

# **Tribal Colleges & Universities**

## **Working toward Tribal Resilience**



**Missouri Basin: Extreme Events and Drought Resiliency**  
**Rapid City, SD**

**September 17 – 18, 2014**



## *TCUs: 37 TCUs (more than 75 Sites – 15 states)*



Serving 88,000+ American Indians in 15 states through academic and community education programs.  
34 TCUs are chartered by their respective Tribal governments; 3 are chartered by the U.S. government



# TCUs & Indian Lands



AMERICAN INDIAN  
HIGHER EDUCATION CONSORTIUM

**TCUs:  
American Indian  
Higher Education  
Where the Indians  
Are!**

*AIHEC is the collective*

**TCUs:  
MT & ND: All Tribes = TCUs  
AZ, MT, ND: Largest Tribes =  
TCUs**

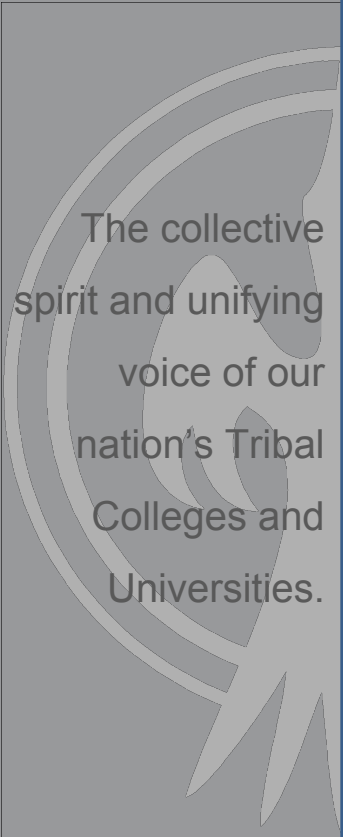


# TCUs: *Change Agents...*

**TCUs  
Are Leading  
American Indian  
Communities  
As Innovative &  
Cost-Effective  
Agents of Change  
& Restoration:  
TCUs ARE Nation  
Building!**



# Strengthening Tribal Nations

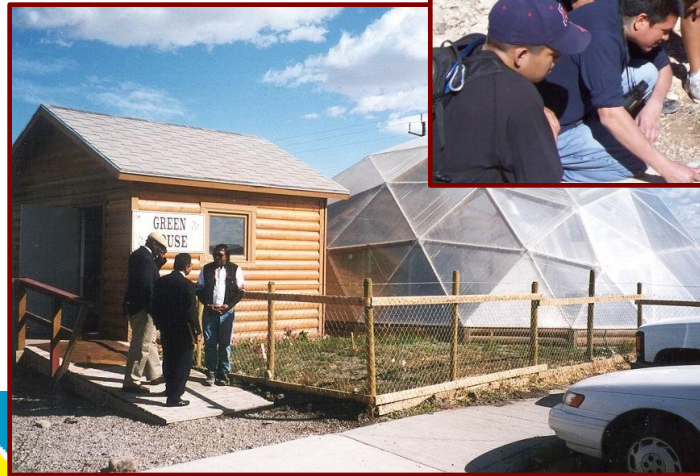


The collective  
spirit and unifying  
voice of our  
nation's Tribal  
Colleges and  
Universities.

## Building Tribal Nations

# TCUs: *Native Research = Stronger Tribal Communities*

**TCUs Conduct  
*Native-Initiated,  
Native-Led, and  
Native-Relevant*  
Research,  
Addressing Tribal  
Land, Water, Health,  
and Community  
Issues.  
TCUs ARE Nation  
Building!**





# AIHEC STEM Vision Statement

**To build a framework of strategic partnerships, resources, and tools that will strengthen TCUs and their communities in Science, Technology, Engineering, and Mathematics (STEM) and ensure that American Indian students achieve success in STEM education and enter the national STEM workforce, thereby contributing to the national STEM research and education goals.**



# **Tribal Response Issues**

Need to monitor effects locally

Need to anticipate challenges before they become severe

Need adaptation and mitigation strategies

Relocation may be only option in some cases – need to assess all options

**ALL RESPONSES REQUIRE RESOURCES**





# TCU Climate Change Network

- TCUs serve as hub of partnerships linking Tribal governments and other local stakeholders with national resources
- Bring resources from national climate research community to **their** communities
- Implement data collection and analysis practices that meet requirements for good science
- Capacity building the TCUs in climate response builds community resilience



