

Indigenous Science Network Bulletin

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Promoting First Nations' science, teaching & education



MUST READ: Special feature inside on the 2022 Turtle Island Indigenous Science Conference!

Torres Strait Islands community members pose with James Cook University staff in Far North Queensland

James Cook University senior research scientist Alex Carter (top right) has been working with Torres Strait Islander communities at the north-eastern tip of Australia to monitor the health of seagrass. Madeina David (bottom left), originally from Iama Island in the Straits, studied Marine Biology with JCU and is now employed by the TSRA Land and Sea Management Unit to protect the Torres Strait environment. By utilising her traditional knowledge of the sea, she has liaised with JCU staff and other local community members to assist in better understanding and maintaining their very important seagrass meadows. Full story [here](#).

(Photo: Torres Strait Regional Authority)

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 stories and text copied from items on the net, there are many images of tweets and other stories screen-grabbed directly. **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 (with occasional Easter eggs).** So, while reading this bulletin online (which is recommended), always hover and click the images. In this issue we have stories from the following countries / First Nations peoples:

Australia: Aboriginal – Warddeken, Yilka, Ngaanaytjarra, Gumbaynggirr, Tiwi, Kuku-Yalanji, Yamatji, Bundjalung, Waanyi, Wiradjuri, Warddeken, Pintupi, Kungarakana, Iwaidja, Kamilaroi, Jawoyn, Darug, Bundalung; Torres Strait Islands – Ima

New Zealand: Maori – Ngāti Whātua, Ngāpuhi, Ngāti Kahu o Whangaroa, Ngāti Wai, Raukawa, Ngāti Ranginui, Ngāti Maniapoto, Te Aupōuri

USA: African American; Native American – Mono/Yokut, Ojibwe, Navajo, Yurok, Chippewa; Native Hawaiian

Canada: Anishnaabek, Cree, Métis, Mi'kmaw, Inuit, Nuchatlaht, Magnetawan, Shawanaga, Kanien'kehá:ka, Mohawk, Algonquin, Atikamekw, Huron-Wendat, Salish, Blackfoot, Thessalon

Mexico: Zapotec, Maya Ch'orti' and Binnizá **Uganda:** Bagungu **Chad:** Mbororo

Ethiopia: Afar **Kenya:** Endorois **Borneo:** Iban **Bolivia:** Casarabe

India, Benin, Sudan

Indigenous Science Conference held June 14-16 in Winnipeg CANADA

A very significant gathering of educators and scientists was held recently by the University of Manitoba. Featuring leading contributors to our understandings of the value and worth of Indigenous science across the spectrum of western disciplines, proceedings and reports from the Turtle Island Indigenous Science Conference can be found [here](#).



Australia's **National Science Week** is coming up 13-21 August and we have links to many Indigenous themed events [here](#). Amazingly (after 4 bulletins) we continue to explore the relationship between Indigenous Science and Western Science through contemporary accounts available online. It seems to be a topic which engenders continual discussion amongst scholars from settler nations! Perhaps there is no definitive answer, given that everyone brings their own worldviews to the debate. You decide. [Link](#)

Our editorial is written by Jesse King, a science teacher, curriculum writer and one of our First Nations Editors. He explores the theme of National Science Week – GLASS – and how it relates to culture. A wonderful piece of writing which I hope many Australian science teachers will find useful. Finally, please welcome [Shalini Dhyani](#), who has agreed to act as one of our Regional Agents for the First Nations peoples of Asia. She submitted this [article](#) regarding a project in the Himalayas using Indigenous knowledge of the environment. Many thanks Shalini!

Mark Linkson, Coordinator ISN, Cairns Queensland AUSTRALIA

ISN First Nations Advisory Board (Co-Editors)

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

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A. Professor Michael-Shawn Fletcher, University of Melbourne

Dr. Femi S. Otulaja, University of Witwatersrand, SOUTH AFRICA

Joe Sambono, QUT, Brisbane, AUSTRALIA

Carly Jia, AITSL, Melbourne

Jesse King, Stronger Smarter Institute, Brisbane



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

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 (Note: we still require a volunteer for the PACIFIKA region)

AFRICA

Femi OTULAJA, University of Witwatersrand, SOUTH AFRICA

Keith LANGERHOVEN, University of the Western Cape, SOUTH AFRICA

Sina Joshua FAKOYEDE, Federal University Oye-Ekiti, NIGERIA

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Coimbra SIRICA, Burness Global, USA

Wanda BAUTISTA, Burness Global, USA

Claudia LIEVANO, Burness Global, USA

Andrew DAVIS, Fundacion PRISMA, EL SALVADOR

Lucas TOLENTINO, Global Alliance of Territorial Communities, BRAZIL

Michel LAFORGE, Global Alliance of Territorial Communities, ECUADOR

EUROPE

Michael Reiss, UCL Institute of Education, London UK

ISN Facebook page and Twitter account

The Facebook page now has around 1594 followers and the Twitter account has 1960 followers (as at 29 July 2022). 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 be registered. 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, I would encourage looking into it. The Coordinator of this Network, Mark Linkson, has been running both these media but would be happy to share the load with other members if you are keen. 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 crop up 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. Some items will not have links. All links were active at the time of publication (10 August 2022).

ACKNOWLEDGMENTS: This issue contains contributions from or reference to the following network members: Brad Moggridge, Michael-Shawn Fletcher, Karlie Noon, Krystal De Napoli, Duane Hamacher, Ray Norris, Cory Tutt, Coimbra Sirica, Carly Jia, Chris Matthews, Michelle Hobbs and Shalini Dyani. Apologies if I have missed anyone (let me know). Many thanks and to all members, your future submissions are most welcome.

ACER PROVIDES ONLINE HOME FOR THE BULLETINS AND THIS NETWORK

All ISN bulletins since 1998 have been stored on Inaugural ISN Convenor Mike Michie's personal website and can be downloaded from there:

<http://members.ozemail.com.au/~mmichie/network.html>.

All ISN bulletins since 2020 are also stored on a website provided by ACER, the Australian Council for Education Research.

Australian Council *for* Educational Research

Creating and promoting research-based knowledge, products and services to improve learning.



Partnership with ACER



The ISN and the Australian Council for Education Research (ACER) are now 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 science in education at all levels.

Indigenous Science Network Bulletin - August 2022

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

Network Home Home > ISN

About
Aims
First Nations Editorial Board
Coordinator and Regional Agents
Bulletins
Membership
Submissions to the Bulletin

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.

Most Popular Papers

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

Contents

INDIGENOUS SCIENCE NETWORK EDITORIAL: AUGUST 2022	6
NEWS AND VIEWS – AUSTRALIA	10
NEWS AND VIEWS – THE WORLD	40
a) Pasifika.....	40
b) Asia	47
c) Africa.....	51
d) Americas.....	57
e) Europe.....	97
THE TURTLE ISLAND INDIGENOUS SCIENCE CONFERENCE.....	99
INDIGENOUS AND WESTERN SCIENCE – A CONTINUING EXPLORATION	109
RESOURCES – AUSTRALIA	118
RESOURCES – THE WORLD	125
PAPERS	138
INDIGENOUS ASTRONOMY.....	143
CONFERENCES / SEMINARS / WEBINARS – AUSTRALIA	160
CONFERENCES / SEMINARS / WEBINARS – THE WORLD	172

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

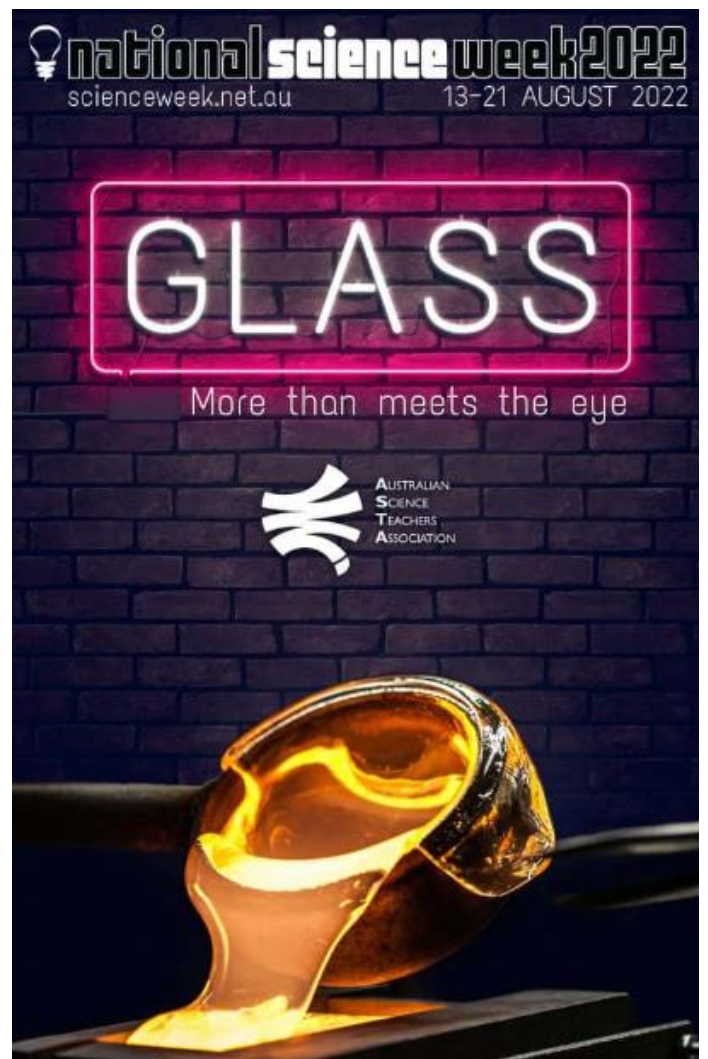
Jesse King is a Waanyi man with a passion for education and the opportunities it provides for everyone. He is keenly interested in the opportunities 21st-century pedagogy offers for learners of all abilities and backgrounds. Jesse has experience in classroom teaching and coaching, school leadership, curriculum development and Indigenous Knowledges in Science, Technology, Engineering and Mathematics (STEM). He has close ties to the Mount Isa and Central Queensland regions through his father and mother's family. Jesse is currently the Team Leader – Digital Solutions at the Stronger Smarter Institute. He is also one of seven First Nations Co-editors with the Indigenous Science Network.



A First Nations Lens on Glass in Australia

The theme of National Science Week 2022: **Glass: More than meets the eye**, gave me an opportunity to reflect on my time working in Indigenous STEM Education. More specifically, what does this theme mean to me as an educator? And more importantly, what does it mean for me as a descendant of the Waanyi people in north-western Queensland? I was able to reflect on the privilege I have had of working with some of Australia's foremost thinkers in Indigenous STEM. Often, when faced with some STEM example or context, my mind eventually gets to the question: what does this mean to First Nations Peoples of Australia? How have we understood or demonstrated this concept? We can spotlight First Nations Peoples' sophisticated ways of knowing, being and doing, to make educational experiences more engaging for everyone. There is often more than meets the eye. What is a First Nations lens on glass in Australia?

Worked (non-natural, manufactured) glass appears around 4500 years ago, centred around the Fertile Crescent region in the Middle East and expands from there to what we know today, through many significant scientific advancements. Similar glass technologies emerge independently in China around 3000 years ago, possessing unique developmental characteristics¹. Archaeological evidence suggests sophisticated glass technology existed in Sub-Saharan



¹ Gan, F., Cheng, H., & Li, Q. (2006). Origin of Chinese ancient glasses—study on the earliest Chinese ancient glasses. *Science in China Series E: Technological Sciences*, 49(6), 701-713.

Africa about 1000 years ago². So what is known about First Nations Peoples of Australia's traditions with glass?

A cursory glance of the available literature would point towards glass being identified by First Nations Peoples of Australia as a raw material that could be processed in the same way as the manufacture of stone tools. The introduction of glass is evidenced in anecdotal reports of trading beads during early contact periods. These reports contribute to the narrative of the time created by Social Darwinism; no wheel, no pottery, no glass, therefore no civilisation. The dominant philosophies of Social Darwinism pervert many of the early descriptions documented by Europeans, that lack an understanding of the sophisticated knowledges held by First Nations Australians. The scientific agenda at the time of colonisation suppressed and silenced First Nations Peoples' sophisticated and novel processes, techniques and innovations on this continent, honed since time immemorial.

However, First Nations Peoples of Australia were able to recognise the similar properties of manufactured glass and other raw materials that were already being used in material culture. This is explained in the Australian Curriculum: Science Elaboration [Teacher Background Information](#)³.

“Stone tools provide sophisticated examples of material culture that required the confluence of geological, chemical, biological and physical knowledge. The lithic raw materials (stones) were then reduced by percussion techniques into a variety of tools and blades that could be used either for highly specialised or general purposes. First Nations Peoples of Australia relied on, and built upon, an expert level of geological knowledge to help identify which rocks formed the necessary conchoidal (Hertzian) fractures for tool making. Conchoidal or Hertzian fracture is a technical term used to describe the way that brittle materials such as obsidian, flint, quartzite, chert and other minerals break or fracture in the absence of any pre-existing fault lines or planes within the material.” (ACARA, 2019)

First Nations Peoples of Australia's recognition, utilisation and contribution to the understanding of australites, is particularly fascinating. Australites are a dark, glossy matter that form a category of [tektites](#)⁴. Much has been written about australites from a western perspective. However, I will instead focus on the contribution to the western scientific understanding of australites by First Nations Peoples of Australia. First Nations Peoples of Australia have many different recorded creation narratives mentioning the extra-terrestrial origins of australites (falling from the sky)⁵. Australites were considered by First Nations Peoples as originating with ancestral beings, and as such, were highly valued. The responsibility for australites was often entrusted to a person of high regard within a community.

There was a particular interest in australites across the Australian continent from the western scientific community. Early western theories attributed the origin of australites to volcanic eruptions. With a bit of imagination, picture the geologists and the First Nations knowledge holder, frustratingly trying to communicate these different world views, across different languages, and both of them walking away thinking the other didn't know much about anything.

² <https://theconversation.com/how-we-found-the-earliest-glass-production-south-of-the-sahara-and-what-it-means-142059>

³ <https://australiancurriculum.edu.au/TeacherBackgroundInfo?id=56799>

⁴ Clarke, P. A. (2018). Australites. Part 1: Aboriginal involvement in their discovery. *Journal of Astronomical History and Heritage*, 21(2), 115-133.

⁵ Clarke, P. A. (2019). Australites. Part 2: Early Aboriginal perception and use. *Journal of Astronomical History and Heritage*, 22(1), 155-178.

It wasn't until the mid-twentieth century, during NASA testing of the impact of atmospheric re-entry on materials, advanced the western understanding of tektite origins. Scientists were able to replicate the creation of a tektite in a wind tunnel. The only reference to First Nation Australians' long held knowledge about the origin of tektites a one sentence reference describing that when "geologists would ask the Australian Aborigines where the tektites came from, they pointed vaguely up to the sky"⁶.

Today, our understanding of australites is made possible by analysing the large collections of australites across various museums and private collections. These collections exist because of the exploitation of First Nations Peoples, whose acute vision would result a higher rate of locating australites than non-Indigenous gatherers⁷ for which they were often paid with no more than a Minty (sweet lolly)⁸.

First Nations Peoples of Australia manufactured superior cutting instruments from australites that were particularly useful for medical procedures. They were able to apply common knapping techniques to australites to produce blades.

"Although most tools were made from readily available local stones, highly specialised tools and blades made from particular lithic materials (for example, volcanic greenstone and natural glass, such as obsidian and tektites) were traded across extensive distances and used only by highly skilled and knowledgeable people... To this day, no surgical tools have exceeded the efficiency of obsidian blades. There are still some surgeons who use obsidian scalpels as they can cut down to a single micron and leave considerably less scarring as a result. This demonstrates the value of shaping and treating natural occurring materials when compared to modern day manufactured tools, such as surgical steel." (ACARA, 2019)



Australian tektites

Australian tektites (Australites) have been known and used as artefacts and ritual objects by Aboriginal Australians for over 30,000 years. The commonly held view that the first Australian tektite was found by Sir Thomas Mitchell in 1836 in the Murray-Darling River region of New South Wales and given to Charles Darwin when he visited Sydney on the *Beagle*, needs reassessment, as it has some ambiguities and inconsistencies in timing and geographical details. A more likely scenario is that the specimen was found by Mitchell on the shores of Lake Boga in what is now Victoria, on his third expedition in 1836, and given to Charles Darwin a year later during Mitchell's visit to England. Emus have been known to swallow Australites for gizzard stones which help grind up their food.



⁶ Bugos, G. E. (2010). *Atmosphere of Freedom: 70 Years at the NASA Ames Research Center* (Vol. 4314). National Aeronautics and Space Administration, NASA History Office.

⁷ Baker, G., 1959. Tektites. *Memoirs of the National Museum of Victoria*, 23, 5–313

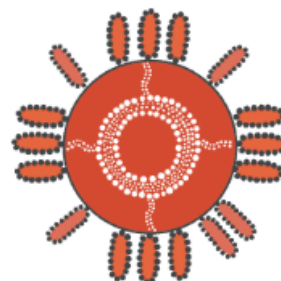
⁸ Fenner, C., 1940. Australites, Part IV. The John Ken-nett collection, with notes on Darwin glass, bedia-sites etc. *Transactions of the Royal Society of South Australia*, 64, 305–324.

With the introduction of manufactured glass to the continent by European colonisers, First Nations Peoples were quick to recognise that the characteristics that make silica-rich stone (obsidian, flint, quartzite, chert etc.) workable are the same that apply to manufactured glass. Evidence of glass being worked by First Nations People exist across multiple archaeological sites such as the Native Mounted Police Camps in Queensland⁹, Kempton in Tasmania¹⁰, the Onkaparinga River estuary in South Australia¹¹ and Sydney in New South Wales¹². Perhaps the most famous examples are Kimberley Points from Western Australia, spear points traditionally manufactured from expert stone knapping techniques, that were applied to manufacture Kimberley points from glass and porcelain. Essentially, people familiar with fundamental knapping processes react similarly when a new material is presented to them and take advantage of this new resource¹³. This is documented worldwide across all First Nations Peoples where manufactured glass was introduced.

While glass was not manufactured by First Nations Australians, natural glass-like materials were recognised and utilised for a variety of purposes across the continent. Glass is just one example of cultural technological adaptation First Nations Peoples of Australia successfully incorporated into their repertoire of skills in response to colonisation. The theme of National Science Week 2022: *Glass, more than meets the eye* gives us an opportunity to consider what glass means from a broad range of cultural and scientific perspectives. As an educator this creates an opportunity to stretch our thinking and create diverse and engaging learning experiences for all students. As a Waanyi person, I am proud to be a part of the longest living cultures in Australia and have had the opportunity to highlight a small part of First Nations' knowledges and their place in National Science Week 2022.

Jesse King

Chief Impact Officer
Stronger Smarter Institute



SSISTEMIK

FIND A PROGRAM NEAR YOU

The Stronger Smarter Institute offers educators and community leaders the opportunity to have deeper engagement in the role that Indigenous Knowledges have in shaping and redefining Science, Technology, Engineering, and Mathematics now and into the future.

⁹ Perston, Y., Wallis, L. A., Burke, H., McLennan, C., Hatte, E., & Barker, B. (2021). Flaked Glass Artifacts from Nineteenth-Century Native Mounted Police Camps in Queensland, Australia. *International Journal of Historical Archaeology*, 1-34..

¹⁰ Tindale, N. B. 1941 A Tasmanian stone implement made from bottle glass. *Papers and Proceedings of the Royal Society of Tasmania*, pp. 1-2; plate 1


¹¹ Freeman, John A. (Sean) 1993 A Preliminary Analysis of the Glass Artefacts Found on the Onkaparinga River Estuary. Graduate Diploma in Archaeology diss. Flinders University, Adelaide.

¹² Goward, T. (2011). Aboriginal glass artefacts of the Sydney region.

¹³ Cooper, Z., & Bowdler, S. (1998). Flaked glass tools from the Andaman Islands and Australia. *Asian Perspectives*, 74-83.

National Science Week 2022

In-person and online events, virtual tours, DIY science and more, all across Australia, from 13 – 21 August



Jas Chambers
@JasChambers007

Loving listening to my fellow board @ScienceAU board member @drchris_maths talk about #balance #systems and the 65,000 year history of #scienceandmathematics in #Australia 🌍🏠🌊🌳



9:00 AM · Aug 4, 2022 · Twitter for iPhone

Australia's **National Science Week** is coming up 13-21 August. At the launch in Canberra on 4 August, three of our network members in Brad Moggridge, Chris Matthews and Krystal de Napoli were invited to give their perspectives on the 65,000-year history of maths and science in Australia. Fantastic to see such recognition. Too deadly comrades! Following are links to some Indigenous themed events in the Conferences section of this bulletin, please view [here](#).

