

ANCESTRAL SCIENCE PODCAST

SEASON 2: Episode 5

with Drs. Miwa Takeuchi and Eun-Ji Amy Kim

“Friends of Indigenous Science”

Ancestral Science was honored to speak with Drs. MIWA TAKEUCHI & EUN-JI AMY KIM and learn how to be an ally/friend to Indigenous Science. We learned about the difference between allyship, friendship, and kinship, how to re-centre scientific voices of children, the Land, and Knowledge Keepers, how mathematics both take and give lives, reconciliation work never ends, and the importance of balancing both understanding the history and trauma of the original peoples of the land with the beauty, innovation, ingenuity, and science within their culture.

Despite the guests concerns this episode may take space away from the voices and teachings of Elders and Knowledge Keepers, the pod hosts understand the importance of accomplices and allies; Indigenous people can't do this work alone. Miwa and Amy also donated their honoraria back to the podcast, thank you.

Without further ado, we welcome Drs. Miwa Takeuchi and Eun-Ji Amy Kim

SHOWNOTES:

Significant of names:

- Miwa and Amy spoke about the cultural significance behind their names. In many cultures names have stories and depth of meaning, which can sometimes be lost or forgotten about with English names.
- In many Indigenous cultures, names are sometimes gifted through ceremony and sometimes changed based on accomplishments or experiences.
- Ask about the significance of someone's name (but be kind, sometimes the origins are not known, removed through colonization and disconnect, and we don't want people to feel bad about not knowing), or do some research to know more about your name and your ancestors' names.

WISE (Women in Science and Engineering)

- <https://wise-stem.org>
- <https://news.umanitoba.ca/wise-kid-netic-energy-inspires-and-fosters-love-of-stem-for-kids-in-manitoba/>
- <https://www.uawise.com>

Women in Science Supporting one another- from CUNY

- “Teaching for Transformation” (2021), P. Pieroni, advisor Dr. Jennifer Adams, paper [here](#)

Science to me is:

- Amy: culturally based and is about coming to know through nature (reference Glen Aikenhead below)

- Miwa: not singular, not politically neutral. Science can take life and give life.
 - the human life lost from the science of the atomic bomb
 - but science can give life through connecting with it mentally, physically, emotionally, and spiritually.

Glen Aikenhead- culture-based science educator:

- [Bio](#) at University of Saskatchewan
- “Walk Together: First Nations, Métis, & Inuit Perspectives in Curriculum” by Glen Aikenhead. Article [here](#)
- “Science Education for Everyday Life” (2006) by Glen Aikenhead (book)
- “Bridging Cultures: Indigenous and Scientific Ways of Knowing Nature” (2012) by Glen Aikenhead, Herman Michell (book)
- Glen’s website and link to all his work, [here](#).

Kanawà:ke:

- Amy speaks about the influence her job as science education consultant in this community. She spoke of how she built strong relationships and really understood the depth of science within Creation Stories.
- education centre: [info](#)
- Science Fair at Kanawà:ke and McGill, [here](#)
- Kahnawà:ke Environmental Protection Office, info [here](#)

Soil Camp:

- Miwa speaks about her work with this project, reconnecting with the soil, learning from Elders and newcomers, and lifting up the voices of youth and the Land.
- <https://soilcamp.ca>
- “The Soil is Alive” Piikani Elder Herman Yellow Old Woman
- humans need to partner *with* the soil, not extract *from* it.

The Body and the Land/Sky:

- Amy speaks about the kinship relationship between human and Land, and how “kinship” ties to a connection to where our ancestors’ bodies were buried. These kinship-based lands are where body becomes nature.
- Miwa speaks about how we are all connected, to other humans, the land, and the stars. Even after the effects of the diaspora, all humans look up to the same sky, it teaches us humility and connection.

Language:

- languages are significant to how humans embrace, understand, experience, and interpret the world around us. They can reinforce worldviews, which can be both connecting and disconnecting.
- below are some of the words we focused on:

-Ally:

- Miwa: you cannot claim the term “ally” for yourself, it is a gift from the community.
 - ally comes with responsibility to both know and to act. To know is to understand the history and effects of colonization, the patriarchy, and the diaspora, and then acting towards repairing these relationships and disconnects without taking voice or space.
 - the failures within this process are important, they are the best teachings.
 - be careful to not be a “performative ally”
 - dwell within the discomfort of the past while embracing the beauty of the innovations, resilience, and science within these cultures and worldviews.
 - “[Treaty 7 Ally Toolkit](#)” from Calgary Foundation
- Amy: not a fan of the term “ally,” it has political connections
 - check out the book “[Becoming an Ally](#)” by Anne Bishop
 - the process of “allyship” is never ending, there is an ongoing responsibility that comes with being an ally.
 - what about “friends” instead of “ally,” because this puts the relationship in the foreground, which is the basis of allyship. It also creates a natural distinction from kin relationships.
 - a kinship relationship, as defined by Amy, is one where you have deep, blood, and ancestral connections with the Land. Your ancestors are buried there, they have become the land, the trees, the plants. It is spiritual relationships created over thousands of years.

