

## Indigenous Science Network Bulletin

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Website: [research.acer.edu.au/isn](https://research.acer.edu.au/isn) Contact: [IndigenousSciNet@yahoo.com](mailto:IndigenousSciNet@yahoo.com)  
*Promoting First Nations' science, teaching & education*



Trevor Dobson, [Milky Way at Cadoux, Western Australia](#), [CC-BY-NC-ND 2.0](#)

## FROM THE COORDINATOR

We present another collection of articles and resources related to First Nations peoples and their science knowledge for a global audience of teachers, scientists and interested community members. Along with science, we also consider the effects of colonisation on the learning and teaching of First Nations students and communities across other curriculum areas. This edition is the final one for 2023 and may be the final one for some time. The network Coordinator (Mark Linkson) has taken up a fulltime job which leaves little time for collating and publishing this bulletin.

However, we are hoping to announce a takeover of the network and bulletin by an educational institution in the new year. Members, please stay tuned for notifications via email. **Please note that nearly ALL images in this bulletin will contain hyperlinks which go either to the exact web location of the image OR to a story related to the image.** Unlike previous bulletins, I have not had time to summarise and write accompanying notes for stories. So, most articles are just screen shots taken directly from social media (for which we have automatic copyright permission). Beneath each image there are links to the original stories.

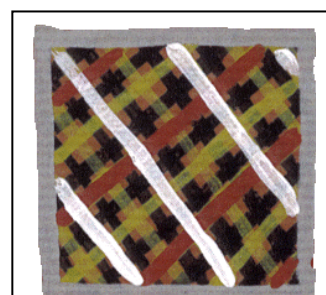
In this issue we have stories from the following countries:

<b>Australia</b>	<b>Brazil</b>
<b>New Zealand</b>	<b>Guyana</b>
<b>USA</b>	<b>Kenya</b>
<b>Hawaii</b>	<b>South Africa</b>
<b>India</b>	<b>Finland</b>
<b>Canada</b>	<b>Mexico</b>
<b>Iran</b>	<b>Zimbabwe</b>

A significant Australian Indigenous science resource is a free download provided by Australia Post: *The Deadly Science Guide to Innovation, Foundation to Year 6 – Teacher Guide* [LINK](#). This guide introduces an understanding of renewable resources for a sustainable future from a First Nations perspective and is based on the Australian Geographic Deadly Science title, 'Renewable Resources'. Some great science teaching ideas in here!

International members, please note a summary of proceedings from the significant gathering in 2022 of the Turtle Island Indigenous Science Conference. Presented by the ISN in full [here](#). My thanks to conference co-convenor Ayush Kumar, Associate Dean (Strategic Initiatives), Faculty of Science and Professor, Department of Microbiology at University of Manitoba.

**Mark Linkson**, Coordinator ISN, Gimuy (Cairns), Queensland, AUSTRALIA



Original artwork for the ISN from Tiwi Designs by Jennifer Coombs, Melville Island, NT, AUSTRALIA

### ISN First Nations Editorial Board (Co-Editors)

**Professor Elizabeth McKinley**, University of Melbourne, AUSTRALIA (Chair of the Board)

**A. Professor Michelle M. Hogue**, University of Lethbridge, CANADA    **Carly Jia**, Education Consultant, Melbourne

**Yolanda Lopez PhD**, Environmental Science Consultant, MEXICO    **Torres Webb**, CSIRO, Cairns, AUSTRALIA

**Keith Langenhoven PhD**, University of Western Cape, SOUTH AFRICA    **Ron Vave PhD**, Coastal Studies Institute, FIJI

**A. Professor Indra Mani Rai**, Tribhuvan University, NEPAL

**We acknowledge and pay respect to the past, present and future Traditional Custodians and Elders of the Aboriginal and Torres Strait Islander peoples of Australia and all First Nations peoples across the world. We celebrate and promote the continuation of their cultural, spiritual and educational practices.**

## Aims of the Indigenous Science Network

Originating from a meeting in 1998 of science educators and Indigenous community members in Darwin, Australia. We agreed that there should be a central place for Indigenous knowledge in any science curriculum. We have grown to cater for scientists, educators and Indigenous community members from across the world:

- To promote First Nations science, teaching and education
- To support all educators who would like to improve their knowledge and understanding of Indigenous science and how to access and use it in their teaching
- To involve Indigenous scientists, educators and community members who support the inclusion of Indigenous knowledge in teaching science and are open to dialogue and sharing about their own experiences.

### Regional Correspondents

#### PASIFIKA

**Ron VAVE**, Coastal Studies Institute, East Carolina University, USA (from Suva, FIJI)

#### AFRICA

**Keith LANGERHOVEN**, University of the Western Cape, SOUTH AFRICA

**Sina Joshua FAKOYEDE**, Federal University Oye-Ekiti, NIGERIA

#### ASIA

**Prem PHYAK**, Chinese University of Hong Kong, CHINA

**Indra Mani RAI**, Tribhuvan University, NEPAL

**Shalini DHYANI**, The Council of Scientific & Industrial Research, INDIA

#### AMERICAS

**Coimbra SIRICA**, Burness Global, USA

#### EUROPE

**Michael Reiss**, UCL Institute of Education, London UK

**The Indigenous Science Network is managed from Gimuy (Cairns), on the unceded lands of the Gimuy-Walubara Yidinji peoples of Far North Queensland, AUSTRALIA.**

## ISN Facebook page and Twitter (X) account



The Facebook page now has around 1600 followers and the (X) Twitter account has 2526 followers (at 4 Nov 2023). Most of these people are not official members of the network (not having supplied an email address) but some do contact us via those sites to join. It means we can improve and widen our reach by posting to those media. Items posted on Facebook focus on Indigenous science, environmental, welfare and equity issues. More pointedly, the Twitter account covers many Indigenous issues, much more than just science and has contributions from First Nations peoples of all settler countries. If you are not yet a Tweeter, we would encourage looking into it. Even though Elon Musk has partially wrecked it, there are still outposts of clear minded thinkers only wishing to improve society on his social media platform (that he bizarrely relabelled “X”). We like to believe we fit into that category! The logos above contain hyperlinks to our live and continuing everyday media presence. However, the Bulletin is our most important and significant work, although some of the issues and stories that first appear on social media do translate to future stories in the Bulletin.

## INDIGENOUS SCIENCE NETWORK: BULLETIN ITEMS

Items are listed under five headings being **News and Views; Resources; Papers; Indigenous Astronomy and Conferences / Seminars**. We further categorise some of these sections with sub-headers of **Australia** or **The World**, to make finding your areas of interest easier. (See the Contents tabled following). We also have sub-sections for each of five regions of the globe within **News and Views (The World)**. Weblinks for most items are contained as hyper-linked addresses or as hotspots within illustrations. All links were active at the time of publication (15 November 2023).

All members are encouraged to submit links to items of interest OR submit reports, narratives or academic papers created by themselves that relate to the aims of the network. The strength of the network derives from the interests and motivations of the membership. Get involved!

### ACER PROVIDES AN ONLINE HOME FOR THE BULLETINS AND THIS NETWORK



The Indigenous Science Network and the Australian Council for Education Research (ACER) are in a partnership, with ACER providing a permanent online home for the network as part of their Research Repository. We thank ACER for this kind gesture and hope that our regular bulletins provide their readers with plenty of useful material regarding the role and value of Indigenous knowledge in education at all levels. All ISN Bulletins issued since 2020 are stored on this [website](#).

A screenshot of the Indigenous Science Network website homepage. The page features a header with the network's name and tagline, a navigation menu, a sidebar with links to various sections, a search bar, and a featured profile of Professor Elizabeth McKinley. The main content area contains a paragraph about the network's mission and a list of popular papers.

**Indigenous Science Network**  
*Promoting First Nations' science, teaching & education since 1998 | Supporting culturally competent science teachers for all*

NETWORK HOME ABOUT BULLETINS MY ACCOUNT CONTACT US

Home > ISN

Our First Nations' Editorial Board ensures that the network authentically represents the wishes, interests and motivations of First Nations science educators and community members as regards the teaching and promotion of Indigenous science. Currently, the Editorial Board comprises eight mainly university level academics who come from First Nations peoples across the world. They review all bulletins before release to ensure that items featured are culturally appropriate and presented satisfactorily. Their details follow below.

Professor Elizabeth McKinley, ONZM  
Chair, Editorial Board, Indigenous Science Network  
Executive Director Atlantic Fellows for Social Equity  
The University of Melbourne, Victoria, AUSTRALIA

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**Aboriginal and Torres Strait Islander people of Australia should be aware that this bulletin may contain images and names of deceased persons.**



Dr Keith Roy Langenhoven

My professional teaching career spans a period of forty-eight years (1974 to 2022) of teaching and learning experiences at Primary, Secondary and Higher Education levels. My current and future goals are the pursuance of collaborative research work into decolonization of Higher Education programming, materials and curriculum development, Relevance of Science Education (ROSE), Integrating Science and Indigenous Knowledge Systems (SIKSP) through classroom-based action-research, Inquiry - based Science Education (IBSE), Historicity of Mathematics, Science and Language Education Projects (MSLEP), African Socio-Cultural Studies, Technology Curriculum Program Design for Tertiary Institutions, Multi-model sensory/digital literacies and Argumentation pedagogical models. Growing the African correspondent role for the Indigenous Science Network (ISN) is a re-imagined innovation. My scholarly projection is to magnify and acknowledge contributions made by First Nations Peoples specifically the Khoi and San in Africa, to science, through the cosmology of Indigenous Knowledge.

### **Affordances of indigenous knowledge in Africa for ISN**

Nascent research in the domain of Indigenous Knowledge Systems (IKS) is infused in Science, Technology, Engineering, Mathematics, Language and Arts (STEAMLA) curricula of many developed and developing countries. Inclusion of indigenous knowledge is seen as a vehicle to acknowledge diversity of cultures and appropriate recognition of the contribution by marginalized First Nations people to the well-being of society.

School curricula is seen as an appropriate location to start exploring and preparing a new generation of innovative scientists and creative critical thinkers. A cohort of activists and change agents should prioritize, protect and consider solutions to address the plethora of natural disasters (floods, fire, earthquakes) and man-made calamities (wars, mining, global-warming, trafficking). The victims in most cases are the landless, dispossessed, impoverished, indigenous people and unemployed.

The ISN platform captures the arguments for border-crossing between curriculum themes and indigenous knowledge from an Embodied, Situated and Distributive Cognitive perspective as espoused by Hardy-Vallee & Payette (2008). You are invited to use ISN as a co-operative space and place to share best practices in ongoing project work. Allow me to support this argument for profiling IKS activity from an African perspective.

An open-source book, AOSIS consisting of twelve chapters with contributions of twenty-five authors, is a collaborative effort to be launched in 2024. The title of the book is 'Future-Proofing STEMLA education' with topics like 'Change Laboratories for system Change'; 'Affordances of coding and Robotics at Foundation Phase'; 'Engaging pedagogies for self-directed learning'; 'Influence of Arts and Entrepreneurial thinking in STEM education'.

