

Highlighting  
Student  
Perspectives &  
Research at the  
2023 Ecological  
Society of America  
Conference (ESA)

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Haley Netherton-Morrison





# 2022 Fall Student Retreat

*Participants:*

BSU – Adedotun Arogundade, Arden Engel, Carlos Dave Dumaguit,  
Haley Netherton-Morrison, Jacob Heil, Meg Dolman, Ryan Wickersham, Tao Huang  
ISU – Adam Zambie, Allegra Sundstrom, Danielle Trawick, Kyle Rufo, Treyton Harris  
UI – Molly Garrett



# Mapping Student Research

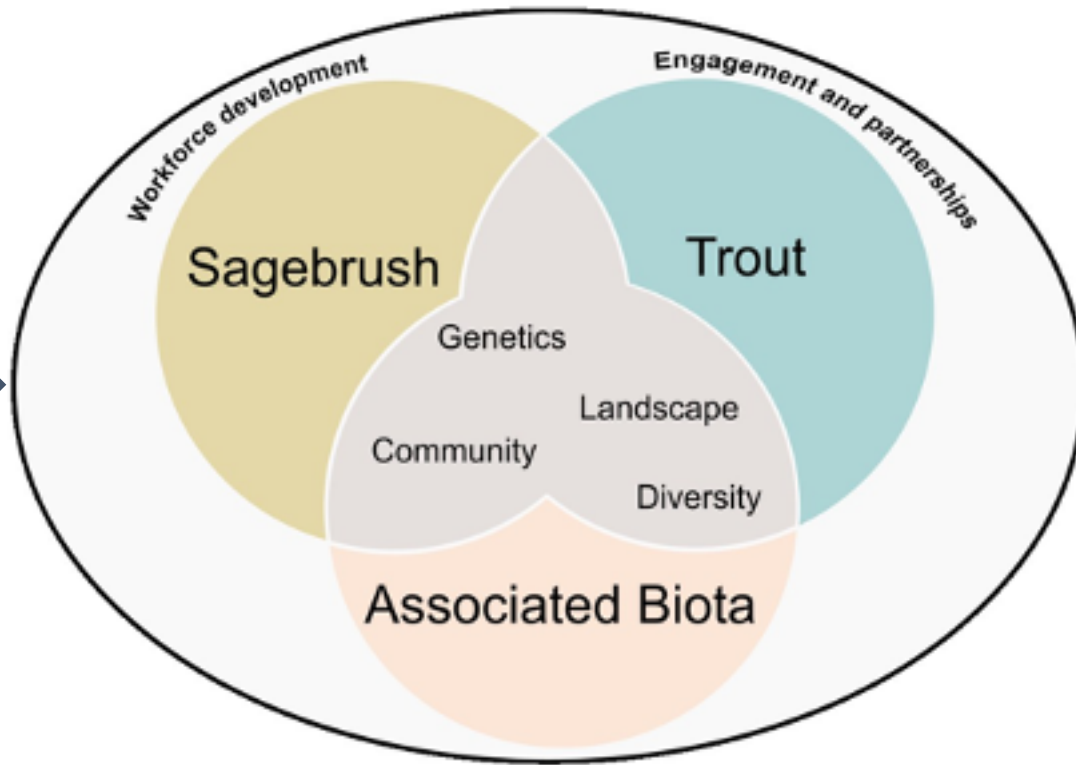
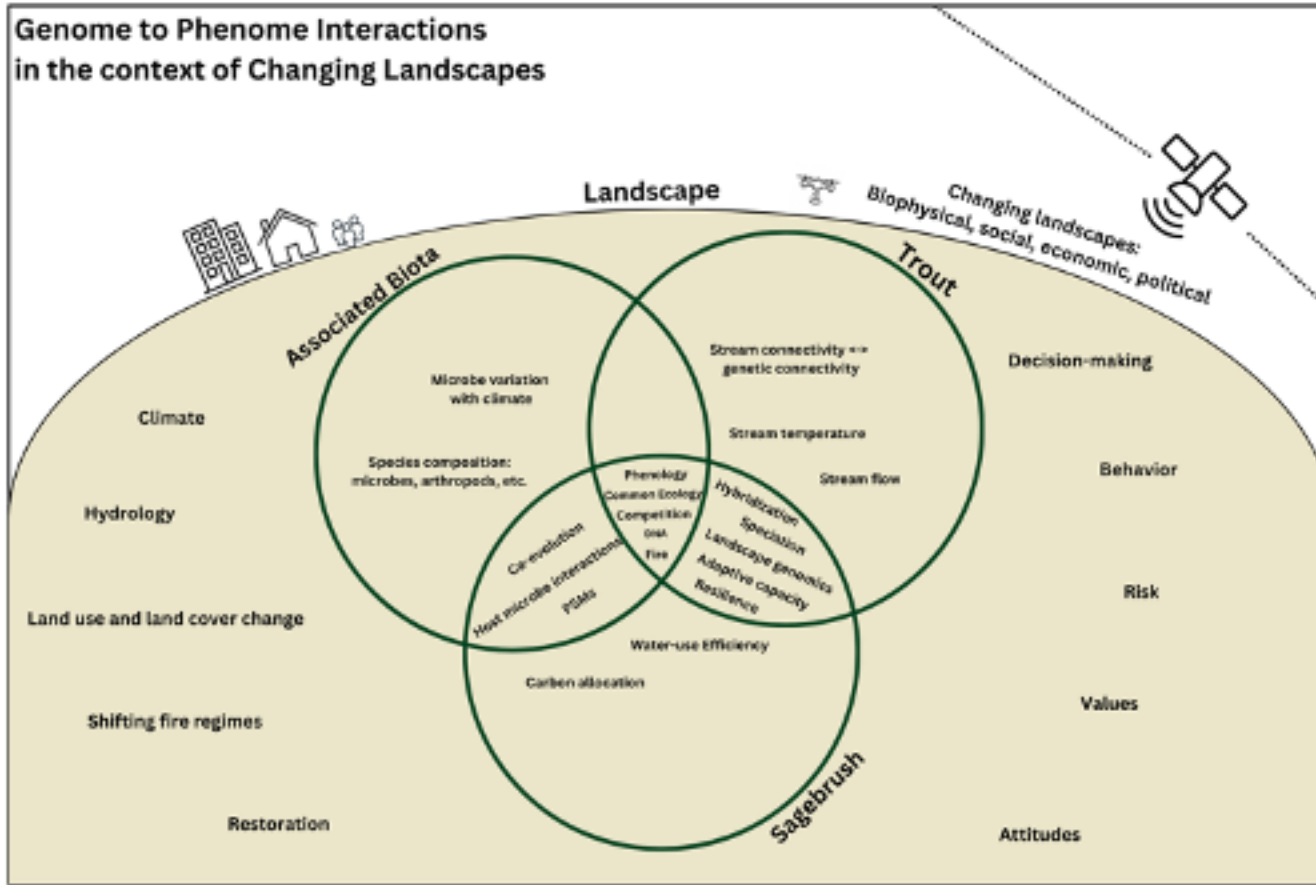