# Network of Networks



- Local: Tribal community stakeholders
- TCU community
- National: climate science community



# **Tribal Community Focus**

- Each Tribe/Tribal community identifies local climate change issues to address
- Communities identify and develop local responses in collaboration with regional partners
- Share observations/research outcomes across Tribal communities
- Collaborative problem-solving across communities





# Indigenous Knowledge Management Focus

- Holistic perspective
- Focus on relationships
- Emphasis on observation
- Build on traditional knowledge
- Community engagement
- Cultural understandings provide local framework for response



# **Engaging the community through the students**

- Students at all academic levels can get involved
- Climate change PBL projects across the curriculum from K-16
- Informal science projects
- Undergraduate research opportunities
- Mentors recruited from the national climate research community



# Implementing the Climate Change Research Network

- Conduct local forums with concerned citizens to identify climate change priorities
- Establish appropriate local research infrastructure: tools, sensors, training that targets different levels of participation
- Facilitate local research/mitigation projects
- Share outcomes across Tribal communities





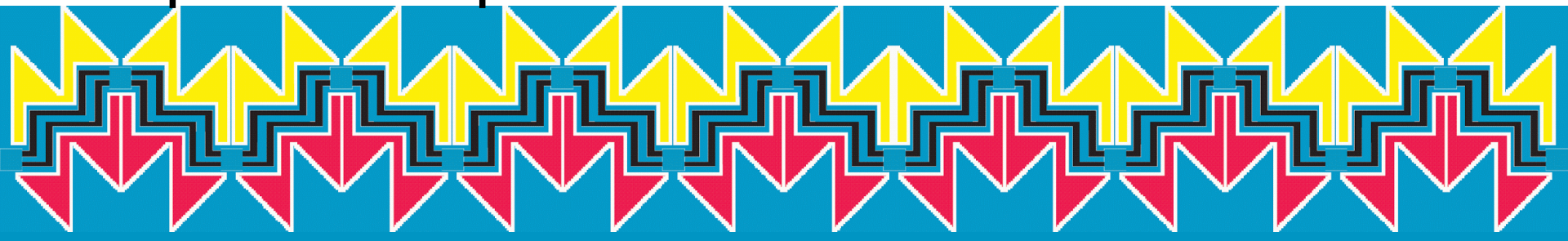
# TCU Initiatives

- CMN Sustainable Development Institute
- HINU/Kiksapa NASA Externships
- OLC floodplain analysis, stream ecology, watershed assessment
- NWIC Coast Salish Institute
- Diné College's Diné Environmental Institute
- SKC BS in Hydrology



# **NSF TCUP can fund a program:**

- \$2.5M over 5 years for major STEM program development
- \$500K over up to 3 years for targeted STEM projects
- \$200K for faculty to initiate research in NSF funded areas, cultivate research partnerships

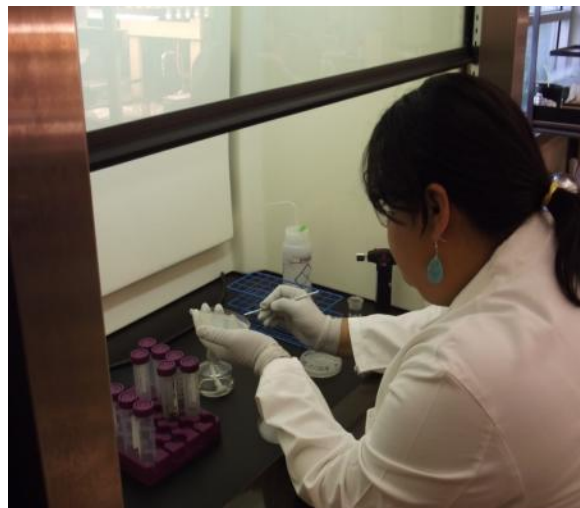


# “Meta” Research Questions

- Can TCUs meaningfully engage Tribal communities in climate change research and response?
- Can we generate critically needed local research cost-effectively?
- Can this approach help to *decolonize the national response to climate change*?







## Power of Partnerships

**... tools alone do not  
create educational  
change. The power is *not  
in the tool but in the  
community that can be  
brought together and  
collective vision that  
share...***

**M. Riel**



# AIHEC Contact Information

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