



**DEW (Diversity, Education, and Workforce Development)  
All Hands Meeting**



October 3-4, 2019

# DEW team members



Laura Conner



Megan McGinty



Beth Leonard



Courtney Breest



Sarah Clement



Robert Herrick



Victoria Smith



Donald Crocker



Joan Travers, Lauren Sutton, Alex Ravelo,  
Stephie O'Daly not pictured

## PEER TUTORS:

Emily Kirkpatrick  
Taylor Seitz  
Travis Oen  
Savannah Owen

# Conceptual framing

---

- Project focused on ecological change
- Research suggests that new ways of thinking are needed to address challenges associated with such change
- Our DEW plan is tied to project research by a focus on developing key sustainability competencies among stakeholders

## Five Key Competencies

**Systems thinking:** comprehending how systems are connected, and internal system dynamics

**Futures thinking:** envisioning how the past and present inform and influence the future

**Values thinking:** understanding the effects our values have on our decisions

**Strategic thinking:** developing strategies to achieve a vision

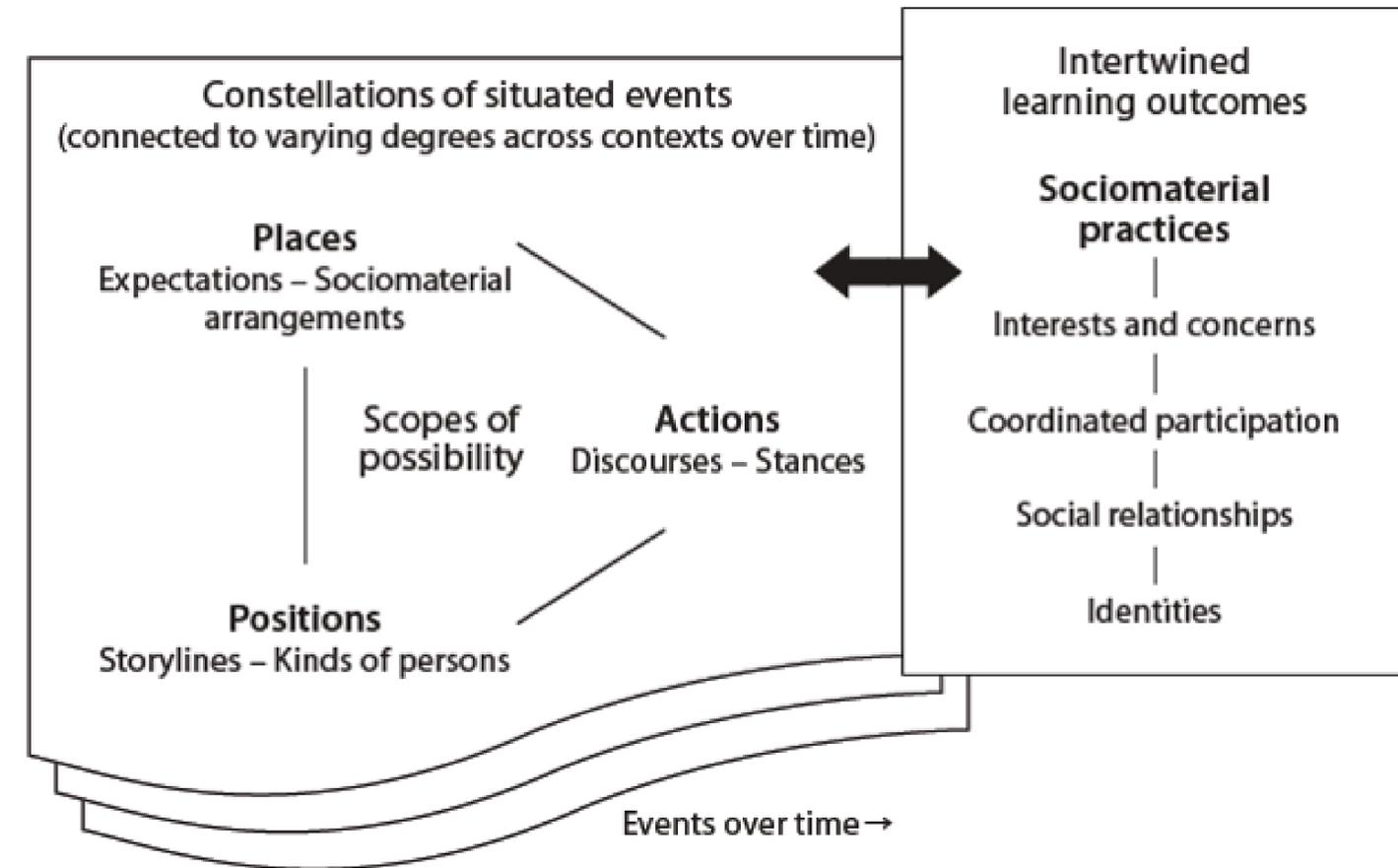
**Interpersonal competence:** communicating, deliberating, negotiating, collaborating, leading, and fostering empathy

Wiek, A., Withycombe, L., & Redman, C. L. (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science*, 6(2), 203-218.