Figure Design: Meg Dolman (BSU)



# Collaboration and Integration Across Scales, Species, and Studies: ~~Graduate~~ Student Perspectives



**Session Speakers:**  
Meg Dolman (BSU)  
Carlos Dave Dumaguit (BSU)  
Jacob Heil (BSU)  
Jessica Bernardin (BSU)  
Kaitlyn Opland (BSU)  
Harrah Friedlander (UI)  
Molly Garrett (UI)  
Carlie Sharpes (UI)  
Haley Netherton-Morrison (BSU)

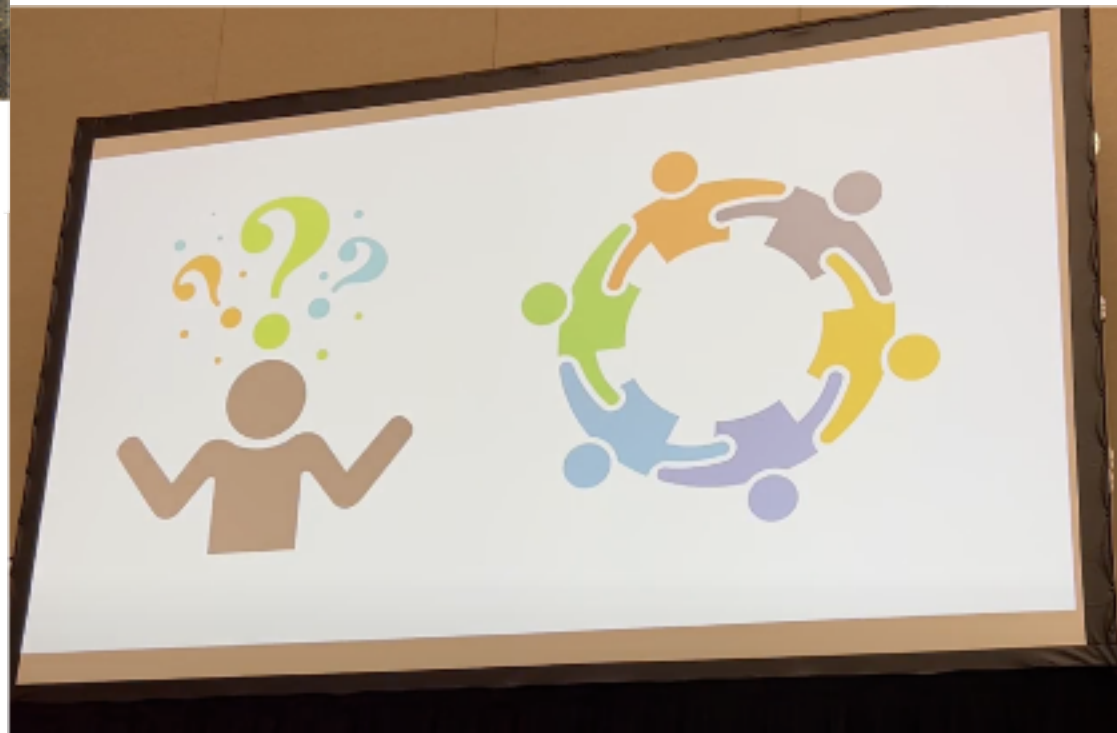
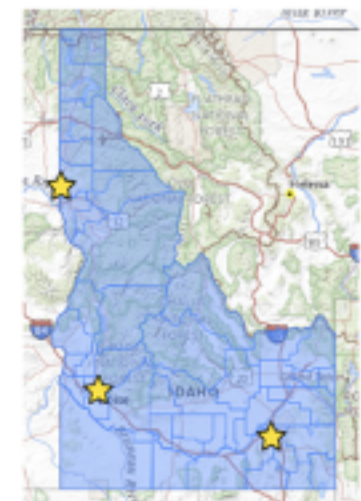


# Collaboration and integration across scales, species, and disciplines: Student perspectives

**Meg Dolman**

PhD Candidate, Boise State University

*Session Co-organizer*





# A genome to phenome investigation in the sagebrush steppe

**Carlos Dave Dumaguit**

MS Graduate, Boise State University

*Current:* PhD Student, University of Utah

*Session Co-organizer*

Collaborator Count: 15



G3, 2022, 12(7), iaw122  
<https://doi.org/10.1093/g3/ckac122>  
Advance Access Publication Date: 14 May 2022  
Genome Report

## A haploid pseudo-chromosome genome assembly for a keystone sagebrush species of western North American rangelands

Anthony E. Milton<sup>1</sup>, Andrew W. Child<sup>2</sup>, Richard S. Beard Jr<sup>3</sup>, Carlos Dave C. Dumaguit<sup>4</sup>, Jennifer S. Forbey<sup>5</sup>, Matthew Gormin<sup>6</sup>, Marie Anne de Gooijer<sup>7</sup>, Andrew Kibbey<sup>8</sup>, Ben J. Leitch<sup>9</sup>, Peggy Martinez<sup>10</sup>, Stephen J. Novak<sup>11</sup>, Jaime Polanco<sup>12</sup>, Bryce A. Richardson<sup>13</sup>, Desirée Sott<sup>14</sup>, Marcelo Sorpe<sup>15</sup>, and Sven Buerki<sup>1</sup>

<sup>1</sup>Department of Biological Sciences, Boise State University, Boise, ID 83725, USA  
<sup>2</sup>University of Idaho, Moscow, ID 83844, USA  
<sup>3</sup>Forest and Rangeland Experiment Station, United States Geological Survey, Boise, ID 83726, USA  
<sup>4</sup>Northwestern University, Evanston, IL 60201, USA  
<sup>5</sup>Wildlife Institute of Colorado, CSIS, Department of Biological Sciences, Fort Collins, CO 80526, USA  
<sup>6</sup>Rocky Mountain Research Station, United States Forest Service, Moscow, ID 83843, USA  
<sup>7</sup>Corresponding author: Department of Biological Sciences, Boise State University, Boise, ID 83725, USA. Email: andymilton@boisestate.edu  
<sup>8</sup>Corresponding author: Department of Biological Sciences, Boise State University, Boise, ID 83725, USA. Email: svenbuerki@boisestate.edu