AssocProf Bradley Moggridge
@bradmoggo

#ScienceWeek launch today at @Aust_Parliament through @ScienceAU was awesome to have a voice off the bench, with yinaar @KrystalDeNapoli and daaghan @drchris_maths talking Indigenous science and maths #STEMoriginal



1:13 PM · Aug 4, 2022 from Canberra, Australian Capital Territory ·

How Deadly Coders is closing the gap in STEM

(Tess Durack, Education: 29 June 2022)

A new initiative is providing a space for Aboriginal and Torres Strait Islander students to explore science, technology, engineering and mathematics (STEM) industries — with the goal to empower Indigenous youths to choose STEM fields in higher education. The Junior Engineers Deadly Coders initiative uses hands-on learning to encourage Aboriginal and Torres Strait Islander kids to participate in STEM — areas in which they are under-represented. At a university level, for example, research shows 0.5 per cent of the Aboriginal and Torres Strait Islander population have a STEM qualification, compared to 5 per cent of Australia’s non-Indigenous population. “Growing up as an Indigenous or Torres Strait Islander kid, there can be a lot of limiting narratives,” explained Karina Hogan, who sits on the advisory board for the Deadly Coders program. “Deadly Coders is about not allowing those negative narratives to take hold. It helps kids discover they’re not limited to being what society says they have to be.” For Andrew Brodie, Director of Partnerships at Junior Engineers, addressing this kind of underrepresentation is why Deadly Coders was created. “My vision for the program is that we bring down the barriers that exist when it comes to First Nations students studying in STEM related fields at university,” he told create.



The first two Deadly Coder events were offered to Queensland primary and secondary school students, and saw a particularly high uptake by female students who made up 57 per cent of the participants. One of those students was Hogan’s niece. “She absolutely loved it! She came home talking about all the different possibilities it had opened her eyes to. And that’s so important because Aboriginal women are often the backbone of our communities but also heavily impacted by disadvantage and marginalised when you look at figures around participation on boards and placement in executive roles.



Some incredible Indigenous people in STEM you should know about:

Mikaela Jade

Kirsten Banks

Karlie Noon

Krystal De Napoli

Corey Tutt

Cass Hunter

Rae Johnston

Taylah Griffin

Renee Wooton

Eden Little



[Mikaela Jade](#) @jade mikaela

[Kirsten Banks](#) @AstroKirsten

[Corey Tutt OAM](#) @corey tutt

[Karlie Alinta Noon](#) @karlie moon

[Krystal De Napoli](#) @KrystalDeNapoli

[Rae Johnston](#) @raejohnston

Recognising Indigenous knowledges is not just culturally sound, it's good science (Maryanne Macdonald, Darren Garvey, Eyal Gringart, Ken Hayward, *The Conversation*: 4 July 2022)



Cultural burning practices can clear out flammable plant materials that lead to bushfires.
AAP Image/Supplied by DFES, Evan Collis

Floods, fires and droughts in Australia devastate lives, destroy wildlife and damage property. These disasters also cost billions of dollars through loss of agricultural and economic productivity, environmental vitality and costs to mental health. People are looking for long-term solutions from politicians and researchers. It's time to listen to First Nations people who have extensive knowledge of Country. For tens of thousands of years, First Nations people have addressed changing weather on this continent and successfully applied their knowledges to land management. Their knowledge and contribution deserve full recognition. To this end, our new research argues Australian researchers must recognise the value of First Nations people to find new and more effective ways to tackle climate and environment problems.

In southeast Australia, climate change over the past century has resulted in weather patterns that increase the likelihood of bushfires. At the same time, non-Indigenous land management practices, including those that prevent cultural burn-off practices, have increased the amount of flammable plant material, sometimes resulting in more intense bushfires. But evidence suggests Indigenous fire regimes help manage forests, protect biodiversity and prevent catastrophic bush fires.

🔄 You Retweeted



Indigenous Desert Alliance

@IDA_Australia



Last fortnight Yilka Rangers made a plan and got started with their burning season. Rangers did some roadside burns to protect important mulga and sandalwood areas from summer wildfires and break-up large areas of spinifex country which is currently all the same age.



12:10 PM · Jun 22, 2022 · Twitter Web App

Supporting culturally competent science teaching

(ACER news: 21 Jun 2022)

The Indigenous Science Network was initiated by Dr Michael Michie in 1998 to bring culture into science teaching for all, by exploring and better understanding First Nations Peoples' ways of knowing and doing. It was based on the belief that Indigenous cultures should form an integral part of the science curriculum, long before Aboriginal and Torres Strait Islander Histories and Cultures was instilled as a cross-curriculum priority. But, as ISN Coordinator Mark Linkson explains, non-Indigenous educators sometimes struggle to effectively include Indigenous perspectives in their teaching. 'This struggle is often caused by fear of not knowing how to do it appropriately, or not fully understanding the cultural nuances of the science knowledge. So, not wishing to cause upset, teachers may sometimes not even try,' says Mr Linkson, a non-Indigenous classroom teacher with many years of experience working and living in various remote Aboriginal and Torres Strait Islander schools and communities.



Under the guidance of its First Nations Editorial Board, ISN produces a quarterly bulletin that aims to:

- promote First Nations science, teaching and education
- 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.
- 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.

Each bulletin is a compendium of articles, opinion, resources, academic papers and conferences related to the promotion, teaching and use of Indigenous science. The bulletin covers such topics as Indigenous astronomy, environment, sustainability, maths, technology, curriculum and anything related to the interests and passions of Aboriginal and Torres Strait Islander science educators and supporters.

Indigenous rangers and scientists working to conserve endangered white-throated grasswren in Arnhem Land *(Jane Bardon, ABC News: 22 June 2022)*

In one of the remotest parts of Arnhem Land, Indigenous rangers have made an exciting discovery that has given them confidence their efforts to control wildfires are paying off. They have found a number of endangered white-throated grasswrens, which are on the federal government's priority list of 20 Australian birds it is hoping to stop becoming extinct. Two weeks ago, Warddeken Indigenous ranger Terrah Guymala was extremely excited to hear the call of the bird he had been searching months for. "The white-throated grasswren is the western name, but in Bininj we call it Yinlinkirrkir, and this Yinlinkirrkir, it's a really important little bird that lives in the Stone Country," he said. The ranger group is working on a project with non-profit organisation Territory Natural Resource Management, which has received federal government funding to work out where the endemic white-throated grasswren still survives.



The population of the white-throated grasswren is under threat. (Supplied: Dr Kelly Dixon, Territory Natural Resource Management)

This Indigenous language map helps kids understand Australia

By First Languages Australia

Posted Wed 18 May 2022, 1:42pm Updated Thu 19 May 2022, 2:21pm



The Gambah map from First Languages Australia, showcases more than 700 Aboriginal and Torres Strait Islander languages. Image: Gambah, First Languages Australia

Gambah* is an interactive map of Australia's first languages with accompanying videos and teacher notes. It's a fantastic way to help kids develop an understanding of the land they live on.

Australia is situated in one of the world's linguistic hot spots; however, many Australians are not aware of the incredible linguistic diversity of Aboriginal Australia.

To help overcome this situation First Languages Australia collaborated with regional language centres to develop a map of Australian languages that reflects the names and groupings favoured by communities.

Launched in 2016, Gambah is a spectacular resource for students, parents and teachers. Teacher notes included with *Gambah* are aligned to the Australian Curriculum (Foundation to Year 10) in line with the Aboriginal and Torres Strait Islanders Histories and Cultures cross-curriculum priority and subject areas including English, maths, science, history, geography, and civics and citizenship.

The importance of learning Indigenous languages

Australia's first languages are a wonderful and precious resource. They're treasures of international significance. Languages are a bridge to rich and important information. When a language is lost, a deep body of knowledge is lost with it.

Language is also key to Indigenous wellbeing in Australia and in the future will play a role in education, employment and improved social outcomes for Aboriginal people.

Gambah project researcher Bridget Priman said, "Students need to learn about Australia's first languages so that they can begin to develop an understanding of the land they live on."

Indigenous

"Gambah supports teachers and students to learn and explore our languages together," Priman added.

The Sydney student helping others reach university

(The University of Sydney news: 20 June 2022)



Kawana Crowe is in her third year of a Bachelor of Science and Bachelor of Advanced Studies (Advanced). *Supplied*

A scholarship to the University of Sydney changed Kawana Crowe's life. Now the 20-year-old Wiradjuri woman from Macksville wants to help other rural, regional and Indigenous students find a pathway to university. The third-year science student will share her story with prospective students at the Meet Sydney event in Coffs Harbour on 23 June. The session will provide information about the University of Sydney for local high school students in years 10-12. It will cover courses, admission requirements, entry schemes, fees and scholarships, as well as support available for students on campus. Current students and alumni from regional NSW will share stories, tips on moving away from home and insights into their journey to university.

crowe dreamed of studying science from childhood, but attending university often seemed like an impossible challenge. Both her parents left school in year 10. Her father died from cancer when she was eight, leaving her mother to support the family on a single income. Due to financial hardship, they moved frequently — seven times before Crowe started high school. “In the world I grew up in, ‘scientist’ was not represented as a viable career option,” she said. “I only knew it was possible because I watched a lot of CSI-style forensics television shows. But I had some great teachers at Nambucca Heads High School who opened doors for me.” She now works as a student ambassador and is passionate about showing others that university might be an option for them. “I want to make other regional, remote and Indigenous students aware that university is a possibility they can consider. There are pathways and support available.”

You Retweeted

 Costa Georgiadis
@CostasGarden

Maddy Miller is an archaeologist, artist and researcher at Melbourne Uni . She is working to connect indigenous knowledge and modern science, bringing them together to care for country. Her story is part of [#reconciliationweek](#) [#gardeningaustralia](#) [@abctv](#) this week. [@RecAustralia](#)



8:20 AM · May 27, 2022 · Twitter for iPhone

The ranger program educating the next generation of students about native animals (Emma Ruben, *National Indigenous Times*: 18 June 2022)

Students from Kiwirrkurra Remote Community School (*Pintupi language and culture*) are gaining generations of Indigenous knowledge about native animals on Country through a deadly two-way science program. The Kiwirrkurra rangers are working with Kiwirrkurra Remote Community School to provide a hands-on education about the native animals in the area. Indigenous Desert Alliance threatened species ecologist Rachel Paltridge said this was a strong, staple program between the rangers and the school. “Every term we have a bush planner meeting where we get together the rangers, the school staff and the Aboriginal teachers at the school and we talk about what’s happening for the next term,” she said. “We talk about what’s coming into season, what the rangers are going to be doing that we can work with the school and also a lot about the bush foods that are going to be around for the term”



Kiwirrkurra school principal Jason Van Poelgeest said the program has been key way of including Indigenous culture and knowledge within an otherwise Western curriculum. “Schools operate from a Western-based education with a strong Western focus,” he said. “Historically over the years, Indigenous knowledge has not been included in the curriculum and this is a way of addressing that. “The two-way science program helps to incorporate Indigenous knowledge into the program and more importantly bring families and the community into the school to teach that knowledge as well.” In an attempt to keep students focused and attending school, Mr Van Poelgeest said the level of engagement increased during the science program. “There’s a big difference sometimes they might find it difficult to do something that takes place in the classroom,” he said. “But once they work with two-way science and importantly once they are speaking in their own language and doing thing in their own language, the engagement levels increase incredibly and they get incredibly interested in what they’re learning about.”

VIDEO: Parents, teachers proud of NSW's first bilingual Indigenous language school

Posted Sat 4 Jun 2022 at 6:40pm



Parents and teachers of NSW's first bilingual indigenous language school say combining a conventional curriculum and teaching language and culture on country is proving to be a big success

More on:

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Parents, teachers proud of NSW's first bilingual Indigenous language school

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Meet the amazing women of ToSI: Natasha, originally from Tiwi Islands.
Natasha chose to study a [#BachelorofTeaching](#) through the Teachers of STEM Initiative to support the connections between STEM, culture & community as well as to give back to her own community
[@indigenous_gov](#)





Dr Ngaree JB
@DrNgaree



From 14 Indigenous doctors in Salamander Bay NSW in 1997 to 600+ Indigenous doctors (and counting) at the 25th anniversary of @AIDAAustralia last night in Sydney. What an amazing accomplishment and incredible moment to celebrate. #blakdocs @NACCHOAustralia @IndigenousX



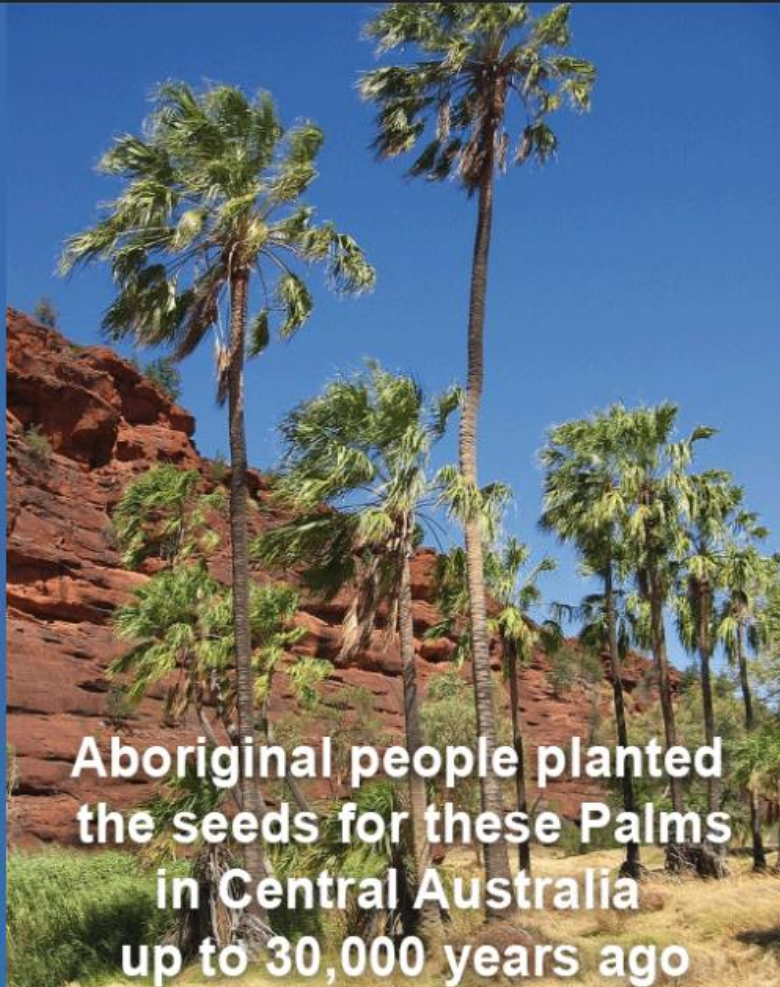
 Christine Anu and Indigenous doctors - AIDA

5:08 PM · Jun 5, 2022 from International Convention Centre Sydney (ICC) ·
Twitter for iPhone

The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.



Confirmation again of the incredible ability of Aboriginal Australians to retain memories of environmental events that occur over geological timeframes!



Aboriginal people planted
the seeds for these Palms
in Central Australia
up to 30,000 years ago

Sovereign Union

June 12 · 🌐

The scientific world was stunned in 2015 when research backed an Aboriginal story about how palm trees got to Central Australia.

Tasmanian ecologist David Bowman did DNA tests on palm seeds from the outback and near Darwin about a decade ago and the results led him to conclude the seeds were carried to the Central Desert by humans up to 30,000 years ago (possibly up to 25,000 years before Stonehenge and up to 26,000 since the Egyptian Pyramids)

Professor Bowman read an Aboriginal legend recorded in 1894 by pioneering German anthropologist and missionary Carl Strehlow, which was only recently translated, describing the "gods from the north" bringing the seeds to Palm Valley.

Professor Bowman said he was amazed.

Palms flourished in the Arctic during a brief sweltering period about 50 million years ago, according to a study that hints at gaps in our understanding of modern climate change.

"We're talking about a verbal tradition which had been transmitted through generations possibly for over 7,000, possibly 30,000 years," he said.

"Just an amazing coincidence that we'd independently concluded that the seeds had been transported and then subsequently we discover an Aboriginal legend is exactly what we found scientifically.

"The concordance of the findings of a scientific study and an ancient story is a striking example of how traditional ecological knowledge can inform and enhance scientific research.

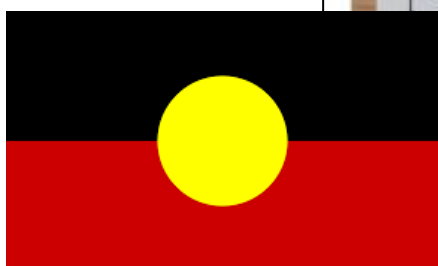
"It suggests that Aboriginal oral traditions may have endured for up to 30,000 years, and lends further weight to the idea that some Aboriginal stories pertaining to gigantic animals may be authentic records of extinct megafauna."

UC Chancellor becomes the first Aboriginal Fellow of the Australian Academy of Science (Danielle Meddemmen, University of Canberra: 26 May 2022)



The University of Canberra extends congratulations to its Chancellor, Professor Tom Calma AO, who was elected as a Fellow of the Australian Academy of Science today. Professor Calma is the first Fellow in the academy who identifies as an Aboriginal person, and was elected for his efforts in championing the health, education and justice of Indigenous peoples. A descendant of the Kungarakan and Iwaidja tribal groups, Professor Calma said he was honoured to have been recognised by the Academy. “It’s a real honour to be recognised as a Fellow of the Australian Academy of Science, not to mention as the first to represent those who identify as Aboriginal or Torres Strait Islander,” he said. “While we still have a way to go, I am proud of the progress I have made, with the help of those around me, towards better outcomes for Indigenous people.”

Professor Calma had a long and successful career in the Australian Public Service before becoming the University’s Chancellor in 2014, but his resume has only grown since then. He was awarded an Indigenous Allied Health Australia Lifetime Achievement Award in 2014 and was later appointed as the inaugural Patron of Indigenous Allied Health Australia in 2017. More recently, Professor Calma was Chief Investigator in a Collaborative Indigenous Research Initiative, focused on the management of scabies in Aboriginal and Torres Strait Islander children.



Deadly Science founder Corey Tutt receives Queen's Birthday Honour for service to Indigenous STEM

(ABC Mid North Coast / Luisa Rubbo: 13 June 2022)

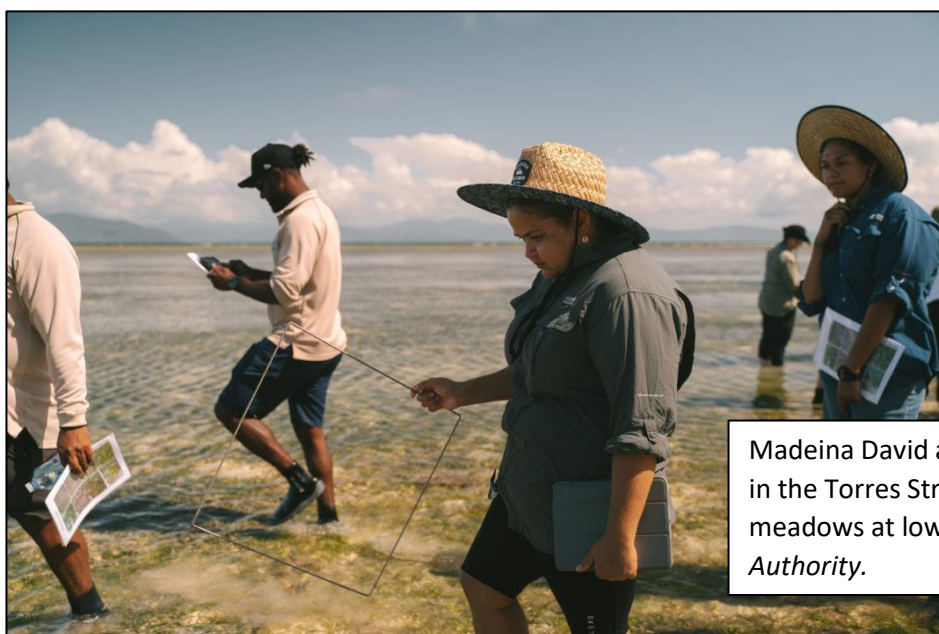
The founder of the charity Deadly Science has been recognised with a Medal of the Order of Australia for service to Indigenous STEM — science, technology, engineering, and maths education. Corey Tutt, 29, who runs his charity from his new home in Port Macquarie on the NSW Mid North Coast, said he was humbled by the award. "To me it's really a credit to all the people that have supported Deadly Science and supported my crazy idea of packing STEM resources up and sending them to remote communities," he said. "To getting kids involved in STEM and making it OK to love science when we push Aboriginal and Torres Strait Islander people towards sport and art. "Also an Aboriginal man it's very rare and I'm not an Olympian or a sports hero ... so again it's triply as rare and that means it's a responsibility. "And it's a responsibility to use this moment to share and encourage people to nominate other young people that are working in our community that are doing incredible work – and elders as well." The Kamilaroi man said what he was doing was not new. "Aboriginal people have been doing science for thousands and thousands of years – tens of thousands of years," he said. The 2020 NSW Young Australian of the Year hoped the award would inspire others.



