



Climate Equity and Environmental Justice Roundtable

Alice Agogino, Professor of Mechanical Engineering
Education Director, Blum Center for Developing Economies
Chair, Graduate Group in Development Engineering

Research Synergies & Funding Opportunities

- Funding opportunities can catalyze faculty, staff and students.
- Must be driven by shared strategic goals: time invested is worthwhile even if not successful in extramural support.
- Works best if tied to sustainable institutional support.



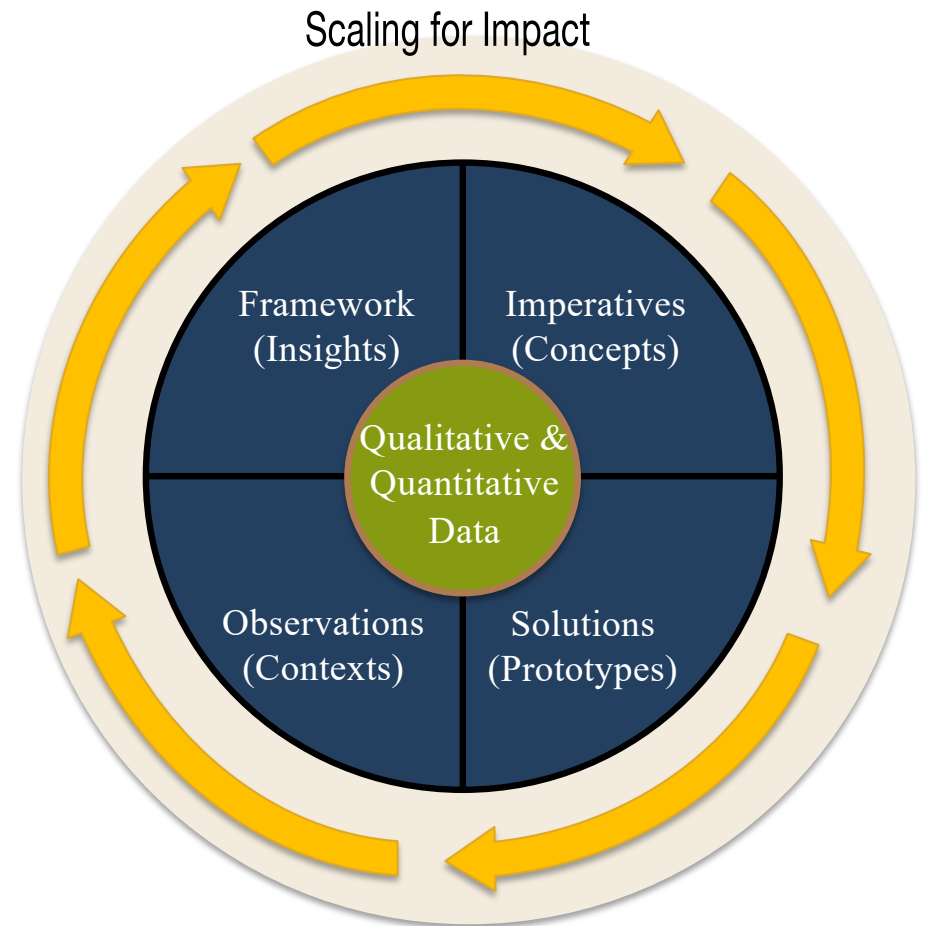
Development Engineering Research Model

An interdisciplinary research field that integrates:

- ❖ Engineering, physical sciences, energy, and resource development
- ❖ Economics, business, and social sciences

Students learn to cycle through a full process of design.

Aimed at scaling technologies to benefit people living in underserved areas.





