



Science Initiative News

Spring 2022

Program Updates

The 2021-2022 class of **LAMP** fellows will continue learning together during workshops and other gatherings this spring. In the late afternoon of May 6th, LAMP fellows will present their final posters culminating a year's worth of curriculum design, development and implementation. Please save the date and plan to attend this event in the Active Learning Classroom of the new Science Initiative building! At the end of November, the five LAMP Educators in the Educators Learning Community (ELC) presented their Scholarship of Teaching and Learning (SoTL) research at the Original Lilly Conference on College Teaching at Miami University in Oxford, Ohio. A [recent press release](#) details the accomplishments of these educators.

The **SI Roadshow** has been busy planning and building a diverse team of graduate and undergraduate students this spring, hiring 4 new Outreach Assistants. Our team is currently preparing for at least 7 STEM outreach events this spring spanning locations from Cheyenne and Sheridan to Pinedale and Cody. We will also be welcoming middle school students from Riverton to the UW campus in April to have an immersive STEM in-reach experience thanks to a gracious financial partnership with the College of Arts & Sciences. We continue to create sustained and lasting partnerships with K-12 educators statewide, and look forward to visiting with more students throughout the academic year.

WRSP has 55 high-achieving scholars participating in

hands-on research during the 2021-22 academic year. In Spring 2022, several students will be presenting results at professional conferences and publishing in peer-reviewed journals. In February and March, WRSP students will join UW faculty and graduate students to speak to local Rotary Clubs about their research experiences and participate in K-5th STEM outreach across Wyoming. For many students, the year of research will culminate in Undergraduate Research Day on Saturday, April 23. This year's Undergraduate Research Day poster session will take place in the large active learning classroom in the new Science Initiative Building and will be one of the first events held in this new state-of-the-art space. As in previous years, the WRSP will hold workshops on preparing oral presentations and poster presentations in advance of this fun and important event.

IMPORTANT DATES

- Every Friday, LAMP Lighters come together for LAMP Coffee & Curriculum from 8-9am on [Zoom](#)! During these sessions prior LAMP fellows facilitate sessions about active learning strategies they have implemented.
- LAMP fellows will give a final presentation for the semester in the late afternoon of May 6th in the ALC in the new SI Building.
- [WRSP application](#) deadline - Friday, March 25
- [Registration for Undergraduate Research Day](#) deadline - Friday, March 25
- Undergraduate Research Day - Saturday, April 23

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SI Building Opening

We are excited that the new Science Initiative Building, at the corner of 9th and Lewis streets, will be opening in late March. Faculty and staff will be moving in throughout the spring and summer. Faculty and student researchers will begin research in the building over the spring and summer, and the active learning classroom will begin hosting large STEM courses in the fall. Please keep an eye on your email for announcements related to events related to the opening of the building.

The Center for Integrative Biological Research (CIBR)

Spread across all floors of the SI Building, CIBR will bring together UW's world-recognized biologists within shared laboratories and collaborative spaces to foster innovation and convergent research activities addressing some of Wyoming's most pressing environmental and health-related challenges. CIBR will support scientific explorations that range spatial scales from molecules, to cells, to organisms, to ecosystems and to earth systems and that span temporal scales from seconds to thousands of years. Lab and field experiments will be paralleled by cutting edge modeling that also spans this broad range of spatial and temporal scales to better understand current systems and model future states.

CIBR's design is one with open laboratory and informal spaces which offer shared resources and natural collision spaces to support current cross-scale collaborations and foster new and innovative research endeavors. The innovative design, in part, will help drive increased research success through external granting, publications, and research opportunities for students.

CIBR will house world-class research support facilities to enable cutting edge research for CIBR faculty as well as all other STEM faculty from across campus. Rooftop greenhouses and walk-in growth chambers will provide highly controlled growth conditions, enabling research opportunities not yet realized at UW. The Model Organism Research Facility (MORF) will provide modern care and procedure facilities to support research aimed at understanding biological processes at the molecular and cell level to whole organisms.



Large-scale Active Learning Classroom to Open in the New SI Building

The active learning classroom (ALC) in the new Science Initiative Building will enable up to 200 students to engage in team-based, active learning. Using student-centered design features, this room contains 22 round tables that each seat 9 learners. The chairs are color-coded to enable students in particular seats to assume certain tasks. Five projection screens enable displays to be viewed from any location in the room. Students (as well as the instructor) can display on these projection screens. Glass writing boards line the walls.

