Integrative Biology

Research Focus: The Burke Lab studies evolution as it happens in real time, in experiments with yeast.

Potential Student Project: All potential projects involve maintaining populations of yeast (Saccharomyces cerevisiae) as they adapt to stressful conditions in controlled laboratory experiments. Students will learn techniques in microbiology, molecular biology and genetics. We are studying the toxic effects of the herbicide glyphosate (RoundUp) on yeast biology. We are also studying the effects of aging on yeast genetics and evolution.

Attributes/skills/background sought in undergraduate: The most important qualities we are looking for are enthusiasm and curiosity. We also seek a student who is dependable and conscientious. A major in biology is a preferred qualification (but not required).

Mentoring Plan: If an URSA Engage student is admitted to my lab, they will work in the lab for about 5 hours/week to assist with a graduate student's experiment. The student will also meet with me in my office once per week (for at least 30 minutes) to discuss the "big picture" implications of the project they are assisting. In addition, the student will be invited to participate in our bi-weekly lab meetings, where members present reports of works-in-progress and we discuss primary journal articles relevant to the lab's research. Finally, the student will be asked to help out with our "chores rotation" where individual trainees take stock of our inventory of lab supplies, complete some basic chores, and help maintain a clean and orderly laboratory environment (any one person does this 1-2 times per term).

What I expect of students: I expect my undergraduate trainees to share with me their school and work schedule at the beginning of each term. We will decide on a weekly lab schedule of that both parties agree to in advance. I expect all lab members to adhere to this schedule and be punctual, and in the event that they are late or absent, to communicate this by text or email as soon as possible. Students need not bring any prior knowledge or experience to my lab, but they should approach their work with curiosity and enthusiasm. I expect all lab members to treat one another with dignity and respect.

What students can expect of me: Undergraduate researchers can expect me to arrange and hold them accountable to their weekly schedule. They can expect to meet with me once per week to discuss the implications of their work. They can expect to find me in my office or the lab most of the time when I am not teaching or in meetings. I will respond to their emails or texts within 48 hours.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: molly.burke@oregonstate.edu
Mentor: Afua Nyarko

Department: Biochemistry and Biophysics

Research Focus: Our lab studies the structures and functions of proteins linked to tumor development

Potential Student Project:

1. Over-express and purify proteins and carry out assays to determine their solution properties
2. Use simple biophysical tools to quantify protein-protein interactions

Attributes/skills/background sought in undergraduate:
Ability to use computers as information tools (required)
Ability to effectively communicate and work in a team (preferred)

Mentoring Plan: Awardees will work closely with a graduate student who will assist them with project-specific skills. They will check-in with the graduate student each time they are in the lab. The mentor will meet with the awardee once a month to discuss progress and outline the goals for the upcoming month. The student is encouraged to be part of the lab's weekly meetings.

What I expect of students: Undergrads will work according a pre-arranged plan. They are expected to communicate with the graduate student and the mentor by email if they can not make it to the lab. Students are expected to keep a lab notebook, keep their work area clean, help with common lab chores and be respectful of others.

What students can expect of me: I am committed to providing a safe working environment and a positive lab experience. I value open and honest communication

Workshop Dates: Neither

Contact: nyarkoa@oregonstate.edu
Mentor: David Hendrix

Department: EECS/Biochemistry and Biophysics

Research Focus: The Hendrix lab studies a large array of different topics related to biological sequence analysis.

Potential Student Project: Recent publications from our lab have demonstrated that deep recurrent neural networks can learn context-specific rules that may impact translational efficiency, including special codons and motifs. The undergraduate who works on this project will learn basic programming and scripting skills, especially in Python and the command line. They will also understand principles of machine learning and biological sequence analysis to help uncover subtle mutations affecting the regulation of translation.

Attributes/skills/background sought in undergraduate: Python programming. Critical thinking. Familiarity with the GNU/Linux command line. Strong foundation in biology.

Mentoring Plan: The Hendrix lab is a diverse group of students from both biochemistry and computer science backgrounds. We bring together a wide-range of expertise, and complement each other well. My lab is an excellent atmosphere for students working in computational biology. I will work directly with the student, through weekly one-on-one meetings evaluating code and figures. In addition to independent work, the student will also work directly with NSF Graduate Research Fellow Nathan Waugh, to trouble shoot and discuss ideas for different analyses. Nathan will also perform experiments to test the predictions of the student. The student will also have opportunities to participate in lab meetings, and in the writing of manuscripts related to this work.

What I expect of students: I expect regular meetings, and I expect detailed documentation of all work done. I request that students should plan ahead and schedule meetings with me in advance, and once we start meeting we will schedule the next meeting at the end of the current meeting.

