

Highlighting GEM3's Education, WFD & Diversity Initiatives



GEM3

Genes by Environment
Modeling · Mechanisms · Mapping

Objective: Increase the numbers and diversity of the STEM students and improve the inclusion across the state

GEM3 Activities:

- Vertically Integrated Projects (VIP)
- Summer Authentic Research Experiences (SARE)
- Idaho Diversity Network
- Statewide STEM Ecosystem





Vertically Integrated Projects (VIP)

- GEM3 uses a **Vertically Integrated Project (VIP)** strategy to increase the number, diversity and preparation of skilled scientists and engineers in GEM3 fields
- Hands-on learning with faculty mentors and diverse teams
- Students receive academic credit
- Fields include bioinformatics, computational biology, conservation genetics, and ecosystem management
- Year 5 – over 100 students enrolled in VIP courses



GEM3 University VIP Courses

BSU:

- *CC: Complex Communities*
- *Environmental Sustainability*
- *Genome2Phenome*
- *Mapping Sagebrush Restoration*
- *MARS: Mapping & Remote Sensing*
- *Nature's Cipher*
- *Project Scientia*
- *Tribal Rural Urban Nexus*

ISU:

- *Goby Development*
- *Sagebrush genome/phenome*

UI:

- *Aquatic Molecular Ecology*
- *WS Version Control*
- *Community Change and Big Data*

Summer Authentic Research Experiences (SARE)

SARE promotes diverse participation and success in GEM3-related STEM fields.

- Paid research positions (full/part-time)
- Targeted recruitment to PUI & underrepresented minority (URM) students
- Cross-institutional collaboration/opportunities
- Provides an intensive laboratory & field experience

SARE:	Students	Female	PUI	URM
Year 1	--	--	--	--
Year 2	17	12	2	10
Year 3	36	27	6	13
Year 4	31	16	17	10
Year 5	50	35	12	10
TOTAL	134	90 (67%)	37 (27%)	43 (32%)



Highlights

- SARE training engaged over 130 Idaho undergraduates
- Engaged large % of PUI students and faculty
- SARE = 67% Female, 27% PUI, 32% URM
- 14 VIP courses established with over 170 undergraduates enrolled
- 8 PUI faculty and 1 PUI community partner part of SARE/VIP
- At least 16 lab modules developed for ongoing use in college and university courses

“This program gave me the opportunity to see the broad world of research that isn't just science-based. I also was able to network in ways I never thought I could before which is really helpful for my future.”

“My SARE experience had helped me grow as a researcher. I feel more confident in being able to design, conduct, analyze, and present an experiment. I also feel more comfortable with the action of networking and creating opportunities for myself. “

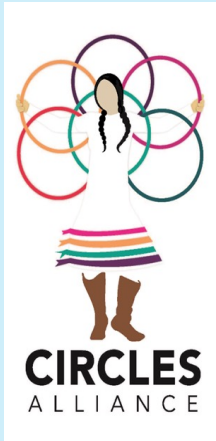


Idaho Diversity Network



Idaho State
University

University of Idaho



Statewide STEM & Diversity Initiatives

Idaho Diversity Network

- *Statewide STEM/Diversity coordination*
- *Networking (e-news) /Professional Development*

Statewide STEM Ecosystem

- *Engages partners from PreK-12 and higher education, industry, state agencies*
- *Promotes equitable access to STEM*
- *Aligns education with Idaho's workforce needs*

Highlights

- **Statewide Idaho STEM Ecosystem meeting** held on the Shoshone-Bannock Tribes reservation (May 2023)
- **NSF INCLUDES Planning Grant** (99K) to develop statewide STEM ecosystem
- **CIRCLES Alliance NSF grant** (739K) to research Indigenous-based STEM education (*Cultivating Indigenous Research Communities for Leadership in Education and STEM*)

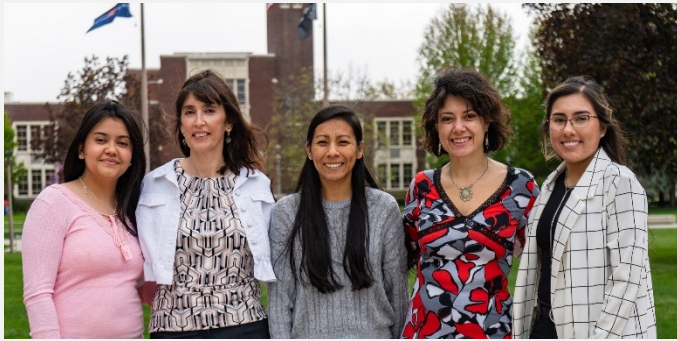


GEM3 Research in Spanish

- BSU team involves undergraduate students, graduate students, and faculty
- Work to communicate STEM research in languages other than English
- Goal of increasing numbers of Hispanic students entering STEM fields
- Recently created 3 new research abstract videos in Spanish
- VIP course (Spring 2023) - 5 students enrolled
 - focus on science communication and outreach to diverse audiences
- Interactive website with materials readily accessible to educators

Outreach Platforms:

- Videos
- Podcasts
- Translation of GEM3 Key Words
- Translation of abstracts
- Brochures
- Educational materials
- Participation in Spanish local radio shows



GEM3 K-12 Highlights



Adopt-a-Scientist

- Annual Adopt-a-Scientist Outreach event aims to prepare a workforce with diverse skills that can lead to innovations in Science-Informed Practices with academic, government and private partners.
- This year's event (April, 2023) was held at The Peregrine Fund's World Center for Birds of Prey
- Participation from over **170 7th-grade students**
- Co-administered by **BSU and CWI** faculty and students