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Ancestral Science Podcast

The Ancestral Science Podcast explores scientific topics through conversations between Knowledge Keepers and Scientists, while *experiencing* the origins and depth of science on and with “the Land”. Join us as science COMES ALIVE when knowledges are shared alongside ancestor plants, rocks, animals, and rivers, creating connections between personal, Indigenous, and global science. The Ancestral Science podcast is a place for *everyone* to see themselves in science, to be inspired by the SCIENCE that is all around them and expand the definitions of both *ancestor* and *science*.

SEASON 3: Episode 20 with **KAREN Colbert** “Humanity & Dignity within A.I.”

We were grateful to speak with **Karen Colbert**, data scientist, department chair, Tribal College Faculty leader, advocate for culturally grounded STEM and AI integration specialist about finding your identity within mathematics, translating and code switching in the math classroom, the pie of DEI, teaching AI to embrace failure, not giving up on the ethics within AI, and pushing back against the default systems of confirmation bias.

Check out [Karen’s TEDx talk](#), released on YouTube in the coming months, the title is “The Most Dangerous Lie A.I Keeps Repeating”

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.

Please like, share, follow, and rate the pod, it goes a long way to share this knowledge.

Thanks to Emil Starlight ([@mikadikadzi_redfoot](#)), the pod’s multimedia podcast producer and [Walter White Bear](#), Sharon Ann Foster, and Emil Starlight for composing and performing our opening tune.

Questions for the Pod? Email us at relational.science@gmail.com

SHOWNOTES:

-Where we met:

-[Carnegie Math Pathways: WestEd](#)

-[“Supporting Developmental Mathematics for Tribal College Students”](#) Heather Bleecker(2024)

-[“Balance and Harmony: Ojibwe Mathematics at Turtle Mountain Community College”](#) Danny Luecke (2023)

-[“Indigenous Arts and Technology ARE Mathematics: Experiments in Connection at Northwest Indian College”](#) Matteo Tamburini (2019)

-Where is my identity within mathematics? Is there one?

-math is often the barrier that prevents students from “doing what they really want to do”

-Karen mentioned Maria Ascher’s book “Ethnomathematics” and how that lead to connecting her students Anishinaabe culture with mathematics. Hence the research hole that happened after that reference...see below.

-The OG “ethnomathematics” authors

When the marginalized corners of “mainstream” topics and subjects begin to become recognized, even though their significance, value, and worth have *never* been questions by community, it is often those from *outside* of the community, with clout, power, and status within academic and funding circles were the ones to break down the barriers. Once these walls are cracked and seemingly “new”/ “novel” / “unique” and very much “othered” and “token” ways of knowing, being, and doing mathematics begin to open conversations, the depth can begin to thrive, especially when those from community are given opportunities of sharing and passing on the value of these relational mathematical knowledges.

Here is a taste of Kori’s bibliography from her master’s degree (that brought back a lot of memories):

“[Ethnomathematics: A Multicultural View of Mathematical Ideas](#)” Maria Ascher (1991)

“[Ethnomathematics: Link between Traditions and Modernity](#)” Ubiratan D’Ambrosio (2006)

“[Ethnomathematics and its Place in the History of Mathematics](#)” Ubiratan D’Ambrosio (1985)

“[An Overview of the History of Ethnomathematics](#)” Ubiratan D’Ambrosio (2016)

“[Ethno+Mathema+Tics: The Legacy of Ubiratan D’Ambrosio](#)” Pedro Palhares

“[Africa Counts and Ethnomathematics](#)” Claudia Zaslavsky

“[Ethnomathematics: Challenging Eurocentrism in Mathematics Education](#)” Arthur Powell & Marilyn Frankenstein. (1997)

“[Ethnomathematics: The Cultural Aspects of Mathematics](#)” M. Rosa (2011)

“[Mathematics Education in its Cultural Context](#)” Alan J. Bishop (1988)

-Quantitative Life:

-think about how you experience life through numbers...

“[What systems of Counting Count](#)”

-tally systems ([Lebombo & Ishango Bones](#))

-[roman numerals](#) (do you only recognize these during the Superbowl?)

-base 2, base 10, base 20 ([Mayan Mathematics](#)) or base 20 ([Yorùbá of Nigeria](#)), base 32 (computer code), base 60 ([Sumerian](#))

-[body tally systems of Oksapmin](#) of Papua New Guinea

-yet, we continue to say mathematics is “neutral” and “cultural free” but you can clearly see the deep connections between culture, land, and community within these examples. **Please be aware, these are often “published” by non-community members, and therefore can come across as token or othered. But we know the depth and ingenuity of our Ancestors right? The OG math and science!**

-therefore, how can teachers connect the cultures, lands, and everyday lives of their students with the mathematics curriculum? Or as **Karen** says “**how do you make these translations in a good way?**”

The answer is...somewhere else!