INFEWS



**UC BERKELEY NRT: INNOVATIONS IN FOOD, ENERGY, WATER SYSTEMS
STEM TRAINING FOR ACTIONABLE RESEARCH AND GLOBAL IMPACT**

**ALICE M. AGOGINO, PI
Yael PEREZ, COORDINATOR**

\$3M OVER 5 YEARS



DGE#1633740



INFEWS
FACULTY



Alice Agogino, Mech
Eng



Dan Kammen,
Energy Resources



Kara Nelson,
Environ Eng



Matthew Potts, Energy,
Social Science, Policy



David Levine
Business



Isha Ray
Energy Resources



Jack Colford
Public Health



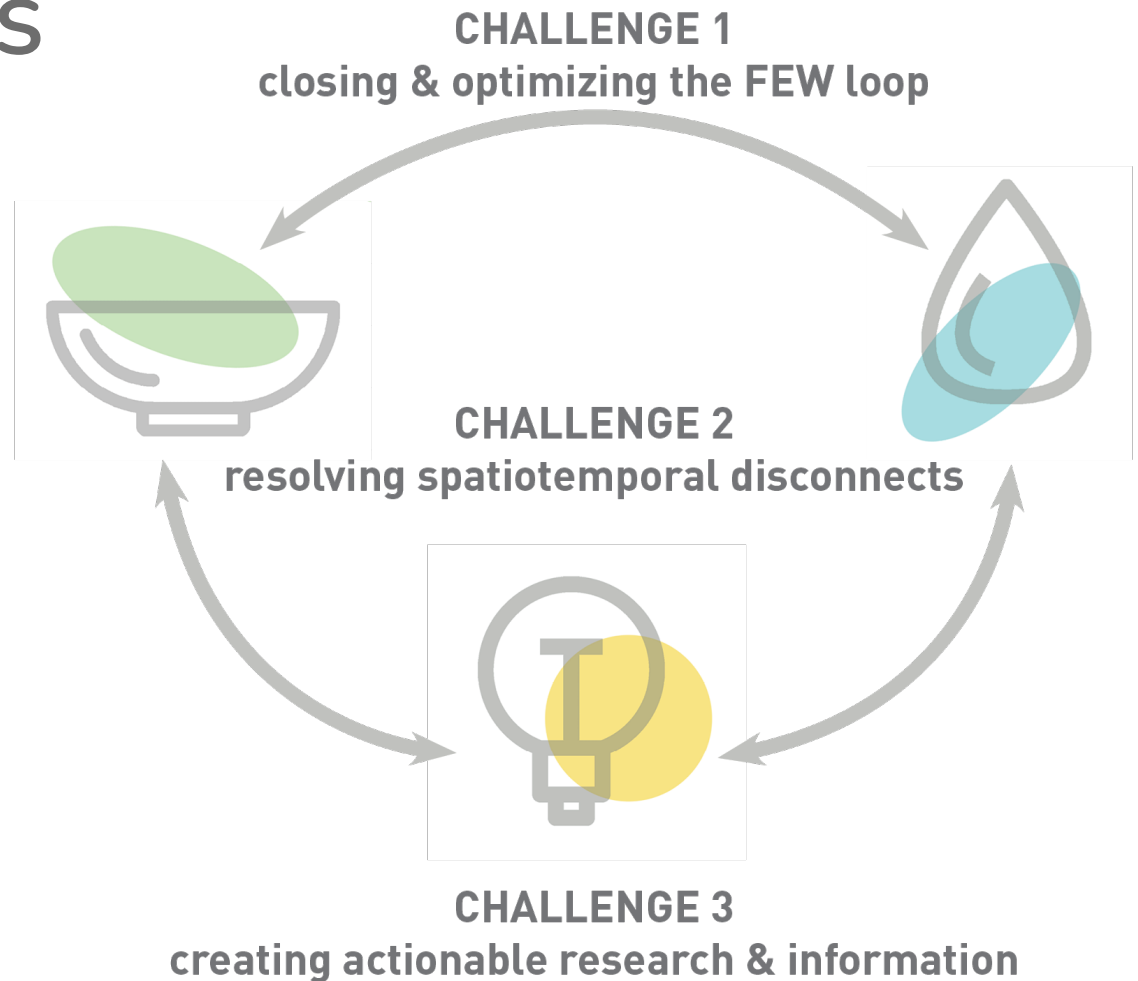
Clair Brown
Econ



David Zilberman