-Ethno: is a term that has often been used to highlight the cultural aspects of a topic. For example ethnobotany, ethnomathematics, ethnography.

- Miwa: there is an “othering” that happens when this term is used within the sciences. For example, ethnomathematics is the cultural aspect/connection within mathematics, but just mathematics mean it is the “real” or “authentic” or even seemingly perceived as “correct” mathematics.
- this can be harmful and hierarchical
 - Miwa mentioned it is important to reflect on the intention of the word, how is it being used and is it reinforcing an othering?
 - Dr. Linda Furuto’s definition is very much NOT othering, but reconnecting mathematics with its spiritual, experiential, and land-based teachings and knowings. “Ethnomathematics is real-world problem-solving that empowers students to be locally-minded, global citizens through a sense of purpose and a sense of place,” Dr. Linda Furuto.
- <https://www.youtube.com/watch?v=gY7kx5Cho8Q>
<https://www.chalkbeat.org/2024/05/13/ethnomathematics-connects-math-and-culture-to-engage-students/>

-Enlightenment-Based Science/Knowledge ([Dwayne Donald](#))

Amy: describes using this term because it more accurately describes the origins and methods of science that is often called “Western” or “Western Modern”.

-Euro-Centric Science

Miwa often asks “when you think of a scientist or mathematician, who do you think of?” these humans are often European males, where she then asks “why?” This doesn’t mean there weren’t women from around the world doing science, its just not documented, validated, or passed on. But can we embrace and highlight all perspectives of science and mathematics.

-Amazing things Miwa and Amy are doing:

-Amy: working with soil science with communities in Bangladesh

<https://www.aciar.gov.au/project/slam-2021-107>

-“Relational Land-Based Science, Technology, Engineering, Arts, and Mathematics Education” (2024) ([book](#))

-Miwa: <https://soilcamp.ca>

-how to sustain and maintain relationships with the soil of the land

-enacting upon the [TRC](#) call to action to create space for newcomers to learn about the history of Indigenous peoples of these lands.

-how to make friends and allies with the Land and lift up voices of the youth

Additional Resources the guests recommend:

- “Asian Changemakers: Shaping the Future through Land-based Learning with Dr. Miwa Takeuchi” <https://youtu.be/kwLSCBBkKpo>

- <https://www.illustratstem.net>

-“Islands of Decolonial Love” (book) by Leanne Simpson

-“Braiding Sweetgrass, for youth” (book) by Robin Wall Kimmerer

- “Making Love with the Land” (book) by Joshua Whitehead

-“Living on the Land: Indigenous Women’s understanding of Place” (book) Eds. Kermoal, Nathalie, Altamirano-Jiménez, Isabel

- “Blackfoot Ways of Knowing” (book) by Betty Bastien

- “One Drum” (book) by Richard Wagamese

-“To be a Water Collector” (book) by Winona LaDuke

- “Decolonizing Methodologies,” (book) by Linda Tuhiwai-Smith

- “Indigenous Storywork,” (book) by Joanne Archibald

- “Gathering Moss” (book) by Robin Wall Kimmerer

- *What listening to the soil can tell us about our relationship with the land?* In The Conversation – With Dr. Mathew Swallow and Dr. Kori Czuy

<https://theconversation.com/what-listening-to-the-soil-can-tell-us-about-our-relationship-with-the-land-205457>

- *Soil builds prosperity from the ground up.* In yes! Magazine. Written by Breanna Draxler.

<https://www.yesmagazine.org/environment/2023/12/07/health-soil-farming-agriculture-regenerative>

Remember, you can support the pod and rock some unique Indigenous Science merch at www.relationalsciencecircle.com/shop, all proceeds go towards Knowledge Keeper honoraria, following protocols, and keeping the pod going.

Gratitude to the support from JUAN-CARLOS CHAVEZ, the editing and audio skills of EMIL STARLIGHT of Limelight Multimedia, and ALEX FLETT for marketing and pod support.