

Coupling Mathematical Modeling Professional Development with Community Connection Events

MAA MathFest
August 3, 2023

Carrie Bala
Cynthia Anhalt
Brynja Kohler

Agenda

*Creating strong, motivated
learning communities centered on
local contexts*

Event Description

- STEAM Expo
- Mathematical Modeling PD
- Community Connection Events

Themes from Participant Reflections

Recommendations

Utah State University STEAM Expo and Teacher Workshop

This year's emphasis: bringing different communities together for a collaborative experience

- Well-promoted and supported by department head
- College of Science JEDI committee support
- Local faculty encouraged and facilitated school districts' participation



“We recognize Utah State University Blanding resides on the ancestral, traditional, and contemporary lands of the Navajo Nation, San Juan Southern Paiute Tribe, and the White Mesa Ute peoples. USU commits to creating and instilling a continuous relationship with tribal nations and fostering a partnership through community, family (clan/bands), research, education, and programming. In offering this land acknowledgment, we affirm Tribal Sovereignty, history, and experiences.”

Mathematical Modeling Teacher Workshop

Cynthia Anhalt: Director of Mathematics Education,
University of Arizona



ASSOCIATION OF
PUBLIC
LAND-GRANT
UNIVERSITIES



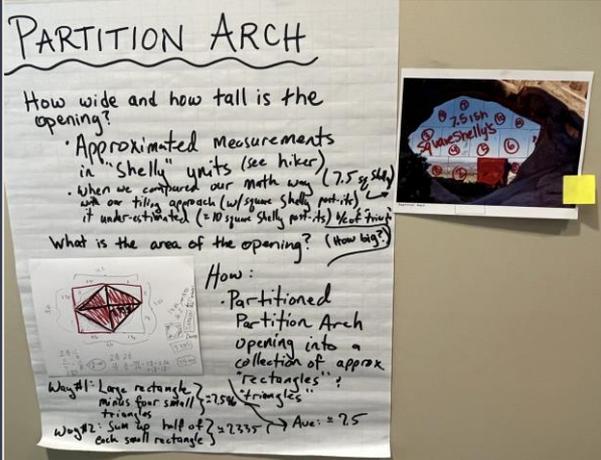
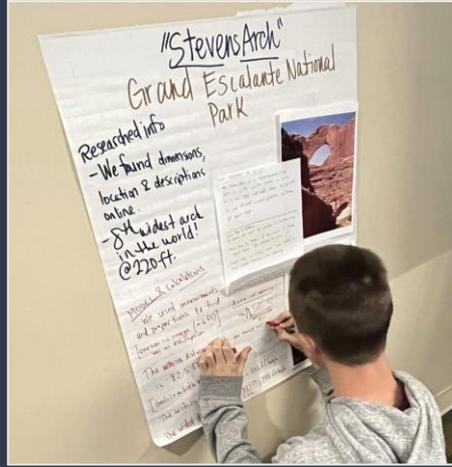
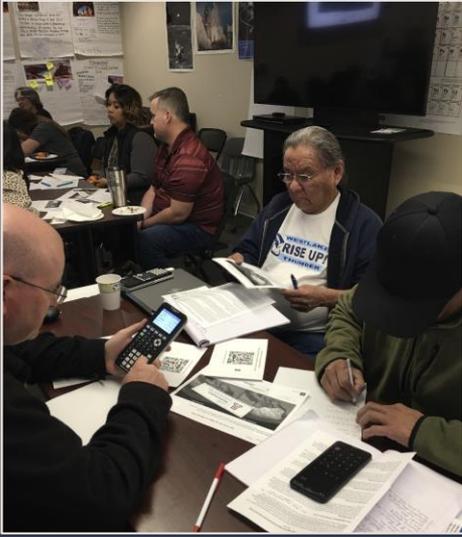
MODULE(S²)

Mathematics Of Doing, Understanding, Learning
and Educating for Secondary Schools

