U.S. DEPARTMENT OF ENERGY | Office of NUCLEAR ENERGY

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Indian Country Energy and Infrastructure Working Group STEM Update
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NETWG STEM white paper

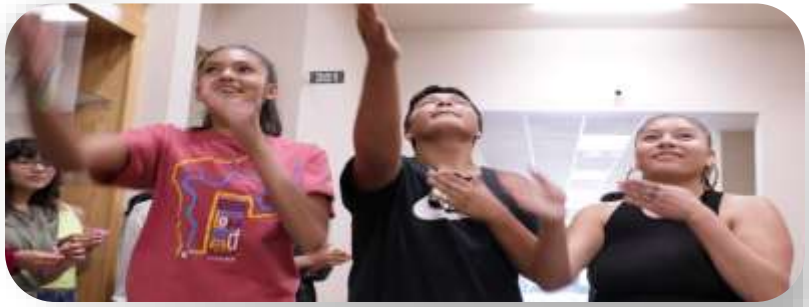
- Identified gaps for STEM opportunities
  - Coordination on nuclear activities and utilization of subject matter expertise
  - Facilitation of STEM opportunities for youth in Tribes to generate interest in nuclear energy
  - National labs interactions with and response to Tribal communities and their concerns

- White Paper Priorities
  - Recommendations for increasing STEM education in Indian Country
  - STEM subcommittee
  - STEM white paper

NETWG
NUCLEAR ENERGY
TRIBAL WORKING GROUP

NE STEM Goals and Objectives

GOAL: The Office of Nuclear Energy works to engage youth and communities in nuclear energy education. The focus is on improving access to STEM education and workforce development opportunities, as well as increasing site-specific engagement. NE also collaborates with all three DOE Tribal Working Groups to increase STEM opportunities for youth and the workforce in Indian Country.



OBJECTIVES:

- Internships and Work-based training
- Fellowships/scholarships
- Course-based training
- Curriculum development
- Outreach and communication

Tribal STEM Subcommittee

- The need for this subcommittee grew out of an expressed interest from all three DOE Tribal Working Groups to increase STEM opportunities for youth and the workforce in Indian Country.
- The focus is on improving access to STEM education and workforce development opportunities, while increasing site-specific tribal engagement.
- This collaborative effort will allow tribal working group members to identify and evaluate best practices to determine methods that suit individual tribal needs.
- Several virtual meetings have been held with members from all three working groups Nuclear Energy, State and Tribal Government, and Indian Country Energy and Infrastructure Working Groups.
- The subcommittee discussed framework for standing up this group including organizational structure, mission statement, and individual expectations.

Navigating Nuclear STEM Resources

High School Resources:

- Digital Lesson Plans
- STEM Project Starters
- Career Profiles (coming soon)
- Virtual Field Trip of Idaho National Laboratory

Middle School Resources:

- Digital Lesson Plans
- STEM Project Starters
- Career Profiles

DOE has partnered with American Nuclear Society (ANS) and Discovery Education (DE) to support High School Resources (2019-2020) and Elementary School Resources (2020-2021)

Virtual Field Trip of Idaho National Laboratory

https://www.navigatingnuclear.com/nuclear-reimagined-vft/

Integration of Traditional Ecological Knowledge (TEK)

Guiding Questions for Tribal STEM Education Visits

1. What STEM Education projects are currently taking place in your Tribe?
2. What are some things you would like to do in STEM?
3. Are there "out-of-school" or informal times that STEM-related content could be used with students?
4. Have you seen or read about things such as Fab Labs, maker spaces, or invention education that you might want to incorporate into formal or informal learning time?
5. Do you feel like your students have opportunities to learn about many different careers in the STEM and STEM-support area?
6. Do most students in your Tribe have access to the Internet in their schools? In their homes?
7. Do you think all-age members of your Tribal community would be interested in doing STEM-related activities?
8. In order to make STEM content relevant for your Tribal members, would you be willing to share stories that are important to your Tribe?
9. What Traditional Ecological Knowledge (TEK) would you think is most important to incorporate into STEM lessons and activities?
10. Would you be interested in collaborating with us to do something for your students?