Recently the artwork of Will Joubert Alves and Josef de Beer (Director- Science Learning Centre for Africa) launched an art competition for schools that captured artistic interpretations of science and the universe through the ages. This artistic interpretation illustrated rock art through the ages as used by the South African Khoi and San who also have a deep knowledge of plants used for medicinal and religious purposes.


Undergraduate students were introduced to beading by Langenhoven and built dream-catchers from beads depicting the integration of science and indigenous knowledge, as recommended in Curriculum and Assessment Policy Statement (CAPS- Natural Sciences, Physical Sciences, Life Sciences) documents.

Finally, the universities in sub-Saharan Africa engage annually in the African Association for the Study of Indigenous Knowledge Systems (AASIKS), conference. The sixth conference “IKS and Social Justice: Innovate, Connect Activate”, held June 2023 in Namibia, to be followed in October 2024, in Mozambique. *‘Respice Prospice’, looking back, looking forward’*

**Dr Keith Roy Langenhoven**

Research Fellow University of the Western Cape, UWC, SOUTH AFRICA  
(PhD; MPhil; BEd; HDE(PG)Sec; BA; BSc)




 **Indigenous Science Network**  
Just now · 🌐

Four Indigenous aquaculture trainees who have been honing their skills at the Australian Institute of Marine Science (AIMS) have successfully completed an inaugural two-year training course and are now expanding their skills with work placements at the Townsville headquarters.

Jamiga Cummins from Brisbane, Wahjtah Johnson from Townsville, Adam Napier from Bowen and Billie Homuk from Mount Isa graduated at a special ceremony at AIMS with Certificate IIIs in aquaculture.

Over the next 15 months they will round out their skills as aquaculture assistants rotating in AIMS' National Sea Simulator (SeaSim) and with other science teams, working on projects that are investigating the resilience, recovery and adaptation of corals under a warming climate.



AIMS.GOV.AU

**Graduation success for AIMS Indigenous aquaculture trainees**  
Four Indigenous aquaculture trainees who have been honing their skills at the Australian Instit...

[LINK TO ORIGINAL STORY](#)





**Indigenous Science Network**

July 24 · 🌐



Lecturer and Indigenous Education Academic Lead in Swinburne's Department of Education, Anne Rohde is introducing Indigenous perspectives and knowledges into the classroom. Anne works with Bachelor of Education students ahead of their primary and early childhood teaching placements to better embed Indigenous perspectives in the classroom. She recommends thinking more deeply about what activities teachers can do on Country and how lessons can connect with Indigenous perspectives, such as looking at how mathematical concepts present themselves in nature



SWINBURNE.EDU.AU

### **Embedding Indigenous perspectives in the classroom**

Indigenous Education Academic Lead Anne Rohde is helping Swinburne Bachelor of Education...

[LINK](#) TO ORIGINAL STORY



THENEWSDAILY.COM.AU

### Indigenous knowledge key in fight to save night parrot

Indigenous rangers could be critical to the survival of one of the world's most elusive and end...

[LINK](#) TO ORIGINAL STORY

# How Indigenous knowledge can help fight climate change

[Rudi Maxwell and Eelemarni Close-Brown \(AAP\)](#) - May 1, 2023



*The ISN has permission to use text and images from NIT stories granted by Reece Harley, COO, via email 22 Feb 2023. With the condition that authorship is clear and links to original stories are included.*



Indigenous Science Network

July 20 · 🌐



CSIRO.AU

### Standing on the shoulders of Australia's First Scientists

Our Myall Vale site is putting reconciliation into action with the naming of new buildings in the language of the local Gamilaroi People.

[LINK TO ORIGINAL STORY](#)



Indigenous Science Network

July 22 · 🌐



"There's a tech and science to being Aboriginal," he says. "You can't have been here for 60,000 years without interacting, immersing yourself and understanding science and tech. What I'm trying to do is make Aboriginal people realise that system still sustains us now and we can find a way to be a part of that."



SMARTCOMPANY.COM.AU

### Alice Springs hub embraces bush-specific technology and 60,000 years of Aboriginal knowledge

[LINK TO ORIGINAL STORY](#)



Indigenous Science Network

July 20 · 🌐



CSIRO.AU

### Inspiring more Indigenous voices in science

Proud Barunggam woman Robyn Pearce has found her research studentship experience to be ...

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

@IndigenousScie1

Promote



When Indigenous knowledge and science are incorporated into looking at environmental problems, there's a growing body of evidence that the outcomes are better.



sheppnews.com.au

Another weapon in climate change battle

According to the United Nations, climate change threatens the very existence of Indigenous peoples all over the plan...

10:37 AM · Jul 22, 2023 · 24.5K Views

View post engagements



1



26



72



13



Post your reply

Reply



**rational\_geographic** @ritodhi\_c · Jul 22



Too bad the IPCC reports are overwhelming in their exclusion of indigenous knowledge and even when present is produced through extractive relationships.

We are working, with the UN foundation, to build a Knowledge Justice Protocol that stops this from happening in the future.



2



6



35



1.9K



[LINK](#) TO ORIGINAL STORY



Indigenous Science Network

2m · 🌐



Wonderful and awe-inspiring



AUSTRALIANGEOGRAPHIC.COM.AU

**Stories told by Aboriginal Tasmanians could be oldest recorded in the world -  
Australian Geographic**

[LINK](#) TO ORIGINAL STORY



**David Broun** • 1st  
Project Lead Living STEM  
21h •



Great to get this project off the ground with [Destiny Paris](#) and [Jessica Hildyard](#). The first Living STEM workshop was delivered in partnership with [Murujuga Aboriginal Corporation](#) to teams from 10 West Pilbara schools. A privilege to learn on country about the incredible stories in stone at Ngarjarli and connect this to classroom activities. We'll continue to grow this way of working across the region with schools and communities as our partners. Big things coming!



csiro.au • 3 min read



**New program brings Indigenous scientific knowledge to the classroom**



Torres Webb and 24 others

1 comment • 1 repost

[LINK](#) TO ORIGINAL STORY





Indigenous Science Network



August 26 at 7:43 PM · 🌐



NIT.COM.AU

## Graziers draw on traditional fire skills to manage land

Grazing land became so overgrown on Ashton and Elliot Smith's Q...

[LINK TO ORIGINAL STORY](#)



**Indigenous Science Network**

July 7 · 🌐



I heard these types of stories from my RATEP students living at Yarrabah (coastal community facing the Great Barrier Reef). Their ancestors passed down knowledge of country now underwater!



SBS.COM.AU

**Modern science discovered these ancient artefacts, confirming millennia-old Songlines**

[LINK TO ORIGINAL STORY](#)

## 52 Aboriginal and Torres Strait Islander people changing the world




[cosmosmagazine.com](https://cosmosmagazine.com)

52 Aboriginal and Torres Strait Islander people changing the world

52 leading Aboriginal and Torres Strait Islander people who are changing the world. A list created with the Australian Council of Learned Academies ...

[LINK](#) TO ORIGINAL STORY

Indigenous Science Network  
July 6 · 🌐



CSIRO · July 5 · 🌐

A huge congratulations to Gunaikurnai woman and marine science student, Courtney Burns, who has been named Youth of the Year at this year's [National NAIDOC Week Awards](#). 🏆

Courtney has dedicated her career to changing the relationship humans have with sharks by bringing First Nations knowledge into science literature.

We were lucky enough to have Courtney as a research technician in our predator population division as part of our [JCU: James Cook University, Australia](#)-CSIRO Indigenous Undergraduate Traineeship program.

Here's what Courtney had to say about the experience: <https://www.csiro.au/.../making-a-splash-in-marine-science>

#NAIDOC2023

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

July 21 · 🌐



Amongst the enduring characteristics of this ancient culture, Aboriginal Australia songlines stand out. These intricate pathways of knowledge, embedded within the rich tapestry of Aboriginal Australian and Torres Strait Islander traditions, served as more than mere navigational routes. Songlines also wove together the fabric of existence, connecting individuals with their ancestral lands, guiding them towards vital resources, determining cultural affiliation, regulating trave... [See more](#)



ANCIENT-ORIGINS.NET

[www.ancient-origins.net](http://www.ancient-origins.net)



[LINK](#) TO ORIGINAL STORY



**ABC Indigenous**  
@ABCIndigenous



Ms Walker wants to start a bush medicine education program aimed at healing youth in state care or foster homes by empowering them, via culture and language, to re-establish vital bonds with country and family.



8:00 AM · Jul 26, 2023 · 4,435 Views

[LINK](#) TO ORIGINAL STORY



Indigenous Science Network

7m · 🌐



"Looking deeper into the draft priorities," Professor Moggridge says, "it has Indigenous people only as helping with flora and fauna, and restoring of biodiversity. We're more than that."

He said more fundamental change is needed to recognise Indigenous knowledge stretches beyond conservation and biodiversity, but also to ensure it is actually supported and utilised.

"Science needs to evolve and see Indigenous knowledge as an equal, not as myths and legends and stories. I'm not inspired by these priorities," he said.

University of Melbourne Deputy Vice-Chancellor (Indigenous), Professor Barry Judd, who leads the institutions Indigenous focused aspirations, is also backing a standalone priority that representing Indigenous knowledge.

"Our research and science system is just beginning to recognise the potential of Indigenous knowledge," he told [InnovationAus.com](https://www.innovationaus.com).

"There needs to be a strong, national focus on Indigenous knowledge, along with dedicated resources to build the Indigenous researcher pipeline, empower Indigenous communities to become equal research partners and enable institutions to enhance the competencies of all staff in all aspects of Indigenous knowledge and knowledge systems.



INNOVATIONAUS.COM

### Indigenous science must be a standalone national science priority

Indigenous knowledge has been omitted as a standalone priority from a draft version of Austr...

[LINK](#) TO ORIGINAL STORY

*ISN members are encouraged to submit items exploring any aspects of Indigenous science, teaching or education. As the Bulletin is not an official journal or organ of any recognised institution, we are not required to enforce any formatting, editing or reviewing regimes. We do have an Editorial Board made up of First Nations Co-Editors from across the globe who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!*



Indigenous Science Network

July 14 · 🌐



George Williams Landscape Photography


July 12 · 🌐

Yaama my people, not by any means my best effort of capturing an image, however, this place is of great significance to me. It's the Baiaame Ngunnhu { Aboriginal Fish Traps} in my nguurambaa Ngemba; Brewarrina. Whist I'm not absolutely happy with this drone shot there's reasons for it's poor quality; my inexperience with the new drone, windy conditions and rushing the process primarily, I am still proud to share it as it's of great importance to me and my family and all of those who are from Brewarrina.


[LINK](#) TO ORIGINAL STORY



## a) Pasifika

 **Indigenous Science Network**  
July 9 · 🌐

A dozen Native Hawai'ian navigators will set sail from Juneau, Alaska this coming week to begin a four-year voyage around the Pacific Ocean by canoe. The expedition will stop in 36 countries and archipelagoes, visiting 100 Indigenous territories with the goal to educate and learn from communities on Indigenous knowledge and planetary health.



NATIVENEWSONLINE.NET

**'The Oceans Have Always Connected Us'**  
A dozen Native Hawai'ian navigators will set sail this month from Juneau, Alaska, on The Moan...