Mr Tutt says he feels "incredibly lucky" to do what he does. *(Supplied: Corey Tutt)*

Off northern Australia, scientists and Islanders are sharing knowledge to protect our 'seagrass capital' (Tom Zaubmayr, *National Indigenous Times*: 14 June 2022)

Madeina David, 23, recalls fondly her days following her father out on his boat crayfishing to make a living on the remote Iama Island in the Torres Strait. Like everyone on the islands, David's life has always been intrinsically linked to the ocean for food, for fun and for culture. It is that connection which made a career in conserving the islands' critical seagrass meadow alluring to David. "Our culture really depends on the sea – it is our livelihood – dugongs and turtles are culturally significant," David said. "Life living on the island, everything is expensive, so most of the families go out fishing and they depend on the sea for the food source. I saw how dependent we were on the sea and I love being by the sea and I wanted to protect that for future generations." That drive saw David leave the islands to study marine biology at Townsville's James Cook University, with a view to playing a leading role in environmental management by the time she reached 50. It was a move David described as a huge learning curve. She had left Iama aged 11 to attend boarding school on Thursday Island, but even there, lessons such as chemistry weren't available. There was also the culture shock of living in a big regional city – but David was driven by her passion for the sea surrounding her island home, and the meadows which sustain the life within it.



Madeina David and team, somewhere near an island in the Torres Strait, slowly wade through seagrass meadows at low tide. *Picture: Torres Strait Regional Authority.*


After gaining a Torres Strait Island Regional Authority cadetship she then leapt at an opportunity to join the authority's land and sea management unit as part of the sea team. Today, on top of the practical work, she plays an important role helping fellow Islanders and scientists understand each other to help build relationships, a critical role in the partnership. "My goal was when I was in high school that I'd be in environmental management, and here I am," David said. "I started off in 2020 and that is when they first noticed some major declines in the western cluster of the Torres Straits. "We had to really find out what was the cause of the declines and I guess actions on how we can manage this into the future, especially with the changing climate, because we are about to see some declines." Discovery of those declines led to a triumph of the program – the use of traditional knowledge to help identify changes in a seagrass habitat.

Happy campers: Young Indigenous Women's STEM Academy

BY MONIKA ANDERSEN · 5 AUG, 2022 · 4MIN READ

The Young Indigenous Women's STEM Academy provides students with the tools and support to succeed in an exciting science, technology, engineering and maths (STEM) career.



On a cold, dry morning in June, 20 year nine Aboriginal and/or Torres Strait Islander women gathered in Darwin and were welcomed to Country by Larrakia Elder, Lynette Fejo and the Garramilla Dancers. They travelled from all over the Northern Territory to be part of the first regional STEM camp in 2022 for the [Young Indigenous Women's STEM Academy](#) .



You Retweeted



@CSIROevents
@CSIROevents

...

What an incredible week in @NT_Australia for the Young Indigenous Women's STEM Academy #STEM camp! Tired and happy campers are heading home with a stronger sense of identity 🖤💛❤️, new networks and connections, and minds full of new #STEM ideas.

@CSIRO

@indigenous_gov



ALT



ALT



ALT

11:27 AM · Jul 1, 2022 · Sprinklr

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...

An incredible morning for the YIWSA Darwin STEM Camp! ❤️💛🖤
Anita Stokes from @Kinetic_IT_Aus got us thinking about careers in STEM. Watch this space to see more incredible women in STEM!
@Kinetic_IT_Aus are partnering with us to deliver the YIWSA Darwin STEM Camp.
#yiswa



ALT

🔄 You Retweeted



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@CSIROevents

...

We learnt so much from Jackie Cahill, Indigenous Ranger at @KakaduNationalP we needed more than one tweet! At #yiwsa STEM camp, we saw first hand how cool burns = healthy bushland and got to explore the amazing natural resources of @KakaduNationalP #stemcareers @indigenous_gov



6:25 PM · Jun 29, 2022 · Sprinklr

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 Advisory Board made up of eight First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!

Shifting seasons: using Indigenous knowledge and western science to help address climate change impacts

(Karin Gerhardt, Jon C. Day, Larissa Hale and Scott F. Heron, The Fifth Estate: 12 June 2022)

Traditional Owners in Australia are the creators of millennia worth of traditional ecological knowledge – an understanding of how to live amid changing environmental conditions. Seasonal calendars are one of the forms of this knowledge best known by non-Indigenous Australians. But as the climate changes, these calendars are being disrupted. How? Take the example of wattle trees that flower at a specific time of year. That previously indicated the start of the fishing season for particular species. Climate change is causing these plants to flower later. In response, Traditional Owners on Yuku Baja Muliku (YBM) Country near Cooktown are having to adapt their calendars and make new links. That's not all. The seasonal timing of cultural burning practices is changing in some areas. Changes to rainfall and temperature alter when high intensity (hot) burns and low intensity (cool) burns are undertaken. Seasonal connections vital to Traditional Owners' culture are decoupling. To systematically document changes, co-author Larissa Hale and her community worked with western scientists to pioneer a Traditional Owner-centred approach to climate impacts on cultural values. This process, published last week, could also help Traditional Owners elsewhere to develop adaptive management for their Indigenous heritage.



A YBM Traditional Owner showing the wattle flower which used to be an indicator species for good fishing. *Author provided*

Link to paper [here](#)

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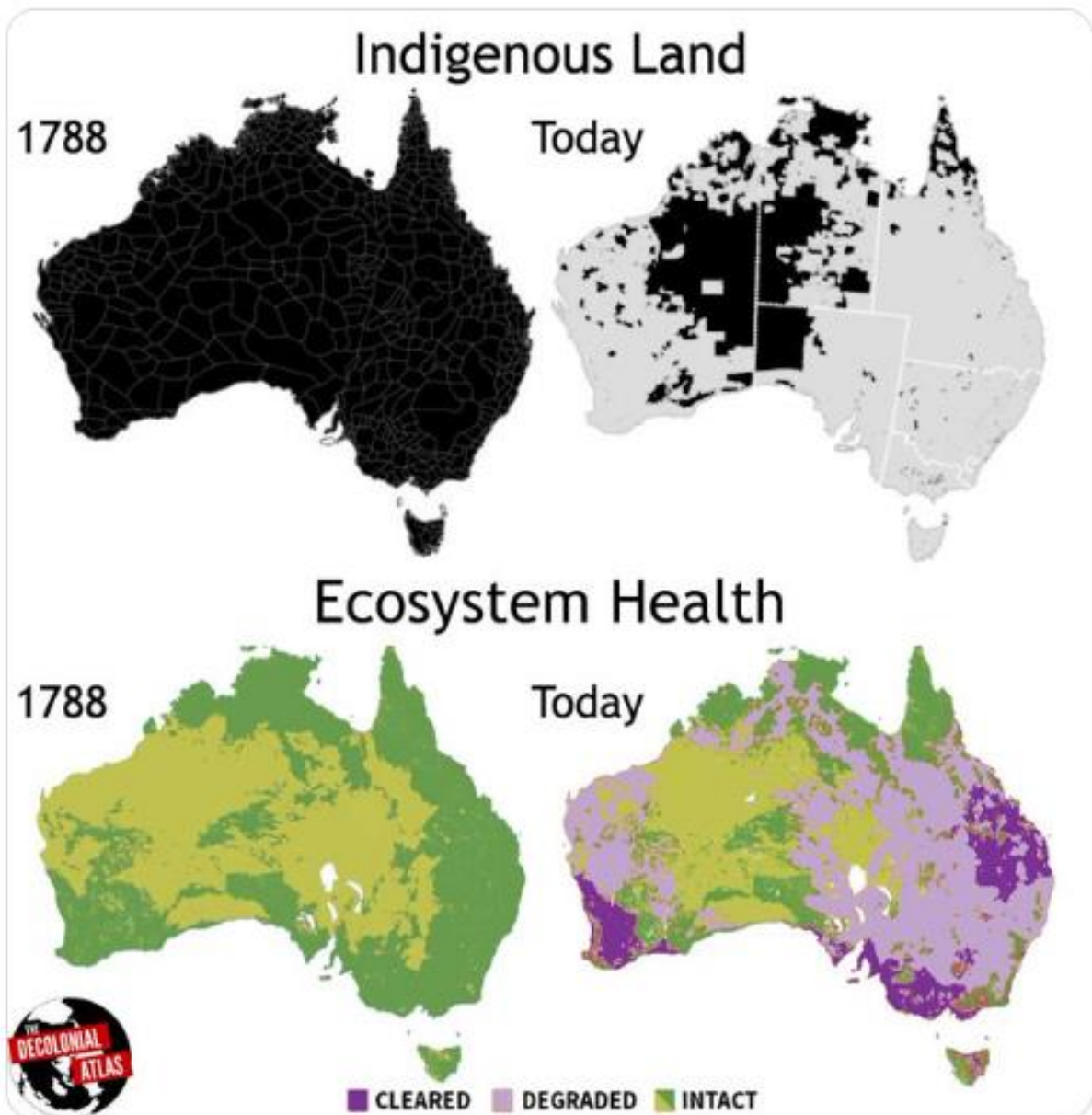


The Decolonial Atlas
@decolonialatlas



The land. The people. All bound together.

[#AlwaysWasAlwaysWillBe](#)
[#NAIDOC](#)



1:55 PM · Jul 8, 2022 · Twitter Web App

3,876 Retweets 139 Quote Tweets 14.8K Likes

Indigenous skills and science

(CQ Today: 7 June 2022)



On 30 May, more than 150 Rockhampton State High School Year 7 students took part in an all-day Rocky Instincts workshop, learning how science relates to indigenous skills and practices. Students investigated some of the fundamental principles of physics such as gravity, balanced and unbalanced forces and the use of levers. This knowledge was then related to the use of spears and woomeras, particularly the effect that different sized woomeras and throwing techniques has on the accuracy and distance that spears travel. Students also had the opportunity to practice throwing boomerangs and learn how their flight in the air is determined by their shape. This workshop is part of the Rocky High Science departments' longstanding initiative to incorporate Aboriginal and Torres Strait Islander science and knowledge into the schools' junior science curriculum. Head of Department (Science) Stephen Ladley said all students at Rocky High in years 7, 8 and 9 science classes now studied 10 weeks of science each year focusing exclusively on learning scientific concepts with an indigenous perspective.

Rockhampton High School students Alana Bennett, Peyton Bland and Ava Holy learn indigenous skills with Wendy Saltner and Malachi Conway from Rocky Instincts.

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Stronger Smarter Institute
@StrongerSmarter

Applications for Teachers of STEM Initiative are open throughout the year.

Apply now to be considered for the September interview notifications stage. Guidance on how to apply can be found here:

strongersmarter.com.au/tosi-applicati... ✓

[@indigenous_gov](#) [#TeachersofSTEMInitiative](#)
[#WomeninSTEM](#)

Teachers of STEM Initiative. WHEN TO APPLY.

- Applications for the Teachers of STEM Initiative are now open throughout the year. Applications can be submitted for the following Semester.
- Notification of progression to interview stage: March and September
- Interviews conducted: April and October
- Notification of outcome: May and November



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Sci Geek
@CitSci_Geek



Absolutely amazed at the intricate details and fabulous use of colour in "The First Scientists" artwork by local Indigenous artist Steven Bekue (insta @Bundalung_Dreaming) for @naidocweek debuting at @RACInational #RACI2022

My pic doesn't do it justice. #deadly



3:32 PM · Jul 5, 2022 from Brisbane, Queensland · Twitter for Android



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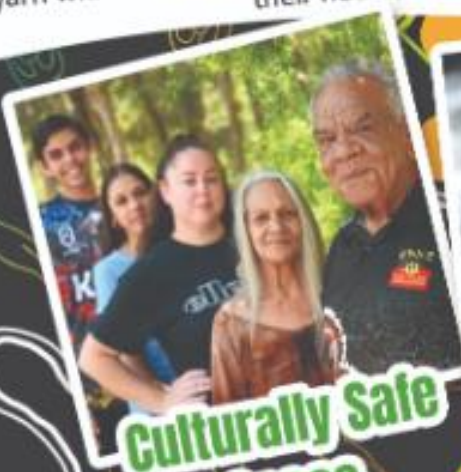
Aboriginal & Torres Strait Islander Crisis Supporters

13 YARN

"We're here to help; call us for a yarn"

13 92 76

13 Yarn is the first national support line for Aboriginal & Torres Strait Islander people in crisis. We offer a confidential one-on-one over the phone yarnning opportunity and support with a Lifeline trained Aboriginal & Torres Strait Islander Crisis Supporter for mob who are feeling overwhelmed or having difficulty coping. We are here to provide crisis support 24/7 to enable our community to yarn without judgement and provide a culturally safe space to yarn about their needs, worries or concerns.



Culturally Safe Space



Available 24/7 across Australia from any phone



We listen, without judgement or shame



This initiative is funded by the Australian Government, Department of Health



Gaya Dhawi (Proud Spirit) Australia
Aboriginal and Torres Strait Islander Leadership in Social and Behavioral Change, Mental Health and Suicide Prevention

This service has been developed in collaboration with Gaya Dhawi

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Stronger Smarter Institute
@StrongerSmarter



Congratulations to our new Stronger Smarter Specialists, from Queensland, New South Wales and South Australia.

Our new Specialists join a growing team of Specialists across the country. Honoured to have been part of an amazing women's circle in Sydney.



[#StrongerSmarterAlumni](#)



10:06 AM · Jul 18, 2022 · Sprout Social


If you expect First Nations staffers to do all your 'Indigenous stuff,' it isn't support, it's racism (Kelly Menzel, *The Conversation*: 24 May 2022) [Link](#)

Workplaces can be hostile, overwhelming and unwelcoming places for many First Nations Peoples. My research has explored how this is the case in many organizations, including universities. White organizations often expect First Nations People to take on additional unpaid work such as providing cultural expertise, educating colleagues and additional networking with First Nations organizations. Often this is done without the First Nations person being given any avenue to be promoted to a leadership role. White people can react negatively when a person of color questions or tries to change what white people consider common understandings. Due to these environments, it often feels like as academics, we're unable to examine complicated or complex issues caused by ongoing effects of colonization—such as racism. It is not uncommon for First Nations academics to have complaints made about us when we discuss issues such as racism and whiteness. Because the concepts (us) make people feel "uncomfortable." Because of the skills First Nations academics gain through education and our positions in universities, there is additional pressure from our families and communities to solve all of the problems we set out to address. However, we have limited power.


IndigenousX LTD 
@IndigenousXLtd · [Follow](#) 

What is racial invisibility, and how do white people benefit from it?

'This invisibility leaves whiteness unnamed but ever present. It is the unspoken norm from which everyone else deviates.' [@LukeLPearson](#) [#IndigenousX](#)



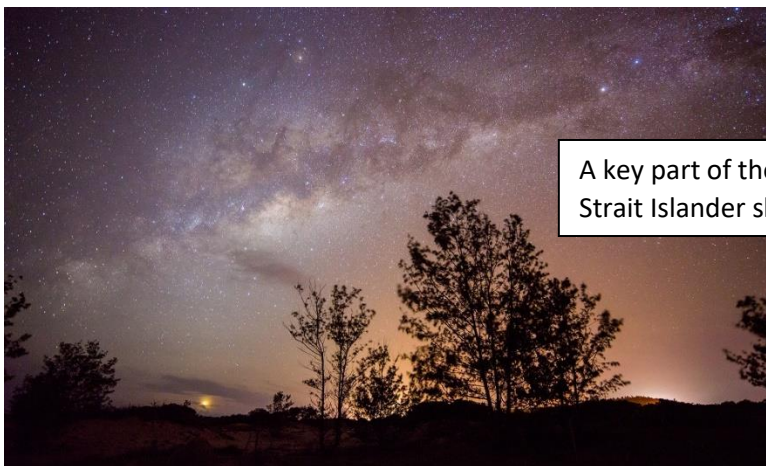
indigenousx.com.au
What is racial invisibility, and how do white people benefit from it? - Luk...
When Australia Day rolls around and you hear white people talking about how they wish we were all "just Australians", ask yourself: is that what ...

8:03 AM · Feb 3, 2022 

Q&A: Creating an online Indigenous Science course

(Dominique Russell, Teacher Magazine: 21 June 2022)

Emerging Sciences Victoria (ESV) have recently launched an online Indigenous Science course in collaboration with John Monash Science School to give secondary school students in Victoria an opportunity to learn about the knowledge systems of local Indigenous cultures about the land, water, and sky. The course is now in its second semester and is co-taught by Jodie Smith, a Humanities teacher at John Monash Science School, and Krystal DeNapoli, the co-creator of the ESV course. In this Q&A, Jodie and Krystal share how the course was developed, the benefits of being online, and the learning outcomes for students.



A key part of the online course looks at Aboriginal and Torres Strait Islander sky knowledge. *@Boyloso/Shutterstock*

Why was this course developed? What do you hope students take away from it after they've completed it?

Krystal: I have worked as a teacher in the ESV program for a few years. As an Aboriginal astrophysics graduate, I would often speak about Aboriginal Astronomy while teaching in the ESV Astrophysics program. After working with Monash University to create our first Indigenous Science course for a cohort of second-year undergraduate students, we became inspired to create an Indigenous Science course for ESV at John Monash Science School. It was developed in order to cater to student interest in Aboriginal and Torres Strait Islander sciences which have traditionally been excluded from the curriculum.

My colleague Jade Bohni and myself had to create the course from scratch as there aren't many pre-existing lesson plans centred on Indigenous Science. We wanted to explore concepts of Aboriginal and Torres Strait Islander land, water, and sky knowledge in a way that respected Indigenous ways of knowing. The main considerations were to structure the course such that the students commenced with two weeks of cultural competency and Aboriginal history, followed by a few weeks dedicated to each broader theme of knowledge. We collaborated with Yorta Yorta man Josef Tye from the William Cooper Institute at Monash University who led the students across the two introductory weeks and had a few guest speakers to speak to the students about their expertise in relevant fields.

By completing this course, I want students to understand the rich, world-first history of Science that has been developed by Aboriginal and Torres Strait Islander peoples for tens of thousands of years on this continent. There is a persistent misunderstanding of Indigenous culture held by Australian people which has arisen from a lack of education on who we are and why our sovereignty and culture is central to us.

You Retweeted



wayne.fossey@gmail.com @FosseyWayne · Jul 12

Cultural burning needs more than interest to change the Australian landscape. A deep understanding of past knowledge; education, and a willingness to make profound operational changes are needed now to achieve real environmental change for the better.



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IndigenousStudies @IndigenousUoM

New rules to keep racist, sexist place names off the map in Victoria, Australia



theage.com.au

New rules to keep racist, sexist place names off the map

New rules will prevent derogatory names being given to places across Victoria amid a push to celebrate women and include more Aboriginal languages in the ...

2 JUN 2022 - 5:41PM

Cultural burning connecting students to Country



Jawoyn Ranger Tristin Lami Lami instructs students on a Learning On Country lesson near Barunga, east of Katherine. (Guy McLean, NITV)

IMAGE

VIDEO

AUDIO

At Barunga, about an hour's drive east of Katherine, burning is learning for local high school students thanks to a cultural program.

By Guy McLean
Source: NITV News

[Tweet](#)

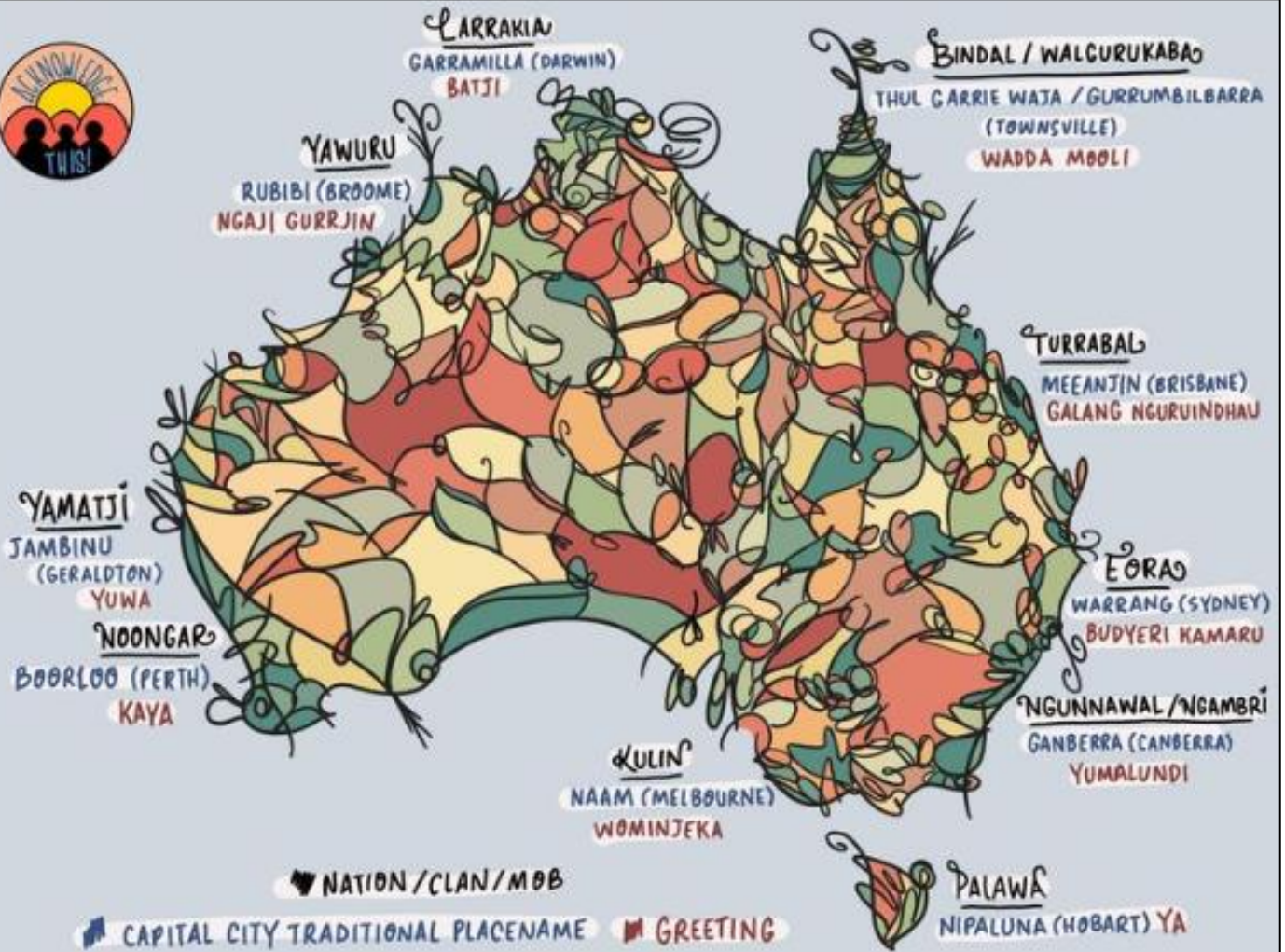
[Recommend 3.2K](#)

2 JUN 2022 - 5:41 PM UPDATED 2 JUN 2022 - 5:41 PM

In the Top End, school students are teaming up with Aboriginal rangers to protect country, sacred sites and communities.

