



CIRCLES Alliance: States Working Together to Reach Out to Underrepresented Populations as Partners in Innovation

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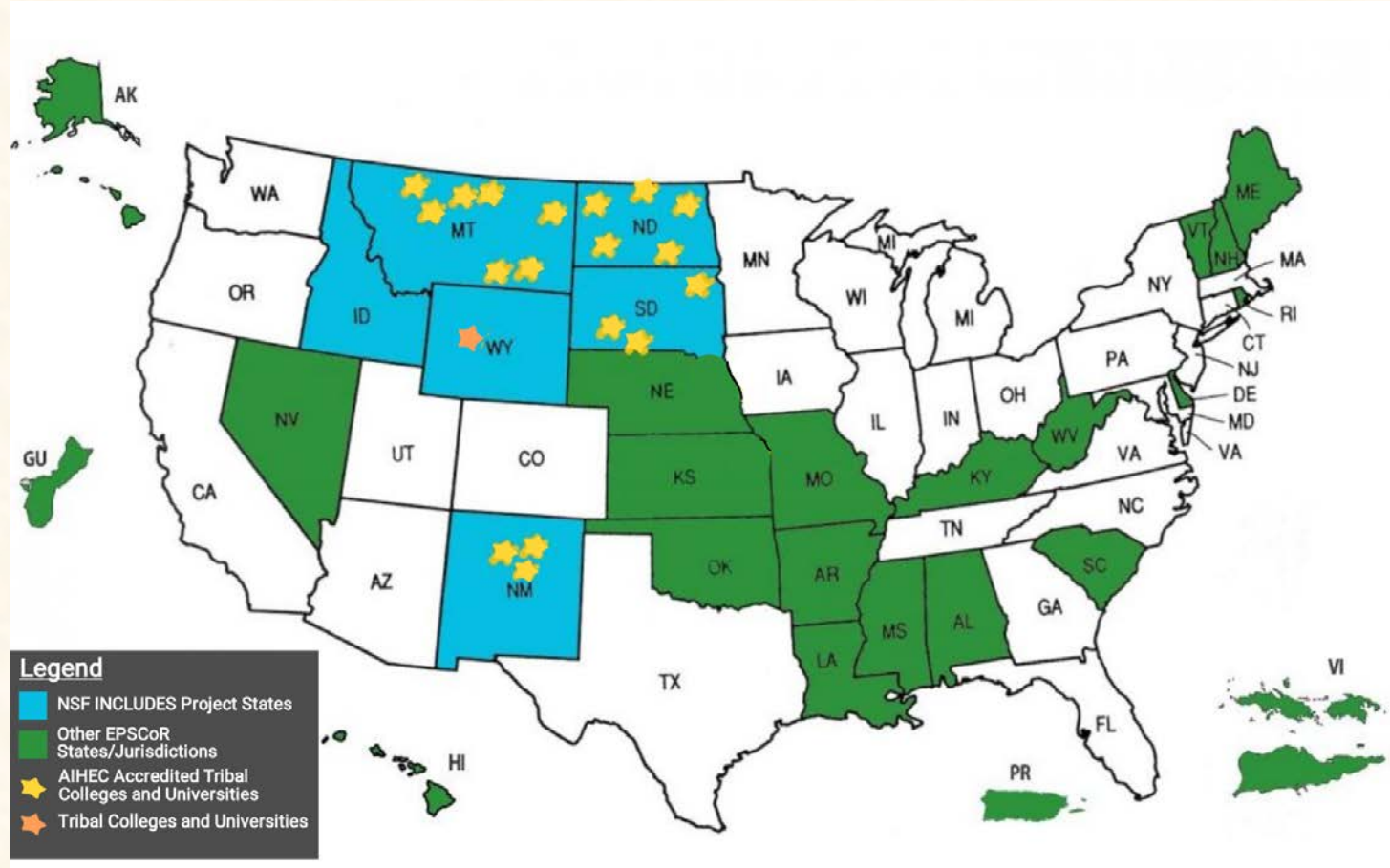
CIRCLES

ALLIANCE

**Cultivating Indigenous Research
Communities for Leadership in Education
and STEM**



CIRCLES Alliance States and Tribal Colleges





What is the CIRCLES Alliance?