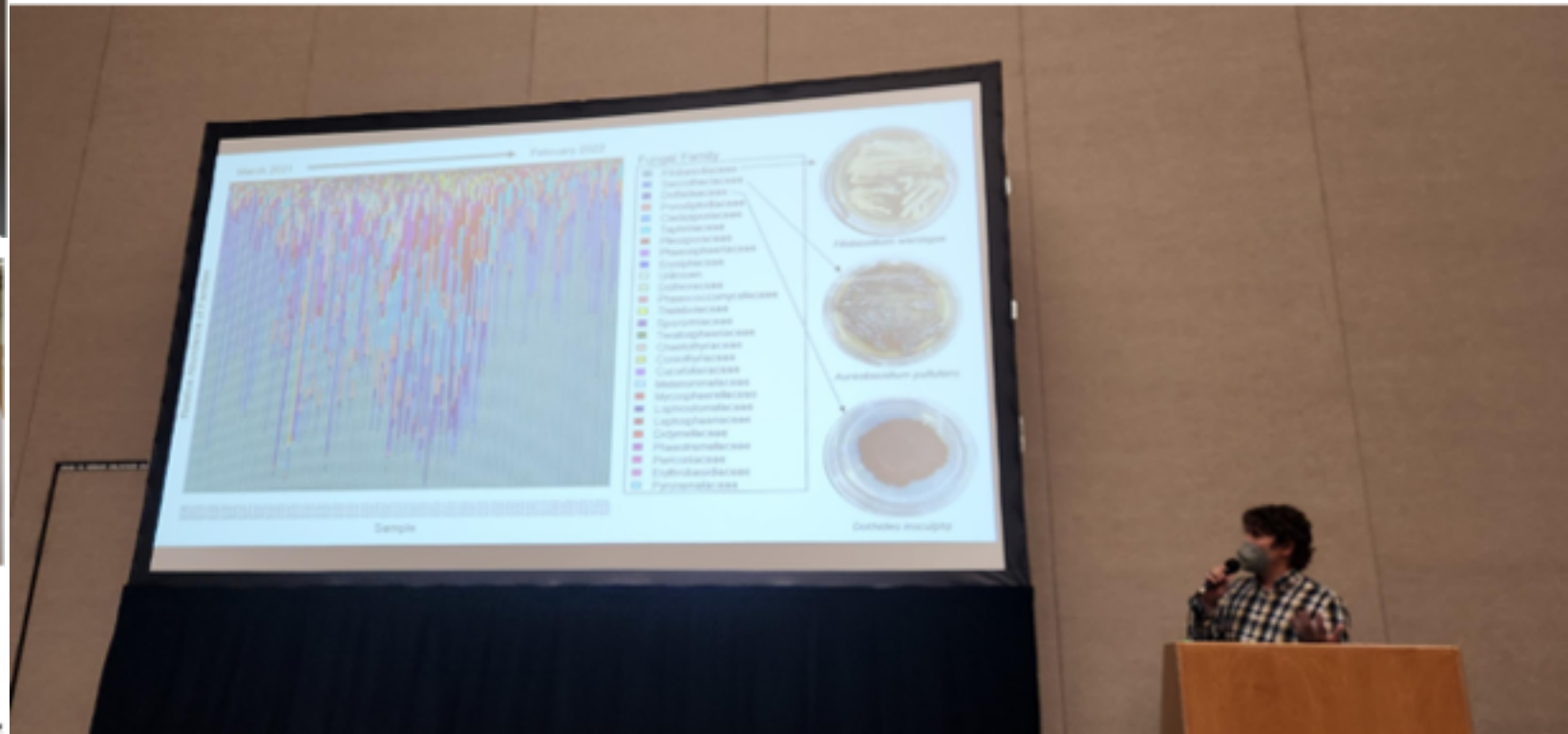


# A microscopic year: Change in a sagebrush microbiome over time

**Jacob Heil**

PhD Candidate, Boise State University

*Session Co-organizer*





# Interdisciplinary teams tackling complex challenges: An example from undergraduate training and research

Jessica Bernardin

PhD Candidate, Boise State University

My research is possible because our lab has built a safe and encouraging research community that fosters learning, facing challenges, and creativity.

The SARE and VIP programs help us build this community.

## SARE & VIP Microbial Ecology Research





# Observing local adaptation of sagebrush to soil microbes: An undergraduate's opportunity

Kaitlyn Opland

BS Graduate, Boise State University



Every new result...

Stems handfuls of  
new questions!