Tribal Nations Listening and Assessment Sessions

Idaho

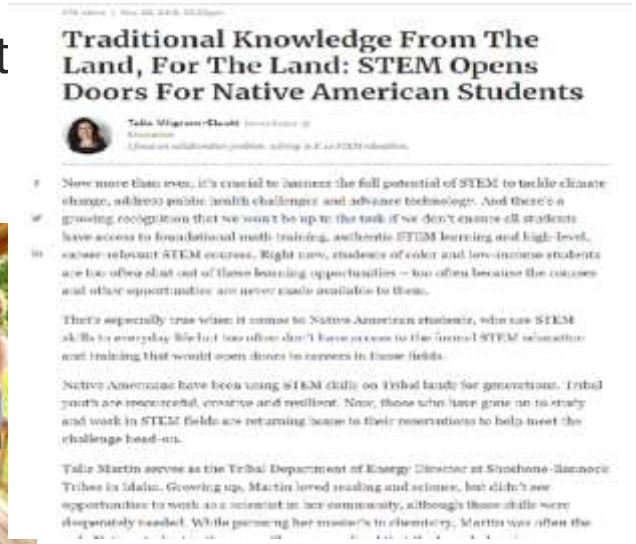
Shoshone-Bannock Tribes

New Mexico Pueblos
Cochiti - Accord
Jemez- Accord
Pojoaque
San Ildefonso-Accord
Santa Ana
Santa Clara-Accord

Pacific Northwest
Nez Perce
Umatilla
Wanapum
Yakama

Supporting STEM Education in Tribal Communities Project Team

- Partners
  - Shoshone-Bannock Tribe (co-lead)
  - Battelle
  - Arizona Science Center
  - North Carolina School of Science and Mat
  - Brockport Research Institute
  - Stemnovations (Alaska)



Traditional Knowledge From The Land, For The Land: STEM Opens Doors For Native American Students

Talia Martin

Now more than ever, it's crucial to harness the full potential of STEM to tackle climate change, address public health challenges and advance technology. And there's a growing recognition that we won't be up to the task if we don't ensure all students have access to foundational math training, authentic STEM learning and high-level, career-relevant STEM courses. Right now, students of color and low-income students are too often shut out of these learning opportunities — too often because the courses and other opportunities are never made available to them.

That's especially true when it comes to Native American students, who use STEM skills in everyday life but too often don't have access to the formal STEM education and training that would open doors to careers in those fields.

Native Americans have been using STEM skills on Tribal lands for generations. Tribal youth are resourceful, creative and resilient. Now, those who have gone on to study and work in STEM fields are returning home to their reservations to help meet the challenge head-on.

Talia Martin serves as the Tribal Department of Energy Director at Shoshone-Bannock Tribes in Idaho. Growing up, Martin loved reading and science, but didn't see opportunities to work as a scientist in her community, although those skills were desperately needed. While pursuing her master's in chemistry, Martin was often the

Research and Technology Investment Committee (RTIC)

- In January 2019, the Deputy Secretary established the Research and Technology Investment Committee (RTIC) to identify strategic cross-cutting research priorities and optimize DOE's investments in those priorities. The RTIC is also charged with promoting greater transparency and collaboration amongst programs on cross-cutting technologies and supporting activities.

- The RTIC identified STEM as a priority cross-cutting area and directed the RTIC Working Group to organize a workshop for programs to share information on their STEM activities, including their planned FY 2020 Funding Opportunity Announcements.

- The outcome of that meeting will begin to determine how DOE will build a strtegic framework for STEM Outreach and Engagement.

Federal STEM Strategic Plan

Federal Alignment: Federal STEM Strategic Plan (2018-2023)

- Goals of Plan
  - STEM-literate society
  - STEM workforce of future
  - Promote diversity and inclusion in STEM
- DOE Implementation Strategy
- Federal STEM Strategic Plan

DOE Tribal STEM Strategic Plan (Draft)

The DOE Tribal STEM Strategic Plan should align and reinforce the 3 major goals of the Federal Plan as well as complement the strategic plans from the Offices' of Nuclear Energy, Environmental Management, and Indian Energy.

Building on recommendations from the Tribal STEM Subcommittee, the strategic plan should address capacity to build out the three major areas of focus:

Data Collection

Funding Mechanisms

Cross-Agency Collaboration

Questions?

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