The Bulletin of the Indigenous Science Network is distributed four times a year via email notification directly to members. Membership is open to all. If interested in being a part of the Network, please contact Mark Linkson, the Coordinator, via email at [IndigenousSciNet@yahoo.com](mailto:IndigenousSciNet@yahoo.com). Issues distributed in March, June, September and December each year.

## b) Asia



**Indigenous Science Network**

Just now · 🌐

Although India has one of the largest tribal populations in the world, tribal knowledge system has not been captured and stored in a systematic way. With the primary objective of integrating tribal's of North East India with mainland India, a two-day national seminar on "Traditional Tribal Technology in India: Northeast in Focus," was held at Don Bosco College, Kohima on May 12.

Addressing the seminar, Prof Rajib Handique, Department of History, Gauhati University remarked that the tribal way of life is considered desirable because the same is considered sustainable and eco-friendly.

"We are increasingly looking into our past to find out when we made our technology and related processes so unsustainable," Handique stated adding that "the tribal today indicates the indigenous when we consider matters like tribal technology or their way of life."



MORUNGEXPRESS.COM

**Indigenous knowledge systems not adequately documented and preserved in a systematic way**

[LINK](#) TO ORIGINAL STORY



Indigenous Science Network

August 18 · 🌐



The nature guys

August 16 · 🌐

These vertical-axis windmills in Nashtifan, Iran, are over a thousand years old and yet are still functional today, serving as a remarkable illustration of the resilience of ancient technology. The enduring legacy of these Persian windmills is awe-inspiring, as they continue to provide for the local community.

[LINK TO ORIGINAL STORY](#)



**Indigenous Science Network**

July 9 · 🌐



Fading Science is the knowledge that Indigenous people all over the world have developed and practiced independent of Western Science. Long before ayurvedic or allopathic medicines were engineered in scientific laboratories, Nagas had their way of curing any/different ailments. The Nagas possess information and uses about species of plants, animals, birds, fishes, fungi and micro-organisms, and also recognise different kinds of flora, landforms and landscapes long before the binomial system of nomenclature was introduced in Western Science.



MORUNGEXPRESS.COM

### **FADING SCIENCE: Reviving Naga indigenous knowledge**

A capacity building programme on Fading Science and sharing of Indigenous Knowledge was ...

[LINK TO ORIGINAL STORY](#)

## c) Africa

Why can't science speak 'vernacular'?, By Wole Olaoye [Link](#)



**Indigenous Science Network**  
Just now · 🌐

When you separate home language and school language, you trigger what has been described as an “epistemological torture” for the African child who is first exposed to his mother tongue at the early stage of his education, and whose in-built learning mechanism is internalising and structuring the grammar and technique of his mother tongue, but he is all of a sudden introduced to a foreign language as he begins schooling. This will maim him emotionally and have ripple effects o... [See more](#)

PREMIUMTIMESNG.COM | BY OLOLADE BAMIDELE

**Why can't science speak 'vernacular'?, By Wole Olaoye**  
There is a this faulty thesis with the contention that African languages are not so...

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

July 20 · 🌐



CHRONICLE.CO.ZW

## MSU translates science textbooks into Shona and Ndebele

Bulawayo's most popular daily newspaper

[LINK TO ORIGINAL STORY](#)



**Indigenous Science Network**

@IndigenousScie1

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Professor Calls for Devotion to Indigenous Knowledge Production Systems



von.gov.ng

Professor Calls for Devotion to Indigenous Knowledge Produ  
A Professor of Literary Theory/Criticism and Text-stylistics  
at the University of Ibadan, Ibadan, Professor Nelson ...

8:57 AM · Jul 31, 2023 · 194 Views



IIN Kenya  
@IinKenya



#IndigenousYouths gathering and using local environmental data to assist their communities in better planning for and managing the risks and effects of climatic variability and extremes. Indigenous youths are now champions in solving climate change crisis.

#IndigenousDay




UNPFII and 9 others


8:32 PM · Aug 3, 2023 · 992 Views

## d) Americas

'Still here and still thriving': University of Manitoba powwow celebrates 486 Indigenous graduates [Link](#)

 **Indigenous Science Network**  
2m · 🌐

The University of Manitoba celebrated 486 Indigenous graduates during their 34th annual graduation powwow on Saturday. Hundreds attended the university's second in-person graduation powwow since the onset of the COVID-19 pandemic. Carla Loewen, director of the university's Indigenous students centre, said the event honours Indigenous graduates in a culturally-relevant way.



CBC.CA

**'Still here and still thriving': University of Manitoba powwow celebrates 486 Indigenous graduates | CBC News**

[LINK](#) TO ORIGINAL STORY





**Indigenous Science Network** @IndigenousScie1 · 42s

...

Indigenous youths use tech as 'weapon' to protect Amazon - Her grandfather defended native lands in the Brazilian Amazon with bows and arrows. The weapon of choice for Txai Surui and many young Indigenous activists like her is technology. [phys.org/news/2023-05-i...](https://phys.org/news/2023-05-i...) via [@physorg\\_com](https://twitter.com/physorg_com)



phys.org

Indigenous youths use tech as 'weapon' to protect Amazon  
Her grandfather defended native lands in the Brazilian Amazon with bows and arrows. Today, the weapon of choice for Txai Surui and man...

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

July 22 · 🌐



Ephemeral Architecture: Historically, thatch work architecture actively made by Indigenous and African diasporic communities in the Americas has been excluded from scholarly discussions and considered “primitive” due to construction methods. Scholarship has focused on monumental stone buildings, such as those at Machu Picchu or Tikal, even though the domestic thatched house as an architectural form and social practice has persisted far longer than stone temples or palaces.



NEWS.FSU.EDU

**FSU art history professor works to preserve ‘forgotten’ architecture of the Indigenous Americas and the African diaspora - Florida State University News**

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network** @IndigenousScie1 · Jul 22

Promote



Archaeologists discover a lost world of 417 ancient Mayans cities buried in remote jungle, connected by miles of 'superhighways,' WaPo reports [ca.news.yahoo.com/archaeologists...](https://ca.news.yahoo.com/archaeologists...) via @Yahoo



A view of a Maya temple at the el Mirador archaeological site in the Peten jungle, Guatemala August 24, 2009.Reuters/Daniel Leclair

[LINK](#) TO ORIGINAL STORY

POST



Indigenous Science Network

@IndigenousScie1

Promote



“We are merging traditional knowledge and scientific research to get all this information that we need but never had before and couldn’t afford to get.” Flying drones and chasing data, Indigenous women in Guyana join fight against climate change



apnews.com

Flying drones and chasing data, Indigenous women in Guyana join fight again...

A small group of Indigenous women in northern Guyana are flying drones and chasing data to help understand climate change and stop the worst of its ...

[LINK](#) TO ORIGINAL STORY



## Indigenous Science Network

July 25 · 🌐



To adapt to climate change, Karuk Tribe members identified the importance of monitoring climate stress on plant species and actively managing and restoring healthy ecosystem processes to increase the consistency and quality of their food harvests, according to a new report. The Karuk Tribe's Aboriginal Territory encompasses over a million acres in the Klamath Basin in Northern California and Southern Oregon.

### KARUK

Agroecosystem  
Resilience and Cultural  
Foods and Fibers  
Revitalization Initiative:  
*xúus nu'éethi* — we are  
caring for it



YUBANET.COM

### Indigenous science key to adapting to climate change

Karuk Tribe members identified the importance of monitoring climate stress on plant species a...

[LINK TO ORIGINAL STORY](#)



## Indigenous Science Network

July 22 · 🌐



Robin Wall Kimmerer spoke on the grammar of animacy, the subject of one of the chapters in "Braiding Sweetgrass," which is "a way of thinking about life and the world." One of the main points that she shared in her talk was with regard to linguistic imperialism and linguistic restoration. Through a Western lens, land is "nearly synonymous" with natural resources and property, Kimmerer said. However, through the Indigenous lens, land is identity.

"We are inseparable from the land; the land is who we are as people," she said. "Land certainly as our sustainer, land not only as our home but home to our more-than-human relatives as well, land as our ancestral connection, our source of knowledge, our teacher. ... Land never as the place to which we claim property rights, but the place for which we accept moral responsibility for all creation."

Kimmerer told the audience that "words matter," that language — the words and grammar — that people choose have "real consequences on the land." She discussed the ways in which language can undo the consequences of linguistic imperialism and work at healing the Earth.



HOMERNEWS.COM

### 'Stories can be medicine' | Homer News

Writers' conference features keynote speaker Robin Wall Kimmerer

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

July 24 · 🌐



Sara Mai Chitty, the curriculum and pedagogy adviser for the office of Indigenous Initiatives at Western, was part of the course creation team, bringing her Indigenous background to the program.

"We have an assessment where students visit with a generation either older or younger than them to talk about what the climate looked like when they were younger or older," said Chitty. "So, bringing in different perspectives and people sharing what their gifts are and what they are ... [See more](#)



CBC.CA

**Western's new climate change course weaves in Indigenous knowledge | CBC News**

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**  
@IndigenousSci1

Promote



a team of researchers have identified compounds in the leaves of a particular medicinal Labrador tea plant used throughout the First Nations of Nunavik, Canada, and demonstrated that one of them has activity against the parasite responsible for malaria.



news-medical.net

Leaves of the Labrador tea plant contain an essential oil that could help com...  
Much of what is now considered modern medicine originated as folk remedies or traditional, Indigenous practices. These customs are still alive today, and ...

4:36 PM · Sep 10, 2023 · 12 Views

[LINK TO ORIGINAL STORY](#)

The Bulletin of the Indigenous Science Network is distributed four times a year via email notification directly to members. Membership is open to all. If interested in being a part of the Network, please contact Mark Linkson, the Coordinator, via email at [IndigenousSciNet@yahoo.com](mailto:IndigenousSciNet@yahoo.com). Issues distributed in March, June, September and December each year.





Indigenous Science Network

July 20 · 🌐



TIMMINSTODAY.COM

**Flood education system with Indigenous knowledge, contributions: expert**

[LINK](#) TO ORIGINAL STORY



Indigenous Science Network

July 20 · 🌐



Among the fire crews, outreach workers and military personnel who've been called in to fight fires are Indigenous Guardians — trained experts who manage protected areas, help restore animal and plant populations, test water quality and monitor development of the land.

"They're our eyes and ears on the land," Valérie Courtois, executive director of the Indigenous Leadership Initiative, said.

They're almost like conservation officers, Courtois said, but have a unique relationship to the land that has been going on for millennia.

"They're developing strategies (and) mitigating and implementing, in some cases, nature-based climate solutions, whether that is reforestation or carbon management projects, management of waterways, bringing back the practice of cultural burning to reduce the fuel load," she said.



GLOBALNEWS.CA

'Our eyes and ears on the land': Indigenous Guardians soar to 170 programs nation-wide | Globalnews.ca

[LINK](#) TO ORIGINAL STORY



**Chinook Indian Nation**

@chinook\_nation



Last week we held a cultural burn on West Sand Island- a practice that has existed since time immemorial. We worked with the Wagon Burners, Ecostudies Institute, and CREST to help return cultural fire to Chinook territory after almost 200 years of its absence.



5:54 AM · Jul 20, 2023 · 11K Views





**Indigenous Science Network**

July 7 · 🌐



Beautiful collaborations between elders and students on country.