Agricultural Econ

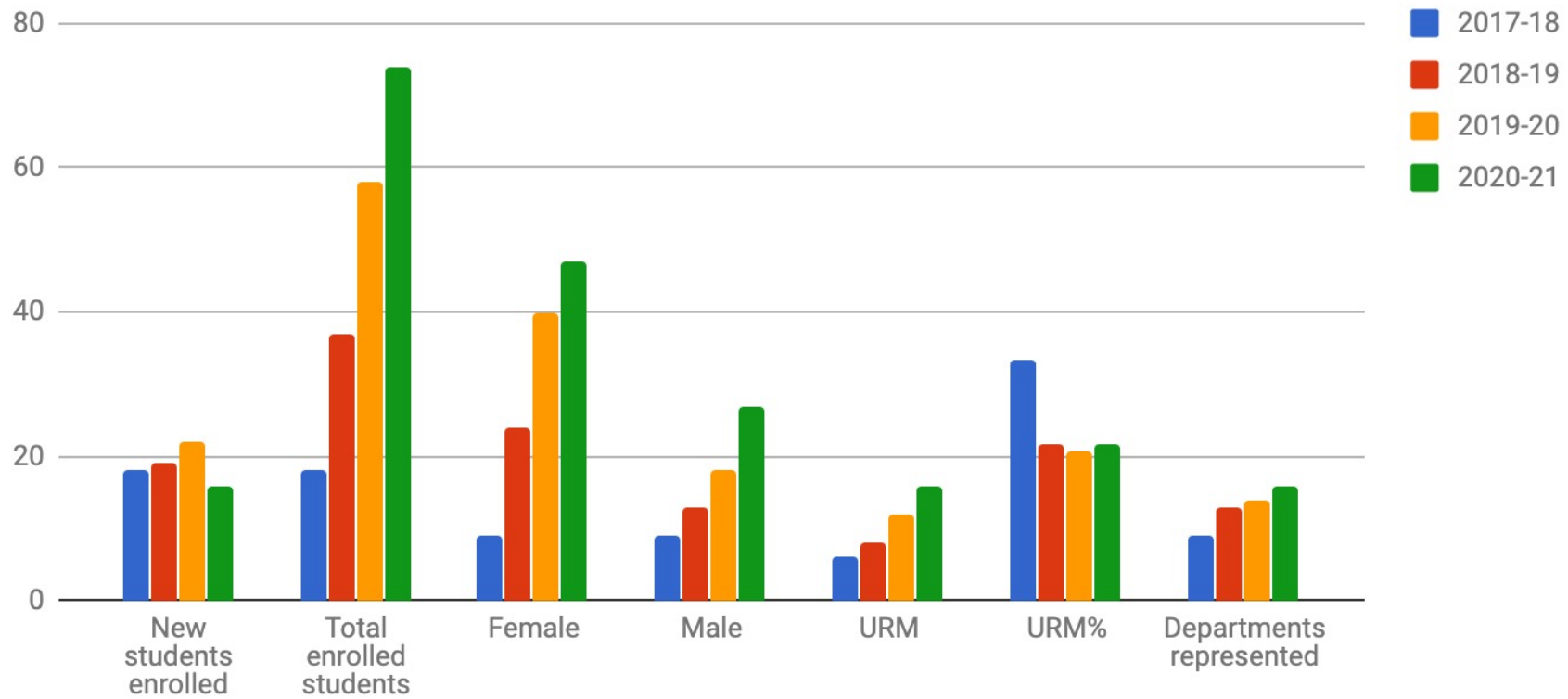
UC BERKELEY INFEWS NRT

actionable interdisciplinary research that address **grand challenges** in the design, implementation, and coordination of food, energy and water systems within **spatial and temporal constraints**.



UC Berkeley InFEWS NRT

InFEWS/DevEng Enrollment Trends





Our Broader Mission: Interdisciplinary Learning & Problem Solving for Global Social Impact

- ❖ Interdisciplinary learning
- ❖ Problem solving
- ❖ Human-centered design
- ❖ Co-design with communities