The Learning On Country program at Barunga School has recently been focusing on cultural burning, giving the next generation vital skills needed to care for Country.

The students are joined by the local Jawoyn Rangers to undertake protective cultural burns around



Acknowledge This

May 24 · 🌐

A few of our major cities traditional place names accompanied with the local greetings 🙌
There are hundreds of mobs around Aus with hundreds of languages, here is a tip of the iceberg!

Referenced from Tindales Aboriginal map of Australia and some help from uncle Google with the place names here.

This is a free downloadable resource - acknowledgethis.com.au/free ✅ for anyone to print out in full!

Any other place names you've heard of? What about your local greeting? Let us know!

a) Pasifika

Matariki heralds launch of new Centre of Indigenous Science

(Otago University: 23 June 2022)

The rise of Matariki brings with it the launch of a new Centre of Indigenous Science at the University of Otago. Māori academic Associate Professor Anne-Marie Jackson (Ngāti Whātua, Ngāpuhi, Ngāti Kahu o Whangaroa, Ngāti Wai) is leading the strategic development of the teaching and research aspirations of the Centre over the next six months before it formally starts on 1 January, 2023. "The Centre of Indigenous Science will be one of the first of its kind in Aotearoa, so this is an opportunity to continue to grow an academic department and scholarship based on ngā kaupapa Māori in sciences," Associate Professor Jackson says. "We will take this time to reach out to our whānau, hapū, iwi, to our communities and networks and bring together the philosophical understanding and underpinnings of Indigenous Science."



Associate Professor Anne-Marie Jackson (left), strategic development lead for the Centre of Indigenous Science, and co-Directors of Te Koronga, Dr Jeremy Hapeta (centre), and Dr Chanel Phillips (right).

Professor Jacinta Ruru (Raukawa, Ngāti Ranginui, Ngāti Maniapoto), former co-Director of Ngā Pae o te Māramatanga and Professor of Law at the University of Otago, says the creation of the Centre of Indigenous Science is very exciting for the University, and especially for future students and the modern Aotearoa workforce. "Otago will be soon graduating students who have a deeper understanding of mātauranga Māori; they will be of enormous service to iwi, hapū and whānau, and to our nation," Professor Ruru says. "As a country we need to value and apply more mātauranga to help address the biodiversity and climate crises. This is a huge moment for Otago and tertiary education world-wide."

Open slate for Indigenous science centre

(WAATEA News.com: 2 June 2022) [Link](#)

One of the founders of the University of Otago's new Centre of Indigenous Science says it's a chance to develop an institution from scratch. The centre within the university's science division will open to students from the start of next year. Associate Professor Anne-Marie Jackson says leading up to that, she's working on what its teaching and research aspirations will be. She says everything's on the table. "What would a new curriculum look like? What are the aspects we think are most important? What are the *tikanga* that underlie what we want to do? And really being able to get out, especially with Covid changing now that people can be more face to face and we are able to spend that time in listening to our *whanau*, *hapu* and *iwi* around what are the components that are the most important to come into the centre within our mainstream organisation," Dr Jackson says. She says because of the low numbers of Māori staff in the tertiary sector, there are few opportunities for students and researchers to pursue research within a Māori framework.

Matariki: 'historic' moment as New Zealand celebrates first Indigenous public holiday *(Tess McClure, The Guardian: 22 June 2022)*

Matariki is the Māori name for a cluster of stars known elsewhere as the Pleiades. The constellation is visible from New Zealand for eleven months of the year, but disappears from the skies for a month in winter, reappearing in mid-June, around the time of the winter solstice. Its rising is recognised by many iwi [tribes] as the beginning of a new year. The holiday centres on three principles: remembrance of those who have died, celebrating the present with family and friends; and looking to the future promise of a new year. It is believed to be one of the first Indigenous celebrations to be recognised as a public holiday in a settler colonial state. "I think it's incredibly significant," says Olive Karena-Lockyer (Te Aupōuri, Ngāti Raukawa) an astronomy educator at Stardome observatory. "It's from here, from Aotearoa. It's not imported, like Christmas or Easter or the Queen's birthday," she says. "It's for us and what is relevant to our environment."



A student performs during a visit by New Zealand prime minister Jacinda Ardern to Wainuiomata Intermediate to mark Matariki in Wellington on Thursday.
Photograph: Hagen Hopkins/AAP

The programme recently won the UNEP's Champions of the Earth prize in the Inspiration and Action category. Sea Women of Melanesia trains local women in essential skills including marine science, snorkelling and underwater photography. They then help monitor and assess the impacts of widespread coral bleaching on some of the world's most endangered reefs. And local communities have their knowledge to share too which, when combined with the science, helps protect the reefs. "Most of the women have no background in science, they have their local way of dealing with conservation," says Apelis. "They take ownership of the sea. So we just go in, and we learn from them, and also impart the scientific knowledge to them."


Could learning about Matariki help us address the climate crisis?






(Miriam Kamo, Stuff.NZ: 19 June 2022)

The stories of the Matariki stars speak to the richness of our mātauranga, our expertise in reading the environment: imagine travelling across the Pacific in waka without any of the technology that we rely on now. There's no doubt in my mind that our early Pacific sailors were the greatest in world history. Bold? Well, the Pacific is the largest expanse of water on earth. It's wide, lonely, dangerous. Our early navigators relied on the currents, the sun, moon, winds, and the stars, like the Matariki cluster, to travel by waka. And, they weren't making one-way trips as early British historians mooted. The evidence shows that Pacific sailors were travelling back and forth across the ocean, even to and from remote Aotearoa New Zealand. I wasn't aware of Matariki until about 15 years ago. I'm grateful to the likes of Professor Rangi Mātāmua who has, with other astronomers and advocates such as Rereata Makiha, spearheaded the return of this mātauranga. The "disappearance" of Matariki knowledge over the previous decades speaks to me of the progressive erosion of our mātauranga, the idea that our indigenous science was an unholy and irrational framework we were better off without. But, I'm going to make another, arguably, bold statement. I think the reclamation of this knowledge could be one of our most potent tools in addressing the climate crisis.



Different iwi here acknowledged different numbers of stars, and our Matariki stories vary across the country. *Photograph: UNSPLASH*

 **Pablo El Diablo** @S1n1sterRootsNZ · Jul 19
Replying to @AmericanIndian8
We Maori here in Aotearoa know that as well as our Native Whanau of Turtle Island do. Our Govt here has stated that as of 2023 the true history of our country will be taught in all schools. I'm hopefully optimistic but pessimistic about the white teachers approach to teaching it.

   3  



WHAT IF I TOLD YOU
The version of history You were taught in school was heavily revised to favor your own nation's agenda while hiding its crimes.

Building Pathways for Indigenous Lunar Science at UH Manoa

(University of Hawaii News: 17 June 2022)



To improve the participation and representation of Native Hawaiians and Pacific Islanders in planetary science, the University of Hawaii in Manoa, researchers will soon begin a project titled Ka mālamalama o ka mahina: Building Pathways for Indigenous Lunar Science in Hawaii. The \$150,000 two-year project is funded through a POT Office of STEM (Science, Technology, Engineering, and Mathematics) Participation Program, Minority University Research and Education Project for American Indians and Alaska Natives STEM

Commitment, serving Native American and indigenous communities. “Since the Apollo era, Hawaii has played an important role in lunar exploration and science,” said Emily Costello, principal investigator of the project and postdoctoral researcher at the Hawaii Institute of Geophysics and Planetology (HIGP) in the UH Manoa School of Earth and Ocean Sciences and Technologies (SOEST). “Hawaiian basalts are often used as an analogue of moon rocks and moonwalkers on the Apollo missions were trained in Hawaii. However, Native Hawaiians and Pacific Islanders have not been able to adequately share that story. With this project, we hope to build bridges, provide opportunities to engage in cutting-edge lunar science, and help remedy this disconnect.”



The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.



Summer Spotlights

Project Hōkūlani June 2022 Email Blast

Summer Scholar Success



Photo: Oceanit interns and mentors Abe Toma and Ian Kitajima

The first cohort of STEM student scholars are successfully out in the community gaining real-world, firsthand experiences with Hōkūlani STEM mentors from organizations like North Shore Community Land Trust, Oceanit, Hui Ho'oleimaluō, Mauna Kea Forest Reforestation Project and much more!! Interested in learning more? Visit our website at <http://go.hawaii.edu/xLJ/>


Project Hōkūlani
 @PHokulani

Meet Lehua Kamaka, Project Hōkūlani Mentor

Interns will help to protect, perpetuate, and enhance the cultural and natural landscape of the Kīholo Bay area through collaborative management and active community stewardship [#STEMed](#)

★ Deadline extended 6/17 projecthokulani.com ?




Lehua Kamaka
Project Hōkūlani Mentor



Hui Aloha Kīholo



4:00 AM · May 19, 2022 · Buffer

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 Advisory Board made up of eight First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!

You Retweeted



Kimberly Samson

@samsonlilai



Love seeing our Pacific Island brothers and sisters being recognized ❤️ All the best with your research [@sabrinapania](#)

Wantok Moana Student Association @wantokmoana · Jun 15

Halo oloketa! Introducing Sabrina Pania MSc students and an ACAIR scholarship recipient. Sabi is studying the Nutritional composition of holothuroids in Fiji and the Socioeconomic impacts of harvest bans on rural communities.

[Show this thread](#)



5:48 AM · Jun 21, 2022 · Twitter for iPhone

b) Asia

Indigenous Borneans knew a tree was two distinct species. Genetic analysis confirms they were right. (National Science Foundation (NSF): June 23, 2022)

More than 200 years ago, a Spanish botanist described *Artocarpus odoratissimus*, a species of fruit-bearing tree found in Borneo and the Philippines. The Iban people, who are indigenous to Borneo, know the tree to have two different varieties, which they call *lumok* and *pingan*, distinguished by their fruit size and shape. Despite this knowledge, Western botanists have long considered the tree as a single species, but a genetic analysis, published in the journal *Current Biology* and supported by the U.S. National Science Foundation, confirms that the Iban people were right all along. "This study benefitted from invaluable and irreplaceable indigenous knowledge," says Christopher Schneider, a program director in NSF's Division of Environmental Biology. "Too few past studies have acknowledged similar contributions. This team's inclusive approach is laudable."



The fruits of *Artocarpus odoratissimus*, which is similar to *Artocarpus sericarpus*.

Both these species are native to the same areas. However, they are still distinguishable based on their appearances when ripe. *Artocarpus sericarpus* has hairs, like a large rambutan, and ripens red. *Artocarpus sarawakensis* is even trickier, because it is the shape of *A. odoratissimus*, and it is orange. It has smaller kernel sections.

Taken from:

https://www.wikiwand.com/en/Artocarpus_odoratissimus

You Retweeted



Dr. Alaa El Din Mahmoud
@Dr_AlaaElDin1

#IndigenousPeople means #indigenous #knowledge
#conservation #SDGs @IPBES



'Local knowledge systems need a boost'

(The Hindu: 18 June 2022)

Efforts are being made to disseminate information and create greater awareness among students on indigenous knowledge systems of India including science and technology, G. Hemantha Kumar, Vice-Chancellor, University of Mysore, said here on Saturday. He was speaking at a seminar on Science and Technology in Ancient India organised by Prajna Pravaha at Manasagangotri. Prof. Hemantha Kumar said the Ministry of Education has created a separate cell called Indian Knowledge Systems to promote research and dissemination of information pertaining to indigenous knowledge that existed in ancient India and see how best it could be furthered through research and societal applications. A committee comprising educationists, Vice-Chancellors, Directors of IITs etc has been constituted to come out with an action plan and it is likely to submit its report in due course. He said it was important to appreciate one's roots and the committee of the Indian Knowledge Systems was engaged in not only ferreting out information enshrined in ancient texts but also as to how best to incorporate ancient knowledge system in modern education.



UoM Vice-Chancellor G. Hemantha Kumar, RGUHS Vice-Chancellor M.K. Ramesh, Yaduveer Krishnadatta Chamaraja Wadiyar of the erstwhile royal family and others releasing a compendium of research papers and patents during a seminar on Science and Technology in Ancient India, in Mysuru on Saturday. | Photo Credit: M.A. SRIRAM

[11 Ancient Inventions & Discoveries Of Science That India Gifted To The Rest Of The World](#)

[Indian Indigenous Science discoveries grouped by western disciplines](#)

Improving quality of life for women of mountainous communities in Asia by developing community-based wellness products

(Dr Deepak Dhyani and Dr Shalini Dhyani, *Indigenous Science Network Bulletin (Vol 23, No. 3): Aug 2022*)

Nanda Devi Biosphere Reserve is a world heritage site, located in the Himalayan Mountains in the northern part of India. The biosphere reserve is a well-known hot spot for floral and faunal diversity. Over 15,000 people, mainly belong to two ethnic groups, the Indo-Mongoloid (Bhotia) and Indo-Aryan, live in the buffer zone. These local communities practice marginal subsistence agriculture, rear cattle for milk and sheep for wool. Cultivation of medicinal plants, sheep farming, apiculture and horticulture are among the main income sources of the villagers. Adverse climatic conditions including natural disasters etc. have a direct impact on the livelihoods of these indigenous people. They have few livelihood options to sustain their lives in such harsh conditions.



In view of this, the Society for Conserving Planet And Life (COPAL), a non-government organisation from Dehradun, India (under the Pastor Rice Small Grant Funds by NTFP-EP Indonesia) initiated the project of developing community-based wellness products. They used lesser-known, under-utilised wild herbs for preparing organic soaps by indigenous Bhotiya women. The Pastor Rice Small Grant project from NTFP-EP was named “Improving quality of life of women in mountainous communities in Asia”. (See the image above of the organisers and participants).

Under the key activities, project activities kicked off in Tolma, one of the remotest villages of the Nanda Devi Biosphere Reserve (NDBR) in India through a series of hands-on training workshops in June 2021. In July, products were developed for making handcrafted herbal soaps. Dr. Deepak Dhyani, Project Coordinator, developed capacity about the importance of community-based wellness products and developing handmade organic soaps using indigenous knowledge systems for sustainable use of wild species. This was a valuable and significant enterprise development and start-up at the village level.

Local communities and indigenous people have always played a huge role in conservation and sustainable use of biodiversity and through this project and venture they will also promote the concept of payment of ecosystem services. Local women shared knowledge on using traditional wild apricot seed oil and other available herbal resources. For example, Hippophae salicifolia (Seabuckthorn) berry pulp, Prunus armenica

dry pulp, Cedrus deodara essential oil, Artemisia vulgaris (an aromatic herb) local honey, turmeric and wild rose flowers in the wellness products. The products are now looking for angel investors and supporters for income generation under the brand name of COPAL that makes budding leaves in local Garhwali language and as a product hand crafted by indigenous women of Niti valley from the lap of the Himalayas.

Below are images of the participants and their endeavours to produce soaps using Indigenous knowledge of the local environments in the Himalayas.





c) Africa

Indigenous lessons on climate change's slow-motion car crash

(Ademola Oluborode Jegede, Newsroom.co.nz: 22 June 2022)

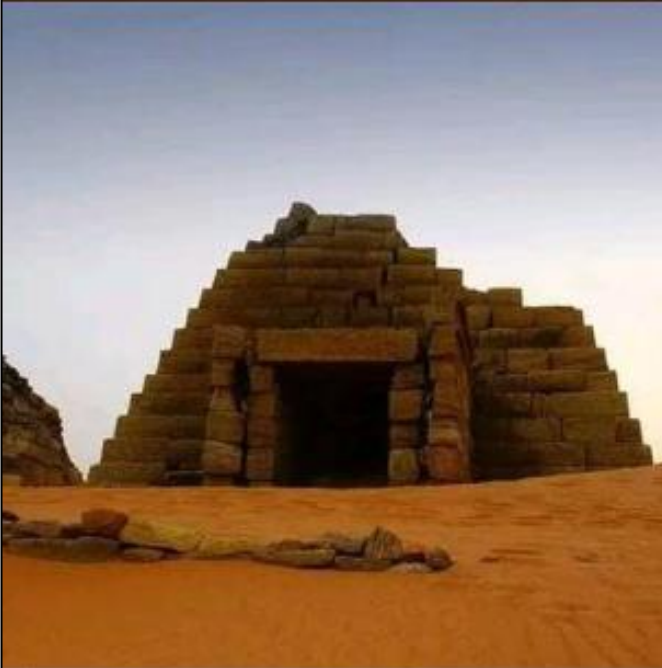
In Kenya right now, even camels are struggling to survive. The worst drought since the 1980s has killed 1.4 million livestock and dried up lakes in the northern part of the country along with the fish in them. Three and a half million people are going hungry. Among the many people imperilled by climate change, indigenous peoples, who often live in marginal environments less favourable for agriculture, will be devastated. Their access to food and water is already limited, and changing natural rhythms and loss of arable land will further limit them. Drought is the slow-motion car crash in the climate change disaster litany. By 2050, 216 million people are expected to migrate because of drought. A staggering 69.6 percent of the Canadian Inuit indigenous people do not always know where their next meal is coming from. A quarter of 2878 surveyed households of off-reserve First Nation peoples in Canada experience moderate food insecurity due to drought and more than half of on-reserve First Nation people do.



The Afar community in Ethiopia have had their livelihoods greatly disrupted by dry climate conditions.

Photo: Flickr/Troy Beckman/USAID

The Afar community in Ethiopia have lost livestock, food and pasture due to dry climate conditions. The Endorois people in Kenya have watched their land degrade crops fail, and livestock die, causing migration and conflicts between members of the community over clean water and pasture land. To mitigate the effects of drought, the Endorois cultivate drought-resistant crops such as cereals and tubers minimising water usage and enhanced food security. Livestock and crop diversification and supplementary livestock feeding is a common practice for the Endorois. Knowledge has long been an important tool for indigenous communities in combatting and addressing the consequences of drought.



بنوتة گارثة ▶ African History Group

June 8 · 🌐

The pyramids of Sudan are more than 245 pyramids, the most pyramids in the world combined

How Mapping Indigenous Knowledge is Helping Nomadic Communities to Fight Climate Change—and Extinction (*Rolex Awards for Enterprise, Wired: 15 June 2022*)



When Hindou Oumarou Ibrahim was growing up in the 1980s, along the shores of Lake Chad, she was dazzled by her elder’s knowledge of the land. “Reading the clouds, listening to the wind, they could tell you that in several hours it’s going to rain,” Ibrahim recalls. “By following the birds’ migrations, observing the trees’ leaves and the plants’ fruits and flowers, and even the direction the cattle face, our elders can predict if the rainy season is coming and if the dry season will be strong or light, and then adapt our migration pattern for the year.”

Ibrahim says. An award-winning climate change and indigenous rights advocate, and environmental activist, Ibrahim has spent her career advancing the rights of indigenous communities, particularly those around Lake Chad. In her activism work with local women, she saw resources dwindling and was reminded of her elders and their

knowledge of the land. “In Chad, official meteorological forecasts don’t always reach rural areas. So who do the farmers consult about when to plant their crops? Who provides the forecast of whether or not it’s going to rain tomorrow? An indigenous grandmother,” she says. “In my community, a grandmother is far more useful than a smartphone.” Inspired by this, (*she*) has pioneered the use of what Ibrahim calls “participatory mapping.”

“We develop maps with satellite images of an area, informed by indigenous traditional knowledge from our elders. This includes identifying where there is clean water, trees for food and wood—even the land is considered sacred, and holds spiritual meaning,” Ibrahim says. “It helps us to share the resources, to define rules to sustainably manage our environment, to prevent and solve conflict.” Maps, after all, can show the way—to something better. “People still believe that indigenous peoples represent the past,” Ibrahim says. “But let me tell you that we are the future.”



