

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)  
Space for All: Decolonial Practices in Space (2)

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ANTI-COLONIAL PRACTICES IN ASTROBIOLOGY EDUCATION - RELATIONSHIPS AND  
COLLABORATION BETWEEN NASA AND INDIGENOUS COMMUNITIES

**Abstract**

Every aspect of our lives in mainstream US culture, including the enterprise of science and the systems of education, is deeply rooted in colonialism, which by definition marginalizes and eliminates Indigeneity. The history of interaction between Western and Indigenous cultures is an ongoing narrative of colonialism, genocide, land theft, broken treaties, assimilation, erasure, extraction, and appropriation. Histories of federal policies such as boarding schools as well as Western cognitive imperialism and cultural hegemony have paved the way for active exclusion of Indigenous knowledges and extreme “underrepresentation” of Indigenous people in scientific education, discourse, and practice. Despite this, Indigenous people, voices, ideas, perspectives, knowledges, and lifeways are still here, and represent and reflect a level of depth and sophistication that in some ways the practice we’re now calling science still strives for.

How can we as the scientific and educational establishment acknowledge these truths, and make positive change and action to repair these harms and co-create a healthy, diverse future? Working to build relationship and trust with communities is a foundational practice that can have positive impacts and lay groundwork for shared vision and co-creation to emerge. The potential for authentic, reciprocal relationship between scientists/science educators and Indigenous communities is ripe, to the benefit of both knowledge generation across all scientific disciplines and, more importantly, healthy Indigenous lifeways.

Here we present a program of partnerships between NASA Astrobiology and Indigenous communities across the US and beyond. NASA’s Indigenous Community-Based Education Program has invested over 70 years of cumulative time in developing relationship and trust with 12 geographically and culturally diverse communities, toward the co-creation of educational programs to serve Indigenous youth.

We call our approach, Community-Based, Culturally-Based Dual Learning. Community-Based refers to the programs being unique expressions of each partner community’s place, people, culture, knowledge, local ecosystem of organizations, and resources. The programs are also Intergenerational, as Elders are teaching youth, and whole families are learning together. Culturally-Based refers to Traditional Knowledge being prioritized, centered, and shared first in the programs. The Traditional knowledge is shared by Indigenous Elders, in Indigenous places and spaces, in Indigenous languages, with Indigenous pedagogies. Dual Learning means that we are weaving together space science and Traditional Star Knowledge, co-cultivating cultural and STEM identities, and that the learning environment we hold is free from one knowledge system dominating over the other.