THE UNIVERSITY OF ARIZONA | EASTERN MICHIGAN UNIVERSITY | MIDDLE TENNESSEE STATE UNIVERSITY | Nebraska Lincoln | Utah State University

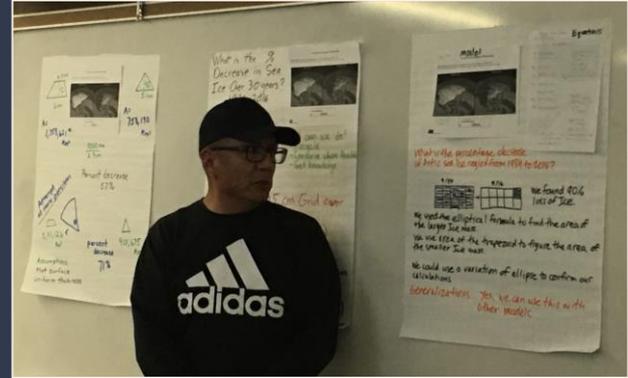
The Mathematics Of Doing, Understand, Learning, and Educating Secondary Schools (MODULES²) project is made possible through funding from the National Science Foundation IUSE (Improving Undergraduate STEM Education) multi-institutional collaborative grant #1726707 (APLU), #1726098 (University of Arizona), #1726252 (Eastern Michigan University), #1726723 (Middle Tennessee State University), #1726744 (University of Nebraska - Lincoln), and #1726804 (Utah State University).

*What do you notice?
What do you wonder?
What do you already
know about your
monument?
How would you describe
your monument
geometrically?*



Community of Learners

- Local Teachers (grade 5-12 math, science, special education)
- Faculty (math/stat department across regional campuses)
- University Students (undergrad/grad/preservice teachers)



