

RELATIONSHIPS FIRST AND ALWAYS: A GUIDE TO COLLABORATIONS WITH INDIGENOUS COMMUNITIES. K. G. Gardner-Vandy¹ and D. M. Scalice², ¹Oklahoma State University; Member of the Choctaw Nation of OK (kat.gardner-vandy@okstate.edu), ²NASA Ames Research Center (daniella.m.scalice@nasa.gov).

This work was submitted to the 2020 Planetary Science and Astrobiology Decadal Survey 2023-2032 as part of a collaborative effort organized by the Equity, Diversity, and Inclusion Working Group (EDIWG) [1].

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Introduction: This document outlines recommendations for working with Indigenous communities under the knowledge that **relationship building with the communities is first and foremost the foundation upon which all collaborations should be centered**. This includes defining a series of wise practices for collaborating with Indigenous communities, in planetary science and astrobiology and across all fields of Science, Technology, Engineering, and Math (STEM). These wise practices apply whether the outputs are educational programs, research collaborations, or other endeavors. The onus is on the Western scientific community, through a foundation of relationship and trust, to understand that Indigenous and Western knowledge systems can reflect, resonate with, and reinforce one another, and can affirm and build

upon each other when treated as equally valid, valuable, and vital.

Background/Findings: *Historical Context and Current Approaches.* The US is home to 574 federally-recognized, culturally-unique Indian Nations [2]. In science and education settings, Western pedagogies and values dominate, and those of Indigenous knowledges are marginalized. These approaches have resulted in lasting impacts on who is recognized as an expert and allowed to participate in the scientific enterprise broadly, and have defined the experience of many BIPOC scholars [3]. In K-12 programs, Indigenous youth often receive STEM instruction from non-Native educators in one of two ways: without a cultural component (“STEM-only”) or with one that is presented secondarily (“STEM-first”).

The story is similar with scientific research conducted by Western scientists on the places of Native communities. Indigenous knowledges are rarely sought and generally regarded as unscientific and therefore of little value. When Indigenous knowledges are included, such as in climate studies, the vast majority (87%) practice an extractive model in which outside researchers use Indigenous knowledges with minimal participation or decision-making authority from communities who hold them [4]. When the research is completed, there is typically no ongoing relationship or connection. Likewise, in most cases of naming celestial bodies [5], the word is simply appropriated, without asking permission from cultural leaders—the extractive “take” scenario. In some cases, permission is sought and granted—the “ask and take” scenario. This scenario, however, without the presence of relationship and trust between the scientists and the Native community, is an “ask, take, and leave” scenario. Co-discovery and co-authorship are all but unheard-of.

Indigenous Knowledge. Despite this, Indigenous communities past and present are inherently ‘scientific.’ Indigenous knowledges and languages hold profound understandings of the nature of the physical Universe and reflect sophisticated cosmologies. Indigenous technologies have been and continue to be made possible by a deep knowledge of what today are called physics, mathematics, and engineering. Indigenous communities are the experts of their places (land, water, sky), as reflected in longitudinal (millennia), high-resolution data sets [4]. These data sets are intersectional across many Western scientific disciplines, including astronomy, geography/geology, climate and environmental science, oceanography, ecology,

biology, and agriculture, reflecting the interdisciplinary aspirations we hold for the sciences today. Indigenous methodologies for data curation and knowledge dissemination may differ from those of Western science, yet are no less accurate or valid.

Motivations for Relationship-Building: Structural racism is a societal problem. The solution lies in working together and shifting the focus from benefit sharing to power sharing. Relationship and trust are outcomes of sharing power, not precursors to it. The purpose of relationship and trust is to facilitate co-creativity and service. In this task, motivations must be clear. We co-create with Indigenous communities because it is the right thing to do.

Recommendations: Our key recommendation is for agencies, scientists, and educators to engage in relationships and build trust with Indigenous communities, so partnerships are at the ready and efforts can be co-creative. We recommend that agency solicitations reflect this crucial component of building relationship and trust and provide funding for those activities directly. In effort to mobilize scientists to engage in relationship building and eventual programs and collaborations with Indigenous communities, we recommend agencies implement a small grants program for awarded investigators. To ensure co-created programs and collaborations are progressing authentically and that Indigenous knowledges are not being misappropriated, we recommend agencies stand up an Office of Tribal Relations.

Guidelines for Building Relationships and Trust:
Before Initiating a Relationship. Endeavor to learn as much as possible from primary sources about the history and culture of the Indigenous community being approached. This includes honoring Indigenous communities' knowledges about their places and the cosmos and the importance of elders. Self-reflect and prepare for an ongoing effort to sustain a relationship.

Initiating a Relationship. Initial communications should not carry an "ask" as such is extractive and disrespectful if not done in the context of relationship and trust. Do not approach an Indigenous community with your research project or educational program set. Prioritize the needs and vision being articulated by the community. If an invitation to collaborate is received and supported, begin the process of getting to know one another. If invited, visit the community in their space, bringing your whole self to such meetings, ready to communicate with and learn from each other. When meeting, listen more than you speak and be humble, offering gratitude. Finally, always follow up with notes of gratitude, recognizing that the Indigenous community is under no obligation to commit to a relationship.

Building Relationships. Once a relationship is started, be prepared to spend the time necessary to cultivate the relationship consistently and indefinitely. Prioritize the Indigenous community as a source of credible information. Ensure that the needs of the community shape the shared vision for the collaboration. Trust is the key; if it is lost, the relationship is lost.

Ensuring Lasting Relationships. Together with your Native partners, it may be required to seek blessings and permission from tribal leadership to continue the relationship. Follow your partners' leadership in how to move forward in this process. Ensure the community is properly represented in the grants you write together (PI, Co-PI, Co-I, etc.). Budget to compensate individuals for their expertise at the same rate as non-tribal consultants. Support tribes in enacting Indigenous Data Sovereignty, the right of Indigenous Peoples to self-determine the access, use, reuse, and attribution for their knowledges and data [6]. Ensure relationships and contributions are properly identified in publications and reports, including co-authorship, acknowledgements, and/or using tools that clarify Indigenous interests in the research, data, and collected traditional knowledge [7].

Impacts: Building relationships with Indigenous communities has lasting implications for the diversity of the STEM workforce, and more importantly, for Indigenous youth and communities towards healthy social, cultural, and economic lifeways. We envision a future for research collaborations wherein Western scientists do not consider a place (land, water, or sky) to become their field site or study site without first forming relationship with the Indigenous community to which the wellbeing of that place has been entrusted. When the knowledge and wisdom resident in both Indigenous and Western STEM are brought together into collaborations and programs, there are undoubtedly profound and lasting impacts. **None of this is possible without the foundation of relationship and trust.**

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