Indige-FEWSS



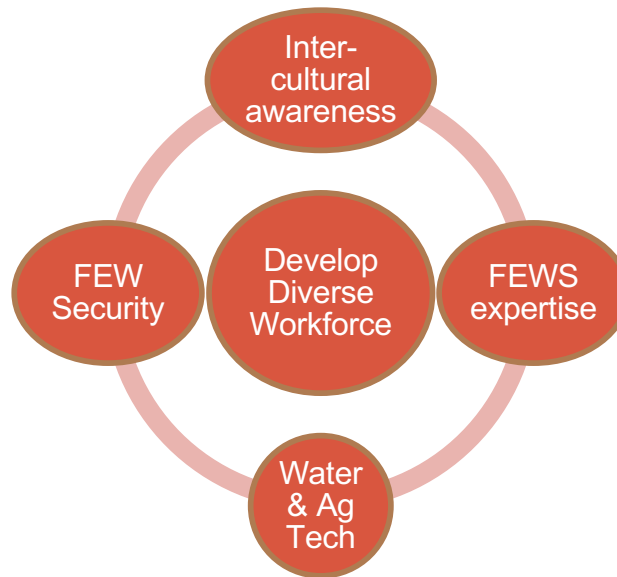
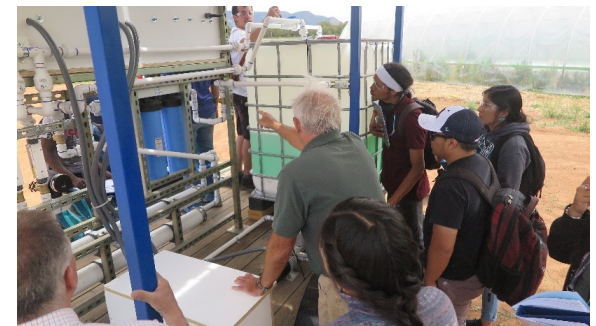
“Indigenous Food, Energy, and Water Security & Sovereignty”



12 trainees (9 PhDs, 3 MS)
42% Native American
58% Minorities
50% Male & Female



Training Tribal College Students in FEWSS



<https://energy.arizona.edu/indigefewss>



MAJOR RESEARCH EFFORTS

Production of Drinking Water from Brackish Groundwater

Brine Management

Controlled Environment Agriculture

Indigenous Co-Innovation of Food, Energy & Water Systems

*Training students to co-design with Indigenous
communities using systems thinking*



NSF#18037

\$200K workshop grant



Co-InFEWS NRT Partners

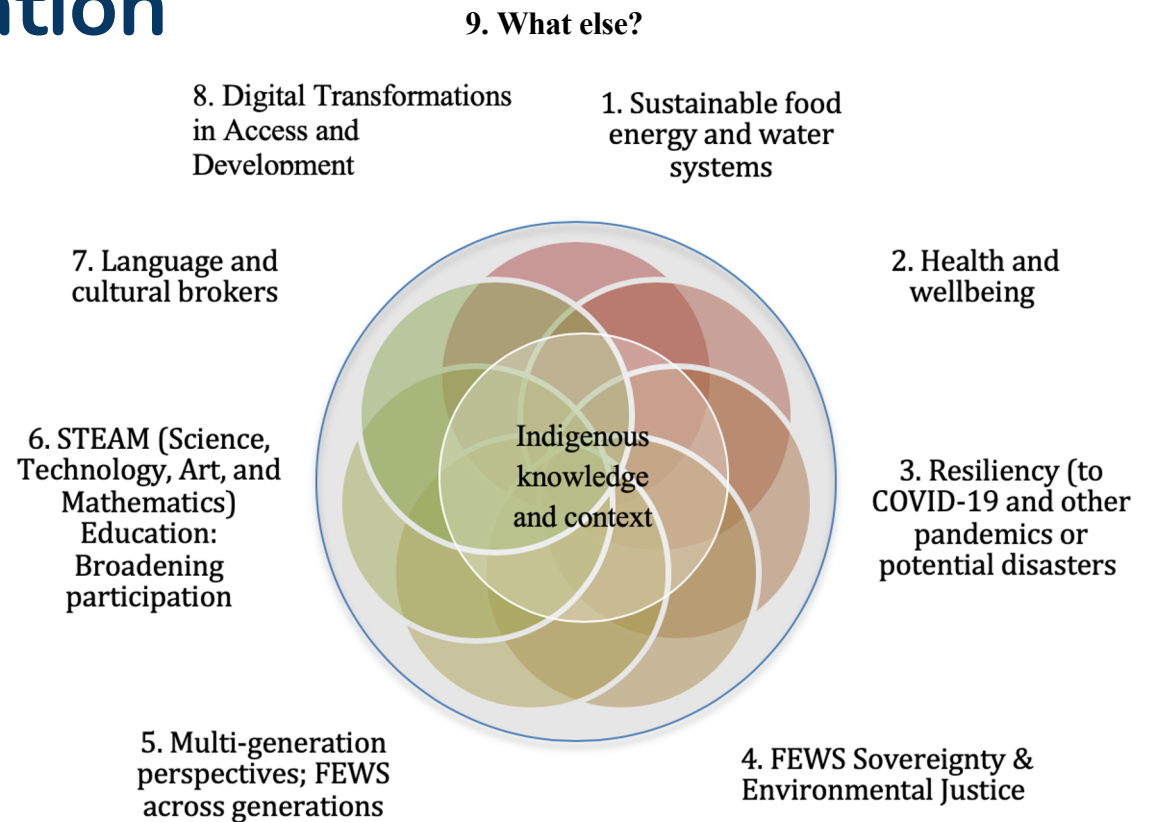
- **Alice Agogino** , UC Berkeley InFEWS Faculty
- **Maya Trotz and Rebecca Zarger**, USF InFEWS Faculty
- **Karletta Chief**, U Arizona InFEWS Faculty
- **Don Robinson**, Diné College INFEW Faculty