MSN.COM

**Land-based learning teaches students Indigenous perspective on science, culture, and spiritual elements**

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**  
@IndigenousSci1

Promote



UW-Whitewater student geoscience research on Lake Superior draws on indigenous knowledge [wisconsin.edu/all-in-wisconsin...](https://www.wisconsin.edu/all-in-wisconsin/) via [@uwsystem](#)



2:55 PM · Oct 22, 2023

[LINK](#) TO ORIGINAL STORY

## Degrees At Brandon University Will Now Include Indigenous Content

*(communications@brandonu.ca, Brandon University: 3 June 2023)*

Starting this fall, all Brandon University undergraduate degrees will include Indigenous content. The new requirement, which was approved by the BU Senate earlier this year, adds a minimum of three credit hours of approved Indigenous content to any BU undergraduate degree.

To be approved as qualifying, a course with Indigenous content will need to demonstrate that it meaningfully incorporates Indigenous content or approaches. There is no set percentage or other quantifier. This was deliberate, said Chris Lagimodiere, BU's Indigenous Advisor to the President and a part of the Indigenous Education subcommittee of Senate that developed the new requirements.

"We are open to many possible approaches to Indigenous content, because there are many different ways to experience Indigeneity," he said. "Some courses may benefit from including an Indigenous worldview as an additional perspective on their content, while other courses may bring in Indigenous approaches to teaching and learning. Still others may add Indigenous content. It's up to the instructor to know which approach make the most sense for their discipline, their teaching style, and their learning goals for their students."



*Brandon University Knowledge Keeper Susie McPherson-Derendy leads a Teachings House at the Turtle Fire ceremonial firepit in the BU courtyard during National Indigenous Peoples Day 2023. [Link](#)*

**Above article and image published by the ISN with permission rec via email 7 July 2023**



**Indigenous Science Network**

July 20 · 🌐



In Washington State, the Jamestown S’Klallam Tribe’s new preservation facility offers a back-up plan for an uncertain future.



HAKAIMAGAZINE.COM

**Preparing for the Worst with a Kelp Seed Bank | Hakai Magazine**

In Washington State, the Jamestown S’Klallam Tribe’s new preservation facility offers a back-up...



[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

August 3 · 🌐



A new documentary about First Nations perspectives on earthquakes and tsunamis is premiering Tuesday night in Kyuquot and will air in other North Island communities throughout the week.

The film, "Tsunami 11th Relative," explores First Nations history and tells stories about earthquakes and tsunamis on the West Coast of Vancouver Island.

It's being released in time for Emergency Preparedness Week May 7-13, and highlights how combining ocean science and Indigenous knowledge ... [See more](#)



MYCAMPBELLRIVERNOW.COM

**Tsunami documentary blends Indigenous knowledge with ocean science : My Campbell River Now**

[LINK](#) TO ORIGINAL STORY



## e) Europe

**NPM** NgāPaeoteMāramatanga  
@NgaPaeotM

Sámi woman Pauliina Feodoroff aims to buy up ancient Sámi lands scattered across Sweden, Norway and Finland which will be a vital shield against climate change. Listen to her speak at the International Indigenous Climate Change Research Summit.  
[iiccrs.ac.nz/iiccrs-registr...](https://iiccrs.ac.nz/iiccrs-registr...)



11:51 AM · Oct 2, 2023 · 356 Views

The Bulletin of the Indigenous Science Network is distributed four times a year via email notification directly to members. Membership is open to all. If interested in being a part of the Network, please contact Mark Linkson, the Coordinator, via email at [IndigenousSciNet@yahoo.com](mailto:IndigenousSciNet@yahoo.com). Issues distributed in March, June, September and December each year.

# INDIGENOUS AND WESTERN SCIENCE – DECOLONISE, COLLABORATE, CELEBRATE



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**INDIGENOUS + WESTERN  
SCIENCE**

**How do we learn to see with both eyes?**  
Workshop Thursday, April 19 11-12:20 | Open to all  
**ESF Nifkin Lounge, Marshall** | [RSVP 2ways2know@gmail.com](mailto:RSVP 2ways2know@gmail.com)


Beginning with energetic discussions in New Zealand in 2021 regarding the place of Māori knowledge in their school and university science curricula (see articles in the previous seven bulletins from Aug '21 to Jun '23), the debate continues. We have also included a series of commentaries on issues around decolonisation and racism.


## Indigenous & Western Scientists Blaze a New Path Forward alongside Šungwakan, the Horse Nation [Link](#)

 **Indigenous Science Network**  
Just now · 

On March 30, 2023, the journal Science unveiled the collaborative work of an international team that united 87 scientists across 66 institutions around the world to begin to refine the history of the horse in the Americas – this time with Indigenous scientists and knowledge keepers leading the way. This work, which embeds cross-disciplinary and cross-cultural research between western and traditional Indigenous science, is a first step in a long-term collaboration.

“Horses have been part of us since long before other cultures came to our lands, and we are a part of them,” states Chief Joe American Horse, a leader of the Oglala Lakota Oyate, traditional knowledge keeper, and co-author of the study. The continent of North America is where horses first emerged. Despite the ancient and deep ancestral relationship many Indigenous Peoples of the Americas had – and have – with the Horse Nation, until this point there has been no place for the original Peoples of the Americas – or their horses - in this conversation. The global narrative was written around them, without them.



 NATIVENEWSONLINE.NET

**Indigenous & Western Scientists Blaze a New Path Forward alongside Šungwakan, the Horse Nation**

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

July 24 · 🌐



Rubber trees came to Kew illegally. In the summer of 1876, after more than a year in Brazil, the British explorer Henry Wickham returned to England with 70,000 rubber tree seeds. In Brazil, Wickham had declared to the authorities that the seeds were curiosities that he was taking back for the queen. He was lying; in London, he delivered the seeds to Joseph Hooker, the director of the botanical garden at Kew, for the princely sum of £700 (more than £16,000 or \$23,000 today)....

**See more**



NOEMAMAG.COM

### **The Long Shadow Of Colonial Science | NOEMA**

Museums and gardens must become spaces that help us learn not only about biological life a...









[LINK](#) TO ORIGINAL STORY

# Indigenous spirituality sneaking into New Zealand’s science curriculum, pretending to be “science” [Link](#) (Mark Linkson, Coordinator ISN, 29 Sept 2023)

This article linked above is based on a heart-felt opinion piece from an anonymous science teacher in New Zealand, bemoaning the insertion of Mātauranga Māori (NZ Indigenous Science) into high school science curricula. As a long-time supporter of Indigenous science, I found myself not unsympathetic to some of the points being made. Does a science curriculum remain a science curriculum when it contains reference to the spiritual beliefs of First Nations peoples that relate to their science knowledge? Well, taken from a purely western academic viewpoint, NO IT DOESN'T. But whose viewpoint should take priority? In Australia our national science curriculum includes such material under the Aboriginal and Torres Strait Islander History and Cultures cross-curriculum priority. We still call it science. Should we continue? The holistic and non-compartmentalised nature of Indigenous knowledge bumps up hard against the strong delineations of western science. Differing world views can become irreconcilable. What is best for reconciliation and rapprochement may not be the best science. When viewed through a particular lens.

## A guide for the recovering ontological supremacist

Settler-colonial education has led many scientists to limited understandings rooted in assumptions and inter-related fallacies linked to assumed superiority of knowledge systems. Indigenous ways of knowing and doing offer guidance for reaching beyond these limitations.

Settler-colonial fallacies in science			
 <p><b>Performative protocols</b></p> <p>Engaging with Indigenous peoples/cultures/communities to further one’s own career, tick boxes or simply make oneself look good in the eyes of colleagues.</p>	 <p><b>Sovereignty ignorance</b></p> <p>Conceptualising Indigenous peoples as stakeholders not rightsholders, while extracting and profiting from our lands and failing to engage with us.</p>	 <p><b>Urgency culture</b></p> <p>Contributing to a career-based academic culture which ignores time needed to build the relationships necessary for good engagement.</p>	 <p><b>White fragility</b></p> <p>Projecting one’s feelings and discomfort when being decentred/unsettled, while remaining callous of the ongoing historic harms of marginalised peoples.</p>
 <p><b>Settler-colonial blinders</b></p> <p>Assuming Indigenous ways of thinking and knowing are less correct than, or inferior to, Western scientific positions, or irrelevant to scientific research agendas.</p>	 <p><b>Western superiority</b></p> <p>Privileging scientists as knowledge holders and engaging with Indigenous knowledges through a Western lens without respecting them as parallel ways of knowing.</p>	 <p><b>Columbusing knowledges</b></p> <p>Claiming scientific ‘discovery’ of concepts, practices, species, etc., while failing to credit or acknowledge long-standing Indigenous knowledge and understandings thereof.</p>	 <p><b>Neocolonial reinforcement</b></p> <p>Failing to realise how settler-colonial science frameworks exist within and contribute to a neo-colonial settler-state, to the detriment of Indigenous peoples and their kin.</p>

*The feelings of the empiricists towards Mātauranga Maori and this kind of analysis picture above*

<https://whyevolutionistrue.com/2023/07/01/another-paper-touts-the-advantages-of-other-ways-of-knowing>

Know thine enemy folks!!



**Indigenous Science Network**

@IndigenousScie1



tensions caused by .... recognising the value of Matauranga Maori (Indigenous science) within the curriculum??



**Jared Carpendale** @think\_STEM · Jul 18

The draft #science curriculum documents in NZ were leaked a couple of weeks ago.

While discussions and tensions erupted, it allows us to think about the purpose of #scienceeducation in our country....

[Show more](#)

9:50 AM · Jul 30, 2023 · 500 Views

View post engagements



1



6



1



Post your reply

Reply



**Jared Carpendale** @think\_STEM · Jul 31



I suspect that was part of the reason that some teachers were reacting in the ways outlined in media - e.g.,



stuff.co.nz

Teachers shocked at leaked draft of science curriculum  
An advance version of the draft school science curriculum which contains no mention of physics, ...



1



241





## Indigenous Science Network

Published by ArtNews · July 22 ·



“Within this space,” the institution wrote, “the Museum perpetuates racist stereotypes by portraying Indigenous people in dioramas as if they only exist in the past, using inaccurate names for sovereign nations (regardless of government recognition), and displaying their belongings without ongoing consent or recognition.” The development comes as many museums—not just ones focused on science, but also art spaces—shift how they present Indigenous art, artifacts, and culture.



ARTNEWS.COM

### Denver Science Museum to Close Gallery About Indigenous Cultures That Promoted ‘Racist Stereotypes’



[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

@IndigenousScie1



The empiricists will never get it. Yes we may say the knowledge comes from the Dreaming in Australia, or spirits in the USA, that does not eliminate the efficacy and truth of that knowledge as science. Worldviews baby, your rigid western self belief is NOT the only way...