What students can expect of me: The undergraduate researcher can expect to learn a lot of skills. Work often begins by trial and error, and then refining approaches through meetings and discussions. Students should expect me to be engaged with the work and discuss details with them.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: david.hendrix@oregonstate.edu, (541) 737-6224

*Willing to mentor a distance student*
Mentor: Maude David

Co-mentor: Christine Tataru (PhD student)

Department: Microbiology

Research Focus: How does the gut microbiome impacts behavior, and new computational methods for microbiome analysis

Potential Student Project: Learning properties of microbiomes using machine learning and public datasets: The student will learn how to access data from publicly available databases, process and clean data, design and deploy production level code on a server, and try their hand at algorithm design (all incredibly marketable skills!).

Attributes/skills/background sought in undergraduate: Strong interest in learning about machine learning and computational techniques in the context of biology - required
Ability to commit 8 hrs on a regular weekly basis to lab work - required
Basic familiarity with some coding language – preferred

Mentoring Plan: Dr. David will meet with the student 3 times per quarter. The student will also be under the supervision of a second year graduate student, Christine Tataru, will be helping to coach and mentor the student. She will have once a week check-in meetings to answer any questions and ascertain there are no unnecessary roadblocks to the project. She will work with them on computing skills as well as some basic computational microbiology knowledge. The student will seat in the open space, near Christine. I will meet with the student once a week in the beginning, and biweekly as the student becomes more comfortable asking for help when they need it.

What I expect of students: Knowing when to ask for help and when to persevere independently is a very valuable skill. If there is a logistical or conceptual problem that is taking more than a few hours to overcome, the student should feel confident in asking for assistance rather than wasting time. I expect students to be upfront about their failures and problems, as well as their successes. They should make a regular weekly physical appearance in the lab (8h/week), or should explicitly notify me about their circumstances (finals, family issues, etc.). Most importantly, they should be excited about participating in science and devoted to learning the new skills they are presented with. They should also be active in asking questions in lab meeting and seeking to understand all the projects going on in lab.

What students can expect of me: Students should expect that I will be committed to their personal and professional growth. I will schedule regular meetings with them, but am also available to address problems that arise between official meetings. They should expect me to be upfront about things like authorship and potential for paid work. I will do my best to continue to find opportunities to ensure that they are successful in lab, including
undergraduate funding opportunities and assistance in publishing should that be relevant to
them.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** maude.david@oregonstate.edu
**Mentor:** Maude David

**Department:** Microbiology

**Research Focus:** Gut-brain axis, autism, behavior, neuroscience, microbiology.

**Potential Student Project:** DNA extraction for 16S sequencing: From various biological sources such as honey-bees and mice, the student will follow a detailed protocol to prep the samples to be sent for sequencing. MIA mouse-model behavior testing: The student may gain some experience in working with mice performing behavior tests, feeding and other skills. Development of biosensors for stormwater management: The student may aid in a project developing biosensors that would include tasks such as processing water sample.

**Mentoring Plan:** The student will be mentored by myself, and the team in charge of the lab and mice work. A second year graduate student, Grace Dietlzer, as well as the lab technician, Alex Phillips, will be helping to coach and mentor the student, especially in the animal facilities and wet lab, and meet and work with the student at least once a week. All the protocols will be reviewed with Dr. David.

*What I expect of students:* This project requires to work with mice, including behavior experiment, wellbeing, dissections. The student is expected to come 8h per week to help with the mice work, to be reliable and very meticulous especially when working with animals.

*What students can expect of me:* Students should expect that I will be committed to their personal and professional growth. I will schedule regular meetings with them, but am also available to address problems that arise between official meetings. They should expect me to be upfront about things like authorship, and summer schedule for potential paid work. I will do my best to continue to find opportunities to ensure that they are successful in lab.

**Workshop Dates:** November 7, 5:00 to 6:30 PM

**Contact:** maude.david@oregonstate.edu
Mentor: Sally Hacker

Department: Integrative Biology

Research Focus: Coastal ecology with an emphasis on plants and animals and their interactions with the environment

Potential Student Project: 1. Conduct an experiment with a new hybrid dune grass to determine how it differs from its parent species in characteristics and competitive ability.

2. Do coastal dunes sequester carbon from the atmosphere, and does the amount vary by vegetation type or species?

3. Does the nutrient content (N, C) of dune grasses vary among sites across the Oregon coast?

4. Do dune grasses promote dune recovery following storm-driven erosion events?

Attributes/skills/background sought in undergraduate:
- Willing to process plant and soil samples in the lab (required)
- Willing to enter data into a database on a computer (required)
- Interest in learning nutrient analysis techniques (preferred but no experience required)
- Interest in helping with fieldwork on the coast (preferred)

Mentoring Plan: I will meet with the student at least 3-4 times over the 15 week period and my PhD students will meet with the student every week.