Hindou Ibrahim is *Mbororo*, part of a nomadic pastoralist people who have grazed the land around Lake Chad for millennia. “We live in harmony with nature, because we depend on it for food, fresh water, materials,” (*Rolex/Eva Diallo*)



Indigenous Science Network
@IndigenousScie1



Ancient Walls of Benin were four times longer than Walls of China. Destroyed by British in 1897



theafricanhistory.com

Ancient Walls of Benin were four times longer than Walls of China. Destroyed b...
The Benin Kingdom, dating back to the 11th century, was one of the oldest and most advanced states in western Africa. Benin's walls with their surroundings ...

10:10 AM · May 10, 2022 · Twitter Web App

Momma bear Retweeted



Erik Solheim
@ErikSolheim

Well done!

Farmers in Kenya 🇰🇪 are using solarpower to improve crop yields. The panels help reduce heat stress, reduce water loss, grow larger crops and cut energy bills.

We have the solutions. Implement them!



From Mike Hudema

3:50 PM · Jul 27, 2022 · TweetDeck

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Nancy Kacungira
@kacungira

One of the best experts I've spoken to on climate change in my career is farmer Margaret Kagole. She's a 'custodian of nature' in a small community in Uganda (Bagungu). Margaret identifies 5 types of wind in the local language. She predicts rain by watching insects & birds.



9:11 PM · Jul 20, 2022 · Twitter for iPhone

902 Retweets 91 Quote Tweets 2,838 Likes

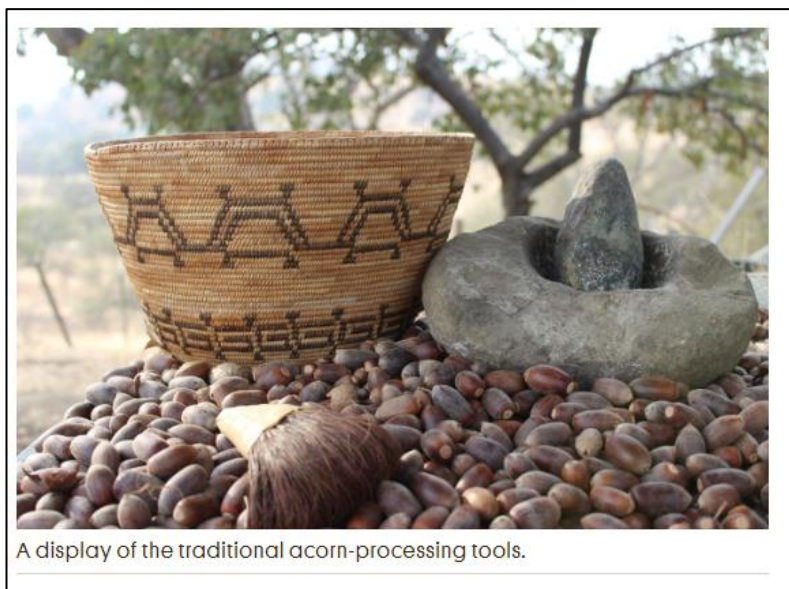
d) Americas

The Indigenous Family Bringing Acorns Back to California Cuisine

(Elena Valeriote, Gastro Obscura: JUNE 22, 2022)

THAT AN ACORN, GIVEN WATER and time, will grow into an oak tree is a well-known fact. Fewer know, though, that acorns can also be made into a delicious meal. Arrow Sample, founder of Arrow's Native Foods, is working to change that. Sample identifies as Mono/Yokut and is an enrolled tribal member of the Big Sandy Rancheria Band of Western Mono Indians. Growing up in the Central California foothills between Fresno and the Sierra Nevada Mountains, it was not until adulthood that Sample first learned that the region's towering oak trees had once provided a staple food for his tribe. As Spanish missionaries and settlers claimed Californian land and the U.S. government instituted boarding schools for Indigenous youth, acorns slowly ceased to be a part of the local diet. "My ancestors were made to forget many of their ways and then rely on the government for assistance when we could no longer sustain ourselves," Sample explains.

His own connection to acorns had been almost entirely lost until his father retired. Several years ago, Brian Sample began regularly returning home with buckets full of acorns. It was a time of reconnection and rediscovery as he sought to remember how his grandmothers and aunts had gathered and cooked acorns in his youth. In the past, the acorn flour would be spread on a hot rock in the sun to dehydrate naturally. Last winter, Sample was the first person in generations to perform this practice in his community, but he generally uses a dehydrator for efficiency. After drying, the acorn flour is ready to be mixed with water to form a dough that is cooked and chilled to



A display of the traditional acorn-processing tools.

form nutty acorn mush. The long and laborious process, from gathering the acorns to finally serving the dish, requires patience and physical stamina, which may have something to do with the rarity of acorns on the dinner table in recent history. "Unfortunately, like for so many of our traditional foods, it's one that's been dwindling little by little," says Sample

Six Indigenous people selected for prestigious award

(Mary Annette Pember, *Indian Country Today*: June 19, 2022)

The Bush Foundation announced the 2022 Bush Fellows in May. The 24 recipients of the prestigious award were chosen from a group of 468 applicants. Six of the winners are Indigenous. The Foundation chooses fellows from communities in Minnesota, North Dakota, South Dakota and the 23 Native nations that share the same geography. Fellows receive up to \$100,000 over 12 to 24 months to pursue education and learning experiences that help them develop skills and relationships to foster large-scale change within their communities and region.



Rebekah Dunlap of the Fond du Lac band of Ojibwe lives in Cloquet, Minnesota. Dunlap, a nurse, who just earned her Ph.D. in midwifery is now working on obtaining her licensure as a midwife and lactation consultant. Her dream is to create the first-ever birth center on tribal lands. She hopes to integrate the birthing work with her Anishinaabe traditional teachings. “I want to offer out-of-hospital options for Native people,” Dunlap said. In her former work as a doula, Dunlap was saddened by what she describes as inequitable treatment of Native women by White male health care providers. “That experience drove me to become a provider for Native people who are pregnant and birthing,” she said. “I’m also driven by our high maternal

mortality rates.” Dunlap plans to include time with tribal elders and sitting in ceremony as part of her self-care plan. “My big goal is to get back to some of our first teachings,” she said.

Biographies of the five other winners can be viewed [here](#).





Indigenous Science with Dr. Jessica Hernandez

Released Tuesday, 17th May 2022

About Reviews Creators **7** Lists

Is Western science always the best science? On this episode, Neil deGrasse Tyson and comic co-host Marcia Belsky discuss Indigenous methods to combat climate change with Indigenous scientist and author Dr. Jessica Hernandez.

NOTE: StarTalk+ Patrons can watch or listen to this entire episode commercial-free.

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Neil deGrasse Tyson

Host



Chuck Nice

Host



Lindsey Walker

Producer



Dr. Jessica Hernandez



Ben Ratner



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Replying to [@IUCN_GovRights](#) [@ICCAConsortium](#) and [@voxdotcom](#)

Check out this amazing paper by [@UNEP](#), [@IUCN](#), [@WWF](#), [@ConservationOrg](#) and others. Released last year it makes some of the strongest statements yet about need to scale up land rights of Indigenous peoples to conserve [#biodiversity](#). [@UNBiodiversity](#) [@IPBES](#)

wwfint.awsassets.panda.org/downloads/repo... ✓



[AMPB and Global Alliance of Territorial Communities](#)

5:06 AM · May 27, 2022 · Twitter Web App

UPEI's Indigenous grads honoured to wear special stole during ceremony



'It's a really nice gesture of support and just a celebration of Indigenous students'

Shane Ross - CBC News · Posted: May 17, 2022 6:54 PM AT | Last Updated: May 18



Sophie Vandale wears her graduation stole as she walks across the stage to receive her degree at UPEI last week. (UPEI/YouTube)

Indigenous students graduating from the University of Prince Edward Island wore something special when they crossed the stage to receive their degrees last week.

For the first time, Indigenous graduation stoles were handed out to celebrate their achievements.

Sophie Vandale said it was "an honour" to be one of eight students to wear a stole around her neck.

"To be the first at UPEI is pretty special," said Vandale, who graduated with a Bachelor of Education degree. "It kind of holds a special place in my heart and for other people."

Introducing ECCC's new Director of Indigenous Science

(Government of Canada - Science: 9 June 2022) [Link](#)

Dr. Myrle Ballard has joined Environment and Climate Change Canada (ECCC) to form the department's first Indigenous Science division. While on a year-long work exchange from the University of Manitoba, she is leading a permanent team at the department to advance reconciliation in ECCC's science and research activities. ECCC is the first federal government department to launch such a division, and Dr. Ballard tells us about her exciting and important work. Dr. Myrle Ballard's greatest challenge has the potential to also be her greatest success in her new role as the Director of the new Indigenous Science division at ECCC. "Changing mindsets will be challenging," she says. "I want to create awareness at the department that there is another knowledge system out there that can be equally as effective as Western knowledge." Changing mindsets will be an indicator of success as she guides the department in understanding Indigenous Science as a distinct, time-tested and methodological knowledge system that will enhance and complement Western science.



Indigenous Science Network
@IndigenousSci1

Very exciting news with Canada formally recognising Indigenous Science. They have created a new Indigenous Science Division headed up by Dr Myrle Ballard. Big congrats to all involved in this wonderful initiative. - [Science.gc.ca](https://science.gc.ca) ✓
science.gc.ca/eic/site/063.n... ✓



Dr. Myrle Ballard (Traverse) and 5 others

1:04 PM · Jul 18, 2022 · Twitter Web App

View Tweet analytics Promote

92 Retweets 6 Quote Tweets 260 Likes

The Government of Canada supports Indigenous leadership in the Quebec green energy sector (*Indigenous Services Canada: 15 June 2022*) [Link](#)

The Honourable Patty Hajdu
Minister of Indigenous Services:

Indigenous Peoples hold a spiritual connection to the land, and their traditional knowledge and input are essential to advancing climate change adaptation across the country. Through Indigenous leadership in the renewable energy sector, the Quebec Green Initiative will contribute to Canada's effort to lower greenhouse gas emissions and drive new opportunities for Indigenous economic growth in Quebec. We can all be proud to know that projects launched through this initiative will work toward a clean environment, and a clean economy, for all Canadians.

UNCEDED ALGONQUIN TERRITORY, ON, June 15, 2022 /CNW/ - The participation of Indigenous Peoples in the green energy sector is a key component of Quebec's and Canada's energy transition. On the margins of the Economic Circle of Indigenous People and Quebec in Mashteuiatsh, Quebec, the Honourable Patty Hajdu, Minister of Indigenous Services, and the Honourable Pascale St-Onge, Minister of Sport and Minister responsible for the Canada Economic Development for Quebec Regions (CED), today announced the launch of the Quebec Green Initiative. With an envelope of \$5.5 million, the Quebec Green Initiative will help establish partnerships between Indigenous communities and other key players in the energy sector to meet growing demand in the area of green energy. By encouraging innovation and the development of Indigenous entrepreneurial skills and businesses, the Quebec Green Initiative will also contribute to the creation of jobs and significant economic benefits for communities. The Quebec Green Initiative will support Indigenous Peoples' desire to participate in the energy transition to clean, renewable and sustainable energy sources. This project, stemming from the Strategic Partnerships Initiative, will provide them with socio-economic development opportunities related to the growth of the green energy sector.



Indigenous Science Network
@IndigenousScie1

Clever technology to harvest water in Mexico based on traditional practices



climatechangenews.com
Fog catchers: improving Mexico's climate resilience using traditional knowledge
Sponsored content: The project is using locally-led solutions and ancestral practices to fight water insecurity

9:17 AM · Jul 7, 2022 · Twitter Web App

🔄 You Retweeted



CeeJay Yellow Hawk
@AdriftAlchemist



My unci Pearl got to see them come home! She grew up hearing stories of them roaming the plains in the millions

At 86yo, she braved -10° weather outside, & watched as our tribe welcomed home a small herd of genetically pure bison for the 1st time

The calves were her favorite



 **NowThis**  @nowthisnews · Jul 15

Indigenous people have led the effort to re-wild the bison, increasing the animal's population into the hundreds of thousands. While still a far cry from the estimated 30 to 60 million that once roamed the plains, it's a great start to restoring the plains ecosystem in the U.S.

[Show this thread](#)

8:04 AM · Jul 15, 2022 · Twitter for iPhone

New Indigenous curriculum introduced to ND educators

(Maiya Fleck, Valley New Live: June 16, 2022)



BISMARCK, N.D. (KFYR) - United Tribes College held a workshop Wednesday that will help educators to integrate Indigenous culture and perspectives into their students' learning experience. The new knowledge can be applied to history studies for 4th and 8th graders as well as high school students taking AP history courses. Dakota Goodhouse (*see left*), a Natives studies instructor at United Tribes College, was one of the presenters at a workshop designed to help educators teach a new Indigenous

curriculum. "We have to understand each other," Goodhouse says. One way cultures can communicate is by understanding the meanings behind the symbolism and how common locations and landmarks are identified differently by each culture. "We're learning a lot about the Native American culture and how to incorporate their customs and perspectives into our curriculums, whether it be reading math, social studies, and just the way they perceive the world, and we can be more accepting," Dr. David Bartz said. Dakota Goodhouse has spent years researching and studying Indigenous culture, cultivating maps and history that can be used in the new curriculum.



How ancient forest gardens could impact Nuchatlaht First Nation's land claim



Findings challenge some commonly held beliefs about plant cultivation in the territory, researchers say

CBC News · Posted: May 29, 2022 10:00 AM PT | Last Updated: May 30



Researchers, seen here taking a crabapple core sample, have worked with Nuchatlaht knowledge holders to identify forest gardens. (Nuchatlaht/Troy Moth)

New research is shining a light on how the Nuchatlaht people cultivated plants for centuries on Nootka Island in B.C.

🔄 You Retweeted



Aaron Yazzie (he/him)
@YazzieSays



This weekend's excursion was inspired by a visit with a Navajo high school STEM summer program, and lead to a tour of several beautiful spots in Arizona and Utah. My first stop, land of my people, Monument Valley at sunrise.



5:53 PM · Jul 6, 2022 · Twitter for iPhone

You Retweeted



Dr. Raven the Science Maven
@ravenscimaven

...

This year I gave the keynote for the National Science Teachers Association Conference. As you all may know, I've taught science in every grade in K-12 and university. In this clip I share one way I effectively integrated my high school students cultural experiences in class. 1/

National Science Teachers
Association Conference Keynote, 2022



8:37 AM · Jun 24, 2022 · Twitter Web App

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Indigenous Leadership Initiative
@ILInationhood

...

Mark [#IndigenousPeoplesDay](#) by learning how Indigenous Guardians are leading the way in caring for lands & waters across the country. We'll be live w/ [@environmentca](#) & Minister [@s_guilbeault](#) to talk about the importance of this work & how it's benefiting communities.

**ECCC Minister Steven Guilbeault interviews
Valérie Courtois & Dahti Tsetso**

**A conversation on the benefits of
Guardians for Land and Community**



**LIVE Tuesday, June 21 at 4pm ET
on Facebook**

Dahti Tsetso and Valerie Courtois

4:46 AM · Jun 21, 2022 · Twitter Web App



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1:40 AM · Jun 29, 2022 · Hootsuite Inc.

The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.

Indigenous-led project hopes to foster education and reconciliation in Wellington County (Carmen Groleau · CBC News · June 19, 2022)

What started out as a request for a small plot of land to grow a medicine garden has now grown to a project that aims to foster education and reconciliation with the community on Wellington County. The county has dedicated two acres of land for the Indigenous Gathering Circle Project, a culturally safe space for the county's Indigenous community and allies. The Project will also restore land to what it was before farming practices removed native plant species. The land is part of Wellington Place, an area made up of 77 hectares in Aboyne, between Fergus and Elora, that hosts several county services like Wellington Dufferin Guelph Public Health, New Groves Memorial Community Hospital and the Wellington County Museum and Archives. "It's taken me completely by surprise, I didn't expect this," said Colleen Brunelle, a Fergus program manager in social services and a member of the county's Indigenous advisory committee. "We haven't had a lot of space available for Indigenous peoples here in this county. Our closest friendship centre was in Kitchener-Waterloo. We're hoping that we're going to be reclaiming some space here at the county. "



Wellington County has dedicated two acres of land for a project that organizers hope moves the needle toward reconciliation. The Indigenous Gathering Circle Project is in its early stages of a final design. (Philip Drost/CBC News)

Conservative politicians across the world who are climate change deniers!!! This is now happening on your watch. We will not forget once the revolution begins (or elections - whatever comes first).

 **Earthjustice** @Earthjustice · May 11

Water will erase Newtok, Alaska. To keep their culture and community intact, the Yup'ik residents must relocate their entire village upriver while battling government inertia. They will become some of America's first climate refugees. @Patagonia



1:20 1,193 views

4:19 PM · May 11, 2022 · Twitter Web App

Reducing Barriers for Indigenous Student Success in Academia

(Sidney Leggett, TEDx MaplesMetSchool: 11 June 2022)



In this talk, Sidney Leggett speaks to her experience navigating academia and what is truly needed for Indigenous learners to feel they belong. Sidney is finishing her final year of undergraduate studies in a student-designed major in Applied Computer Science and Data Analysis at the University of Winnipeg. She has worked as a Junior Epidemiologist for over three years and has worked as a research assistant at the University of Winnipeg, University of Manitoba, and Queens University. She also works for Waterways recreation and is passionate about Indigenous youth involvement in learning traditional knowledge through canoeing and being on the land. Sidney is Métis and believes in the importance of inclusion of Indigenous peoples in STEM fields, and the importance of having diverse views within the STEM world. She hopes to break barriers in academia to be inclusive to Indigenous People to pursue higher education. Sidney will

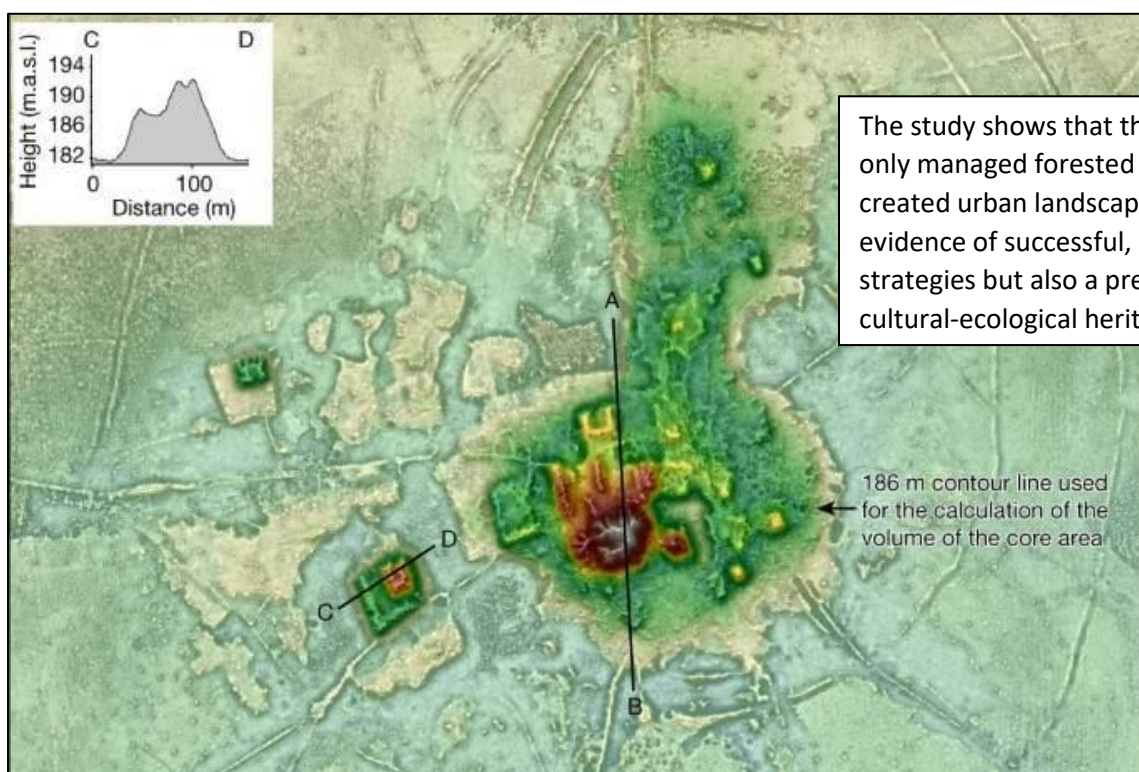
be discussing the barriers that exist in academia for Indigenous people, and the steps that can be put in place to better the academic world.



How Ancient Amazon Cities Were Built Without Harming Nature

(University of Exeter: May 26, 2022)

A team of international researchers, including Professor Jose Iriarte from the University of Exeter, has uncovered an array of intricate settlements in the Llanos de Mojos savannah-forest, Bolivia, that have laid hidden under the thick tree canopies for centuries. The cities, built by the Casarabe communities between 500-1400 AD, feature an unprecedented array of elaborate and intricate structures unlike any previously discovered in the region – including 5m high terraces covering 22 hectares – the equivalent of 30 football pitches – and 21m tall conical pyramids. Researchers also found a vast network of reservoirs, causeways and checkpoints, spanning several kilometres. The discovery, the researchers say, challenges the view of Amazonia as a historically “pristine” landscape, but was instead home to an early urbanism created and managed by indigenous populations for thousands of years. Crucially, researchers maintain that these cities were constructed and managed not at odds with nature, but alongside it – employing successful sustainable subsistence strategies that promoted conservationism and maintained the rich biodiversity of the surrounding landscape.



