List of Workshops and Posters

Poster Presentations:

Located in the hall between the 100 wing and 200 wing of the **T building**.

Presenter: Kelsea A. Jewell

Title: “Splitting exams into linked online and in-person evaluations improved passing rates in BIOL&170 (Human Biology)”

Workshop/Presentations

9:15-10:15am

Room: T243

Presenters: Adrienne Godschalx & Natalie Tonn

Institution: Lower Columbia College

Title: Three sisters in three classrooms: Garden-based CURE spanning a course sequence (Biology 160, 260 & ENVS 100)

Abstract:

"We will tell our story about how we collaborated to make a garden-based project possible to use in both of our courses. Students build upon their experience with the research project and recognize the design, which seems to allow students to jump into more advanced methods and data collection the 2nd time they encounter the research. Utilizing the same garden plots and experimental design therefore benefits the students with more learning, but also the instructors in time-saved. This creates opportunities for interdisciplinary collaboration with statistics, chemistry and other courses. The resulting garden provides food for the food bank, recycles food scraps from the cafe in the student-driven composting process, and integrates our community college students into the community."

Room: T239

Presenters: Daniel A. Najera

Institution: Green River College

Title: Ecological Research as part of the Curriculum

Abstract:

"Our modern students are not equipped to understand their local ecosystems before they come to our colleges. Consequently, this new generation is the most disconnected from nature in the history of humanity. In our classes we have the opportunity to give them exposure to nature and allow them to produce relevant ecological data. With a smartphone and a few extra tools, we can immerse them in their ecosystems connect them with biodiversity. The resulting dataset allows conceptual exploration through graphical analysis and data comprehension in a flexible way, while reinforcing aspects of the scientific method. Come see examples of what we have been able to do at Green River College and be open to pushing your students to learn through immersion and be productive in ecological research."

Room: T238

Presenters: Jonathan Cowles

Institution: Columbia Basin College

Title: How I Short-Circuit AI Lab Reports

Abstract:

I was stumped about how to avoid students using AI to cheat on lab reports. Then I decided to flip the script by using it first. I provide AI lab reports which students must critique and improve based on data they collect. Students find this approach innovative and feel it offers a less stressful path to learning to write lab reports.

This session will briefly cover my goals, how I structure the assignments, and the strengths and weaknesses of my approach. It will also including anonymous commentary to provide perspective from students.

Room: T145

Presenters: Dave Bennatt

Institution: Wenatchee Valley College

Title: Biology Hunger Games

Abstract:

“This quarter I am attempting to solve some of the issues I've been facing with student attendance, low engagement, and student social media use in the classroom. The Hunger Games is my answer. I will share my examples and up to date outcomes, including the readiness of students entering my Microbiology course. This presentation is very much participatory, with your own shared experiences welcomed!”

Room: T153

Presenters: Damon Tighe

Institution: Bio-Rad

Title: Algae Beads – Photosynthesis and Cellular Respiration in 1 Lab

Abstract:

“In this hands-on workshop, use algae beads containing the freshwater algae Scenedesmus obliquus and a tight pH indicator system to teach photosynthesis and cellular respiration at the same time. Students can experiment with the effect of temperature, light intensity, wave length etc on the rates of both pathways and can interpret data qualitatively against a color scale or can get quantitative with a spectrophotometer.”

10:30-11:30am

Room: T243

Presenters: Benjamin Wiggins

Institution: Shoreline Community College

Title: The Exam Preview Project: A Preview of Its Findings and Implications

Abstract:

Despite the methods you will find in a survey of NWBIO instructors, traditional college STEM exams typically occupy an intersection of outdated teaching practices and inequitable barriers to student success in STEM. Aspirationally, STEM exams can be inspiring challenges that include students in the process of their own assessment and allow students to practice the skills they need for STEM careers. We present Exam Preview Methods, which are supported by educational theory and positive outcomes in initial research.

We will discuss the early results of an NSF-funded project team working in two-year institutions at six sites, all exploring the larger question of: What makes great exams for students, for learning, and for helping the next generation of scientists to progress? We will present findings from ongoing controlled experiments in which exam preview and traditional exams are being utilized by the same instructors with diverse populations of students. The results of content testing, individual interviews and focus groups will be discussed for two types of exams in this style: Test Question Templates and Public Exams. Initial data suggests these methods may lower barriers to equitable student persistence and advance the educative qualities of these assessments.