Topics to consider in the process of Indigenous innovation

How sustainability should be considered in the design of FEWS with Indigenous communities?

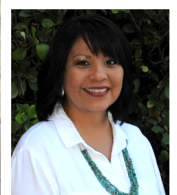
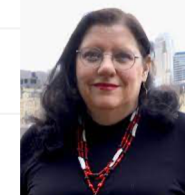
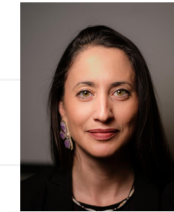
Action Items: How can YOU put this into action?



Launch of the Native FEWS Alliance

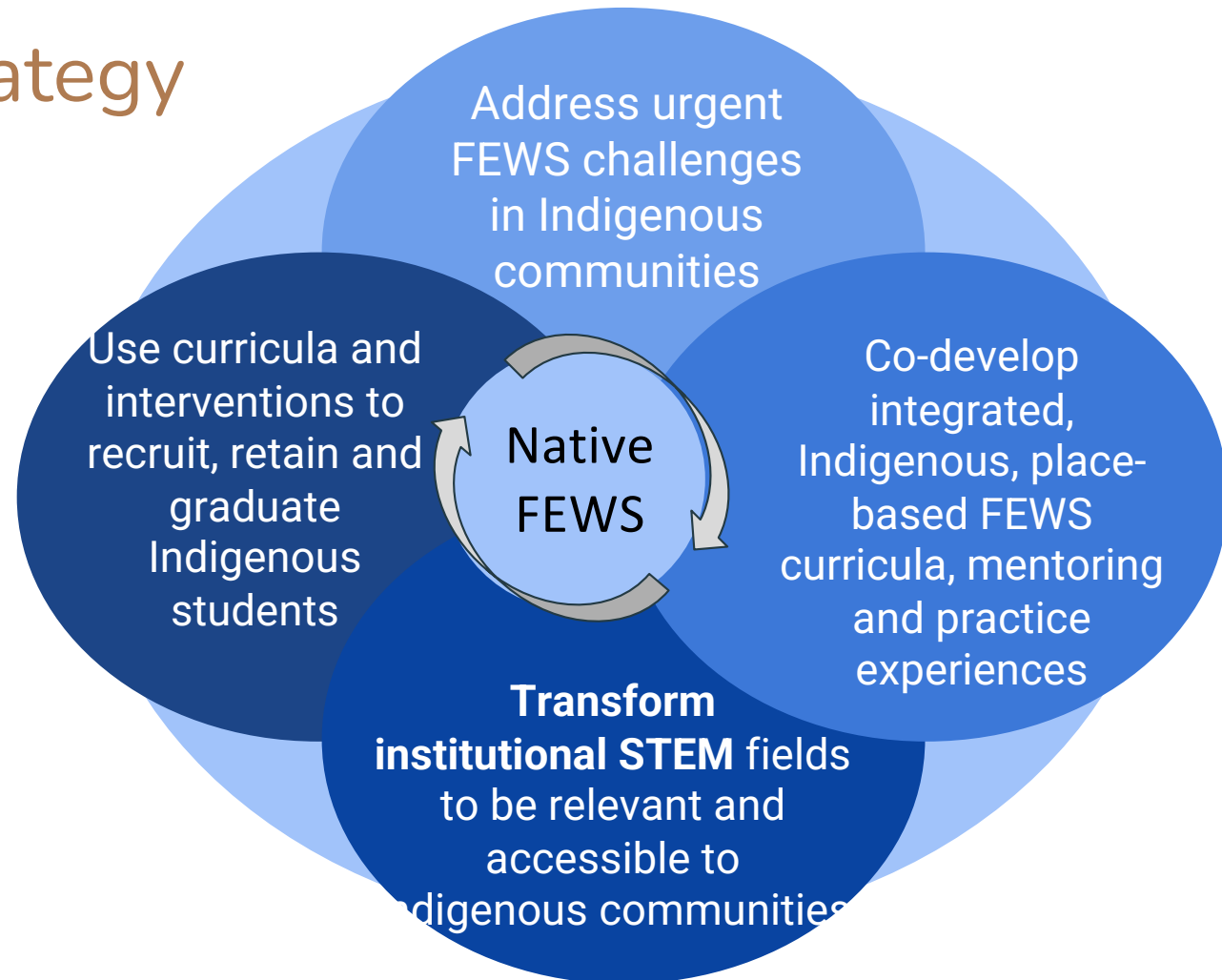
Broadening Career Pathways in Food, Energy, and Water Systems (FEWS) with and within Native American Communities