Paying Lip Service to Indigenous Knowledge Won't Fix Climate Change

(Dr. Len Necefer, *Outside*: 3 June 2022)

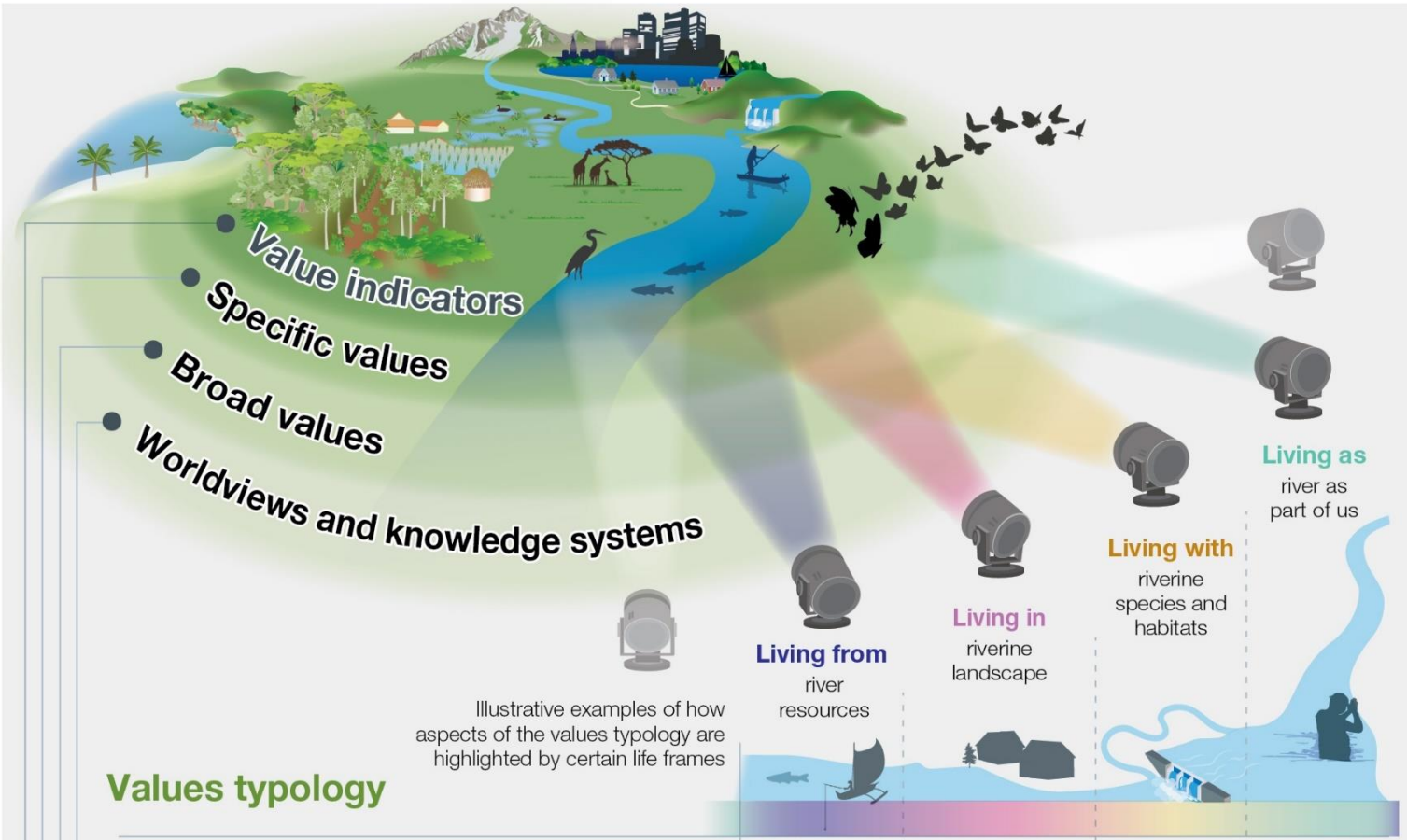


One summer afternoon when I was seven or eight years old, I went for a hike with my grandfather and uncle in the Chuska Mountains of Navajo Nation to search for medicinal plants for traditional healing ceremonies. When we stopped on a ridge, to look at the vast, red desert below, my grandfather turned to me and spoke in Navajo. My uncle translated to English, “He said, ‘This is your first classroom; don’t ever forget that.’”

For the next two decades, I pursued a western education within a system that, just a generation before, had been used as a tool of assimilation and oppression against my people. I recognized from an early age that titles like Dr. and PhD held a lot of power in shaping our natural world. I also understood, from that moment atop the ridge, that having a deep knowledge of the land was an important piece of my own learning. As I pursued higher education, I wove together two threads: science and engineering and a Navajo knowledge of the natural world. My doctoral research focused on how Indigenous cultural values could be incorporated into technical decision making on energy and environmental policy. During most of my educational journey, the knowledge that I brought from my Navajo heritage was often belittled and treated as inferior by the western academic worldview. But seeing firsthand the impacts of climate change in my own community motivated me to continue my education and graduate.

I left a tenured professor track role because of the inability of academia and western institutions to meaningfully incorporate Indigenous knowledge. Within academia, Indigenous knowledge is largely only valued when it confirms the conclusions of western science. When it conflicts or disagrees with western science it is often discarded or ignored.





Illustrative examples of how aspects of the values typology are highlighted by certain life frames

Values typology

Worldviews	Ways through which people conceive and interact with the world	Anthropocentric	Anthropocentric	Bio/ecocentric Cosmocentric	Pluricentric
Knowledge systems	Bodies of knowledge, practices and beliefs Academic, indigenous, local				
Broad values	Guiding principles and life goals	Prosperity, Livelihood	Belonging, Health	Stewardship, Responsibility	Oneness, Harmony with nature
Specific values	Judgements regarding the importance of nature in particular situations Instrumental: means to an end, nature as a resource/asset, satisfaction of needs and preferences, usefulness for people Intrinsic: agency of other-than-humans, inherent worth of biodiversity as ends in-and-of themselves Relational: importance of desirable, meaningful, and often reciprocal human relationships	Commercial fishery stock Cultural meanings of fishing	Health benefits of recreation on the river Intrinsic value of heritage fish Sense of place of a fishing community	River as fish habitat The right of fish to exist Respect for fish life cycles	Fish as co-inhabitants Fish as part of kinship or clan relationships
Value indicators	Quantitative measures and qualitative descriptors Biophysical Monetary Socio-cultural	Tonnes of fish Market price of fish harvest Gender-specific participation in fishing	Physiological effects of being in nature Willingness to pay for recreation Ratings of special places	Number of fish species Existence value Legal standing of biodiversity	Nutrition of fish References to personhood of fish

Indigenous science framework removed from Ontario elementary school curriculum (Caroline Alphonso · The Globe and Mail: 2 Jul 2022) [Link](#)

The Ontario government removed parts of an overarching theme in its elementary science curriculum that would have taught students the connections between Indigenous and Western science, documents show. Just three weeks before the release of the science and technology curriculum in early March, Education Minister Stephen Lecce's office directed Ministry of Education staff to delete the language that also included examining the "scientific and technological knowledge systems and perspectives of various cultures." The changes were contained in curriculum documents that were released in response to an Access to Information request by The Globe and Mail. Provinces were called on to make Indigenous contributions part of school curriculum as part of the 2015 calls to action by the Truth and Reconciliation Commission. Jodie Williams, co-chair of the First Nations, Métis and Inuit Education Association of Ontario, said the deleted texts "further erases" the contributions of Indigenous people to science. "It's a missed opportunity to really correct how Indigenous people are portrayed in education, historically and even up until today," said Ms. Williams, whose association was consulted on the curriculum. Curriculum documents undergo multiple revisions, especially after educators and other groups are consulted.

Isha DeCoito, an associate professor and the coordinator of the STEM specialty focus in teacher education at Western University, provided a research report to the government on the new curriculum that included culturally relevant teachings. She said that the deleted language was part of her research package. Dr. DeCoito was concerned that the new curriculum is heavily focused on skilled trades but does not engage students as much in topics such as climate change. "At the end of the day, what it does is it discourages students. Students cannot identify with what's in the curriculum. It's so far removed from what happens to them," she said. Ms. Williams was "disappointed" that much of the input her association provided last summer wasn't included in the final version. She wanted to see explicit references to Indigenous knowledge, including ties to the land and water systems, in the overall expectations of the curriculum. She said that while Western science may be considered valuable, it also "got us into climate change." "Indigenous knowledge systems that have been tested and true over thousands of years and have a lot to offer in terms of innovation, design, technology. It's just frustrating because it's a missed opportunity."

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 FNMIEAO.com
@FNMIEAO

Including Indigenous knowledges & contributions in curriculum benefits everyone & actually enhances society. Keeping it out only further erases us & promotes a harmful narrative that we are somehow not as important.



theglobeandmail.com
Indigenous science framework removed from Ontario elementary school curric...
Ministry of Education staff directed to delete the language that also included examining the 'scientific and technological knowledge systems and perspective...

11:25 AM · Jul 3, 2022 · Twitter for iPhone

Saturday July 2, 2022

Hon. Stephen Lecce
Minister of Education
315 Front St. 14th Floor
Toronto, ON M7A 0B8

You Retweeted



Jerica Fraser
@JericaFraser

...

My letter to Minister of Education @Sflecce re: the removal of the Indigenous science framework from Ontario elementary school curriculum.

Re: The removal of the Indigenous science framework from the Ontario elementary science curriculum

Dear Mr. Stephen Lecce

Based on past actions, such as the redacted elements of the math curriculum and last-minute cancellations of various Indigenous curriculum projects, it should come as no surprise that many Indigenous educators, families, and community members are fearful that their histories, knowledges, and their distinct contributions can at any moment be removed from the curriculum in Ontario. This fear has arisen once again with the removal of the Indigenous science framework from the Ontario elementary science curriculum.

Two-eyed seeing is an approach that not only allows for Indigenous children to learn about their distinct worldviews and knowledge systems, but also provides *all* students with the framework to approach problems with both Western and Indigenous knowledges to find creative and innovative solutions. If the focus is, as stated by Grace Lee, your spokeswoman, to “remain focused on ensuring Ontario’s students excel at the foundations of math, science, and reading, so they can pursue good-paying jobs”, would the goal also not be for Indigenous peoples, who are underrepresented in STEAM, to have the opportunity to excel in these areas as well with curriculum that reflects them and their distinct knowledges?

This decision clearly undermines Indigenous communities, their lived experiences, and their voices. Indigenous families, and community members in Indigenous education committees and circles throughout Ontario school boards have tirelessly advocated for students to learn about Indigenous ways of knowing, being, and doing. Many never had the opportunity to learn through education because of their lived experiences in the residential school system or through the colonized curriculum that they received in the public education system. As they uncover Indigenous children across this country—children who were forbidden to learn about the beauty and the knowledge held within their communities, it is incredibly harmful today to continue to deny this generation with opportunities to learn about the knowledge that carries on, despite colonial efforts, within their people today.

Residential School survivors and intergenerational survivors have shared their testimonies and the Truth and Reconciliation Commission and the Calls to Action offer the roadmap forward. Call to Action #62 states: “We call upon the federal, provincial, and territorial governments, in consultation and collaboration with Survivors, Aboriginal peoples, and educators, to: Make age-appropriate curriculum on residential schools, Treaties, and Aboriginal peoples’ historical and contemporary contributions to Canada a mandatory education requirement for Kindergarten to Grade Twelve students.”

But this decision is a willful detour from the roadmap outlined by the TRC. Instead of providing a strong and dedicated direction for educators, the curriculum is purposely vague and incomplete. All prompting questions are absent in the elementary science curriculum, leaving it up to educators to interpret expectations and define for themselves what “various communities”

and the “scientific and technological knowledge systems and perspectives of various cultures” means, or if Indigenous science should be implemented in their classroom at all.

We are not from “various communities.” We are distinct. We are from specific places with specific knowledges that derive from generations learning from, and adapting to, the land. The commitment to Indigenous education must be more than a promise that can be redacted overnight. We deserve more and we cannot be erased.

Sincerely,

Jerica Fraser
Onkwehón:we educator in Ohròn:wakon (Hamilton, ON)

Indigenous University of Guelph professor Jesse Popp ‘weaving knowledge systems’ into project studying eastern wolves

(Joy Struthers, Guelph Mercury Tribune, 2 Jul 2022)



University of Guelph professor Jesse Popp is researching eastern wolves in northern Ontario though collaborating with local Indigenous Peoples. *UNIVERSITY*

A unique project to research the eastern wolf population in northern Ontario draws from collaboration with local Indigenous Peoples to learn more about the wolves and their decreasing population. University of Guelph (U of G) professor Jesse Popp, a member of Wiikwemkoong Unceded Territory who is the Canada research chair in Indigenous environmental science and was recently named to the Indigenous Leadership Circle in Research formed by the Canada Research Coordinating Committee, said that building relationships with Magnetawan and Shawanaga First Nations was the first step. Popp said the project includes her team of scientists from the Ministry of Northern Development, Mines, Natural Resources and Forestry (MNDMNRF), Indigenous Elders and Knowledge Keepers and others. “At least in wildlife ecology, in Ontario, these sorts of relationships are still rare — not just collaborating with, but taking the lead from Indigenous communities,” Popp said. Initial conversations with the First Nations provided Popp and the research team with knowledge that led them to locate the wolves more efficiently than they might have on their own. “By weaving


knowledge systems and building a relationship, spending time with the community, to visit and learn from one another and conduct research in a good way, we’re seeing such success in these early stages,” Popp said.

Assistant Professor or Instructor, Indigenous Science, Faculty of Science
(The University of Calgary: Posting Date April 26, 2022; Closing Date Open until filled) [Link](#)

We don't normally include job vacancies in this bulletin, however these 2 positions in Canada are highly unusual in that they specifically target the use and teaching of Indigenous science. And both positions apparently remain unfilled.

The Faculty of Science at the University of Calgary is seeking applicants for a tenure-track faculty position in Indigenous Science at the rank of Assistant Professor or Instructor. This is an open disciplinary search, meaning any candidate with research, scholarship, and teaching expertise centering on Indigenous ways of knowing within the disciplines (biological sciences, computer science, chemistry, geoscience, mathematics and statistics, physics and astronomy) represented in the Faculty of Science is encouraged to apply. The successful candidate will be appointed in one of the six departments in the Faculty of Science.

The University of Calgary (UCalgary), located in the heart of Southern Alberta, both acknowledges and pays tribute to the traditional territories of the peoples of Treaty 7, which include the Blackfoot Confederacy (comprised of the Siksika, the Piikani, and the Kainai First Nations) as well as the Tsuut'ina First Nation, and the Stoney Nakoda (including Chiniki, Bearspaw, and Wesley First Nations). The university recognizes that the City of Calgary is also home to Region III of the Métis Nation of Alberta. By virtue of the signing of Treaty 7 in 1877, the university recognizes that we are all treaty people. The City of Calgary is home to a culturally diverse community. Together, we share this land, strive to live together, learn together, walk together, and grow together "in a good way."



The screenshot shows the University of Calgary Careers website. At the top left is the University of Calgary logo. Below it, the text "UCalgary Careers" is displayed. A navigation bar contains links for HOME, INFORMATION FOR CANDIDATES, OPPORTUNITIES BY TYPE, and OPPORTUNITIES BY FACULTY/UNIT. The main content area features a job listing for a "Canada Research Chair (Tier II), Weaving Indigenous Science and Sustainability Science, Faculty of Science". The job ID is 25580, updated on April 26, 2022, and located on the Main Campus. An "APPLY NOW" button is visible, along with social media sharing options for Twitter, Facebook, LinkedIn, and Email. The background of the job listing area features an illustration of diverse people in a park setting, including a woman walking a dog, a person in a wheelchair, a person sitting on a bench, and a person riding a bicycle.

Canada Research Chair (Tier II), Weaving Indigenous Science and Sustainability Science, Faculty of Science

(The University of Calgary: Posting Date April 26, 2022; Closing posted for a minimum of 30 days with possibility of extension until the position is filled) [Link](#)

The University of Calgary is committed to Indigenous Engagement and systemic change and is seeking candidates for a Tier 2 Canada Research Chair (CRC) in the area of Weaving Indigenous Science and Sustainability Science in the Faculty of Science. The successful candidate for the CRC will be appointed at the rank of Assistant Professor (tenure-track) or Associate Professor (with tenure). This recruitment will be complimented by additional appointments that will support continued Indigenousization within the Faculty of Science, notably an Assistant Professor or Instructor in the area of Indigenous Science.

Indigenous ways of knowing (Canadian Space Agency: 17 June 2022)

Exploring the universe with feet firmly on the land, the Canadian Space Agency (CSA) is headquartered on the traditional and unceded territory of the Kanien'kehá:ka (people of the flint) (Mohawk Nation), part of the Haudenosaunee (people of the longhouse) Confederacy. We recognize the Kanien'kehá:ka Nation as the custodians of the lands and waters of Tiohtiá:ke (Montreal), which has long been a gathering place for diverse First Nations, including Algonquin-Anishinaabe, Atikamekw, and Huron-Wendat. The CSA recognizes that there are different ways of knowing and acknowledges the many contributions of First Nations, Inuit and Métis peoples to science, technology, engineering and mathematics (STEM), and to the studies of the stars. There are many ways of sharing knowledge and building understanding. That is why the CSA is working to broaden our content to include Indigenous perspectives.



Students at Nakasuk School in Iqaluit, Nunavut, with CSA astronaut David Saint-Jacques. (Credit: CSA)

Oregon State partnering with Yurok Tribe to envision Klamath River after dam removal
(Steve Lundeberg, Oregon State University Newsroom: 2 June 2022) [Link](#)



CORVALLIS, Ore. – Oregon State University researchers will embark in July on a 3½-year partnership with the Yurok Tribe to study what the connections between river quality, water use and the aquatic food web will look like after four Klamath River dams are dismantled. “We want to fill in gaps in the Western science as well as gaps in how we make equitable decisions based on both ecological science and Indigenous knowledge,” said OSU’s Desiree Tullos, professor of water resource engineering and the project’s leader. “Our partnership with the Yurok Tribe aims to bring together multiple and complementary ways of understanding and making decisions about the Klamath system.” The joint project with the Yurok Tribe is the first attempt to represent tribal knowledge in decision processes in the Klamath Basin, she said.

THE 12 LAKOTA VIRTUES

- 1 Unsiiciyapi (*Humility*)
- 2 Wowacintanka (*Perseverance*)
- 3 Wawoohola (*Respect*)
- 4 Wayuonihan (*Honor*)
- 5 Cantognake (*Love*)
- 6 Icicupi (*Sacrifice*)
- 7 Wowicake (*Truth*)
- 8 Waunsilapi (*Compassion*)
- 9 Woohitike (*Bravery*)
- 10 Cantewasake (*Fortitude*)
- 11 Canteyuke (*Generosity*)
- 12 Woksape (*Wisdom*)

Traditional Indigenous knowledge must be considered as part of climate change knowledge

(Lori Thompson, The Manitoulin Expositor: 2 June 2022)

BIRCH ISLAND—There is a huge bias in the existing body of knowledge around climate change, said Deborah McGregor, Canada Research Chair in Indigenous environmental justice and professor with Osgoode Hall Law School and the Faculty of Environment and Urban Change at York University. Traditional knowledge has rarely been considered, and working groups continue to include Indigenous persons as tokens, she said. “Because my area is justice, Indigenous climate justice is something I think about a lot,” she added “Equity and justice, how people are impacted, that hasn’t really been considered (in past research). They didn’t look at questions that were important to other people although that’s slowly changing.”



Deborah McGregor, Canada Research Chair in Indigenous environmental justice with Osgoode Hall Law School and the Faculty of Environment and Urban Change at York University. *(Supplied)*

Indigenous climate declarations, such as those by Turtle Lodge, Manitoba or the Chiefs of Ontario, say climate change is because of the kind of relationship that people have with the Earth. “People don’t know how to behave properly,” she said. Indigenous people define the problem differently so their ideas of what the solution is are different. “We’re saying in order to regain this connection to the land, we need to get kids out on the land,” she explained. “They need to know the language. Everything is about reconnecting and understanding what’s happening to the natural world in order to be able to respond to it appropriately. When you define the problem differently, then your solutions are different.” Most people don’t think revitalization of Indigenous languages is a climate solution but it makes perfect sense in an Indigenous context. The kind of work scholars are doing now is more holistic and recognizes that humans are part of the planet. They’re trying not to think about everything in the siloed kind of approach that science tends to have towards things.