 **The Heartland Institute** @HeartlandInst · Oct 19

Decisions Based on Science, or Spirits?: Like most people, I am fascinated by Native American history and traditions. There is much to admire about those people, several of whom are among my own ancestors. But we should not confuse that admiration with... [dlvr.it/Sxd0Vw](https://dlvr.it/Sxd0Vw) [pic.twitter.com/UJjEmv1u4w](https://pic.twitter.com/UJjEmv1u4w)

2:26 PM · Oct 22, 2023 · 4 Views

[LINK](#) TO ORIGINAL STORY



**Dr. Jessica Hernandez**

@doctora\_nature



As a grad student, I used to think academic spaces or institutions were "open" to feedback that would improve working conditions for POC. I was WRONG.

Every time I spoke up, I was met with so much pushback including retaliation from upper administration & faculty.

4:33 AM · Jul 30, 2023 · 33.9K Views



9



121



736



29







**Dr. Jennifer Grenz** ✓

@Jennifer\_Grenz



Indigenous Nations doing the right thing on behalf of our precious fish relations while colonial governments say they will work with/co-manage with us, but ultimately their colonial governance structures are not designed to give up control. [#nativesinstem](#)



6:27 AM · Aug 4, 2023 · 8,987 Views



Indigenous Science Network

July 20 · 🌐



These and other topics were removed from the curriculum last year to help lighten students' workloads during the COVID-19 pandemic. But they have now been removed from textbooks, too. The National Council of Educational Research and Training (NCERT), the government-funded but operationally autonomous body tasked with producing India's textbooks, has not discussed the changes — which will affect more than 38 million children — with parents, teachers or researchers. Those who study science education have told Nature that they're baffled, not least by the lack of any engagement.

NCERT also wants "a rootedness and pride in India, and its rich, diverse, ancient and modern culture and knowledge systems and traditions". Some people interpret this as a motivation to remove the likes of Charles Darwin and Michael Faraday, and instead use the time to learn more about India's precolonial history of science.



NATURE.COM

### Why is India dropping evolution and the periodic table from school science?

India's curriculum body needs to explain why it has removed foundational topics from school t...

[LINK TO ORIGINAL STORY](#)

## Indigenous Science Network's Post



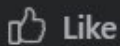
### Why is India dropping evolution and the periodic table from school science?

India's curriculum body needs to explain why it has removed foundational topics from school text...

[See insights and ads](#)

[Boost post](#)

3 comments



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Most relevant ▾



**Rowena Ball**

Uh huh. An unsigned editorial piece citing no references or sources from a journal that for 150 years has been devoted to promoting and upholding whatever it sees or claims as British science - which was mostly founded on and funded by colonial exploitation, and is still to this day. Is this pillar of the British scientific establishment worried, perchance, that 38 million Indian children may not have Western superiority drilled into them?

[Like](#) [Reply](#) [Hide](#) 6w



**Author**

**Indigenous Science Network**

**Rowena Ball** nice observation. Everyone has an agenda. Whose agenda should we foreground? Probably the Indians in this case.

[Like](#) [Reply](#) 6w



**Rowena Ball**

**Indigenous Science Network** Perhaps Nature will show some responsibility and invite and publish commentaries from Indian scientific societies and science educators. I won't hold me breath though.

[Like](#) [Reply](#) [Hide](#) 6w



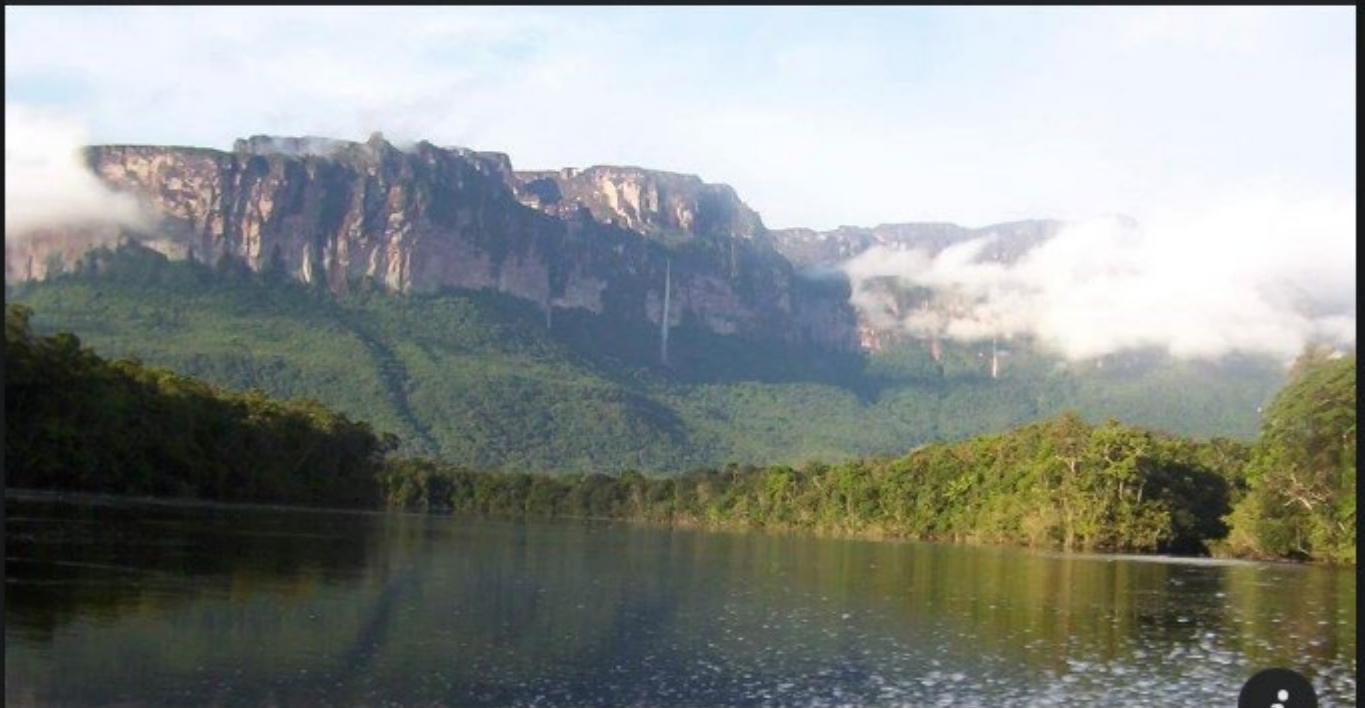


**Indigenous Science Network**

July 20 · 🌐



If corporations can be defined legally as "people" and then act like psychopaths, I see no harm in allowing nature the same privileges. Found this old white man shouting at the sky about Science Journals going woke. Giving credence to Indigenous spirituality as part of science!! Considering the super-heated dumpster fire that is the weather currently in the Northern Hemisphere, a new paradigm just might be the answer Old White Man.




EVOLUTIONNEWS.ORG


## Should We Give Nature "Rights"? | Evolution News

The text is too long to present here, so I will give one example: the ...

[LINK TO ORIGINAL STORY](#)

← **Indigenous Science Network**  
3,015 posts  
You reposted


 **DeadlyScience** @DeadlyScience · Aug 9  
Here it is! The DeadlyScience Guide to Innovation.  
Download now. Thanks to [@auspost](#) for your partnership and sponsoring the creation of this fantastic resource for Science Week. Thanks to [@ausgeo](#) [@WingaruEd](#) and to Mim Cole for her fabulous artwork.  
[ow.ly/JBWi50Pvtae](https://ow.ly/JBWi50Pvtae)



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**DEADLY  
SCIENCE**  **Australia Post**

[LINK TO ORIGINAL STORY](#)

🔄 You reposted



**ATSI SUQ** @atsisug · Aug 2



Listen to Susan Beetson (@sooJeeBee) be interviewed by @RenPerkins1 about Indigenous people in IT, #science, #maths, & more for The Big Mob, #STEM it up Project funded by the Aust Gov & led by A/Prof Marnee Shay - [open.spotify.com/episode/5iFaCG...](https://open.spotify.com/episode/5iFaCG...)  
[#WomenInSTEM](#) [#STEMeducation](#) [#stemchat](#)

**The Big Mob, STEM it up Project**  
Associate Professor Marnee Shay

Follow

UQ Engineering and Technology and 8 others

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ABC Indigenous  
@ABCIndigenous



The oldest bakers.

Stream The Dark Emu Story now on ABC iview:  
[iview.abc.net.au/show/dark-emu-...](http://iview.abc.net.au/show/dark-emu-...)



2:52 PM · Jul 25, 2023 · 4,161 Views



## Indigenous Mapping Workshop Australia

@imwaustralia



1/2 Make sure to catch episode 2 'Science of Story' of the SBS series 'The First Inventors' for insight into the Murujuga Land and Sea Rangers! They share how modern science has identified places that were used by Ngarla-Ngarli thousands of years ago. [hubs.la/Q01XT9Kk0](https://hubs.la/Q01XT9Kk0)



1:05 PM · Jul 20, 2023 · 967 Views





science

Amanda Cucchi

### Spring Webinar Series: Incorporating Indigenous Knowledges into Federal Research and Management

April 6: What are Indigenous Knowledges (IK)?

April 20: Understanding Federal Guidance on Engaging with Indigenous Knowledges

May 4: Tribal Policies Around Indigenous Knowledges

May 18: Case Studies of Successful IK Engagement

June 1: Best Practices for Engaging Tribal Nations and Indigenous Peoples Surrounding IK

series, we have Anne Kinsinger,

0:08 / 50:39

Context

Climate change [↗](#)

United Nations

Climate change refers to long-term shifts in temperatures and weather patterns, mainly caused by human activities, especially the burning of fossil fuels.

### Incorporating Indigenous Knowledges into Fed Res. and Mgmt: New WH Guidance on Indigenous Knowledges

 USGS [✓](#) 186K subscribers [Subscribe](#)

15 [Share](#) [Download](#) [Clip](#) [Save](#) [⋮](#)

785 views 2 months ago Climate Change Science and Management Webinar Series

In November 2022, the White House Office of Science and Policy released guidance on how Federal agencies can ethically acknowledge and incorporate Indigenous Knowledges (IK) into science, management, and decision making. This first-of-its-kind document recognizes IK as an important body of knowledge contributing to a more complete understanding of the natural world. It also acknowledges the U.S. government's past history of marginalization of and resource extraction from Indigenous peoples and the impact this left on building trusting relationships. [Show more](#)

[LINK TO ORIGINAL STORY](#)



**Indigenous Science Network**

Just now · 🌐



First published in 1997, *The Sacred Balance: Rediscovering Our Place in Nature*, expresses in Suzuki's impassioned, unique style, his view that in nature, everything is connected to everything else. Suzuki links care for the environment to our fundamental human physical, social and spiritual needs. American psychologist Abraham Maslow's 1943 "hierarchy of needs" ranged from "basic physiological requirements to love, esteem and, finally, self-actualisation". Today Maslow's theory is contested but for Suzuki, human flourishing is a complex matter requiring fulfilment of a range of needs – all of which depend on a healthy environment.



THECONVERSATION.COM

**The Sacred Balance: blending Western science with Indigenous knowledges, David Suzuki's influential book has been updated for this moment**

[LINK](#) TO ORIGINAL STORY



**Jared Carpendale**  
@think\_STEM



Some wonderful resources available here from [@NZScienceTeachr](#)

[shorturl.at/hkvAT](https://shorturl.at/hkvAT)

Including profiles of scientists, competitions, and science education events - and more!