	University of California, Berkeley	University of Arizona
PI	Alice Agogino	Karletta Chief
Co-PI	Elizabeth Hoover	Greg Barron-Gafford
Co-PI	Matthew Potts	Kelly Simmons-Potter
Co-PI	Carrie Billy (AIHEC)	Valerie Shirley
		Diana Dalbotten (U of Minnesota)



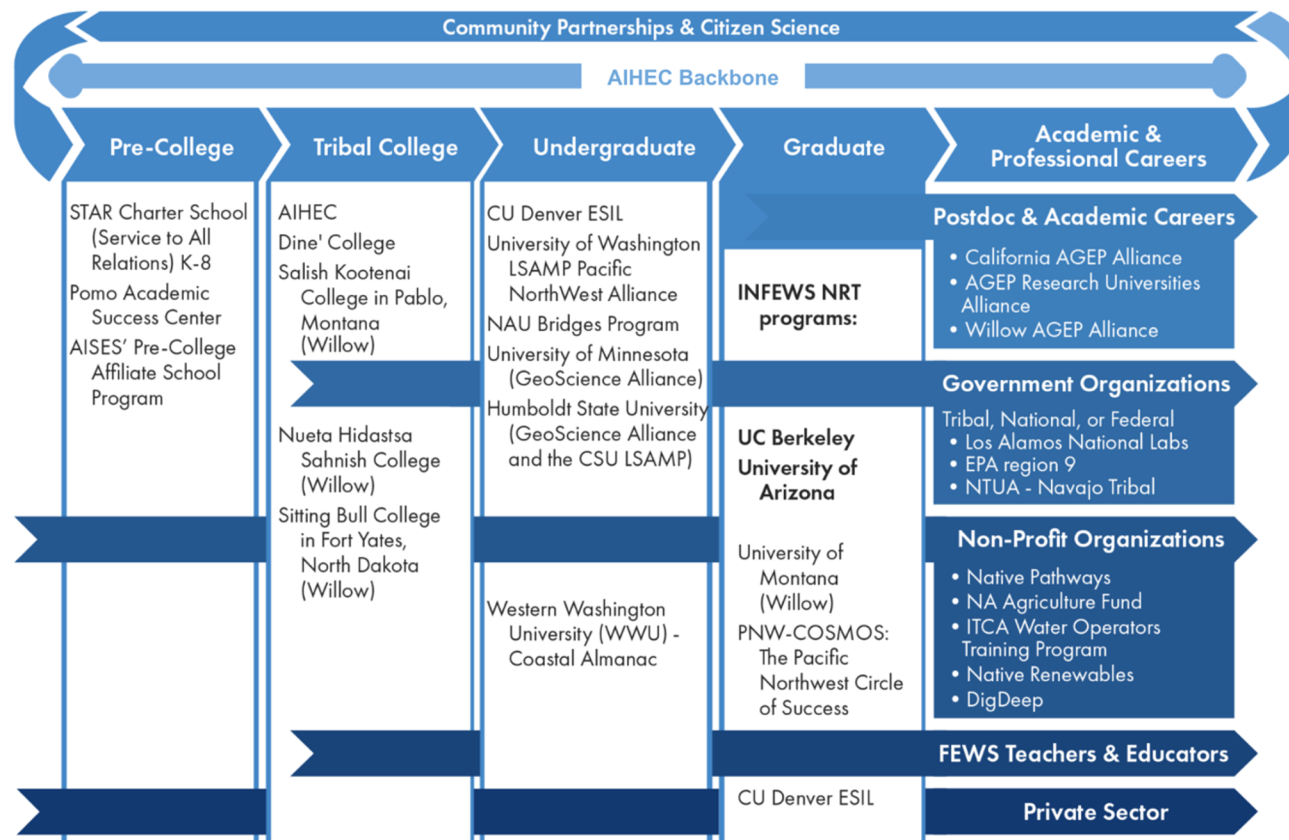
\$10 million over 5 years

Change Strategy

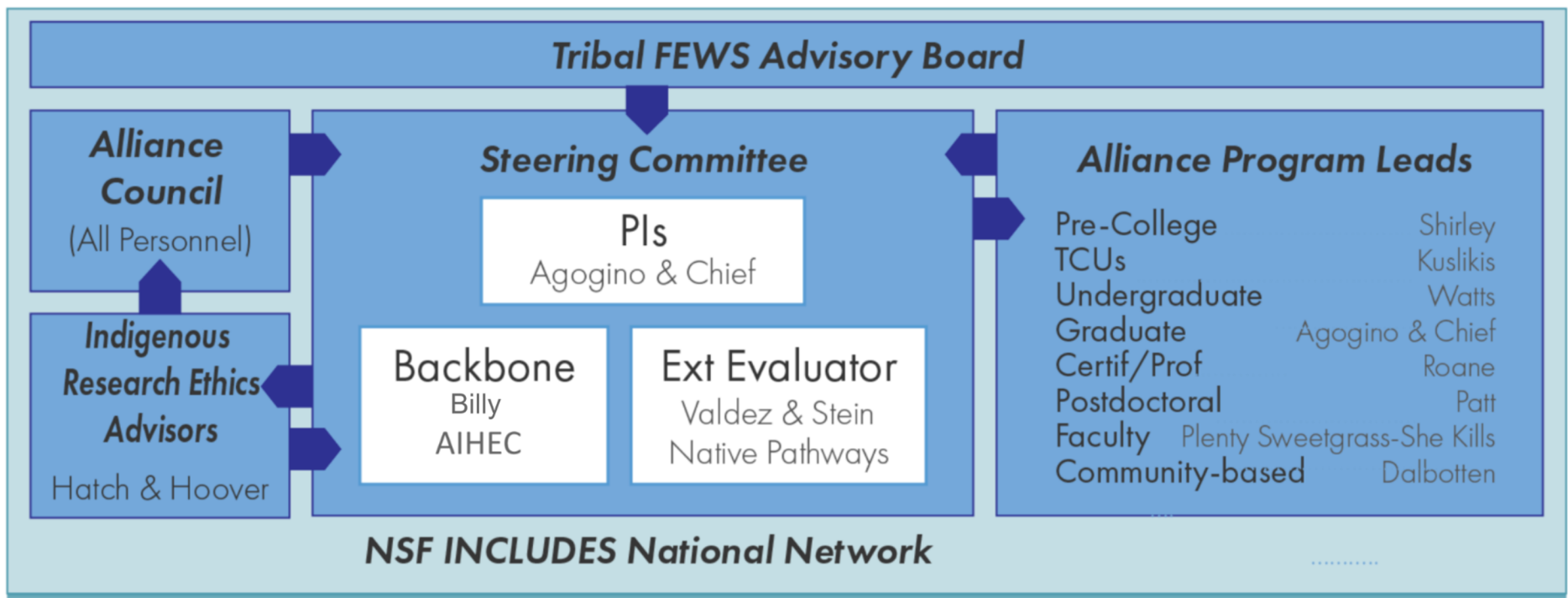


Project Goals:

Native FEWS Pathways through the Native FEWS Alliance Institutions



Organization Structure and Launch Breakout Group Leaders



Networked Improvement Community (NIC) Framework



Research Synergies & Funding Opportunities

- Funding opportunities can catalyze faculty, staff and students
- Must be driven by shared strategic goals
- Works best if tied to sustainable institutional support
 - DevEng Faculty Position
 - PhD Minor – Designated Emphasis
 - Master of Development Engineering
 - Support for Graduate Student Research
 - Research Experiences for Undergraduates
 - Follow on Grants – Digital Transformations in Development