Barth, M., Godemann, J., Rieckman, M., & Stoltenberg, U. (2007). Developing key competencies for sustainable development in higher education. *International Journal of Sustainability in Higher Education*, 8(4), 416-430.

# Conceptual framing

- EPSCoR is capacity building
- Both UA and NSF prioritize diversifying the STEM workforce
- Values and interpersonal competencies are inherently linked to diversity
- Cultural Learning Pathways: a model for how learners navigate science-linked experiences and build identification with science



Bell, Tzou, Bricker, & Baines (2012). Learning in Diversities of Structures of Social Practice: Accounting for How, Why, and Where People Learn Science. *Human Development*, 55, 269-284.

# DEW Goals

Goal DEW 1: Build key competencies among stakeholders to address ecological change.

Goal DEW 2: Build a diverse pool of STEM learners and workers in Alaska.

Goal DEW 3: Increase capacity for F&I science and teaching among UA faculty and students.

# Today's summary focused on audience type

---

- DEW-designed activities for UA audiences (Internal)
- DEW-designed activities for audiences outside of UA (External)
- Cross-cutting activities (co-designed or co-offered by DEW, the natural science teams, and/or Communications)

# Internal (UA) activities

---

## *Undergraduate focus*

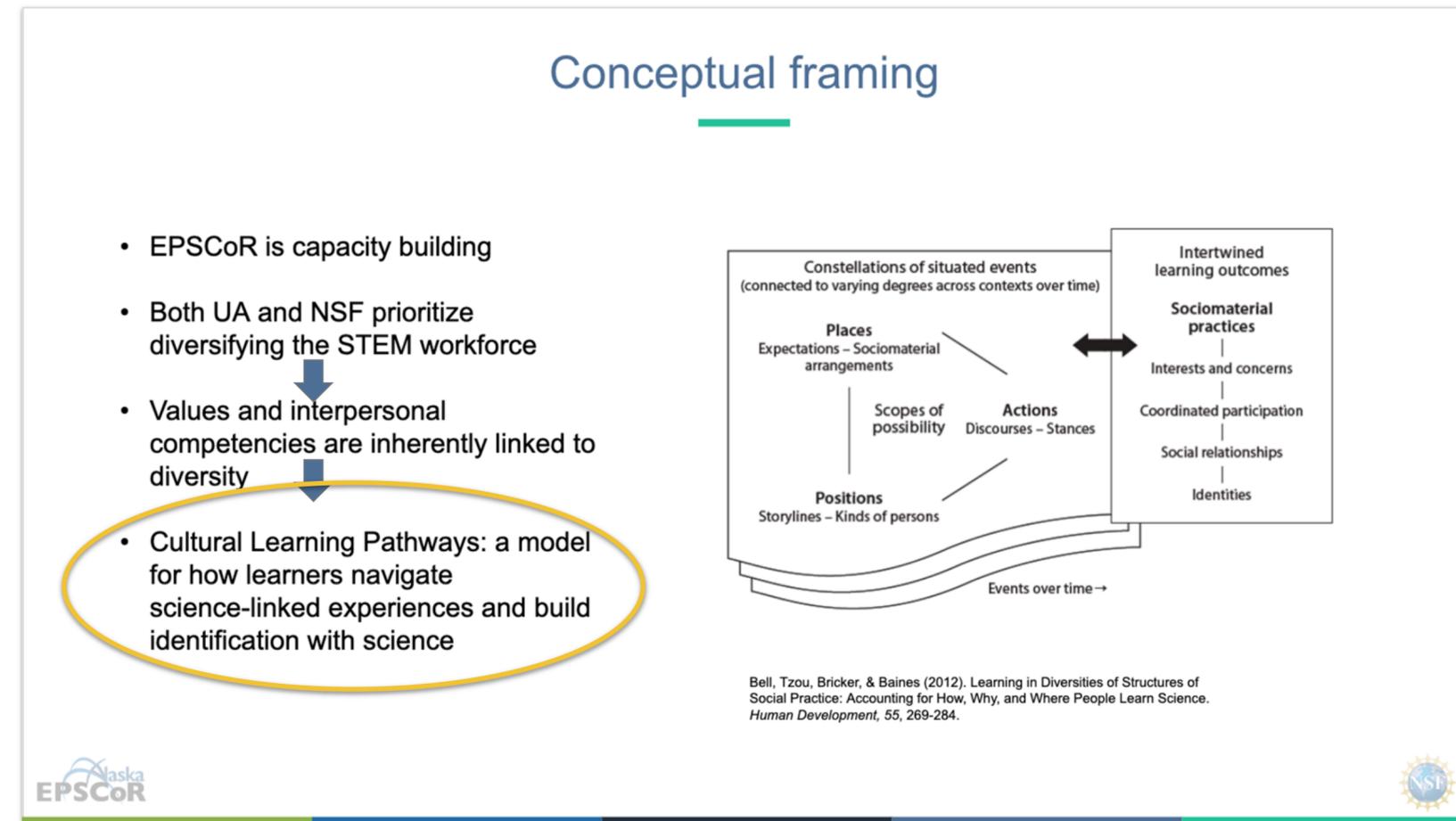
- Research on science identity
- Education difference workshop
- STEM tutors
- STEM success stories