What I expect of students: My expectations are that the student will act professionally in the lab, work 5 hours a week and arrive on time, and communicate any discoveries and/or problems or complications to me and the graduate student mentor. The student will work in the laboratory and/or field in a safe manner and according to OSU safety regulations.

What students can expect of me: Likewise, I will act professionally as a mentor, keep appointments and meetings, and communicate any problems or concerns to the undergraduate researcher. I will expect the same from my PhD students who mentor the undergraduate.

Workshop Dates: Neither

Contact: hackers@science.oregonstate.edu
Mentor: Bruce Menge

Co-mentor: Sarah Gravem, gravems@oregonstate.edu

Department: Integrative Biology

Research Focus: The effects of sea star wasting disease and climate change on tide pool communities

Potential Student Project: There are a variety of projects that an undergraduate student could participate for the URSA Engage program. Potential projects include but are not limited to: Investigating effects of small predators (small sea stars and marine snails) on community structure, studying recruitment trends of juvenile mussels and barnacles, examining effects of large predators (birds and sea stars) on community structure, quantifying biodiversity trends over time and space with sea star wasting disease.

Attributes/skills/background sought in undergraduate:
Required
- Willingness to learn
- Positive attitude
- Dependability

Preferred
- Interest in marine science
- Someone who takes command of their own career by asking questions, learning actively, and improving their professional skills

Mentoring Plan: Me and/or my faculty co-mentor will meet with the student 2-3 times to identify their research questions, hypotheses and analyze data for a poster or presentation. My graduate students and/or technicians will meet with the student ~5 hours per week for lab and field research.

What I expect of students: We expect our undergraduate researchers to bring a positive, Can-Do-attitude to the tasks required of them, communicate clearly their schedules, be punctual, and be ready to learn! We expect all students to identify a research question, hypothesis, do data analysis and create a poster for a student symposium.

What students can expect of me: The student should expect to learn many different laboratory and field methods for marine ecology. My co-mentor and I will guide them through the scientific process, provide background information, and talk about strategies for becoming a scientist.

Workshop Dates: November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM
Contact: mengeb@oregonstate.edu
Mentor: Patrick Ball (Cascades Campus)

Co-mentor: Dr. Matt Shinderman, Matt.Shinderman@osucascades.edu

Research Focus: To determine if Pseudomonas flourescens may be an effective biocontrol agent against cheatgrass.

Potential Student Project: The proposed project will include laboratory experiments to evaluate, under highly controlled conditions, the presumptive inhibitory effect of Pseudomonas flourescens on the growth of cheatgrass.

Project 1: Pseudomonas flourescens will be cultured in a laboratory, plated to determine concentrations, and applied to cheatgrass seeds planted in both natural and sterile soils.

Project 2: Pseudomonas flourescens will be applied to test plots located around campus.

Attributes/skills/background sought in undergraduate: Individuals should be self-motivated, highly curious and able to work independently. Minimum skills required are completion of classes in basic biology, completion of a class in microbiology or molecular biology is preferred, but not a necessity. Basic microbiology and molecular biology skills will be acquired during the project.

Mentoring Plan: The mentoring plan includes meeting with the student at least twice a week for one to three hours as required for moving the project forward and providing guidance and encouragement through feedback. Student(s) will also be meeting with mentors to read/review/discuss scientific literature assigned that pertains to the project. Student(s) will have the opportunity to engage in both standard microbiological techniques, as well as, plan and implement field techniques (applications of materials to plants), keep a detailed notebook and analyze data that will be presented to mentors.

What I expect of students: We will be communicating directly through our weekly meetings and during laboratory work

What students can expect of me: Each meeting will begin with a summary of the previous week's activities and a plan for the upcoming week's goals. This will allow the mentors to monitor project progress and guide the student(s) through the research process.

Workshop Dates: Neither

Contact: pat.ball@osucascades.edu
**Mentor:** Kenton Hokanson

**Department:** Biochemistry and Biophysics

**Research Focus:** I study the brain, measuring and manipulating how living neurons connect and communicate.

**Potential Student Project:** Students could learn to record the electrical signals in neurons using patch-clamp electrophysiology. This would first involve growing cultured neurons, then using a microscope and a tiny electrode to record their activity. My mentee would learn lab skills such as aseptic technique, pipetting, cell culturing, etc, as well as specialized techniques for recording neuronal activity.

**Attributes/skills/background sought in undergraduate:** Students must have an interest in continuing research after the URSA program ends. Of course, I am not asking for students to commit to staying in my lab when they apply, but my technique involves so much initial training that it would be a bad fit for a student looking to conduct research for only one term as a way to see what research is like.