Community Connection Events

USU College of Science JEDI Committee



Excursions

Visits to historical, cultural, scenic wonders of the area

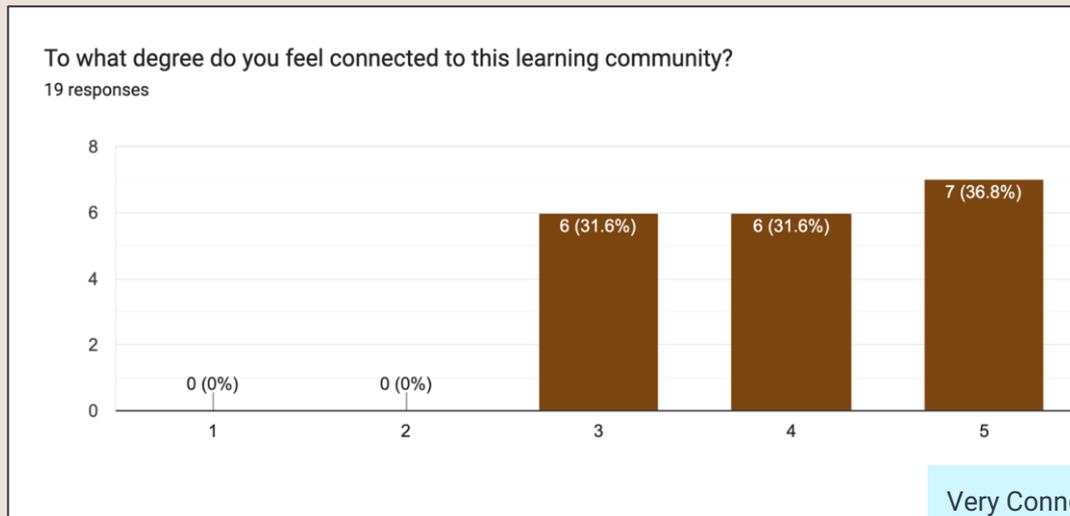


I
D
D
US
A

g

Participant Reflections

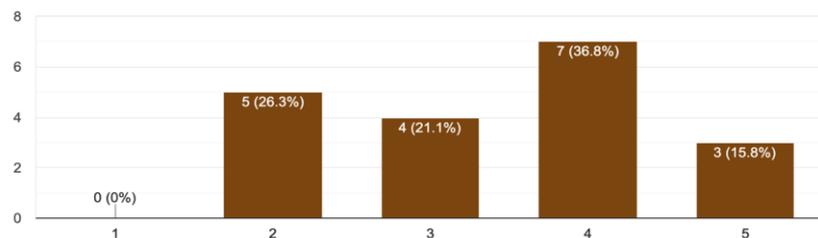
Strong sense of belonging
and connection to the
learning community



Participant Reflections

How confident are you about implementing mathematical modeling in your activities?

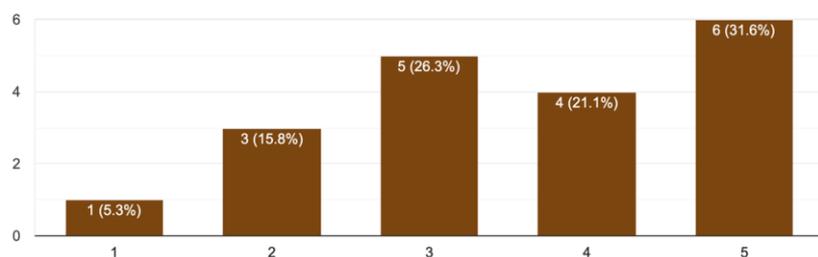
19 responses



How feasible is it for you to incorporate mathematical modeling activities into your curriculum?

How feasible is it for you to incorporate mathematical modeling activities into your curriculum?

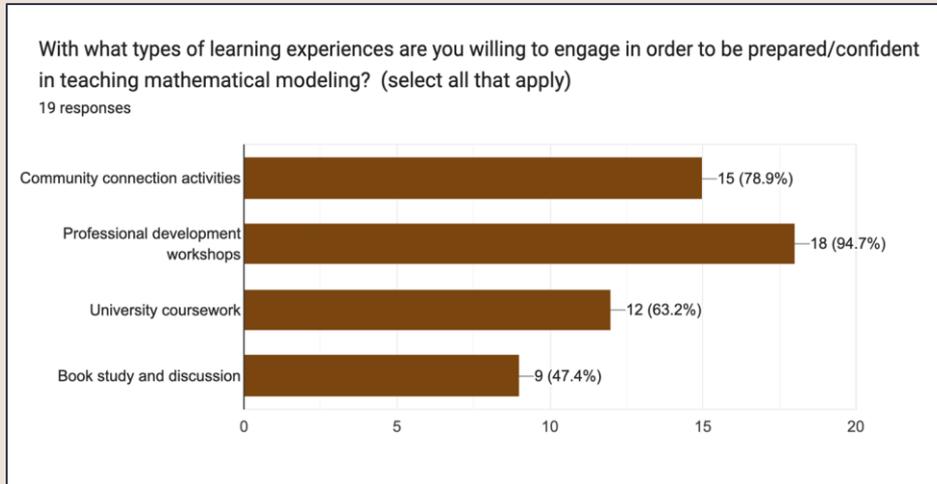
19 responses



High interest in incorporating mathematical modeling into the classroom

- Relevance to learning community
- Mixed levels of confidence & feelings of feasibility
- Desire for more training

Participant Reflections



Willingness to participate

- future professional development (95%)
- community connection events (79%)

Recommendations

for building motivated,
connected learning
communities

- Provide more collaborative opportunities to engage with mathematical modeling.
 - Diversity & Creativity
- Focus mathematical modeling professional development on local contexts.
- Engage in collaborative cultural exchange as part of PD.

Questions or Comments?

Carrie Bala
Utah State University
carrie.bala@usu.edu



Cynthia Anhalt
University of Arizona
canhalt@math.arizona.edu



Brynja Kohler
Utah State University
brynja.kohler@usu.edu



Thank you!