[#science](#) [#education](#) [#STEM](#) [@ASERAeducation](#)

**NZASE** @NZScienceTeachr · Jul 10

Happy holidays! Just a heads up about the NZASE pānui arriving by email @ a leisurely 10am today for relaxed & wide-ranging reading. Enjoy! Free for non-members: [nzase.org.nz](https://nzase.org.nz) @NZScienceLearn @Welly\_ED @annamh\_nz @hannahrtwigg @MorganeMerien @JBHoughton @think\_STEM



8:15 AM · Jul 10, 2023 · 678 Views

[LINK](#) TO ORIGINAL STORY



**Indigenous Science Network**

July 22 · 🌐



Considering the danger of the losing significance of indigenous knowledge, Dr Martemjen in collaboration with Centre for Indigenous Culture and Environmental Studies (CICEs) started Fading Science, a YouTube Channel that documents series of short videos on Naga indigenous knowledge.



MORUNGEXPRESS.COM

### **Fading Science: Upholding Naga Indigenous knowledge**

Much like the rest of the Indigenous society around the world, changes in Naga society over t...

[LINK](#) TO ORIGINAL STORY



CICES

@cices2005 276 subscribers 10 videos

Fading science is a series of short videos based on Naga Indigenous Kno... >

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### Description

Fading science is a series of short videos based on Naga Indigenous Knowledge under the initiative of Center for Indigenous Culture and Environmental Studies (CICES) to promote and preserve the vast Naga indigenous knowledge and wisdom.

The Bulletin of the Indigenous Science Network is distributed four times a year via email notification directly to members. Membership is open to all. If interested in being a part of the Network, please contact Mark Linkson, the Coordinator, via email at [IndigenousSciNet@yahoo.com](mailto:IndigenousSciNet@yahoo.com). Issues distributed in March, June, September and December each year.



Indigenous Science Network

July 7 · 🌐



Ancestral Science Podcast

Send message



Ancestral Science Podcast

July 7 · 🌐

Get ready for some epic upcoming guests on [Ancestral Science Podcast!](#)

MELANIE GOODCHILD, Anishinaabekwe systems thinker and complexity geek!  
[www.melaniegoodchild.com](http://www.melaniegoodchild.com)

ALVIN HARVEY, Diné (Navajo), PhD Candidate (MIT) in Aeronautics and Astronautics asking questions about space travel in a more Indigenous way, Alvin D Harvey

TORRES WEBB, Indigenous from Erub, Torres Strait, Cultural Capacity Advisor bridging science, culture, and education. [Indigenous Science Network](#), Torres Bradley Webb

NICOLE REDVERS, Deninu Kųę First Nation, "The Science of the Sacred," Medicine Science. [Dr. Nicole Redvers, ND, MPH](#)

and of course...to be posted VERY SOON Siksika Astrophysicist ROB CARDINAL.

As always, help keep the podcast running though some merch!  
[www.relationalsciencecircle.com/shop](http://www.relationalsciencecircle.com/shop)

[#indigenousscience](#) [Blue Marble Space Institute of Science](#) [Indigenous Knowledges in Science Education](#) [Coyote's Crazy Smart Science Show](#) [KIN Knowledge in Indigenous Networks](#) [Native Teaching Aids LLC](#) [Native Scientists](#) [NASA - National Aeronautics and Space Administration](#)  
Thanks [Emil Starlight](#) for your editing skills!

Hai hai



**Coyote's Crazy Smart Science Show**

June 10 · 🌐

Season 3 Alert: Coyote Goes Tech starts tomorrow on APTN. Superhero Episode up first. Learn why fireflies have superpowers! Watch how you can defy gravity with the Weissenberg Effect and slime! How you can use a 3D printer to make your own superhero model. And how our Questers are like superheroes, learning about the many creatures in tidal pools. And John Herrington looks at whether astronauts are superheroes. Check your local listings. Saturday and Sunday mornings, on the SD channel (9125 on Telus). Looks like 9 AM Pacific time! And Lumi! [APTN](#) [APTN](#) [lumi](#) [CBC Kids Canada](#) [Media Fund](#) [Native American Encyclopedia](#) [National Geographic TV](#) [Native Teaching Aids LLC](#) [First Nations Health Authority](#) [AISES](#) [NASA](#) - National



## Summary of the **Inaugural Turtle Island Indigenous Science Conference at the University of Manitoba** in June 2022

Myrle Ballard<sup>1</sup>, Roger Dube<sup>2</sup>, Samar Safi-Harb<sup>3</sup>, Miguel Uyaguari<sup>4</sup>, Ayush Kumar<sup>4\*</sup>, Teresa Dekievit<sup>4\*</sup>,

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<sup>2</sup>Rochester Institute of Technology, Rochester, NY, USA

<sup>3</sup>Department of Physics and Astronomy, University of Manitoba, Winnipeg, MB, Canada

<sup>4</sup>Department of Microbiology, University of Manitoba, Winnipeg, MB, Canada

\*Corresponding Authors.

### Abstract

The Turtle Island Indigenous Science conference was hosted by the Faculty of Science at the University of Manitoba from June 14<sup>th</sup> to 16<sup>th</sup>, 2022. We (the members of the organizing committee) report a summary of the scientific sessions at the conference which was held in-person with almost 400 participants. To our knowledge, this is the first conference of its kind aimed at raising awareness on Indigenous science approaches. Attendees included representatives of government and funding agencies, schoolteachers, and members of the community. The conference provided a venue for participants to share their research together with their experiences, including barriers they face in post-secondary education institutions.



## Introduction

The Faculty of Science at University of Manitoba hosted the Indigenous Science conference (<https://event.fourwaves.com/turtleisland2022/pages>) from June 14<sup>th</sup> to 16<sup>th</sup>, 2022 with generous support from the Alfred P. Sloan Foundation. There were several goals for this gathering, including facilitating a discussion on Indigenous approaches to science, Indigenous STEM education, and Indigenous language preservation. This event aimed to rebut the misconception that prior to the arrival of Europeans, the Indigenous people of North America (Turtle Island) did not use scientific, engineering, or mathematical approaches in their day to day lives. The conference sought to increase awareness of Indigenous scientific approaches while informing academics about incorporating Indigenous approaches in STEM education. Fostering collaboration among academics, policymakers, funding agencies, and school boards was another goal of this gathering. There were 393 in-person attendees and while this was planned as an exclusively in-person event, five invited speakers delivered their presentations virtually (via Zoom) due to pandemic-associated travel limitations. Thirty-six abstracts were submitted for poster presentations and travel grants (eight) were awarded to all eligible students and post-doctoral fellows that applied.

## COVID Precautions

At the time of the conference, the University of Manitoba safety precautions included a vaccine and indoor mask mandate. University mandates were posted on the conference website and clearly communicated with all attendees at the time of registration. Conference sessions (oral and poster) were held in the University Centre. Lunches and coffee breaks took place in two different rooms to ensure physical distancing. Meals for attendees with special requests were provided in a separate designated room.

## Scientific Program

The scientific program began with a smudging ceremony performed by Elder Wanda Murdock. After which, a plenary talk was delivered virtually by James Makokis, a Nehiyô (Plains Cree) Family Physician from the Saddle Lake Cree Nation in northeastern Alberta. James provided a moving account of challenges experienced navigating the Western and Indigenous education systems while earning a medical degree. James shared that Indigenous knowledge could only be garnered from family and community members, as it is absent in the current University medical curriculum. In closing, James emphasized the importance of incorporating Indigenous knowledge in science and medicine taught at post-secondary institutions.

The remaining scientific program was divided into the following five sessions.

### Session I: Scientific Knowledge Embedded in Indigenous Languages

Jeannette Armstrong from the University of British Columbia delivered the keynote lecture for this session. Jeannette's talk highlighted the importance of Indigenous languages in describing Indigenous-focused science. Jesse Popp (University of Guelph) discussed the benefits of including multiple languages for a holistic approach in science. Yolanda Teran (University of New Mexico) presented virtually, focusing on the significance of Indigenous languages in conserving biodiversity. The role of language in Indigenous science is central since traditional knowledge is transmitted orally from one generation to the next. Finally, Wilfred Buck, an astronomer from Opaskwayak Cree Nation, detailed oral histories and narratives of the Indigenous People from Turtle Island.

### Session II: Traditional Medicine and Health

Nicole Redvers from the University of North Dakota was the keynote speaker. Nicole's talk, *The Science of the Sacred: Reflections through Land-based Healing*, was delivered virtually and described the educational and healing benefits of Land-based interconnection within Indigenous communities around the world. Nicole highlighted the intersections between Western science and traditional healing work in Land-based

settings. For the next talk, Darrell Manitowabe, Northern School of Medicine, Sudbury, ON, outlined the concept of *mino-bimaadiziwin* which means “living the good life” in Indigenous preventative medicine. Marcia Anderson from University of Manitoba described the strong foundation provided by Indigenous science and teachings for public health practice. Marcia discussed the Mino Pimatasiwin Manitoba Model of STBBI (sexually transmitted and blood borne infections) Care that has been informed by Indigenous science and teachings. Finally, Anita Murdock, a graduate student in Ayush Kumar’s lab at the University of Manitoba, highlighted the poor microbiology quality of drinking water from First Nation communities in Manitoba. Lack of safe drinking water remains a concern for First Nation communities and Anita’s work shows that even communities with working water treatment plants are at risk.

### **Session III: Two-eyed Seeing – Indigenous Ways of Knowing and Mainstream Science**

Blair Stonechild’s keynote lecture addressed the question of whether Indigenous spirituality can influence developments in fields of contemporary science. Blair’s talk highlighted that Indigenous scientific approaches involve respectful interactions with the environment. Brian Rice, who teaches Land-based courses at University of Manitoba, emphasized the importance of Indigenous sites in learning outside the classrooms. Next, Jürgen Werner Kremer (University for Peace and Santa Rosa Junior College) explored the roles of perception, experience, and story in two-eyed seeing. Roger Dube (Rochester Institute of Technology) described examples of advanced science that was a part of Indigenous cultures across Turtle Island. The final speaker of the session was Myrle Ballard from University of Manitoba. Myrle introduced the concepts of three-eyed seeing and three-voices and how they can advance our understanding of biodiversity.

### **Session IV: Novel STEM Education Approaches that Include the Indigenous Way of Knowing**

Henry Fowler’s (Navajo Technical University, New Mexico, USA) keynote lecture highlighted the mathematical advances made by Indigenous people for centuries, describing how Indigenous mathematical knowledge relates to nature. Indigenous mathematics camps for middle school children were described as an exciting way to bring traditional knowledge into mainstream math education. Next, Edward Doolittle from First Nations University of Canada shared their work making connections between ‘global’ (a term Edward proposes to use instead of ‘Western’) and Indigenous mathematics. Emily McKinnon, University of Manitoba, highlighted the importance of applying culturally responsive pedagogy in introductory science courses. Emily’s teaching focuses on including Indigenous science and disrupting the narrative that science is primarily a Western discipline. Joel Grant received their MSc from McGill University, working under the guidance of Nathalie Tufenkji. Joel described their experience living at First Peoples’ House while participating in various extracurricular activities throughout graduate school. Additionally, Joel showcased research findings focused on how freeze-thaw cycles and UV irradiation affect plastic breakdown.