It would be helpful, but isn't required, for the student to have some background in cellular biology, biochemistry, and/or physics. It is fine to apply if you do not have a background in these topics, if you have a strong interest in neuroscience.

**Mentoring Plan:** For most if not all of our work, I will be present to help, train, and mentor my mentee at all times when they are in the lab. I will meet my mentee weekly to discuss progress, brainstorm, make plans, etc. I will be in contact by email and in person during the rest of the week.

**What I expect of students:** I will support my mentee with time and guidance as they learn to carry out experiments in my lab. My mentee will need to communicate clearly if they are confused or need assistance in understanding or performing something. My mentee will need to work carefully and safely, and to spend some time outside of lab reviewing procedures and reading papers and protocols.

**What students can expect of me:** My mentee can expect me to be available and supportive. I will train the mentee in all relevant tasks, and will provide written resources to help my mentee fully understand the ideas involved in their work. I will also help them prepare to present their work.

**Workshop Dates:** November 7, 5:00 to 6:30 PM, November 13, 5:00 to 6:30 PM

**Contact:** kenton.hokanson@oregonstate.edu
Mentor: Nate Kirk

Department: Integrative Biology

Research Focus: I am interested in corals, symbiotic partners (e.g. parasites and helpers) and their environment.

Potential Student Project: I am currently working on 3 projects involving corals or anemones.

1) The interactions between apicomplexans (parasites related to malaria) and corals (Specifically who lives with who).
2) Heat tolerance of corals from the Middle East (and the genes involved).
3) Interactions between anemones and their environments. Anemones, like corals, can grow clonally and can be used as a model for corals. We are asking questions about stress tolerance and if certain clones have advantages over others.

Attributes/skills/background sought in undergraduate: I am looking for people who are interested in biology (broadly speaking), but may be unsure of or uneasy about research. Preference will be given to students with no previous background in research. The work ranges from field biology to bioinformatics and I want to work with individuals that may want to explore their interests and find something fun.

Mentoring Plan: Weekly meetings are good, but there will be time in the lab needed with both of us. Initially, we will spend time together in the lab (and possibly the field depending on the project) training and getting comfortable with procedures. Email and stopping by the office is best for quick questions and longer questions and the literature can be discussed in weekly meetings.

What I expect of students: Clear lines of communication are best to be established upfront. I expect students to respond and to engage with the rest of the lab and in their work.

What students can expect of me: A guide, a resource and help trouble-shooting. I will also give more or less structured guidance on development based on the project. For example, projects 1 and 2 will have less flexibility in design and scope than 3. We can work together to carve out a piece that you find most interesting.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: nathan.kirk@oregonstate.edu
Mentor: Victor Hsu

Department: Biochemistry and Biophysics

Research Focus: My research interest is focused on understanding how biomolecules recognize and bind to each other.

Potential Student Project: Is it possible to train computers to assist in the design of new therapeutic drugs? We have just started training machine-learning algorithms with known structures of drugs and their molecular receptors hoping to identify new drug leads. These computational predictions will be tested with wet-lab experiments. We are working on an anti-leukemia drug and plan to study an immunosuppressive. You would brainstorm, generate new training datasets, analyze results and/or assist in verification efforts.

Attributes/skills/background sought in undergraduate: Required attributes and skills: Curiosity, an inquisitive nature, and a desire to understand how molecules "work". You should have a basic knowledge of what proteins are, and that a protein's structure often dictates its function. You should be comfortable around computers and not be afraid of laboratory equipment (don't worry, we do not do anything remotely dangerous, and we do not work with any hazardous chemicals. On the other hand, there may be some opportunities to use some pretty interesting instruments!). You should also be unafraid to ask questions.
Preferred attributes and skills: Some experience with programming. Nothing fancy, of course. For example, the ability to write python scripts would be great. If you haven't programmed, but have a real desire to learn, that is fine as well.
Above all, the ideal applicant is not afraid of failing. The reason that most new drugs are "discovered" and not "designed" is because nobody really understands how drugs recognize the biomolecules that bind to them. As a result, pretty much anything we try will not result in the ultimate answer. However, we can learn from any and all results, and oftentimes more so from negative results. What we learn informs our subsequent experiments, each time hopefully getting us a little bit closer to our research goals.

(More information on a potential project requiring an applicant with some programming experience and interest in developing an efficient software workflow for the 3D printing of biomolecules - protein and DNA structures. I have a zMorph 3D filament printer with a dual extruder and a Mosaic Palette+ four-filament feeder/combiner for multi-color, multi-material printing. We can discuss this project if you are interested.)