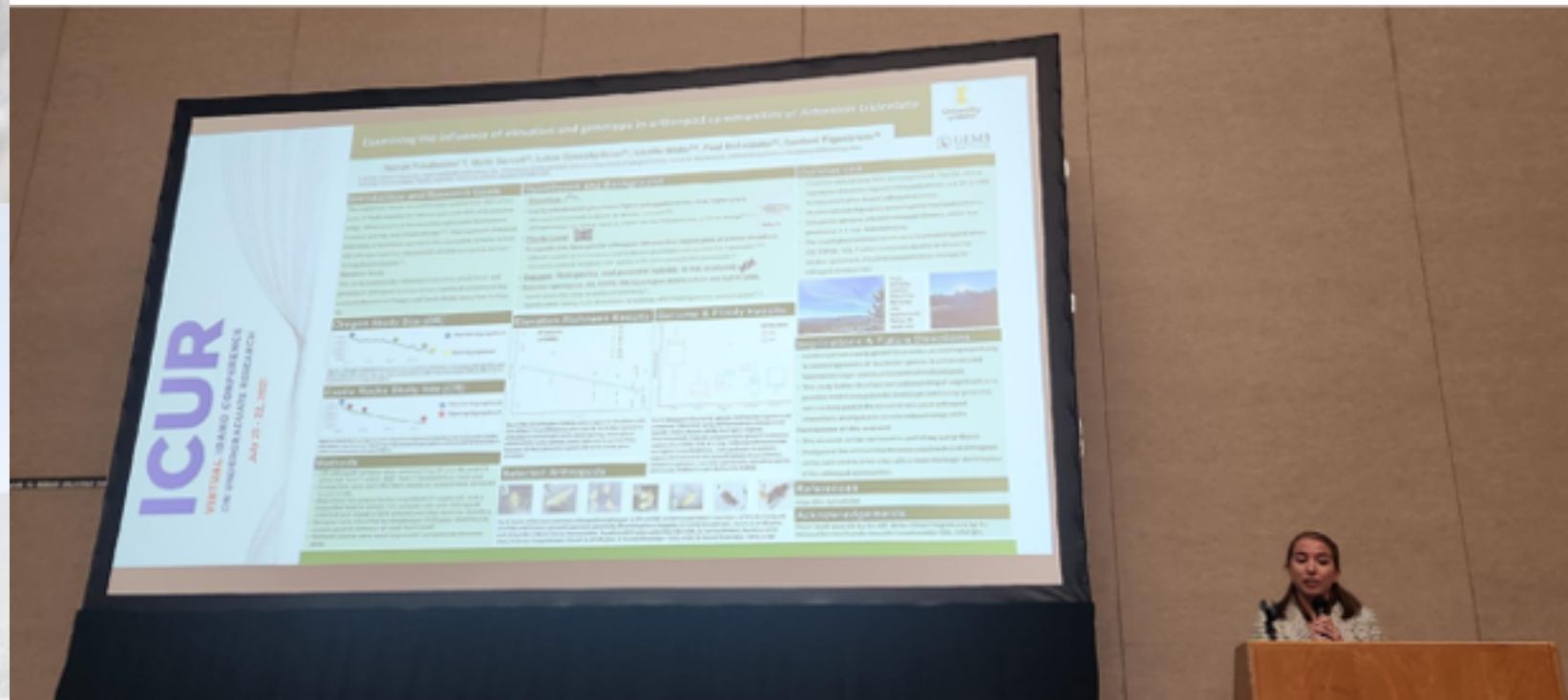
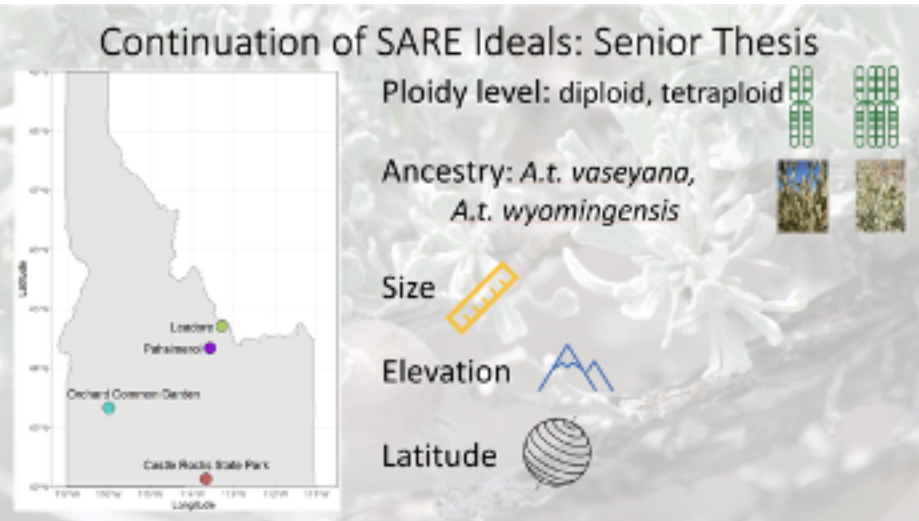


