Project Red Bus

Project Red Bus is a collaborative initiative aimed at promoting climate change education and adaptation through community engagement, innovation, and partnership, with a **specific focus on serving Indigenous Peoples and centering tribal colleges and universities**. The working group comprises partners from the National Ecological Observatory Network (NEON), the American Indian Higher Education Consortium (AIHEC), the Indigenous Peoples Climate Change Working Group (IPCCWG), Environmental Data Science Innovation & Inclusion Lab (ESIIL) and CU Boulder EarthLab, the National Climate and Atmospheric Research Center (NCAR), The Haskell Indian Nations University Cooperative Extension Program (funded by USDA-NIFA), the Indigenous Design Collective, and The Carpentries, along with partners from Tribal Colleges and Universities (TCUs), including The College of the Muscogee Nation, Northwest Indian College, and Ilisagvik College, among others.

The project is grounded in foundational principles that prioritize building relationships based on trust and respect, recognizing and addressing historical traumas experienced by Indigenous Peoples, and supporting the capacity and infrastructure needs of TCUs. The Building A Fire... method from the Livelihoods Knowledge Exchange Network (LiKEN) *Knowledge Sharing Network: Climate Education Centering Indigenous Knowledge Systems* is the guiding framework for the development of the charter. Utilizing a principled approach, foundational principles which emerged from the Sensing The Earth I conference held in Boulder, CO in June of 2022 recognize the unique needs and challenges of TCUs, including limited resources and infrastructure, and seek to support them through training, funding, and collaboration.

Foundational Principles:

1. **Fostering Relationships**; built at the speed of trust. Enter partnerships respectfully, through humility, listening well, and building a system of life enhancements. Recognize traumas experienced by Indigenous Peoples, as well as those who support TCUs, Tribal Climate Resilience, and other alliances, and support health and wellness of partners.
2. **Capacity and Infrastructure** development needs are an area of high need for TCUs; Increased faculty and research personnel are needed, as well as support for Faculty/Staff in terms of funding, training, advocacy, and interinstitutional collaboration. Technological infrastructure, as well as capital costs such as buildings, labs, offices, etc. are needed; TCUs may not have infrastructure in place to support research, large-grants, however there are opportunities to support TCUs through AIHEC and through collaboration with TCUs and other University partners/networks.
3. **Accessing Tools and Workshops** for climate, geospatial applications, data access, that are widely available, and there are opportunities to train TCU faculty/staff/student partners without requiring significant costs or infrastructure (outside of reliable internet access). Opportunities to lead application-specific workshops and host meetings on site at TCUs can be leveraged quickly.
4. **Cyber-Infrastructure** is a general need throughout the TCU and TCU-partner ecosystem; on-site data-management requires significant investment in terms of personnel and costs, however can increase local-utilization of data as well as promote data-sovereignty; inline with cyber-infrastructure development, there are opportunities for TCUs (and Tribal Nations) to utilize sustainable energy and materials, as well as increase workforce development.

Capacity and infrastructure development are identified as high-priority areas of need for TCUs. The project aims to support increased faculty and research personnel, as well as provide support for funding, training, advocacy, and interinstitutional collaboration. Technological infrastructure (as well as capital costs such as buildings, labs, offices, etc.) are also identified as high-priority needs. The project seeks to also develop and provide access to tools, decision-platforms, curricula, and workshops on climate and geospatial applications, data access, and cyber-infrastructure, with a focus on promoting data sovereignty and sustainable energy and materials. At present at least two major events have been held to pilot some of these TCU faculty and student-focused application-specific events.