Mentoring Plan: I plan to meet at least once a week with the URSA Engage awardee. I like to have an "open door" policy, and am happy to meet whenever, and as many times a week as they would like, or feel is necessary to understand and talk about their project.

What I expect of students: I expect a researcher to have a certain level of independence, but to also know that it is okay to talk and ask for help whenever it is needed. I would like this to be an
exciting, enjoyable, and learning opportunity for both of us. I am hoping to gain insights and learn as well.

What students can expect of me: I understand that this may be your first research experience, and thus may need some guidance and help, and I am more than happy to do so. However, I also expect that someone that applies to URSA Engage is genuinely interested in doing research and is therefore reasonably self-motivated (I do not micromanage). Research doesn't always go where you think it may go, so I enjoy when researchers in my lab think about, come up with, and talk about new ideas - sometimes the best experiments come from "what if we give this a try?"

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: Victor.Hsu@oregonstate.edu, 541-737-4398
**Mentor:** Brianna Beechler

**Department:** Biomedical Sciences

**Research Focus:** I study ecophysiology in wildlife and domestic animals, in the context of one health.

**Potential Student Project:**
1) A student may be able to participate on a project developing laboratory assays to understand physiological and immunological function in desert bighorn sheep.
2) A student may be able to explore genetics of antibiotic resistance that are found in toads, water and cattle from a Costa Rican dairy farm.
3) A student interested in data science would be able to investigate microbiomes in sea mammals.

**Attributes/skills/background sought in undergraduate:** I do not require any specific background, however students must be curious, hard-working, and interested in learning about animal health. Students must be willing to learn to work in the lab, as well as how to analyze their data. If interested in developing a project involving animal handling they must be willing to take the required course and undergo additional training.

**Mentoring Plan:** I will meet with the student once every other week, and a graduate student will be available to meet with the student weekly as well (if needed).

**What I expect of students:** I expect the undergraduate student to contact me when they need assistance, and to take the lead on their project. I expect them to be reliable and communicate when problems arise.

**What students can expect of me:** I will be responsive to emails, and requests for help, but I will not be supervising the students every move. They will need to be somewhat independent and ask for help when needed.

**Workshop Dates:** Neither

**Contact:** brianna.beechler@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Carla Schubiger (Hatfield Campus)

Department: Biomedical Sciences

Research Focus: Marine & freshwater aquaculture; aquatic animal health: bacterial diseases and alternative therapies

Potential Student Project:

1) Document healthy/diseased sea stars in intertidal areas and collect samples for a data base
2) Toxic algal bloom project: Collecting & preparing water & fish samples from Newport's public fishing docks
3) Seafood-safety project involving market-size oysters
4) Help collect & analyze data from probiotic trials at oyster hatchery
5) Student initiated projects & lit reviews in aqu. animal health/aqu. microbio/aquaculture welcome

Projects are seasonal, thus particip. in several projects is encouraged

Attributes/skills/background sought in undergraduate: Required:
- ability and willingness to drive themselves to Newport or other locations on the Oregon Coast (for project 1 Ecampus students around Coos Bay are highly encouraged to apply)
- willingness to go through lab safety and animal handling training etc as required
- perseverance, independence, and integrity
- being coachable and a team-player
- motivation to learn new skills and read up on topics in self-study

Preferred:
- basic microbiology-lab training/experience (project 3 and 4)

Mentoring Plan: The URSA student will meet with the mentor and/or her research team at least once a week (face-to-face and/or online depending on student location) to review and discuss progress.

What I expect of students: I expect the student to be reliable, very thorough with data collection and documenting, and to be independent but to contact me immediately if problems occur, so we can trouble shoot together, rather than to wing it.

What students can expect of me: I am a hands-on mentor and excited to introduce students into the fields of microbiology/marine biology/aquaculture/aquatic animal health. I am always available via text message or phone calls. I do not micromanage, but expect the student to be self-motivated in completing tasks timely.

Workshop Dates: Neither
Contact: carla.schubiger@oregonstate.edu

*Willing to mentor a distance student*
Mentor: Jamie Cornelius

Department: Integrative Biology

Research Focus: I study physiology and behavior of wild songbirds in the lab and the field

Potential Student Project: 1. Individual variation in activity and behavior of captive wild songbirds. Individuals vary hugely in how active they are in small cages. Students could describe this variation and link it to other metrics of health and/or how it changes over time.

2. How does affiliative behavior (behavior that indicates two animals like to be near each other) relate to social information and migratory state?