# Reflections of an undergraduate researcher in collaborative science

**Harrah Friedlander**

BS Graduate, University of Idaho

Current: PhD Student, The University of Queensland



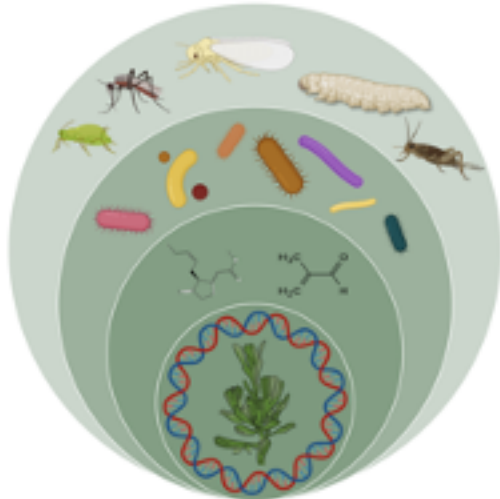


# Exploring mechanisms behind team science and community interactions

**Molly Garrett**

PhD Candidate, University of Idaho

*Session Co-organizer*

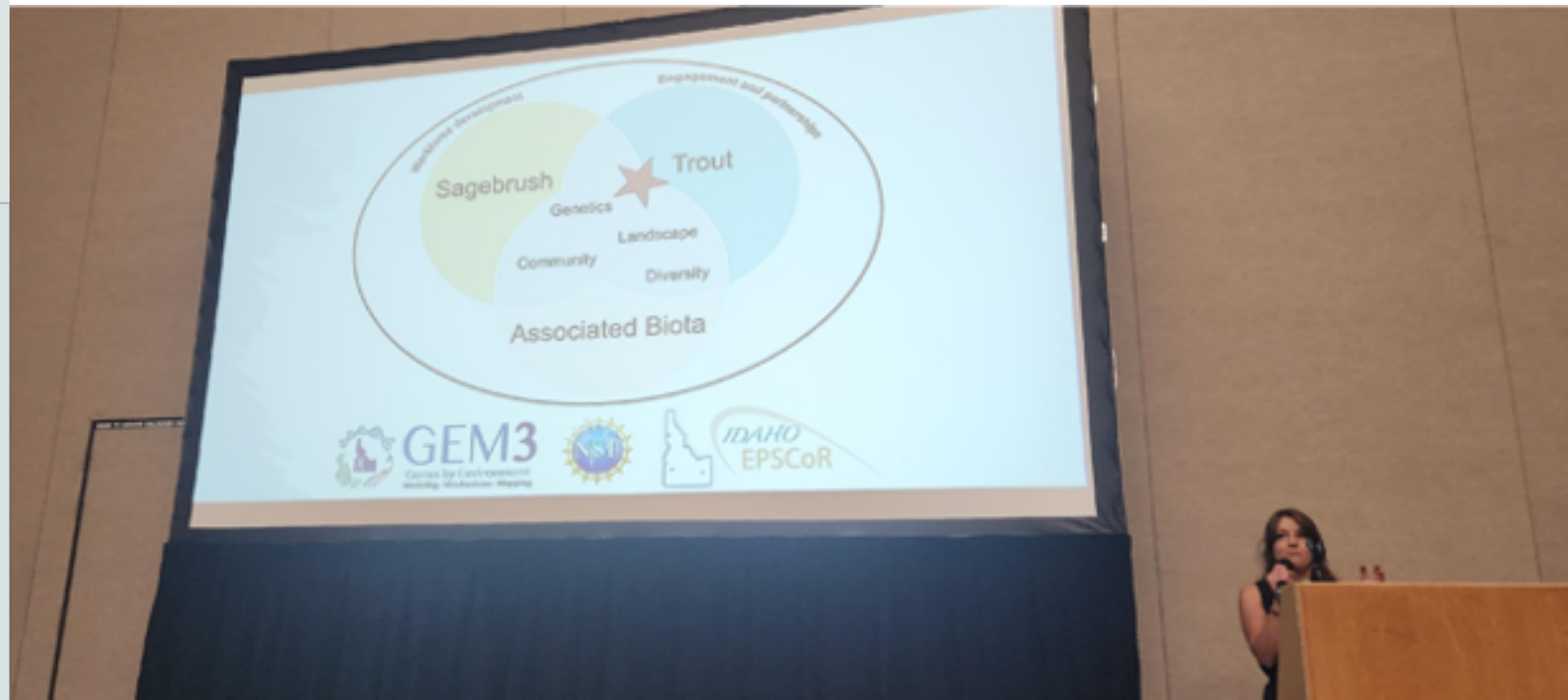
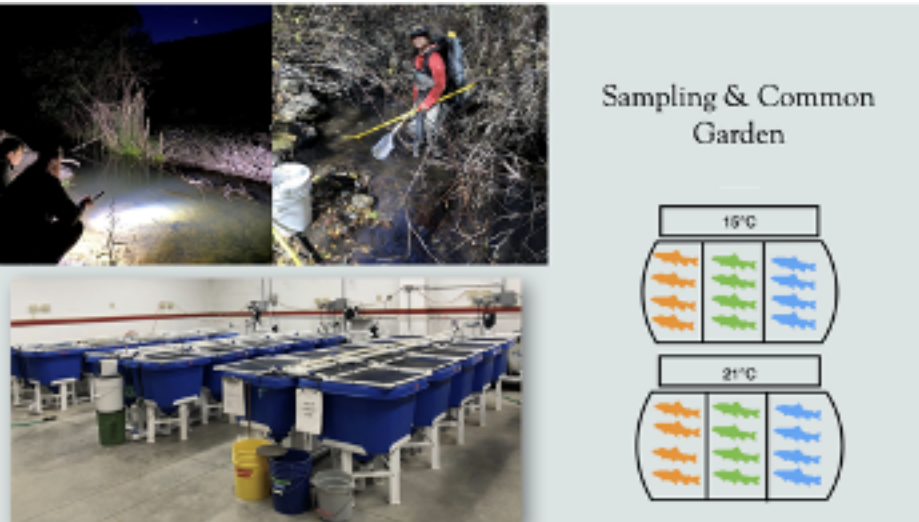