Indigenous fire keepers and ecologists say it's time to light a careful fire to calm wildfires (Yvette Brend · CBC News · 2 July 2022)

With a deft swing of a drip torch, Joe Gilchrist ignited sagebrush near Savona this spring, just northwest of Kamloops, BC. In seconds, an angry crackle grows into a tongue of orange flame, fluorescent against the dusty landscape of the Skeetchestn Indian Reserve in central BC. Gilchrist — a fire keeper — sets fires to fight wildfires and "cleanse" the land. He is one of about 20 members of the growing Interior Salish Firekeepers Society and part of a growing movement. Indigenous knowledge keepers and fire ecologists are reigniting an ancient practice outlawed during colonialization when he says at least one fire keeper was hanged for setting fires. This June, British Columbia earmarked \$359 million for future wildfire protection, with \$1.2 million invested in burn projects this year. The province says it supports cultural burning which is prescribed by the Declaration on the Rights of Indigenous Peoples Act Action Plan (UNDRIP). But fire ecologists say that support is falling short and plans to burn often fizzle out because of approval delays. In B.C., hundreds of thousands of hectares used to be deliberately burned each year, but now fewer than 10,000 hectares of land is set on fire for community protection.



Firekeeper Joe Gilchrist demonstrates how a cultural burn is started in a pile of sage brush near Savona, B.C.
(Harold Dupuis/CBC)

Prescribed burns: Indigenous knowledge

May 18, 2022 at 3:56 pm | Updated May 18, 2022 at 3:56 pm

By [Letters editor](#)

The Seattle Times

Re: “[Fighting fire with fire: WA resuming prescribed burns on public lands](#)”
[May 8, Local News]:

It is difficult to understand that this lengthy environmental article reprinted from The Spokesman-Review about controlled burnings on public land did not once mention it is an age-old practice of Indigenous people of this region and the United States to burn land to promote growth and suppress wildfires.

Modern Western culture and science did not invent this concept of healthy land management through burning. My Indigenous ancestors perfected this process countless generations ago to work within the laws of nature. Through intelligence, experience and wisdom, they applied fire in a healing way.

Why were Indigenous knowledge and science not mentioned once in the article and why were prescribed burns presented as a modern development that had no precedence?

Roger Fernandes, Federal Way (Native artist and storyteller)

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How Saving Seeds Is Helping This Modern Farmer Reconnect With Her Roots

MAY 21, 2022

Bevin Cohen

In Canada, Indigenous seed steward Tiffany Traverse is focused on rediscovering, cultivating and preserving the traditional foods of her community.



Tiffany Traverse sniffs wild labrador tea she foraged.

Photography courtesy of Justice Photography.

Land as teacher: Land-based education means learning on, about and from the land
(University of Manitoba News: accessed 12 July 2022)

When you ask Nicki Ferland, community engaged learning coordinator (Indigenous), about land-based education, she'll tell you what it is—and is not. “Land-based education is about learning on, about and from the land,” explains Ferland. “It is about seeing the land as our teacher, putting our relationships with the land and each other at the centre of learning, and recognizing that everyone has something to offer. “While it is inherently Indigenous, land-based learning should not be pan-Indigenous,” Ferland adds. “Too often we see people blending teachings and symbols from Anishinaabe, Cree and Métis paradigms. The Anishinaabe Seven Sacred Teachings are an example. Other nations have their own stories and teachings that are going to be relevant to their place and environment.” Ferland is a Two-Spirit Red River Métis with deep roots in Manitoba’s Lorette and Winnipeg’s St. Vital communities. She has a background in human and Indigenous rights, and just completed her Master of Education in Indigenous land-based education at the University of Saskatchewan. Ferland leads workshops for UM educators on how to incorporate land-based learning into their courses—each one co-facilitated by Indigenous staff advisors. “My way of knowing is Métis,” Ferland explains. “I couldn’t possibly teach the knowledge system of a community I don’t belong to. So I work with Anishinaabe, Dakota or Cree Elders and Knowledge Holders to bring in their own teachings.”



Students learning on and from the land at Bannock Point with Elder Diane Maytwayashing in 2019

New Digital Space to Celebrate and Catalyze Indigenous-led Conservation in Canada (Conservation through Reconciliation Partnership: 20 June 2022)

GUELPH, ON, June 20, 2022 /CNW/ - The [Conservation through Reconciliation Partnership \(CRP\)](#) today announced the launch of a new online platform, created to inform and inspire Indigenous-led conservation initiatives in Canada. The IPCA Knowledge Basket holds and shares vital resources to support Indigenous leadership in their nature conservation efforts, including the creation of Indigenous Protected and Conserved Areas (IPCAs). The announcement fell on the eve of National Indigenous People's Day during an event to celebrate and honour a national movement of Indigenous leadership in conservation. "Indigenous governments are at the forefront of protecting the largest, healthiest, and most biodiverse areas across Canada," said Steven Nitah, Managing Director of Indigenous Relations at Nature4Justice. "The IPCA Knowledge Basket will help to strengthen their capacity to realize their visions and aspirations for the lands and waters they have been stewarding for millennia."

Indigenous Protected and Conserved Areas (IPCAs) are lands and waters protected and conserved by Indigenous governments through Indigenous laws, governance, and knowledge systems. They represent pathways to Indigenous self-determination, nationhood, and cultural revitalization. Indigenous approaches to nature conservation are increasingly proving to be as or more effective in preserving biodiversity compared to state-led conservation. In fact, Canada's goal to conserve and protect 30 percent of lands and oceans by 2030 will unlikely be met without the support and leadership of Indigenous Peoples. The IPCA Knowledge Basket acts on recommendations set out by the Indigenous Circle of Experts, and addresses the need for a central, accessible, and interactive space for gathering and sharing resources for Indigenous-led conservation. Inspired by the practice of basket weaving, it was designed to bring together the best of Indigenous and western science, innovation, and knowledge.



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 Advisory Board made up of eight First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!

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Nia Tero
@NiaTero



"When corporations look at my home in the [#Amazon](#) rainforest, they don't...see a land capable of sustaining life on Earth, a land that needs protection, a land that is sacred. Instead, they see commodities."

Check out this amazing read at the link below.



climatechangenews.com

My people have lived in the Amazon for 6,000 years: You need to listen to us
As the planet warms and biodiversity collapses, those encouraging and profiting from the destruction of the Earth must be charged with ecocide

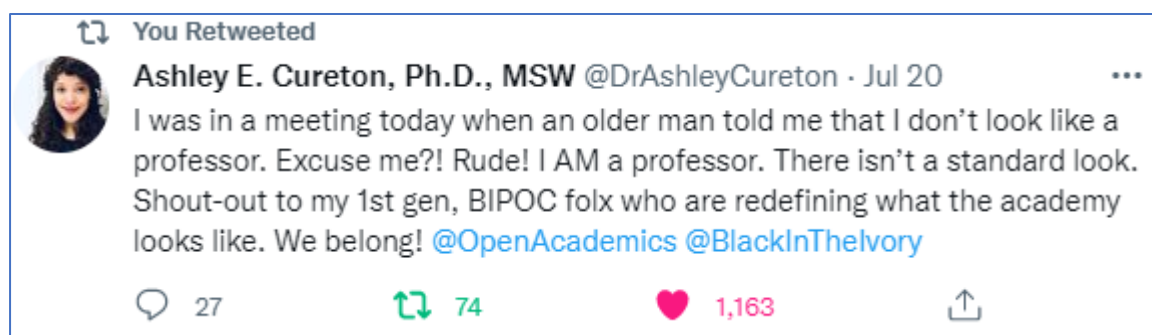
11:27 PM · Jul 4, 2022 · Sprout Social

UCalgary nursing grad reflects on merging Indigenous and western health-care systems and her own past (*Faculty of Nursing Staff, University of Calgary: 20 June 2022*)



A deeply rooted sensitivity and concern about the overall health of her people (Siksikaitsitapi or Siksika), and an understanding that all systems are relevant in health care, has led Debbie Smith to her new role as co-ordinator of Iiyikinaami (Spirit Helper Program), the collaborative new Bachelor of Nursing degree route between Old Sun Community College (OSCC) and the University of Calgary's Faculty of Nursing. "I view this program as the start of something wonderful," says Smith, who has worked in First Nations health in various capacities for more than 30 years. "With the establishment of the Iiyikinaami Spirit Helper program, we have finally reached a place where we are learning from both the western perspective but also, and just as importantly, from the perspectives of the First Peoples of this land.

"History has shown us that the Blackfoot were a strong people who had their own traditional medicines and health-care practices, who had their own governing system, and fortunately, over the years, whose customs, values and traditions have survived historical trauma." "Our Siksika students face multiple challenges and obstacles while trying to get an education," she says. "They have to leave their families, their support systems and their community. But, with this partnership, we now can offer future nursing students an opportunity to learn from western teachings in a culturally inclusive, familiar and safe learning environment — an environment that embraces the traditional ways of the Siksika people. "The learning acquired from both these streams will broaden their perspectives, positively affecting their care for not only non-Indigenous patients but with our Indigenous people, as well."



Massacre Leader's Name Is Removed From Yellowstone Mountain


(April Rubin, *The New York Times*: 22 June 2022)

A mountain in Yellowstone National Park, named for an Army officer who participated in a massacre in which at least 173 Native Americans were slaughtered, has been renamed in honor of America's Indigenous people, the National Park Service said. The National Park Service said on Thursday that the U.S. Board on Geographic Names had voted unanimously to rename Mount Doane, a 10,551-foot peak in the southeastern part of Yellowstone. It will now be known as First Peoples Mountain, the Park Service said in a statement. The mountain had honored Gustavus Doane, an Army officer and explorer who, in response to the alleged murder of a white fur trader, helped lead an attack in 1870 that became known as the Marias Massacre. He boasted about the attack in his accounts of the exploration of the land that would become Yellowstone National Park two years later. The change was announced as the Interior Department under Secretary Deb Haaland, the first Native American cabinet member, is taking steps to strip oppressive and offensive names from geographic features across the national park system.




First Peoples Mountain in Yellowstone National Park, center. It was previously named for Gustavus Doane, who helped lead an attack on Indigenous people in 1870 known as the Marias Massacre. *Credit...Jacob W. Frank/National Park Service*

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 **Lakota Man**
@LakotaMan1

Celebrate with me. Mount Doane, in Yellowstone National Park, named after an Army Captain that massacred 173 Natives in 1870, has officially been renamed — First Peoples Mountain.


6:23 AM · Jun 15, 2022 · Twitter for iPhone

 **Bryce @BryceandAya** · Jun 15

Replying to @LakotaMan1
tribal nations are still in the most poverty stricken areas of the country.

i get that this was culturally significant but...doesn't put food on the table for anyone. idk, read a lot last semester on Native American issues in PH; this doesn't seem as big a deal by comparison

34 25 205

 **Lakota Man @LakotaMan1** · Jun 15

Yes. Absolutely. There are other issues/grievances that are more pressing for the Native community. However, dismantling icons and symbolisms that celebrate genocide are good for our community's healing process. Kinda like renaming Columbus Day — Indigenous Peoples Day.

26 73 1,037

'Two-eyed seeing' as a way to decolonize western science

(Chris Morgan & Matt Martin, KUOW: 7 June 2022)



Dr. Andrea Reid doing field research while using the principles of two eyed seeing. Credit: Courtesy of Andrea Reid/Mikayla Wujec

There's a way to understand nature through the perspectives of indigenous knowledge and western science side by side. It's a concept known as "two-eyed seeing." "Etuaptmumk" or two-eyed seeing is a term first used by Mi'kmaq elder Dr. Albert Marshall. It is a way to understand wildlife and nature from the perspective of both western science and indigenous knowledge. Indigenous knowledge refers to understanding and skills built up by a group of people through generations of living closely with nature. "It's this principle of learning to see from one eye with the strength of Indigenous knowledges and ways of knowing and from the other eye with the strength of western knowledges and ways of knowing, and learning to use both of these eyes together for the

benefit of all," said Dr. Andrea Reid, who leads the Centre for Indigenous Fisheries at the University of British Columbia. The idea behind the concept is that we will do a far better job of being stewards of the environment if we take together all the tools that are available to us, and all of the ways of "knowing" that are available to us. Dr. Reid believes that two-eyed seeing is a way to decolonize western science. In some ways this new collaborative, two-eyed seeing approach to understanding the environment is just beginning. It is changing how researchers work with first nations communities in British Columbia.

Inspiring the next generation of Indigenous engineers

(Kayla Dettinger, Queens Gazette: 6 June 2022)

Established in 2011, InEng (formerly Aboriginal Access to Engineering) is based out of the Faculty of Engineering and Applied Science and led by Indigenous education professionals with expertise in STEM instruction. The initiative is committed to significantly increasing the number of Indigenous engineers in Canada through both supports for students at Queen's and K-12 outreach programming. By providing opportunities for Indigenous youth in K-12 to engage with Indigenous engineers and engineering students, the program aims to encourage youth to see themselves in the profession and eventually pursue STEM education. The program has also worked with more than 100 Indigenous engineering students at Queen's since its inception, providing a broad range of resources and support from tutoring to dedicated study spaces to opportunities for national and international networking.



Nicole General, Indigenous STEM Outreach Coordinator with InEng, works with a young student. Supplied



Jurassic 5

July 30 at 9:47 AM

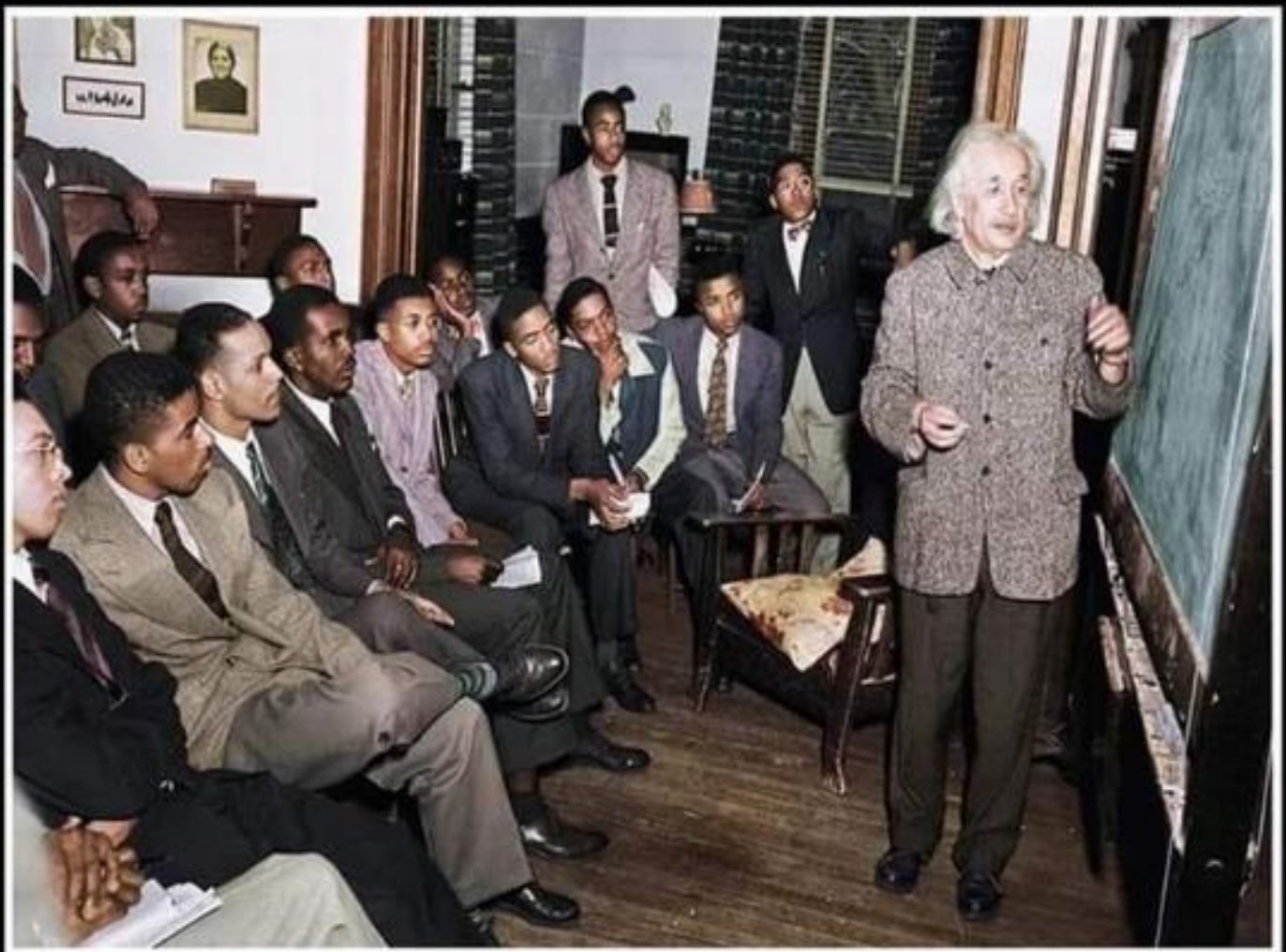
I never knew this
Albert Einstein.

In 1946, the Nobel Prize-winning physicist traveled to Lincoln University in Pennsylvania, the alma mater of Langston Hughes and Thurgood Marshall and the first school in America to grant college degrees to blacks. At Lincoln, Einstein gave a speech in which he called racism "a disease of white people," and added, "I do not intend to be quiet about it." He also received an honorary degree and gave a lecture on relativity to Lincoln students.

The reason Einstein's visit to Lincoln is not better known is that it was virtually ignored by the mainstream press, which regularly covered Einstein's speeches and activities. (Only the black press gave extensive coverage to the event.) Nor is there mention of the Lincoln visit in any of the major Einstein biographies or archives.

In fact, many significant details are missing from the numerous studies of Einstein's life and work, most of them having to do with Einstein's opposition to racism and his relationships with African Americans.]

Interesting [https://www.forbes.com/.../what-should-we-think-about.../...](https://www.forbes.com/.../what-should-we-think-about.../) ✓



Real Hip Hop Forever, NightSmoke Ent. and 12K others

1.2K Comments 6.6K Shares

Blessing ceremony opens new Indigenous Hub at UCalgary's Foothills campus

(Lindsay Marcaccio, Cumming School of Medicine: 24 June 2022)

The new Indigenous Hub at the University of Calgary's Foothills campus offers a space for staff, students, faculty and Elders to gather, share and connect. The Hub was recently officially opened with a blessing from UCalgary Senator and Elder Reg Crowshoe, Hon. LLD'01, ceremonialist and a former chief of the Piikani First Nation. Crowshoe started the blessing with a prayer and a smudge, grounding the room as an ethical space for work to be done on parallel paths toward reconciliation. The Indigenous Hub is located in the Indigenous, Local and Global Health Office within the Health Sciences Centre, part of the Cumming School of Medicine (CSM). Planning for the space began in 2019 when Elders and Indigenous community members provided input about function and design to create a welcoming, supportive and ceremonial space for Indigenous staff, students, faculty and Elders. "In my clinic, we have a similar ceremonial room that the clinic was built around," says Dr. Lindsay Crowshoe, MD, assistant dean of Indigenous health at CSM. "The room offers an intentional environment where patients and staff can reconnect with our culture and traditions integral to healing and wellness. Even the idea that the room is there inspires hope in clients and staff.



Katrina Fras, research assistant, Indigenous Primary Health Care and Policy Research Network; Andrea Brose, program manager, Indigenous, Local and Global Health Office; Dr. Pamela Roach, PhD, director, Indigenous health education; Dr. Dianne Mosher, MD, associate dean, Indigenous, Local and Global Health Office; Elder Rose Crowshoe, a member of the Piikani Nation; Dr. Reg Crowshoe, PhD, Traditional Knowledge Keeper in Residence, UCalgary; Holliston Logan, Indigenous health program co-ordinator, Indigenous, Local and Global Health Office; Dr. Lindsay Crowshoe, MD, assistant dean, Indigenous, Local and Global Health Office; Dr. Michael Hart, PhD, vice-provost, Indigenous Engagement, UCalgary. *Photo: Indigenous, Local and Global Health Office*

A Growing Movement to Reclaim Water Rights for Indigenous People

(Resilience: 14 June 2022) [Link](#)

Native tribes are reliant on their local water sources, which have been continuously exploited and contaminated by the U.S. government and non-Native people. Indigenous groups are finding new ways to demand justice. In recent years, the hashtag #LandBack has surfaced across Indigenous platforms to signify a need to reclaim ancestral landscapes and protect the sacred and cultural resources they contain. Across the American Southwest, however, there has been an even deeper call to action: “We can’t have #LandBack without #WaterBack” reads the poster material for the Pueblo Action Alliance’s #WaterBack campaign.