## *Faculty focus*

- Indigenous science workshops
- Stereotype threat talk
- Postdoc mentoring group
- Mentoring workshop

# Science identity research

- Known conflicts between various components of identity and science identity
- Not much known about first gen identity vs. science identity
  - Designed surveys and in-depth interviews to get a better understanding of 1st gen STEM majors (What are the factors affecting their decisions to major in STEM?)



# Indigenous Science

---

## Work with us: Engaging Indigenous Knowledges in teaching and research practice with integrity

- What are the places of Indigenous knowledges and worldviews in the intellectual traditions of the university?
- Are there perspectives, values, norms and practices that need to be 'unlearned' in order to engage IK with integrity?
- How should Indigenous knowledges be engaged by researchers and scientists?
- What kinds of perspectives, values and practices are needed for engagement with integrity?

## INDIGENOUS KNOWLEDGES WORKSHOP

### WORK WITH US: ENGAGING INDIGENOUS KNOWLEDGES IN TEACHING AND RESEARCH PRACTICE WITH INTEGRITY

University of Alaska faculty, staff, students and affiliates are invited to a workshop examining key questions about the role of Indigenous Knowledges in academia. Topics include how Indigenous Knowledges can be engaged in teaching and research with integrity, using authentic and decolonizing methods.

Co-leaders Drs. Ocean Mercier and Beth Leonard will briefly present on their collaborative work, lead a roundtable discussion that examines successes and challenges, then assist participants in generating plans or strategies for engaging Indigenous Knowledges in their future teaching and/or research.

**Workshop 1:** UAA campus (location TBA), 9 AM - 1 PM, Monday, May 6

**Workshop 2:** UAF campus (location TBA), 9 AM - 1 PM, Friday, May 10

Registration is free but spaces are limited. Visit <http://tinyurl.com/yxmduyql> to register. Travel funding may be available for attendees from Juneau; for more information contact [cfbreest@alaska.edu](mailto:cfbreest@alaska.edu).

# Education difference workshop

---

- First Generation students can experience challenges in college that are different than those faced by continuing generation students
- Workshops documented to reduce achievement gaps and other outcomes
- Emphasizes how students' different backgrounds can be a source of both challenge and strength
- November 8 at UAF, future events planned for other campuses

# External (non-UA) activities

---

- Girls on Water
- After school programs, 21st Century Learning
- Partnership with K-12 Outreach Office



# Girls on Water

- First program in August 2019
- 12 days in a wilderness setting (K-Bay area)
- Satisfaction scores were high (mean 3.9 on a 4 point scale)
- Pre/post changes in several areas but sample size too small to assess statistically



“Asking that is a pretty difficult question, I enjoyed just about every part. I loved characterizing Arch beach with all of the amazing scientific tools. I also loved going to the hatchery and catching fish. Even broader I loved the atmosphere of being allowed to fail and explore and follow what interested me. If you were to ask me again, though, I'd probably say something different because there was SO much I loved.”

“The best part of Girls on water was the positive empowerment of women mixed with the new skills we were learning and the beautiful places we were exploring. I think i can safety say this has been one of the most inspiring adventures of my life so far.”

Scale	Pre Mean	Post Mean	Change
Science Career	3.21	3.54	+0.33
Science Identity	2.97	3.16	+0.19
Science Interest	3.31	3.26	-0.05
Systems Thinking	3.48	3.48	0.00

# After School programs

---

- Starting with wildfires -
  - Partnering with organizations in Fairbanks, Anchorage (fire curriculum) and Juneau
  - Working to develop lessons modeled on fire training simulators
  - Investigating simulation/game options with manipulable parameters

## Five Key Competencies

**Systems thinking:** comprehending how systems are connected, and internal system dynamics

**Futures thinking:** envisioning how the past and present inform and influence the future

**Values thinking:** understanding the effects our values have on our decisions

**Strategic thinking:** developing strategies to achieve a vision

**Interpersonal competence:** communicating, deliberating, negotiating, collaborating, leading, and fostering empathy

# Cross-cutting activities

- Hands-on activities modeled after research
- Science Pubs / Cafes
- Field-work participation
- Strengthen connections between researchers and educators
- Open to additional cross-cutting activities between researchers and DEW team! Let's discuss.