-you have all the tools you need, you just need to figure it out, and know that you CAN!

-This was always about “how can I do my work while serving my community?” How to do this authentically, *in a good way*, while keeping into account the Seven Grandfather Teachings and Seven Generations?

-Default Systems:

-we have to first recognize the default systems are made to uplift and support Western/Global knowledge systems, capitalism, hierarchy and power WHILE not falling into a hopeless blackhole of nihilism, without values or community.

-you have to understand the bias in order to BE the SOLUTION

-Failure: this is often not recognized or valued, especially within A.I.

-failure is a truly human experience

-how can we learn FROM the seemingly lack of failure within A.I.?

-Using AI In a Good Way:

-thinking about the possibility with these tools

-think about what these tools can do FOR our communities?

-if we don't make this tool accessible, relational, ethical, humane, and with dignity, who will?

-no one is coming to help us! We have to save ourselves

-responsibility of educators!

-we have to change the default.

-use the resources *in a good way*

-push back against the confirmation bias, change the algorithm

-the loudest voices often have the most confirmation bias, change this!

-how? **Give AI a framework that aligns with YOUR values, YOUR community, YOUR humanity**

-share WHERE we get our answers

-teach AI the protocols for accessing (or not) those answers and processes

-create a space YOU want to be in, where you want to learn and thrive in!

-teachers want to know where to go, who to talk to, what processes to use

-[Faculty Professional Development Webinars and Workshops](#)

-“**Fire Keepers Notebook**” Tribal Colleges

-workshop companion for Culturally Grounded AI use at Tribal Colleges

[Firekeepers Notebook Resource Guide](#)

-[“The Algorithm wasn’t Built for Us”](#) by Karen Colbert

The Algorithm Wasn’t Built for Us is more than a book. It’s a blueprint for anyone ready to lead, teach, and thrive in a world that wasn’t designed with you in mind. In this groundbreaking work, Karen Colbert blends raw storytelling, cultural wisdom, and practical strategy to show you how to navigate AI, data-driven systems, and institutional change—without losing your humanity, your voice, or your vision.

If you’ve ever felt overlooked by technology, overwhelmed by change, or underestimated by systems built for someone else, this is your roadmap back to power. Whether you’re an educator, a leader, or simply someone who refuses to shrink inside broken systems, this book will equip you to rise, reframe, and rebuild what’s next—with clarity, courage, and unstoppable momentum. (Shared from Karen’s [webpage](#))

-in her SOLD OUT book, Karen exposes the problems within mathematics and education by “saying the quiet things out loud”!!!

-Karen closed with a powerful statement that “AI didn’t create the cracks in the education system, it made them more visible.”

-let’s recognize this then move forward

-Additional Links:

-[“The Algorithm wasn’t Built for Us”](#) by Karen Colbert

-[“The Science of Doing it All: without Losing your Mind”](#) by Karen Colbert

The Science of Doing It All Without Losing Your Mind is not about hustling harder, waking up earlier, or squeezing more productivity out of your day. It is about learning how to think differently about time, decisions, and mental energy so your life can finally feel sustainable.

- <https://www.karencolbert.com>

-“Strengthening Faculty Development at Tribal Colleges and Universities: A Critical Review and Three-Tiered Framework” Karen Colbert, S. Nez, S. Corput, S.Wall (article)

<https://doi.org/10.1002/cc.70050>

- “Exploratory Assessment of Advocates & Allies Workshops at a Midwestern STEM-Focused Institution” Karen Colbert, B. Lehman, S. Goltz, A.R. Minerick. (article)

<https://doi.org/10.5399/osu/advjrnl.6.1.7>

- “Effects of repeated implicit bias training in a North American university” Betsy Lehman, Karen Colbert, S. Goltz, A. Mayer, M. Rouleau (article)

<https://doi.org/10.1080/1360080x.2022.2145927>

-[Indigenous Protocol and Artificial Intelligence](#) Working Group

-[Abundant Intelligences](#)

-[Abundant Intelligences: Research Creation and AI](#)

Want more Indigenous Science Resources? Check out [Relational Science Circle](#).

Want to learn more about Indigenous Science, Indigenous Science/Mathematics Teacher PD sessions, or have an idea for a guest or topic for the Ancestral Science Podcast, email relational.science@gmail.com

Gratitude to the OG support from Juan-Carlos Chavez, ongoing teachings gifted from Elders and Knowledge Keepers, Ancestors of past and future, and all the science and knowings of Stones and Stars.