3. Does age influence the use of social information in behavioral interactions?

Attributes/skills/background sought in undergraduate: An interest in animal behavior and physiology is preferred, but no prior specific experience is required. The student who works in our lab should be comfortable with working with captive birds and should be capable of paying close attention to detail. Students contribute to animal care as part of the lab team so this student needs to be willing to do the online Institutional Animal Care and Use trainings - which is a small time commitment. Mostly I'm looking for students who are excited about biology and are interested in learning more about research!

Mentoring Plan: I plan to meet and interact with the student weekly and will have a graduate student who will interact with the student weekly as well. Much of the project will be hands-on and group oriented, thus this student will be fully integrated into the lab community.

What I expect of students: I expect the student to be an excited and invested participant in their research project, to be dependable after we've agreed on a particular schedule and to be careful, observant and respectful of the birds we are working with

What students can expect of me: I will meet with the student and ask about student goals and desired outcomes for their research experience. We will identify together how those can be achieved in the context of our larger projects and I will help the student work towards those goals. I communicate frequently with my students and try to create an open, supportive and honest relationship. Students will have access to other undergraduates and graduate students in the lab.

Workshop Dates: Neither

Contact: cornelja@oregonstate.edu
**LIBRARIES, PRESS, & NEW MEDIA**

**Mentor:** Laurie Bridges

**Co-mentor:** Tiah Edmunson-Morton, Special Collections and Archives

**Research Focus:** As a librarian (Laurie) and archivist (Tiah) our research focus is on information access and equity.

**Potential Student Project:** Wikipedia is the 5th most visited website in the world, but there are gaps of information (ex. 17% of bios are about women). This project will focus on learning about Wikipedia and editing ethics, becoming a Wikipedia editor, and increasing the number and quality of articles about an under-represented topic of interest to the student. Participate in the library's February editathon, "Writing African Am. History into Wikipedia". Help plan and coordinate a March editathon about women's history.

**Attributes/skills/background sought in undergraduate:**
- Required: Interest in social justice
- Required: Like to write and edit
- Required: Enjoy research (literature review)
- Required: Attention to detail
- Preferred: Multilingual (This is a great project to practice translation skills - translating articles into English from another language. Last year the awardee chose to translate articles about women artists from Spanish into English).

**Mentoring Plan:** We will meet weekly or biweekly with the student in the library.

*What I expect of students:* Be able to work independently and with enthusiasm. An open mind and a desire to learn about Wikipedia. Answer emails promptly and attend weekly or bi-weekly meetings.

*What students can expect of me:* Enthusiasm! We are excited about the educational opportunities available by using Wikipedia as an educational platform. Quick communication via email. Openness to answering questions and helping.

**Workshop Dates:** Neither

**Contact:** [laurie.bridges@oregonstate.edu](mailto:laurie.bridges@oregonstate.edu), 541-737-8821
Mentor: Wiley Thompson

Research Focus: Conduct research to examine the changing nature of Oregon’s smaller, rural communities.

Potential Student Project: This project examines the changing nature of Oregon’s rural communities on two levels. You will investigate state-level trends comparing how they have changed from the 1970s to present. You will also examine two local, rural communities in detail and study how they have changed over this same period. There multiple narratives in play right now ranging positive to negative accounts. Through your investigation you will look for evidence to support these narratives or even develop a new one.

Attributes/skills/background sought in undergraduate: This project would be of interest to students potentially majoring in Geography, Rural Studies, Anthropology, History, Sociology, or Business, but I am willing to mentor any student interested in pursuing this research. A successful student researcher would have: basic information search skills (required); good organization skills (required); strong oral and written communication skills (required); knowledge in research design and elementary statistics (preferred). Bi-lingual (Spanish) not required but is a plus.

Mentoring Plan: As a mentor I am available to meet once a week in person or virtually as our schedules dictate. To meet student researcher needs I can be available more frequently during peak efforts.

What I expect of students: Desired attributes also include: self-motivation, curiosity, and a willingness to learn.

What students can expect of me: Desired attributes of me: Willingness to share knowledge and experience; positive attitude; enthusiasm and genuine care for the development of the student; provide guidance and constructive feedback; assistance with goal setting; treat student with dignity and respect and value him/her/their just as I would any other colleague.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: wiley.thompson@oregonstate.edu
Mentor: Emily Henry

Co-mentor: Anna Browne, Juntos and 4-H Latino Outreach, Professor of Practice

Department: Open Campus, Outreach and Engagement

Research Focus: Using photos to tell their stories, we will explore the experience of OSU students.

