

# 4<sup>th</sup> Global Summit on Earth Science and Climate Change

September 26-27, 2023 | Webinar

Volume : 14

## Investigating the Feasibility of Mid-range Infrared Spectroscopic Analyzer (MIRA) for Quantification of Polysorbate 20

**Dr. Wendy Todd**

Departments of American Indian Studies and Earth & Environmental Sciences

**E**arth has a unique structure and consists of different layers and interacting subsystems reflective of the diversity of Earth's inhabitants.

Ecosystem diversity requires creative solutions, critical thinking, learning, and discovery all of which are fundamental elements of [scientific endeavours](#), but those elements do not occur in a vacuum. People manifest these critical elements and the shared diversity of culture, experiences, and worldviews combines a broad range of perspectives, from a variety of knowledge sources to allow for the development of innovative solutions to the many unprecedented issues facing society. Thoroughly vetting diverse methodologies will yield stronger, more holistic solutions. The modern version of the scientific enterprise is heavily based on myopic perspectives, approaches, and interests, which in has created and sustained exclusive environments, destruction of fragile ecosystems, and loss of cultural diversity and thus innovative scientific solutions. As a result, only western science perspectives, ways of knowing, perspectives and approaches have been perpetuated while Traditional Knowledges have largely been overlooked. Historically excluded groups in [STEM](#) disciplines have lacked the opportunity to contribute vital perspectives that could enrich ideation and vetting of solutions, to today's climate and environmental crises.

Earth is facing an "all contributors needed" problems, however due to historical systemic structures, all contributors have not been invited to perform. Recent research shows that underrepresented science scholars produce higher rates of scientific novelty, yet they do not persist in systems where the innovation is created. The STEM workforce cannot operate at full capacity if all available and qualified minds are not engaged. The evolution of scientific productivity requires these new voices – new contributors. Here we will consider the important role and knowledge Indigenous peoples have to offer scientific innovation, [environmental remediation](#), and in addressing the current global climate crisis.

### Biography

Dr. Todd is a Dr. Howard Highholt Endowed Professor at UMD holding a joint appointment in the Departments of American Indian Studies and Earth & Environmental Sciences. AISES named her 2019 Professional of the Year. Dr. Todd has Ph.D.s in estuary - ocean systems and environmental science and engineering from OHSU. Her geoscience research focuses on examining microbial ecology, biogeochemistry, and biomineralization of metalliferous groundwaters. Her social science research focuses on DEI to provide understanding and respect for diverse students, faculty, and communities. She founded the Indigenous Geoscience Community, so that Traditional and Western knowledge systems can be expressed within culturally specific protocols. She co-founded the Indigenous Women's Water Sisterhood, providing knowledge about the Indigenous history of Lake Superior. Dr. Todd founded The Geoscience Education Program coupling STEM with Traditional Knowledge in K-12 education. She's a director for XKKF to preserve the highly endangered Northern Haida language.

wsmythe@d.umn.edu

Abstract received : January 14, 2023 | Abstract accepted : January 15, 2023 | Abstract published : 28-09-2023