- Formed to address severe underrepresentation of American Indian and Alaska Native students in STEM academic disciplines and STEM workforce
 - AI/AN Workforce in STEM is only 0.2%
 - STEM bachelor's degrees earned dropped from 0.7% to 0.5% (2000 to 2015)
- Six EPSCoR states with large AI/AN population
 - Idaho, Montana, New Mexico, North Dakota, South Dakota, Wyoming
 - AI/AN population of 440,000
 - 19 Tribal Colleges and Universities
 - 49 tribal nations



CIRCLES Alliance History

- 2018 NSF EPSCoR Native STEM Education Summit, Kalispell, MT
- 2019 CIRCLES Alliance submits NSF INCLUDES proposal (not funded)
- 2020 NSF EPSCoR CIRCLES Alliance Award
 - Strengthen Alliance and relationships with tribal communities
 - Develop collaboration and backbone communication platform
- 2022 CIRCLES Alliance submits NSF INCLUDES proposal
- 2022 CIRCLES Alliance awarded NSF INCLUDES project



Activities Conducted under NSF EPSCoR CIRCLES Alliance award

- Weekly meetings of Alliance Leadership Team to discuss how to strengthen collaboration
- Working meeting of Alliance members held in New Mexico to review activities and plan further collaborations
- Interviews and surveys conducted with 95 AI/AN K-12 instructors, TCU faculty and tribal community members across all six states as to what they would like to see from an alliance such as CIRCLES
 - From this, CIRCLES Alliance Themes and Goals were developed that will guide future Alliance activities



CIRCLES Alliance INCLUDES Project Themes

- **Theme 1:** Improved culturally relevant and culturally responsive K-12 science and math instruction is imperative to promote Native student skills and sustained interest in STEM disciplines.
- **Theme 2:** More science and professional learning for K-12 educators is required to better prepare AI/AN students before entering higher education, especially for students from rural areas.
- **Theme 3:** Indigenous STEM resources and training are needed for K-12 teachers, support staff, and programming staff that work with Native students.
- **Theme 4:** More AI/AN teachers and faculty are needed in both K-12 and higher education as well as more opportunities for non-Native educators to learn about Native cultures and histories.
- **Theme 5:** Development of more AI/AN STEM role models and mentors is critical for students at all levels.
- **Theme 6:** Improved collaboration and communication between Tribal communities and STEM education is essential to increase AI/AN participation in STEM.



CIRCLES Alliance INCLUDES Project Goals

- **Goal 1:** *Develop, implement, leverage, and evaluate Indigenous-based STEM activities in the partner states and tribes.*
- **Goal 2:** *Develop a network of cross-sector partners to collectively impact STEM education in AI/AN communities.*
- **Goal 3:** *Increase the competency and positively influence the attitude of AI/AN students in math and science, with a focus on K-12 students, through experiential and community-based learning that is culturally relevant.*
- **Goal 4:** *Build community awareness and investment in STEM in AI/AN communities and within AI/AN leadership and governance.*
- **Goal 5:** *Develop STEM pathways for AI/AN students to enter TCUs, enter and transfer from TCUs to other post-secondary institutions and enter the workforce.*
- **Goal 6:** *Increase the number of AI/AN teachers and mentors while supporting existing teachers and mentors through Indigenous-based STEM activities.*
- **Goal 7:** *Centralize Indigenous STEM for Alliance members and national EPSCoR and INCLUDES communities*



CIRCLES Alliance INCLUDES Project Objectives

- Develop a repository of indigenous based middle school STEM formal lesson plans with training opportunities
- Develop STEM AI/AN teachers/faculty and mentors
- Using culturally based experiential and community focused learning opportunities, cultivate a positive outlook towards STEM, especially focusing on K-12
- Supporting AI/AN STEM students K-20 through nation building and mentorship
- Developing Alliance partners and leveraging resources for expansion and sustainability



CIRCLES Alliance Opportunities

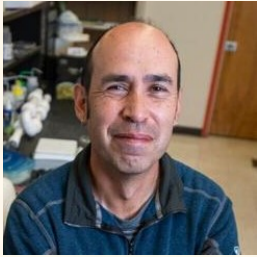
- Repository of Curriculum Modules and Resources
- Best practices for working with AI/AN students/communities
- Shared vision creates powerful base for rigorous and innovative research and practice
- Benefit tribal communities in other EPSCoR and non-EPSCoR jurisdictions
- Expand collaborations and activities supporting tribal communities
- Provide resources for broadening participant activities



CIRCLES Alliance: How to get involved

- As CIRCLES Alliance progresses, information on resources that can be accessed and utilized will be shared widely and presented at future EPSCoR and other conferences
- Many of the best practices that will be developed and shared within the Alliance will be made available for dissemination but please be patient
- **Continue to talk and share ideas/strategies with CIRCLES Alliance members**

CIRCLES Alliance Leadership & Contacts



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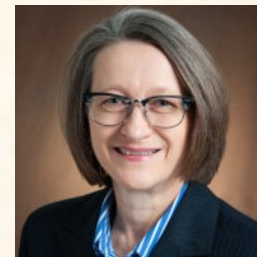
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- **Award # 1724847 Tribal College Faculty Professional Development Workshop**
- **Award # 2038271 Collaborative Research: Cultivating Indigenous Research Communities for Leadership in Education and STEM - CIRCLES Alliance**
- **Award # 2217344 NSF INCLUDES Alliance: Cultivating Indigenous Research Communities for Leadership in Education and STEM (CIRCLES) Alliance**



CIRCLESAlliance.org