Potential Student Project: This Photovoice project is centered on OSU students who have participated in Open Campus college access programs. The Photovoice method is intended to capture stories from the community’s perspective. This project will be co-developed with participants and they will help guide the research questions. Some potential themes include:
- Student identity (rural/first generation/transfer/student of color/etc.)
- Family, friends, and/or support systems
- Transition from high school or community college

Attributes/skills/background sought in undergraduate: Required qualifications:
- Demonstrated commitment to equity and inclusion
- Demonstrated communication skills (written and verbal)
- Ability to work in a team environment as well as one-on-one
- Organizational abilities and time management skills

Preferred qualification:
- Demonstrated involved with traditionally underrepresented and/or marginalized groups on-campus

Mentoring Plan: Anna and I will be available to meet with the student on a weekly basis and more often as needed. I am based on campus and Anna will be available remotely (and in person as the project requires). We also have space in our Ballard Extension Hall Office where the student can work alongside our student interns and employees. Our team is statewide and, as a result, regularly communicates through multiple methods (email, Zoom calls, in-person meetings, etc.).

What I expect of students: Our student researcher should be curious and excited to try something new; Photovoice projects provide a lot of room for collaboration and flexibility. We expect that the student researcher will be invested in equity and inclusion and be knowledgeable and sensitive to traditionally underrepresented students. The student researcher will need to be experienced in working with a team as there will be two faculty on the project and student participants will also be partners in developing the project. In addition, the researcher will need to be organized and communicate clearly. We expect our undergraduate researcher to be proactive, reaching out to us and study participants with any questions or issues in a timely manner.
What students can expect of me: Our schedules can be a little hectic and one of the lead mentors will be off-site. Expect that we will be available for any questions or support but that email responses may not be immediate (we will provide multiple contact options on top of the weekly check-ins). Neither of us tend toward micromanagement, so our student researcher would expect to have the freedom to move forward on the project under the guidelines we establish together, and should also expect the responsibility that comes along with that freedom. Also expect this to be fun! We are both excited to explore this new method and to learn more in partnership with OSU students.

Workshop Dates: November 13, 5:00 to 6:30 PM

Contact: anna.browne@oregonstate.edu, emily.henry@oregonstate.edu
Mentor: Barbara Brody

Department: Extension-FCH, 4-H, SNAP-Ed

Research Focus: Policy, systems, and environment work in a rural, diverse, high poverty community.

Potential Student Project: Some of the potential projects could focus on:
- Obesity prevention
- Nutrition education
- Farm-to-school education with school local districts
- STEM advocacy and engagement
- Workforce Development for underserved youth
- Increasing physical activity opportunities for low-income populations
- Food insecurity systems

Attributes/skills/background sought in undergraduate: Strong writing skills-preferred
- Communication skills-written and verbal-required
- Positive attitude and willingness to work hard-preferred
- Ability to think and work independently-required
- Knowledge and ability to use Excel and other programs for documentation and reporting-required

Mentoring Plan: At the initial meeting, we would discuss the best date and time to meet. Because OF my location being in a community and off campus, an Ecampus student may be a good fit but I am willing to mentor any student. The plan would be to use Zoom, email, and phone to interact and communicate with the mentee. I would be willing to come to campus and meet as well when needed.

What I expect of students: Open, transparent and on-going communication. Someone who thinks broadly and works from a foundation of integrity. This opportunity is collaborative and reciprocal which will require critical conversations and dialogue. The student must be driven, organized, and willing to set deadlines that work for the team. The ability to persevere and complete tasks.

What students can expect of me: I will provide open and on-going communication. I value the knowledge, ideas, and skills others bring to the team and will work to support and build the skills through this mentoring opportunity. Integrity and commitment are two values I am committed to. There will be various opportunities for research and we will work together on projects. The student will be provided a more community-based experience due to my location and assignment.

Workshop Dates: November 13, 5:00 to 6:30 PM
**Contact:** [barbara.brody@oregonstate.edu](mailto:barbara.brody@oregonstate.edu), 541-207-8078  

*Willing to mentor a distance student*
Mentor: Victor Villegas

Research Focus: STEAM K-12 outreach and engagement, with the Arts as the main educational/communications vehicle.

Potential Student Project:
- STEAM podcast or Vlog
- STEAM art project/s (music, visual art, theater, dance, poetry, photo/video, multimedia, puppetry, etc.)
- Science communication via the Arts
- STEAM outreach & engagement social media campaign
- Create a STEAM K-12 event/experience, such as an exhibit, workshop or lesson/s

Attributes/skills/background sought in undergraduate: Any of the following (the more, the better):
- Communications (writing, speaking, editing, social media, etc.)
- Music production (composing, arranging, recoding, editing, etc.)
- Multimedia/digital media production (video, photo, audio, animation, 3D graphics, etc.)
- Art skills (painting, illustration, photography, sewing, etc.)
- Performance experience (theater, dance, stand up comedy, etc.)
- K-12 outreach and engagement
- Robotics (Arduino based preferred)
- Coding
- FAA Part 107 certification (drone pilot)

Mentoring Plan: I plan to meet at least once a week with mentee/s, in person when possible, or via video conferencing (ZOOM) for remote mentoring of Ecampus students or those unable to come to the Corvallis campus.