### **Session V: Indigenous Engagement with the Land and the Environment**

Indigenous populations around the world are most vulnerable to the effects of climate change, which was the focus of Deborah McGregor’s (York University) keynote talk. Deborah’s virtual presentation highlighted the role of stories and teachings as part of our responsibility to the planet. Deborah emphasized that inclusion of Indigenous knowledge is critical for fighting the challenge of climate change. The second talk of this session was delivered by Sue Chiblow (York University) who described Anishinaabek women’s knowledge on Nokomis Giizis laws from the Great Lakes Territory. Melissa Arcand (University of Saskatoon) then stressed the significance of Indigenous knowledge of soils to support Prairie agro-ecosystems. Chelsey Geralda (Simon Fraser University) described the role of forest gardens in sustaining ecosystems. Andrea

Reid (University of British Columbia) then introduced the attendees to Sayt K'il'im Goot. This program engages Indigenous youth (from Niga'a Village of Gingolx on British Columbia-Alaska border) through land- and water-based experiential learning activities. Storytelling as an indigenized methodology for improved land restoration was presented by Jennifer Grenz, from the University of British Columbia (BC, Canada). Finally, Stewart Hill (Manitoba Keewatinowi Okimakanak, MKO) shared their autoethnography. Drawing upon their own experience as a researcher, as well as government data, Stewart expressed hope for water governance and self-determination by Indigenous people.

### **Panel Discussion:**

A panel discussion, moderated by Emily McKinnon, featured graduate and undergraduate students, recent graduates and an Assistant School Principal. The panelists were Christie Lavallee, Gordon Naylor, Benjamin Anderson-Sackaney, Teassa MacMartin, and Raven Bennett. All panelists echoed that barriers faced by Indigenous students in post-secondary institutions are unique and educational institutions must *listen to the needs to Indigenous students*. Panelists underscored the importance of supporting Indigenous students at a much younger age rather than at high school, to ensure their success at post-secondary educational institutions.

### **Summary**

The Turtle Island Conference on Indigenous Science is the first conference of its kind organized by a Canadian post-secondary institution. As evident from responses garnered in a post-participation survey, attendees greatly appreciated the diversity of topics covered. The goal of the conference was to initiate a discussion on ways to blend Indigenous and Western science respectfully and effectively, which requires listening to Indigenous scholars. The Turtle Island Conference was successful in initiating that discussion, as one attendee in their response noted, "*... the conference provided great insight into the way in which Indigenous Ways of Knowing can be incorporated into Western/Global Scientific endeavors from a variety of perspectives from across the continent*". We recognize that this is just a start, and this effort will require dedication, hard work and continuing dialogue. Our hope is to establish a network of universities across the country willing to host the Indigenous science conference on a rotating basis.

### **Acknowledgements**

The Turtle Island Indigenous Science Conference was generously supported by a grant provided by the Alfred P. Sloan Foundation and support from the Canada Research Chairs Program (S.S-H), and the University of Manitoba (Faculty of Science and the Office of the Vice-President Research and International). Special thanks to Stefi Baum, former Dean of the Faculty of Science, for their support in initiating the conference organization. We wish to thank the session chairs (Session I was chaired by Myrle Ballard and Miguel Uyaguari) Melanie Lalonde (Session II, co-chaired by Ayush Kumar); Brian Rice and Shirley Thompson (Session III); Emily McKinnon, Darja Barr and Frank Deer (Session IV); Kyle Bobiwash and Nicole Wilson (Session V) for curating a diverse and engaging panel of speakers. We are grateful to the many student volunteers, in particular Jocelyn Plouffe and Taylor Galvin. Finally, we are indebted to Stephanie Carter, Christa Kruck and Jennifer MacRae for their hard work behind the scenes ensuring the event was a huge success.



**Dr. Jessica Hernandez**  
@doctora\_nature



**CALL FOR PAPERS**

Special Issue: Indigenous Peoples & Environmental Justice!

Deadline: October 13, 2023 (Please share)

Indigenous-led special issue\*.

\*All first authors must be Indigenous.

[home.liebertpub.com/cfp/call-for-...](https://home.liebertpub.com/cfp/call-for-...)



# INDIGENOUS PEOPLES & ENVIRONMENTAL JUSTICE

**DEADLINE: OCTOBER 13, 2023**

**INDIGENOUS-LED SPECIAL ISSUE**

**\*ALL FIRST AUTHORS MUST BE INDIGENOUS**



6

266

384

43.9K





### Indigenous Science Network

July 20 · 🌐



### Port Macquarie Astronomical Observatory

June 10 · 🌐

Songline Connections of Aboriginal Peoples on the East Coast.

The Port Macquarie Astronomical Association (PMAA) welcomes Dr. Robert S. Fuller (Bob) as our special guest speaker.

About: Aboriginal songlines are a unique development of Aboriginal cultures that celebrate the travels of the Creator Ancestors as they shaped the landscape. The identification of the Black Duck Songline and its possible connection to the Pleiades is an example of the potential reawakening of long-distance songlines in Australia and their connection to the cosmology of their communities.

Speaker: Bob is an Adjunct Fellow at the School of Science at



Indigenous Science Network

July 20 · 🌐



Australian Indigenous Astronomy

July 16 · 🌐

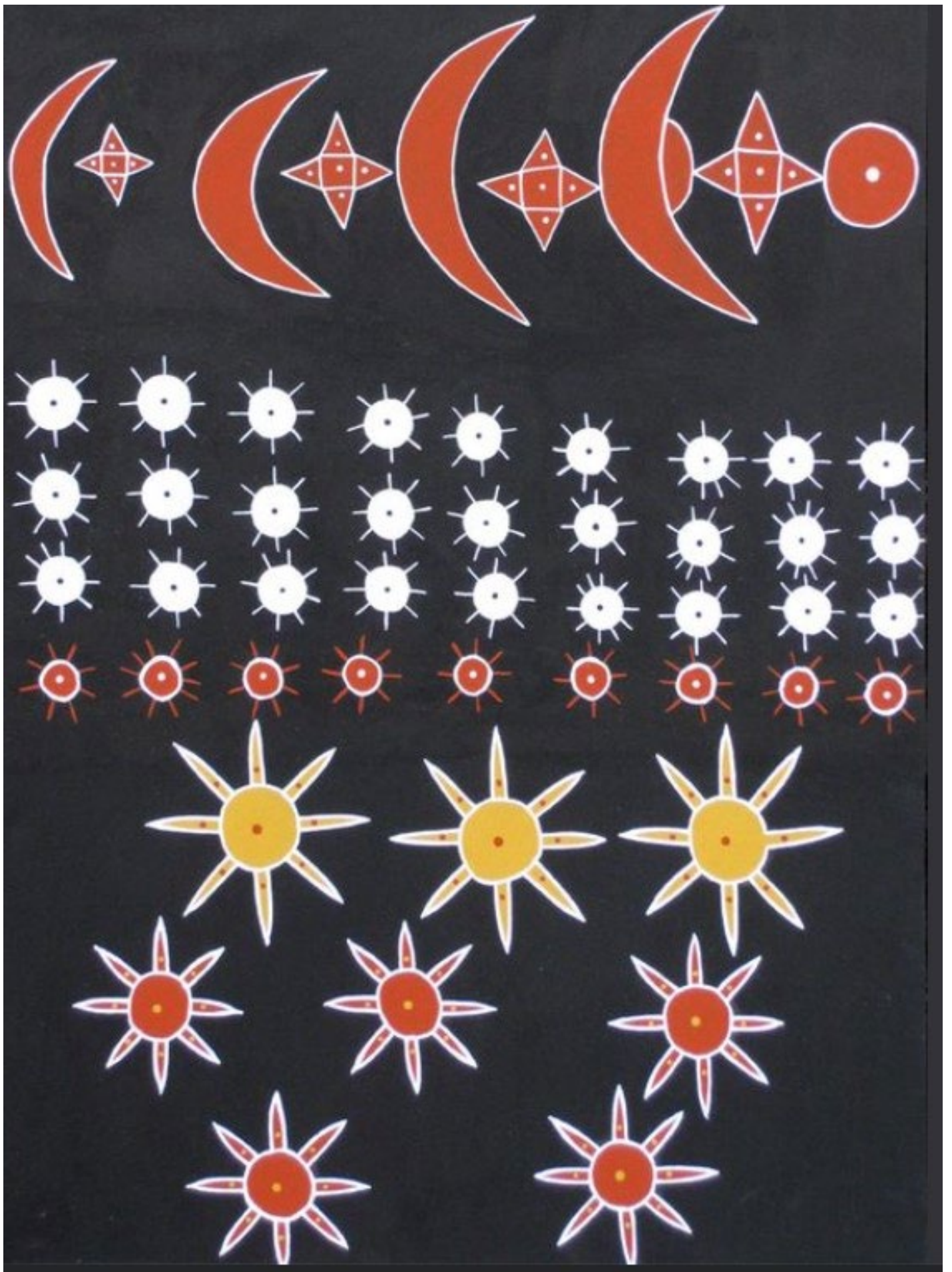
"Aurora Traditions of the First Australians" by Krystal De Napoli and Duane Hamacher.

Have you ever looked south on a dark night and noticed a faint glow of light arching across the horizon? For those in the far south of Tasmania, you might have even seen red and green waves dancing across the sky. These are the Southern Lights, also known as the Aurora Australis. The swirling lights of the aurora are a rare sight to behold from Australia, but appear in numerous Aboriginal astronomical traditions across the southern half of the continent.

This article demonstrates real-world applications of magnetism, electrical charge and waves to Physics students, the features of the Earth to Earth and Space students and elements to Chemistry students. Use this activity with Year 6-9 students to encourage them to make connections between these traditional Indigenous stories and Western scientific understanding.

<https://education.riaus.org.au/cosmos-magazine-aurora.../>

[LINK](#) TO ORIGINAL STORY





## Australian Indigenous Astronomy

July 11 · 🌐

### "Seven Sisters and The Orion's Belt" by Alfred Lalara

The nine large stars at the bottom half of the painting represent Wurrubirrimba. The three yellow stars are three men paddling canoes and the six red stars below are their wives. During the half moon, the stars that form Wurrubirrimba begin their journey across the sky. When the moon becomes full, the men and women continue their journey. Wurrubirrimba's journey brings the last rain before the dry season commences. This is also the time when the turtles start to nest. The row of smaller red stars in the middle section is the Milky Way, which Wurrubirrimba passes through.