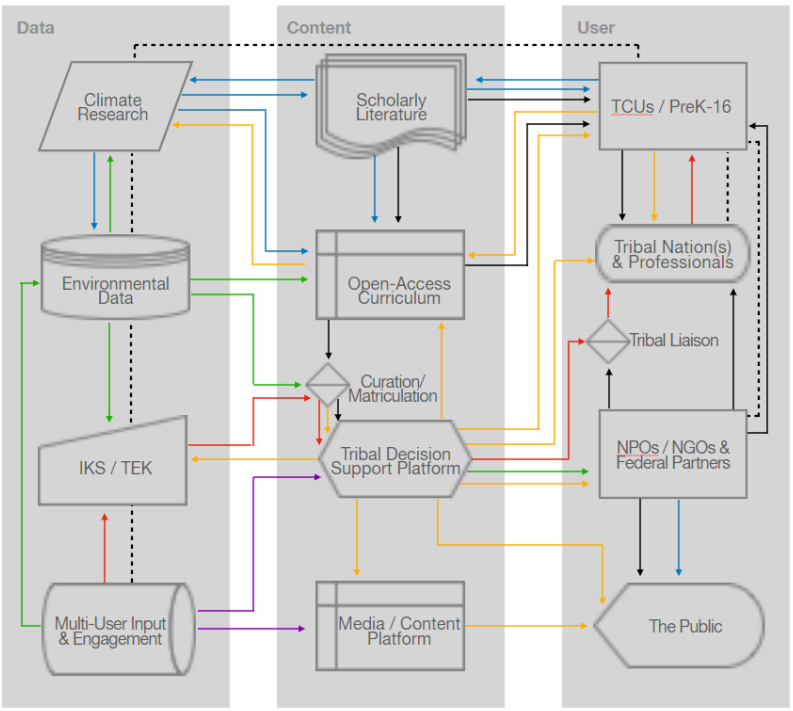
In summary, Project Red Bus is a collaborative initiative aimed at promoting climate change education and adaptation among Indigenous Peoples through partnership, innovation, and community engagement. The project is grounded in foundational principles that prioritize building trust and respect, recognizing historical traumas experienced by Indigenous Peoples, and supporting the capacity and infrastructure needs of TCUs. The project seeks to support increased faculty and research personnel, provide access to curriculum, tools and workshops, and promote data sovereignty and sustainable energy and materials.

Project Red Bus (Continued)

"Relationships are built at the speed of trust…" - Dr. Dan Wildcat

The complex interrelated challenges of ecological destabilization - climate change, environmental contamination, cultural degradation, and rapid urbanization - must be addressed by complex interrelative response; to "be in right relations" is not a singular homogenous action or behavior, but an active, intergenerational eco-kinship, partnership, and system of life enhancements. Intergenerational approaches require both synthesis of the pragmatics of past and contemporary tangible impacts of human nature, yet also through development of intentional memetic and operational artifacts which scale beyond human lifetime and temporal scale, founded upon honoring past ancestry, traditional ecological knowledges, and care of place(s), yet fostering new traditions in leadership, intertribal and interinstitutional engagement, and holistic consideration for the development of relationships (with human and non-human relatives).

The collective vision for this work centers around key aspects of: Data Sovereignty, an Emergent Partnership Ecosystem, "Big Data," Sustainable Energy Systems Integration, and Food Sovereignty. Moving towards a collective vision requires fostering relationships, understanding the cultural norms and protocols of individuals, their communities, and their network of practice, as well as to understand the priorities, environmental and climate related risks, and capacity needs.



Information Flow

- Boundary Spanners
- Curated Open-Access Curriculum
- Scientific Research Results
- Dynamic Environmental Data
- Inter-Tribal / Inter-Institutional Knowledge
- People/Place/Power-Specific Knowledge
- Common/Popular/Social Knowledge

Development Focus for Proposals

- Open-Access Curriculum Repository
- Role(s) for Curation / Matriculation
- Tribal Decision Support Platform Infrastructure
- Media / Content Platform
- TCU-based Infrastructure/Capacity/Training
- Role(s) for Tribal Liasion(s)
- Designing Protected Pathways for IKS / TEK

Vision and Scenarios

- Introduction to tools and how to use them – starting with training offered through The Carpentries
- Utilizing Datasets and standardized ecoregions from the National Ecological Observatory Network (NEON) as well as developing skills to utilize these data
- Training for TCU Faculty/Staff/Students specific to Data Management
- Merging local data with larger datasets and ground-truthing using remote sensing applications
- Developing a Tribal Decision Support Platform (TDSP) for TCUs and Tribal Nations to inform climate adaptation and access climate data; ensuring user-informed design and accessibility for general public; integrating Climate Futures Toolbox, LiDAR, and other open-source APIs
- Accessing and creating a repository of Open-Access Curriculum, best practices, and other content
- Supporting TCU Faculty directly; developing “faculty exchanges” and inter-institutional collaboration opportunities to pool resources, knowledges, and offer more climate-change, data-science, and
- Workforce development coursework
- Including Federal Partners, Tribal Nations & Communities, and Private Foundations in large-scale planning to rapidly distribute research and implementation funding; ensuring Tribal Sovereignty and Nation-to-Nation processes for sustainable development and application