What I expect of students: Mentee/s should make all effort to meet at appointed times, provide regular updates/reports and ask for feedback as needed. Questions are encouraged. Dedication/commitment to project/s will be expected, as well as weekly communication (at a minimum).

What students can expect of me: Mentee/s will receive clear, consistent and regular communication in person, via video conferencing or email. Feedback and guidance will be provided as needed.

Workshop Dates: November 7, 5:00 to 6:30 PM

Contact: victor.villegas@oregonstate.edu, 541-737-8255

*Willing to mentor a distance student*
Primary Faculty Mentor: Melody Riley
Co-Mentor: Alex Aljets

Office: University Information and Technology

Research Focus: We are focused on gathering information to improve university processes at OSU that affect the student experience. We are gathering student feedback on transactional processes that directly affect students, identifying key interaction points, and highlighting potential areas of improvement from a student perspective.

Potential Student Project: 1) “Journey Mapping” – Identify multiple student profiles and map the main steps and touchpoints that students go through as they engage with OSU during their college experience. This will involve learning about and gathering different types of journey maps and user personas through online searches. 2) “Customer Experience” – Interview students from a variety of backgrounds about their experiences interacting with the university. 3) Business Analysis and Data Visualization – Combine findings, summarize key pain points, and highlight areas that need improvement. 4) Share Findings – present the research findings to OSU stakeholders at department meetings.

Attributes/skills/background sought in undergraduate:
Required: Good interpersonal and written communication skills. Basic computer skills (Microsoft Word, PowerPoint, Excel). Organized, reliable, and responsive. Collaborative and able to work with others.

Preferred: An interest in human behavior and process improvement. Desire to improve the OSU experience for current and future students. Curiosity, enthusiasm, and a sense of humor. Basic data collection and analysis skills.

Mentoring Plan: Mentees will meet with a mentor at least once per week. That meeting may be a one-to-one meeting, though could also include team-based meetings. Mentees may also be invited to attend relevant department meetings.

What I expect of students: Mentees should treat this professionally, hopefully approaching this opportunity with enthusiasm, and in turn, have fun in the process! Our expectation is that they be on time, be good listeners, be open to other's ideas and perspectives, and active contributors in the work we do. Students selected to work on this project will engage in an orientation to learn about journey mapping approaches and techniques. The research project involves collaboration with several other OSU staff, advisors and administrators, therefore portions of the work may involve consulting with these collaborators, both independently and with the mentor.
What students can expect of me: Students can expect us to be supportive professional mentors who invest in their learning. Students will gain experience with journey mapping and business process analysis which are used across a variety of industries and fields to improve processes and customer satisfaction. We’d love to help you translate the skills you gain working with us to whatever your OSU major and career goals.

**Workshop Dates:** November 7, 5:00 to 6:30 PM (Alex); November 13, 5:00 to 6:30 PM (Melody)

**Contact:** melody.riley@oregonstate.edu, alex.aljets@oregonstate.edu
Mentor: Sophie Pierszalowski

Office: Office of Undergraduate Research, Scholarship, & the Arts

Research Focus: I study potential student barriers to accessing undergraduate research experiences.

Potential Student Project: An URSA Engage student would help us solve questions related to undergraduate research participation at OSU. For example, a student could analyze data regarding student and faculty participation in the URSA Engage Program across a range of years and disciplines to help us determine how we can be more inclusive and broaden participation. A student could also help us better understand how students interact with our Office’s marketing strategies to enhance our communication.

Attributes/skills/background sought in undergraduate: No previous skills required! A familiarity with Excel spreadsheets would be helpful, but is not necessary.

Mentoring Plan: I plan to meet with my URSA Engage student once per week to brainstorm ideas related to the project, and provide personal or professional support, as needed. I would be willing to meet virtually with a distance student if a distance student is interested in applying.

What I expect of students: No previous research experience is required! However, I will be looking for students who are on time, regularly check and respond to their OSU email, and are willing to explore exciting questions about undergraduate research.

What students can expect of me: Similarly, an URSA Engage student can expect me to be on time to meetings, regularly check and respond to email, and communicate openly and clearly. I am very excited to get to know any interested students (both personally and professionally) and work collaboratively to explore issues related to undergraduate research.

Workshop Dates: Neither (advertise on website only)

Contact: pierszas@oregonstate.edu, 5417374892

*Willing to mentor a distance student*