Two additional desks are provided in the south corner for LAMP learning assistants (LAs). An adjacent prep area is equipped with resources that will enable laboratory-style demonstrations including chemical reactions that necessitate a hood. All demonstrations can be recorded live and footage piped to the full classroom. Adjacent storage areas are also provided to enable you to easily utilize any active learning supplies needed.

Finally, the room is equipped with a state-of-the-art Constellation sound system that enables students to engage in small-group discussions without being interrupted by the noise of adjacent groups. This sound system also enables instructors to effortlessly 'call back' the large group without straining or yelling and without the use of a microphone!

In April and May, LAMP will host two workshops in the new classroom. These workshops will assist educators in utilizing the Large-scale ALC to implement Cooperative Learning and Problem-based Learning. Please watch for exact dates and times for these April and May workshops.

Wyoming K-Community STEM Education Program

The Roadshow is now working towards building the Wyoming K-Community STEM Education Program. This program aims to foster collaborative community-based projects across levels that enrich the state of Wyoming and provide K-12 students with relevant, research-based STEM education. K-12 educators statewide will participate in a yearlong professional and curriculum development training on community-based research that aligns with science standards and outcomes. The Roadshow and SI Programs will support the educators in the implementation of projects in their classrooms and educators will present their projects at the annual Education Outreach Network Conference the first week of August. This conference is hosted by the Community Outreach Program for STEAM Engagement (COPSE) which is a graduate student network nested in the SI.

People in SI



WRSP Scholar

Kaatje Fisk

Hometown: Salt Lake City, UT

Major: Molecular Biology

Faculty Mentor: Jason Gigley

Since 2019, Kaatje has been working on research focused on the immune system's response to *Toxoplasma gondii* infection in mice models. She is working with the Gigley team to look closely at the relationship between the innate and adaptive immune responses in the host during acute *Toxoplasma* infection. Through this research, she hopes to uncover the regulation of IL-12 production by CD4 T cells.



Roadshow Outreach Assistant

Austin M Bernard

Hometown: Santa Cruz, CA

Major: Mechanical Engineering

Austin has been serving as an Outreach Assistant (OA) with the Roadshow for almost two years. In his role in the Roadshow, he helps design outreach curriculum that links to K-12 educators' needs across the state. He has also been a LAMP Learning Assistant (LA) for the last year working with Tawfik Elshehabi in both his Drilling Simulator Classes as well as his Engineering, Ethics and Energy class. He has implemented Modeling from the active learning spectrum into his classes, which is a way of making a concept more tangible, something students can physically hold and use to explain a concept. The students took some type of drilling machinery or energy system and created a model in a CAD software that they then 3D printed. They then used this model to explain their understanding of how the system works. The students seemed to enjoy this because it allowed them to grasp concepts and ideas more thoroughly.



LAMP Learning Assistant

Vinaya Palecanda

Hometown: Mysore, India

Major: Civil Engineering

Faculty Mentor: Kimberly Frith

Dr. Kimberly Frith of Civil and Architectural Engineering writes of her LA:

"Vinaya has proven herself as a valuable member of the teaching team in our course. From the beginning of the semester, she's shown her ability to work with the students and the instructor effectively and answer the students' most challenging questions about the course content. She's approachable and floats through the classroom work sessions naturally, checking in with students and clearing up any areas of confusion. Her organizational skills are an asset to our large active learning classroom. Our class is fortunate to have her on the teaching team this semester and I look forward to seeing her grow & shine in this leadership role this semester."



LAMP Fellow

Dr. Eric Atkinson

Biology Coordinator and INBRE Project Lead, Northwest College in Powell, WY

This semester's featured LAMP Fellow is Dr. Eric Atkinson, head of Northwest College's (NWC) Biology program. Eric participated in the in-person Summer Institute in May; during this weeklong, immersive training, Eric's contributions were robust. Integrating his expertise in ecology, biology and ranching with his passion for learning about diverse students, Eric braided together many ways of knowing. He designed and developed a curriculum vision in which students synthesize their learning through the development of a graphic novel. Since completing the Summer Institute, Eric has stepped into a leadership role within Wyoming's Inclusive Excellence team. The work of this team is led by LAMP mentor Rachel Watson and funded by a learning grant from the Howard Hughes Medical Institute. Eric has galvanized more than a dozen NWC educators to create a learning community dedicated to inclusive excellence in the 2-year to 4-year transition. When not designing curriculum and immersive educator learning experiences, Eric is a passionate civic and environmental leader in the Cody/Powell region!