Serial: AM 5947/08

Title: Seven Sisters and The Orion's Belt

Created: 2008

Medium: Acrylic on cotton

Size: 760 x 510mm

<https://artmob.com.au/product/am-5947-08/>

[LINK](#) TO ORIGINAL STORY



# Indigenous Astronomy Workshop

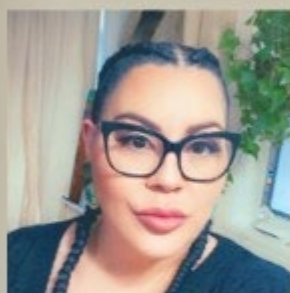
July 7<sup>th</sup> & 8<sup>th</sup> (Fri & Sat), 2023  
Burke Science Building, McMaster University



Future of Canada  
Project



We are excited and honoured to host the guest speakers below:



Bonita Bohnet



Corey Gray



Dr Laurie  
Rousseau-Nepton



Sam Doxtator



Tom Deer



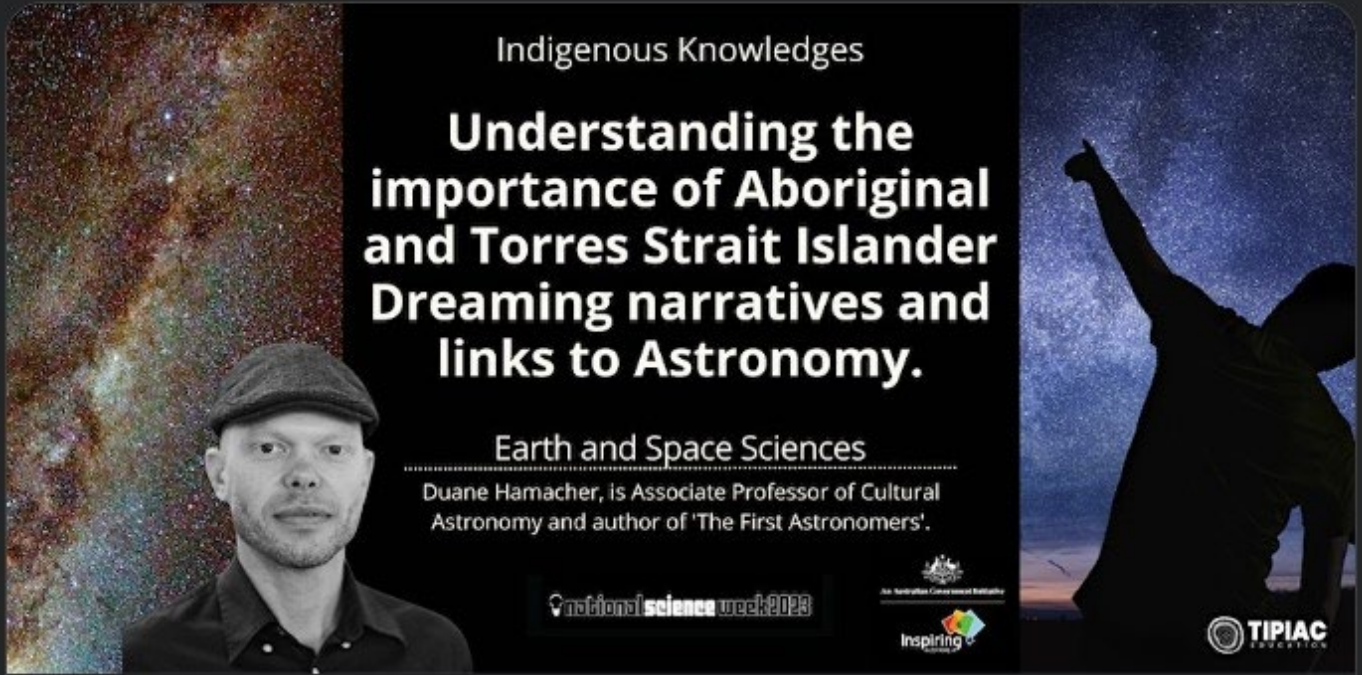
Vicki Monague

For the schedule, speaker bios, and to register, please scan the QR code above or visit <https://forms.gle/fpQKrgCd7E9oXYh87>



Indigenous Science Network

July 6 · 🌐



Indigenous Knowledges

## Understanding the importance of Aboriginal and Torres Strait Islander Dreaming narratives and links to Astronomy.

Earth and Space Sciences

Duane Hamacher, is Associate Professor of Cultural Astronomy and author of 'The First Astronomers'.

national science week 2023



Inspiring

TIPIAC  
EDUCATION



Australian Indigenous Astronomy

July 5 · 🌐

Join us as we celebrate [National Science Week](#) with an incredible opportunity to delve into the profound scientific knowledge embedded within Aboriginal and Torres Strait Islander traditions. In this live webinar, we are happy to have [A/Prof Duane Hamacher](#), the author of *The First Astronomers* and Associate Professor of Cultural Astronomy at [The University of Melbourne](#), as our guest speaker. Duane will share his experience in [Australian Indigenous Astronomy](#) and the deep connections to modern astrophysics.

Event held online.

Monday, 14 Aug 2023 from 3:30-4:30 pm (AEST)

<https://www.eventbrite.com.au/.../cultural-astronomy-with...>



ABC Indigenous  
@ABCIndigenous



Have you heard of Wurdi Youang?

It's a stone arrangement located on Wadawurrung Country, and Aboriginal Astronomer Karlie Noon believes it to be one of the oldest stone arrangements in the world – much older than the approx. 5,000 year old Stonehenge.



11:16 AM · Jul 18, 2023 · 38.1K Views

The Bulletin of the Indigenous Science Network is distributed four times a year via email notification directly to members. Membership is open to all. If interested in being a part of the Network, please contact Mark Linkson, the Coordinator, via email at [IndigenousSciNet@yahoo.com](mailto:IndigenousSciNet@yahoo.com). Issues distributed in March, June, September and December each year.

## WEBSITES

To learn more and attend upcoming events, please follow us on social media and visit our website

- [www.aboriginalastronomy.com.au](http://www.aboriginalastronomy.com.au)
- [www.facebook.com/AboriginalAstronomy](https://www.facebook.com/AboriginalAstronomy)
- [twitter.com/aboriginalastro](https://twitter.com/aboriginalastro)
- <http://ocaf.pbworks.com>



As there are now many events occurring it is not possible to easily keep track. Hence, after listing upcoming events, we will also now include accounts of gatherings that have already been held. Members, please notify the network of any future events!

### EVENTS ALREADY HELD



**Indigenous Science Network**  
July 14 · 🌐

Please place Saturday August 19 in your calendar for the Indigenous Science Experience @ Redfern Community Day. At this very special National Science Week event, you can immerse yourself in science, technology, engineering, mathematics and Aboriginal culture at the iconic Redfern Community Centre, 29-53 Hugo St, Redfern NSW. Come along any time between 10am and 3pm. See <https://lnkd.in/gtwh77gQ> for more information and a beautiful video on what you can experience.

The Indigenous Science Experience

The image is a collage of four photographs. Top left: A man in a hat playing a didgeridoo. Top right: The exterior of the Redfern Community Centre building. Bottom left: A collection of traditional Aboriginal artifacts including a boomerang, a spear, and a boomerang. Bottom right: A woman in traditional Aboriginal dress performing a dance on a stage.

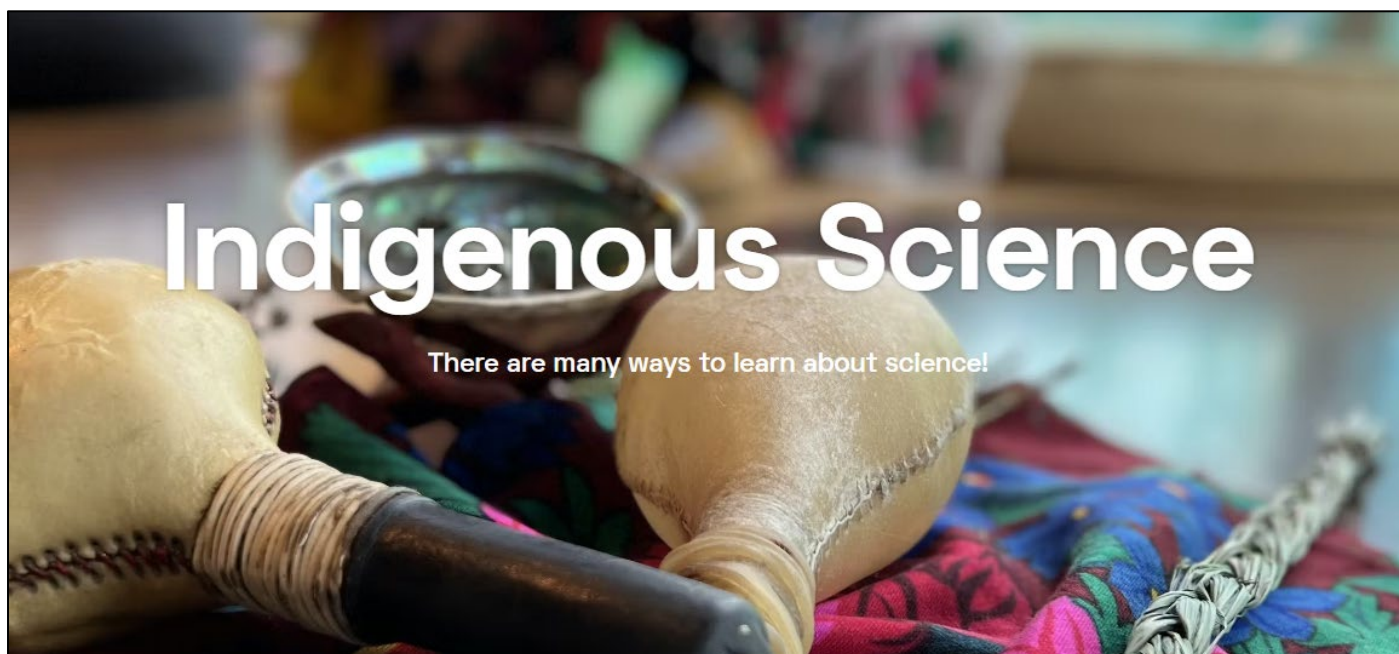
[LINK](#) TO ORIGINAL STORY

## UPCOMING EVENTS

### Calgary Science centre – TELUS Spark

Events and presentations continually available – check their [website](#)

TELUS Spark, Calgary’s science centre, is a city jewel. When it opened in its current location in 2011, it was the first purpose-built science centre in the country in 25 years. It houses the largest dome theatre in western Canada and attracts hundreds of thousands of visitors a year and launches blockbuster shows. It changes lives and opens doors to the world of science, technology and innovation. Indigenous science themed events at TELUS Spark are linked to the image below:



[LINK TO ORIGINAL STORY](#)

*ISN members are encouraged to submit items exploring any aspects of Indigenous science, teaching or education. As the Bulletin is not an official journal or organ of any recognised institution, we are not required to enforce any formatting, editing or reviewing regimes. We do have an Editorial Board made up of First Nations Co-Editors from across the globe who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!*

## EVENTS ALREADY HELD

**Dr. Jessica Hernandez** @doctora\_nature · Apr 24

In August we invite high school physics teachers to join us in creating a new vision for science learning: one that integrates physics with social justice. Two weeks, live online course, stipend of \$2100  
[#energyandequity #iteachphysics energyandequity.org/events/sw2023/](#)

**PHYSICS EQUITY ENERGY JUSTICE**

**Integrating Energy, Equity and Place in High School Physics**  
**A live online continuing education course**  
July 24—August 4, 2023

SEATTLE PACIFIC UNIVERSITY NSF WASHINGTON STATE UNIVERSITY BOTHELL

2 16 41 6,451

[LINK TO ORIGINAL STORY](#)