Participants will learn about the experiences of instructors and students using these exam methods from nascent research funded by the NSF. Our goal is that any college instructor will leave this session with enough information (both in outcomes and practical implementation) to decide if these methods might be a good fit for their classrooms.

Room: T239

Presenters: Dr. Kelly Hennessey

Institution: Codon Learning

Title: Translational Research in Biology Education: From National Objectives to Effective Course Design

Abstract:

“This interactive workshop explores the implementation of nationally-endorsed learning objectives (LOs) in undergraduate biology education, drawing from the framework presented in "Nationally endorsed learning objectives to improve course design in introductory biology" (Hennessey & Freeman). Participants will examine how translational research bridges the gap between education research and classroom practice through backward design principles.

The workshop opens with a discussion on how nationally vetted Learning Objectives serve as the foundation for course transformation. We'll showcase examples of instructors who have enhanced their courses using Codon Learning's platform to implement highly structured course designs featuring aligned learning objectives and assessments, ultimately leading to improved student outcomes. Participants will engage in guided activities to design their own high structure course using the Codon Learning platform.

1. Analyze alignment between learning objectives and assessments

2. Identify opportunities to enhance their existing courses using research-based LOs

3. Apply backward design principles to design a high structure course from their own practice

This workshop offers valuable insights for biology educators seeking evidence-based approaches to course (re)design. Participants will leave with practical strategies for implementing nationally endorsed learning objectives in their own teaching contexts and a deeper understanding of the Codon Learning platform can effectively bridge research and practice in biology education."

Room: T238

Presenters: Dr. Staci Bronson, Isaac Julio-Pereira, Dr. Lindsay Biga

Institution: Oregon State University

Title: Digital Dichotomous Keys for Biology: Yes or No?

Abstract:

"In this workshop, we will take a deep dive into digital, accessible dichotomous keys. Dichotomous keys are scientific tools that present the user with a series of yes or no questions to arrive at a specific conclusion. Common uses in Biology include species identification, particularly for plants and macro-invertebrates. However, the utility of dichotomous keys extends into other applications including career choice exploration, student care response decision making, medical diagnoses, and beyond. We will present our digital dichotomous key that teaches students characteristics of EKGs and how to identify unique cardiac rhythms and arrhythmias. Using this key as an example, we will highlight strategies to take advantage of the flexibility of the digital world (e.g. clickable terms with definitions, short videos clarifying new concepts, figures illustrating features students should look for as they make their yes/no choices, etc.). We will also demonstrate design elements to deliver more accessible content. Workshop participants will have time to brainstorm ways to implement content specific dichotomous keys to increase learning and accessibility in their classes. Following the brainstorming session, we will guide participants as they explore free online tools for dichotomous key creation. Please bring your laptop!"

Room: T153

Presenters: CC Carson

Institution: SimBio

Title: Affordable Active Learning for Intro Bio

Abstract:

"SimBio's inquiry-driven teaching tools are popular in biology courses that emphasize experimentation and discovery. In this presentation, we will demonstrate how SimBio's SimUText System® lets you mix and match SimBio's interactive tutorial/labs with OpenStax Biology e-text to build an inexpensive active-learning replacement for your traditional Intro Bio textbook. We will be happy to brainstorm with participants on their particular teaching challenges!"

Room: T145

Presenters: Jess Weaver, Kaitlyn Bolland, Kanaili Singkeo, Lina Dahlberg, Trà Huỳnh, Norda Stephenson

Institution: Western Washington University

Title: Searching for Alignment: Exploring student engagement with science practices in biology lab courses

Abstract:

"Our research investigates student engagement in science practices (SPs) across introductory chemistry, biology, and physics laboratory courses, as defined by the Framework for K-12 Science Education and the Next Generation Science Standards (NGSS). We utilize the Three-Dimensional Learning Assessment Protocol (3D-LAP) to elicit evidence of the potential of undergraduate laboratory courses at Western Washington University (WWU) to engage students in SPs. Specifically, we use the 3D-LAP to look for evidence of SPs in laboratory artifacts and classroom observations across disciplines.