# Synergy among scientists aids synergism study: redband trout resilience facing hypoxic and thermal stress

**Carlie Sharpes**

MS Graduate, University of Idaho

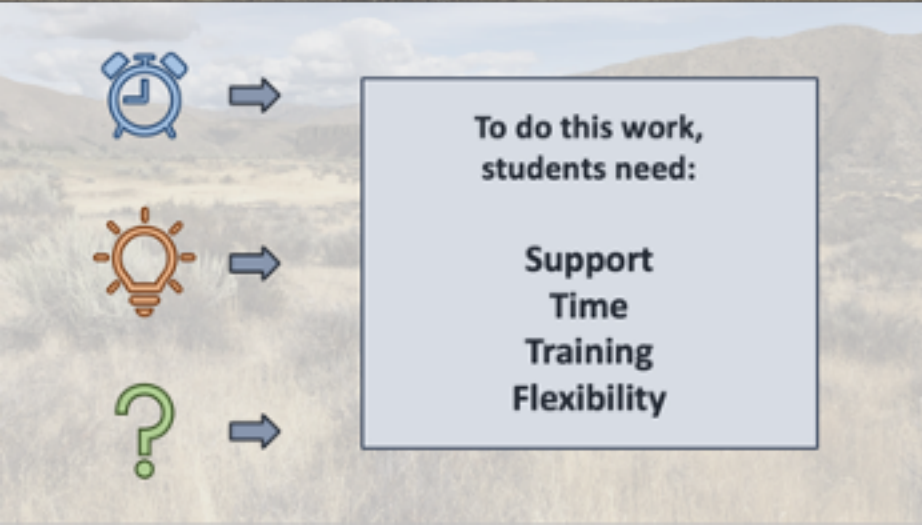
*Current:* Aquaculturist, The Klamath Tribes





# Leveraging stakeholder and community partner engagement to better understand sagebrush steppe values and management concerns

**Haley Netherton-Morrison**  
PhD Candidate, Boise State University  
*Session Organizer*





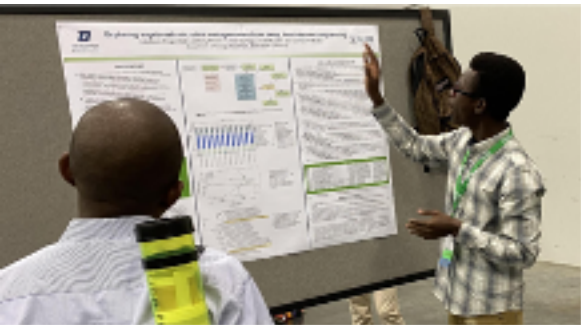
**Molly Garrett (UI)** - Development & evaluation of genetic monitoring tool for threatened ground squirrel



