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INDIGENOUS KNOWLEDGE: BRIDGING EARTH AND SPACE SCIENCE

Abstract

For thousands of years, Indigenous Peoples throughout the world have used their knowledge of the Earth and cosmos for information about impending weather patterns, to predict environmental changes, or estimate the availability of food sources. Many Indigenous languages do not have a single word for nature, environment, or space. Instead those languages include words that encompass “everything in creation” including all life on Earth (humans and other beings), the Sun, the Moon and the stars. Indigenous Knowledge integrates many fields of science into a comprehensive knowledge system, passed down from generation to generation through storytelling, songs and other traditional practices. In contrast, space and educational outreach activities at NASA and other space and Earth science organizations typically separate the two sciences and do not include any cultural context. For example, NASA’s Earth Science Capacity Building Program (CBP) offers trainings and other activities that highlight the use of satellites to study Earth systems, but disregard how Space phenomena can inform these processes. Similarly, NASA’s space and planetary science outreach activities typically focus on stars, planets, asteroids, etc. but do not make connections to life on Earth. This presentation will focus on how The Turtle Island Institute within the Waterloo Institute for Social Innovation and Resilience uses social innovation practice to work with Indigenous and non-Indigenous people to understand how Indigenous Knowledge bridges Earth and space science. The concept of “two-eyed seeing” was coined by Mi’kmaq Elder Albert Marshall to bring the best of both indigenous and western ways of looking at our world and universe and is key to developing successful education and outreach programs. Using these unique indigenous perspectives and combining them with Western science will enable us to better understand our rapidly changing planet and its relationship to the cosmos now and in the future.