In this workshop, we explore the alignment between opportunities for student engagement in SPs as prompted by lab artifacts and actual student engagement observed in video data. We share three episodes from our biology video data that provide evidence that (1) students engaged in SPs as prompted by the lab manual, (2) students did not engage in SPs despite being prompted by the lab manual, and (3) students engaged in SPs unprompted. We invite the audience to join us in discussion about the ways in which students use laboratory manuals as guides for participating in SPs and how SPs are situated in the curricula and expressed in the classroom. Finally, we conclude with suggestions of how existing lab curricula can be modified to prompt students to engage with SPs more frequently."

11:45-12:45pm

Room: T243

Presenters: Sabrina Mostoufi

Institution: Whitman College

Title: The Chance to Fail: A Pillar of Science and the Classroom

Abstract:

"When we teach our students about the nature of science, we often praise both successes and failures as part of the process of scientific discovery. Yet, in our science classrooms we don't often practice what we preach. In a traditional class, a few high-stakes exams make up most of a student's grade, and whether they earn an A or an F they have no choice but to focus on the newest material, with no time or incentive to review what they missed. Is there a better way? Can we provide students with space to fail and the incentive to truly learn and grow? In this presentation, I will discuss my own successes and failures at implementing a "reassessment without penalty" policy in both large and small biology classes. Topics will include what reassessment looks like for different assignment types, class scheduling, taking advantage of Learning Management Systems (LMS), grading workload, and student reactions. Attendees will be invited to ask questions, discuss their own experiences, and think about how they might implement these policies in their classes."

Room: T239

Presenters: Hilary Engebretson

Institution: Whatcom Community College

Title: Academic Help-Seeking and the Community College STEM instructor: Student Perceptions

Abstract:

"Getting students to ask their instructor for the academic help they need isn't easy. This presentation will consider academic help-seeking within the context of self-regulated learning. We will explore some background on the types of help-seeking behaviors students choose, when and why students might avoid asking for necessary help, and how instructors influence student help-seeking. We will also examine some recent data from my Human Anatomy & Physiology classes to gain insight into student perceptions about asking for help in this difficult course."

Room: T238

Presenters: Jutta Heller

Institution: Division of Sciences and Mathematics, School of Interdisciplinary Arts and Sciences, University of Washington Tacoma

Title: Co-Creating Class Community Agreements

Abstract:

"In recent years I have co-created classroom community agreements (aka "contracts") in a variety of my courses. The purpose of these agreements is to build community, set expectations, and establish a respectful and safe learning space for students. Students gain ownership and accountability regarding their education, class participation, and learning environment. This is achieved not just through the product itself (i.e. the actual contract that is posted in the classroom), but also through the collaborative creation process. In this session I will present my experience with classroom agreements: the process, the pros, the cons, and in which courses I have found these to be effective. I will also welcome feedback and discussion from session participants!"

Room: T145

Presenters: Claire M Carpenter

Institution: Yakima Valley College

Title: Toxicology of Lorchel and Morel Fungi

Abstract:

"The edibility of morels and false morel (lorchel) fungi is controversial. Some species are widely harvested, but there have been multiple cases of morbidity and mortality associated with morel and lorchel consumption. In a summer research project with Yakima Valley College students, we investigated the toxicology of a variety of morel and lorchel species (Discinaceae and Morchellaceae families). This talk will cover some basics of fungal biology and taxonomy and the results of our research on the toxicology and insecticidal/ antimicrobial properties of these ascomycetes."

Room: T153

Presenters: John Melville

Institution: Vernier Science Education

Title: Biology Experiments with Spectroscopy: From Plant Pigments to Proteins

Abstract:

"Spectroscopy isn't just a tool for measuring light—it's also a powerful way to help students understand core biological processes! While many biologists may see spectrometers as just "black boxes," these hands-on tools are an engaging, easy-to-use way to help students explore real-world phenomena and visualize complex biological systems—from plant pigments and photosynthesis to proteins and the evolution of plants and algae and fungi."