**Jessica Bernardin (BSU)** - Microbial communities with different functions influence leaf size and nutrients



**Haley Netherton-Morrison (BSU)** - Public attitudes toward sagebrush steppe management



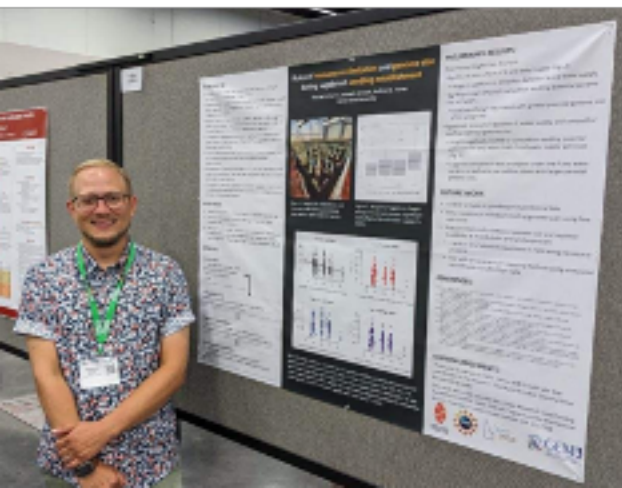
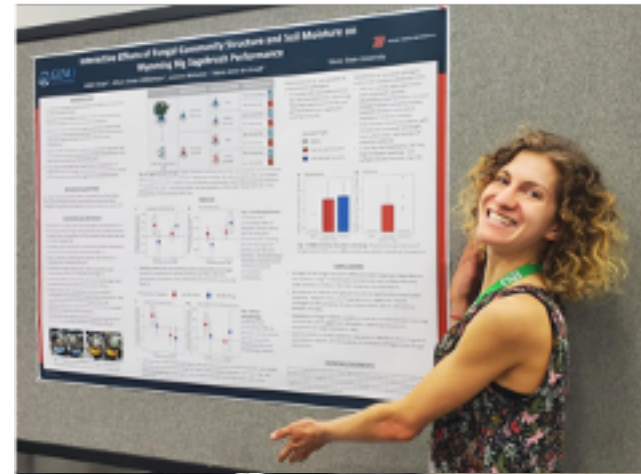
**Adedotun Arogundade (BSU)** - Characterization & functional profiling of sagebrush leaf microbiome using host-sequence data

**GEM3 Student Voices at ESA**

**Ryan Wickersham (BSU)** - Estimates of sagebrush success using remote sensing & machine learning

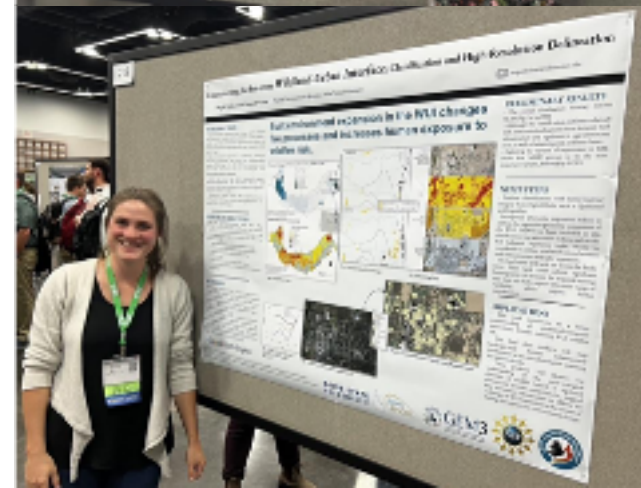


**Arden Engel (BSU)** - Soil moisture influence on fungi inoculum to improve sagebrush restoration success



**Treyton Harris (ISU)** - Resource co-limitation & genome size in sagebrush seedling establishment

**Meg Dolman (BSU)** - High-resolution delineation & classification of built environment expansion in the fire-prone WUI in southern Idaho





# Reflections from ESA

*“Both attending this conference and participating in this session enabled me to get good experience presenting oral presentations, making new contacts with the wider scientific community, and the ins and outs of proposing a session at a national conference.”*

*“The ESA Symposium was such a fulfilling way to end my graduate experience in GEM3...I feel we accomplished our goal of creating a sense of community as we worked together and made lasting friendships.”*

*“We supported each other throughout this process and displayed this immense support at ESA in the form of attending each other's poster and presentation sessions outside of our own student-led session.”*

*“In a way, this was similar to a culminating project or capstone, embodying my journey: how from my undergraduate research career all the way through a successful graduate thesis and defense, the GEM3 community has scaffolded me with mentors, resources, finances, and experiences that continue to shape how I carry myself as a learner and researcher.”*

*“We worked together to connect our results with each other and it really painted the bigger picture of our interconnected research...As incredible as it was to attend the conference it was even more rewarding to see all of our efforts come together in one final presentation session!”*

*“[Presenting my research] helped me not only learn but build great connections for future endeavors.”*

# Thank You!

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Tami Noble  
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Stephanie Galla  
Tyler Breech



IDAHO  
EPSCoR



**GEM3**  
Genes by Environment  
Modeling · Mechanisms · Mapping