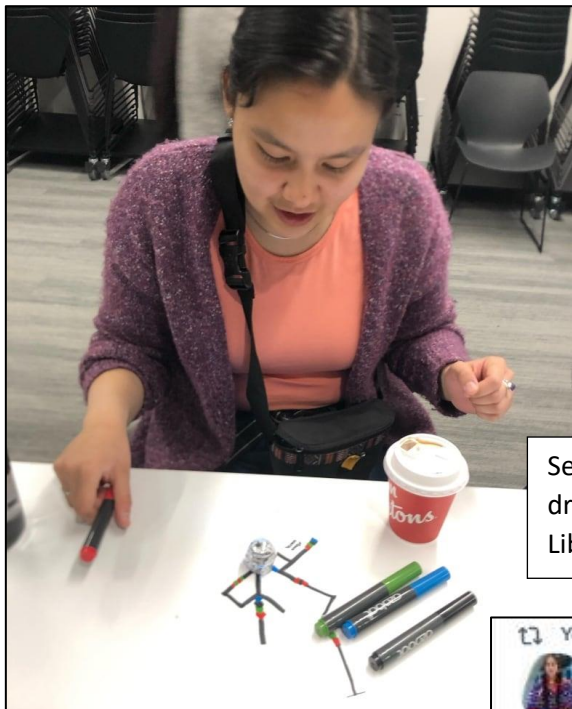
Overview of Pueblo Bonito, Chaco Canyon. *Chris M. Morris/Flickr*

Chaco Canyon is a 7.5-mile stretch in the Chaco Wash of northwest New Mexico. It drains into the San Juan River, a critical upstream sandstone formation for delivering water across the San Juan Basin. Specifically, the rincons, angular recesses in rock formations, in the canyon cliff faces divert rainfall to drought-stricken regions of the high desert, a function that directly impacts precipitation levels in an arid region with short growing seasons. About 1,000 years ago, Chaco Canyon also served as an enormous cultural hub for the Chacoans, ancestral Puebloans who quarried the canyon to build great houses that would serve as the political center of the ancient culture. The houses were so great, in fact, that their sheer size would not be surpassed in North America until 19th-century American construction. It is estimated that between 30,000 and 40,000 people dwelled within the region at its peak, harvesting beans, maize, and squash, and even engaging in a massive long-distance turquoise-trading industry. Both practices continue in the contemporary Pueblos, which still exist in the arid Southwest desert.

Especially in the Southwest, tribes have had to desperately fight for their rights to the water systems their ancestors used for years, but which now come to them in the form of hard-earned “paper rights”—essentially, promises on paper that often are not kept. The point is, water is necessary, and through a combination of red tape, contamination, lack of physical or spiritual access, scarcity due to climate change, or development on ancestral and archaeological sites, tribal communities are disproportionately affected.

New program offered in Edmonton connects coding to traditional Indigenous knowledge (Kashmala Fida Mohatarem · CBC News Jun 05, 2022)

Traditional knowledge is meeting up with technology and coding in an innovative program recently introduced to Edmonton's Indigenous youth. The INDIGital program is a four-week course created by the Indigenous Friends Association, a not-for-profit organization. The program's goals are to teach digital literacy to Indigenous youth while connecting technologies with Indigenous knowledge. "It is meant to be an empowering class," said Danielle Paradis, program manager for INDIGital. Previously offered in Saskatchewan and Ontario, the program held its first session at the Edmonton Public Library, starting on



May 9 and ending in early June. INDIGital offers students a chance to learn about coding, build their own websites and design digital content, all while learning about Indigenous history and teachings. Paradis said the program helps youth understand how technologies have existed within the worldview of Indigenous communities. "A lot of times Indigenous people are portrayed as people who've existed in the past, not people who are real and present," Paradis said. "A lot of this program focuses on understanding that Indigenous people have always had technology."

Serenity Jacko makes a robot move within a fixed pattern she drew during an INDIGital workshop at the Edmonton Public Library. (Danielle Paradis/Indigenous Friends Association)

You Retweeted



Michelle M. Jacob
@AnahuyMentoring

So proud of all Indigenous graduates @uoregon & such an honor to celebrate w/ your families these past few days! Look at these brilliant Indigenous educators who earned their master's degrees @uoeducation in our Sapsik'w'alá Program-they're ready to transform K-12 education! ❤️ 🍁



Here's how Fargo Public Schools will use their new Indigenous land acknowledgement (David Olson, InForum: June 14, 2022)

FARGO — The Fargo School Board on Tuesday, June 14, approved at least three ways it will use a newly developed statement acknowledging that land used by the district originally belonged to Indigenous people. When the district recently developed a land acknowledgment statement, it joined a number of other institutions in the region that have done the same thing, including the Moorhead City Council , North Dakota State University and North Dakota State College of Science . The school district's land acknowledgment statement reads:

"Fargo Public Schools respectfully acknowledges that we gather on the lands of the Oceti Sakowin, who are the Dakota, Lakota, and Nakoda people, and the Anishinaabe people of this area."



The Fargo School Board, seen here meeting in August 2021.

C.S. Hagen / The Forum

The Fargo-West Fargo Public Schools Indian Education team worked to develop the land acknowledgment statement this spring, and it was drafted in consultation with regional tribal nations and local Native American entities, according to materials provided by the school district.

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 Advisory Board made up of eight First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!

Int'l Inuit org releases protocols for researchers, institutions and policy makers in the Arctic

✎ Ellis Quinn, Eye on the Arctic 🐦 @arctic_eq

📅 Posted: Friday, June 3, 2022 at 15:35

💬 0 Comments



Hunters from the community of Cambridge Bay use binoculars to try to spot mukoxen on Victoria Island in Nunavut. Inuit Circumpolar Council has issued new protocols and directives for those working in Inuit communities including involving Inuit from the very beginning of projects and using Inuit knowledge to inform decisions. (Ellis Quinn/Eye on the Arctic)

The Inuit Circumpolar Council (ICC) launched its protocols for researchers, institutions and policy makers in the Arctic on Friday saying it was an important step towards putting Inuit front and centre in global discussions about issues affecting their homeland.

The EEE Protocols

ICC has released eight guidelines in all:

1. 'Nothing About Us Without Us' – always engage with Inuit
2. Recognize Indigenous Knowledge in its own right
3. Practice good governance
4. Communication with Intent
5. Exercising accountability – building trust
6. Building meaningful partnerships
7. Information, data sharing, ownership and permissions
8. Equitably fund Inuit representation and knowledge

SOCIETY AND CULTURE, RESEARCH

Education professor working with teachers to create new relationships with Indigenous knowledge

Cree educator and researcher Dwayne Donald is one of the U of A's nine newest Canada Research Chairs.

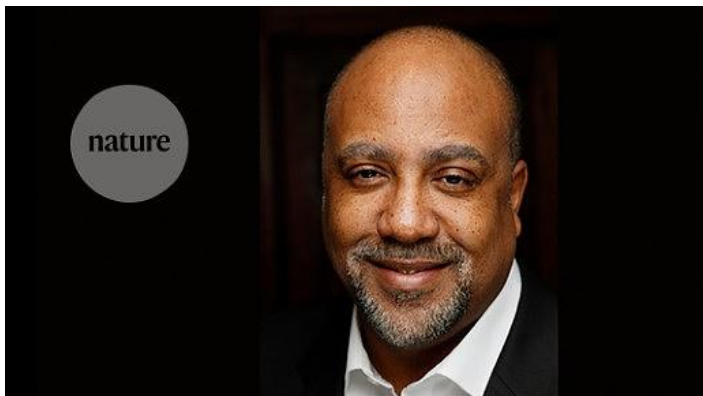
June 02, 2022 By Geoff McMaster



Education professor Dwayne Donald will use his new Canada Research Chair to explore locally rooted Indigenous knowledge in teacher education across Canada.

e) Europe

Science must transcend its racist past: Nature's guest editors speak out (Editor No. 9, *INDONEWYORK*: 13 June 2022)



Science is a human endeavor that is driven by curiosity and a desire to understand and shape the natural and physical world. Science is also a shared experience. It is subject to both the best of humankind's imagination and creativity. European governments have supported slavery of African peoples and the subjugation of Indigenous peoples around the globe for centuries. A scientific enterprise was established during this period that supported racist beliefs and cultures. Science has been influenced by colonization, apartheid, slavery, forced labour, imperialism, and other forms of colonization. Although decolonization was achieved through valiant and difficult freedom struggles, the original racist beliefs still reverberate today and are reflected in the policies and attitudes that govern the participation of individuals in modern, global scientific enterprise.

We believe that racism has contributed to a lack in diversity, equity, inclusion, and marginalization of Indigenous communities and African diasporic peoples in science at a national as well as global scale. Because science and racism have a common history, scientists, institutions of science and influential supporters of science directly or indirectly supported core racist beliefs. These included the belief that race is a determinant human traits and capabilities (such as the ability build civilizations) and that white people are superior because of their racial differences. Even though the most extreme forms of racism are illegal, racism continues to be a problem in science and impacts diverse communities around the world. Nature was one of those institutions that pledged change after the murder of George Floyd and the expansion into science of the Black Lives Matter movement, and it was also among the first to respond. It stated in an Editorial that "the enterprise of science has been --and remains -- complicit with systemic racism and must work harder to rectify those injustices and amplify marginalized voices."

Herbal medicines that actually work

(Fred Schwaller, DW News: 5 May 2022)

Humans have been extracting the healing properties of plants for thousands of years. Although herbal remedies are often discounted as unscientific, more than one-third of modern drugs are derived either directly or indirectly from natural products, such as plants, microorganisms and animals. Now, researchers from the Scripps Research Institute in the US state of California have found that a chemical extracted from the bark of the *Galbulimima belgraveana* tree has psychotropic effects that could help treat depression and anxiety. The tree is found only in remote rainforests of Papua New Guinea and northern Australia and has long been used by indigenous people as a healing remedy against pain and fever. "This goes to show that Western medicine hasn't cornered the market on new therapeutics; there are traditional medicines out there still waiting to be studied," senior author Ryan Shenvi, PhD, a professor of chemistry at Scripps Research, told reporters in mid-May.



Drugs made from hawthorn tree berries could help treat cardiovascular disease

The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.

**Reports from the Turtle Island Indigenous Science
Conference, 14 – 16 June, 2022**



University
of Manitoba

TURTLE ISLAND
INDIGENOUS
SCIENCE
CONFERENCE



14 - 16 June, 2022
Winnipeg, MB

**Conference Program
and Abstracts**



ALFRED P. SLOAN
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Presented by the University of Manitoba Faculty of Science with generous support from
the Alfred P. Sloan Foundation, the Canada Research Chairs Program and The
University of Manitoba, Office of the Vice-President Research and International.

Brief summary of my experiences at the Turtle Island Indigenous Science conference (Dawn Sutherland, University of Manitoba: 28 July 2022)

After sending out a message to all ISN members from the Americas, Dawn got back and offered to write something about this highly significant conference held recently in Winnipeg, Canada. Many thanks Dawn.



Professor Dawn Sutherland is Department Head and Graduate Chair of Curriculum, Teaching and Learning with the Faculty of Education at University of Manitoba.

As a science educator and researcher, I am very interested in creating educational experiences for youth who are often marginalized from science. I enjoy collaborating with inner-city schools and community-based organizations such as the Boys and Girls Club to create meaningful science learning in the inner-city context.

<https://www.dawnsutherland.ca/>

In recent decades, Indigenous scholars have been at the forefront of the movement toward inclusion in scientific and academic spaces, calling on researchers to embrace Indigenous perspectives and to acknowledge the legacy of Indigenous scientific contributions. In June, professors at the University of Manitoba organized the Turtle Island Indigenous Science Conference to explore the legacy of Indigenous contributions to science.

Named after a creation story shared among many Indigenous peoples, the conference hosted a series of sessions to explore science through an Indigenous perspective. The three days of the conference were divided into focused presentations on:

- Indigenous Languages and Scientific Knowledge
- Traditional Medicine and Health
- Indigenous Engagement with the Land and
- Two-Eyed Seeing-Indigenous Ways of Knowing and Mainstream Science.

Two-eyed seeing, or *Etuaptmumk*, encourages scientists, teachers and students to consider questions from two viewpoints: the traditional scientific view and the Indigenous way of knowing. A principle of cross-cultural understanding, *Etuaptmumk* was developed and popularized by Mi'kmaw Elder Albert Marshall. The word *Etuaptmumk* comes from the Mi'kmaw language and translates to "the gift of multiple perspectives."

"Two-eyed seeing is very important, because it enables people to see from both the Indigenous lens and the western lens," said Myrle Ballard, an assistant professor in Chemistry. "It gives someone an improved perspective of both methods of inquiry where similarities and gaps can be better understood, and to understand each other better."

I was able to attend the second day of the conference where the focus was on Two-eyed seeing in Western Science. As a researcher involved in Indigenous Knowing and Science Education in the Canadian public school system for the past 30 years this conference was inspiration for the sheer number of attendees and the genuine interest in decolonizing current scientific discourse. I remember attending presentations by many of the speakers in the 1990's where there would be only a handful of attendees. Sitting in an audience of 300 and listening to and participating in the discussions during the break and lunch was truly heart warming - I felt I was experiencing real change.

For me the presentation that had the most impact was by Dr. Ballard herself on the history of her community and how a three-eyed and three voices framework can be used to look at Anishinaabe mowin/Indigenous places/spaces/and forms.

Three-eyed seeing and Three-voices: an ethical space for understanding biodiversity and natural law(s)

Dr. Myrle Ballard¹

¹University of Manitoba

This talk explores a three-eyed and three-voices framework that is premised on ethical space on respecting biodiversity and natural laws. Examples based on Anishinaabe mowin / Indigenous places/spaces/land forms will be used to explain this framework. Examples will also be presented of what western science cannot decipher and Indigenous aquatics knowledge regarding water and its "character". This talk also will explain how the knowledge of the water is premised on Anishinaabe mowin that is based on "laws" and how it is an important baseline monitor.

Website for the **Turtle Island Indigenous Science Conference** can be accessed [here](#)

A copy of the **Turtle Island Indigenous Science Conference Program** can be downloaded from [here](#).





Dr. Jesse Popp
@JessPopp

...

#WISElab team members (past & present) @akmenzies @ella_bowles_82 @kate_yarchuk @ckempers123 shared posters at the #TurtleIslandIndigenousScience conference alongside so many other amazing scholars @umanitobasci. Loving all these awesome #IndigenousScience projects!



6:00 AM · Jun 16, 2022 · Twitter for iPhone

See this poster (created by Claire Kemp) on the next page of this bulletin.

UM Manitoba Science Retweeted



Extended Education University of Manitoba
@umextended

...

Our #AccessUM Math and Science Specialist Emily McKinnon spoke about applying culturally responsive pedagogy in introductory science courses, as part of the inspiring Turtle Island Indigenous Science Conference presented by @umanitobasci #UMIndigenous



Indigenous Science Network

6:50 AM · Jun 16, 2022 · Zoho Social

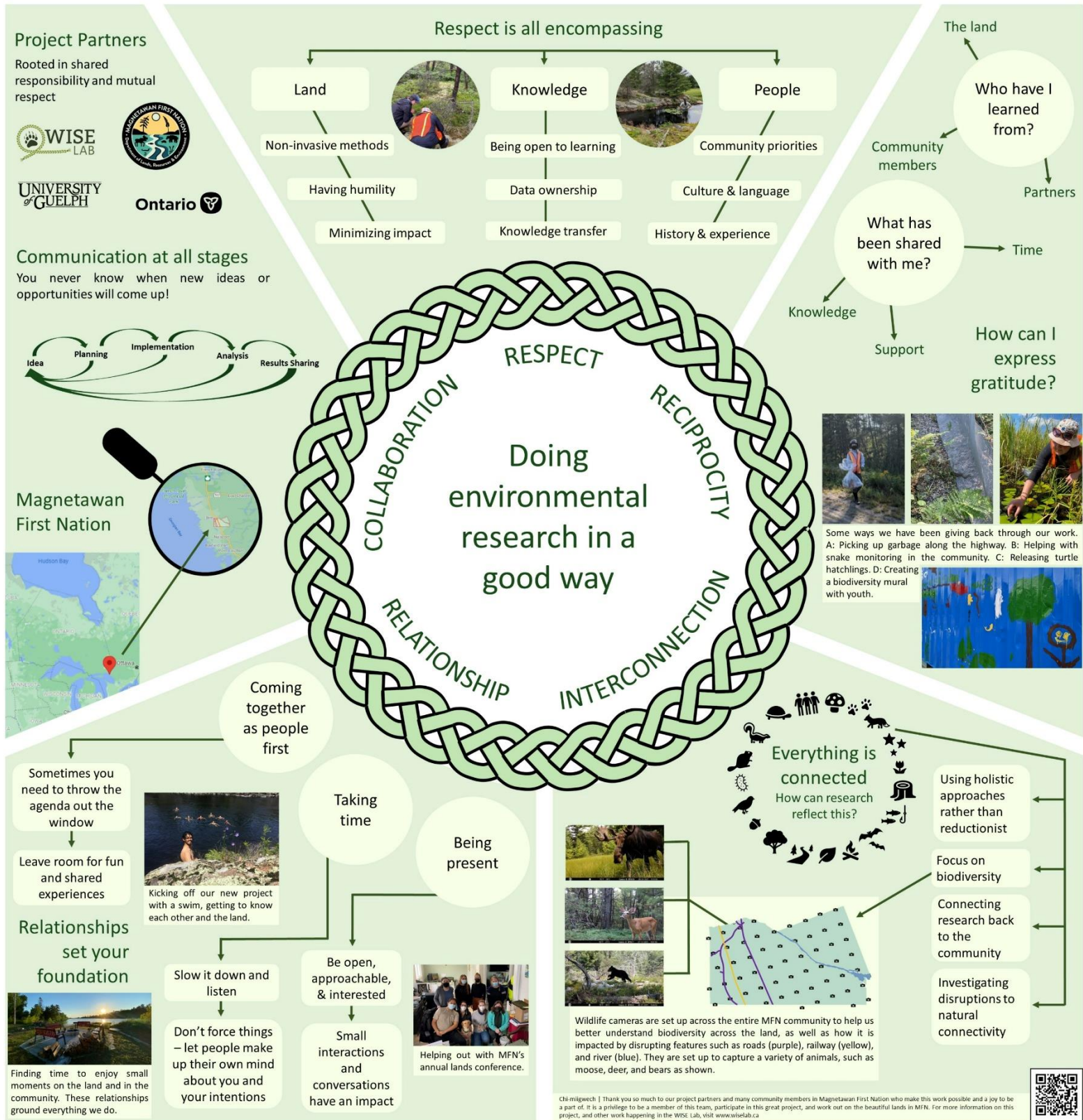
Optimizing Community-based Wildlife Monitoring: Prioritizing Indigenous Knowledge & Values

Claire Kemp^{*1}, Kathryn Yarchuk¹, Joseph Northrup², Nadine Perron³, Allyson Menzies¹, Jesse Popp¹

¹ University of Guelph; ² Ontario Ministry of Northern Development, Mines, Natural Resources and Forestry; ³ Magnetawan First Nation Department of Lands, Resources and Environment

*Contact: Claire Kemp | MSc Candidate, University of Guelph | ckemp01@uoguelph.ca | Twitter: @ckempers123

There is an increasing need for weaving Indigenous and Western knowledge systems, especially within the environmental field. However, it is important to ensure this is done in a good way – respecting the validity and strengths of each way of knowing. In partnership with Magnetawan First Nation (MFN), we are working to create a community-based wildlife monitoring program that prioritizes community values and interests. Here we highlight some of the intentional ways that values have been included throughout the research process, becoming part of our methods rather than an afterthought, as we work to conduct wildlife monitoring and research in a good way.



Indigenous science conference brings more than 300 researchers to Winnipeg

(Sam Thompson, *Global News*: 21 June 2022)

The University of Manitoba hosted researchers from across North America last week as part of the first-ever Turtle Island Indigenous Science Conference — an event highlighting the work of Indigenous academics who say they're ready to show their research to the world. Myrle Ballard, university professor and Environment Canada's Indigenous science director, told 680 CJOB that Indigenous-led research has been very strong at the university for years now, but the conference awarded an opportunity for leaders in their respective fields to network and learn from each other. "We had more than 300 people participating from across Canada and the U.S. — from government and academic institutions across the continent," Ballard said. "It was very enriching and very informative."



University of Manitoba professor Myrle Ballard talks about the importance of Indigenous science in western education, and how it can help to develop a better understanding of the planet and environment. – Jun 21, 2022

Ballard said the knowledge at the conference was culturally focused, and that language-based research, for example, is a way to help people have a deeper understanding of issues that isn't possible through traditional academic methods. "We had sessions regarding the science embedded in language and we had sessions on STEM," she said. "We had Indigenous academics who spoke about their research." Among the presentations was Ballard's own work: a look into the reconciliation efforts with those who were evacuated from Lake St. Martin First Nation over a decade ago, after the province diverted flood waters to the lake to protect agricultural and other properties. "My research is about reconciling land with the Lake St. Martin evacuees — the ones that were evacuated in 2011 — and to bring healing to them through land-based projects."

U of M conference looks at Indigenous perspectives in science

(melissa.martin@freepress.mb.ca: 17 July 2022)

Long ago, the crops must have made their way north, carried along trade routes that linked every forest and plain and coast, spreading from what is now widely known as Mesoamerica to the regions east of the Great Lakes. Maize, beans and squash. To the Haudenosaunee, they became known as the Three Sisters, and those who farmed them thrived. What those farmers knew then is that the three crops work together as if they were one. The corn stalk gives the beans a tall ladder to climb up to the sun; the beans hold nitrogen in the soil, which helps the corn; and the squash surrounds them both with a shady, prickly ground cover that guards moisture and keeps nibbling mammals at bay. Dr. Roger Dube, a physicist and professor emeritus from the Rochester Institute of Technology, has spent his whole life in the mainstream science world. Dube is Mohawk and Abenaki and a professor emeritus at the Rochester Institute of Technology, he earned his PhD from Princeton and studied space weather and artificial intelligence; but he always saw how that world was skeptical, at best, of what Indigenous approaches to learning had to offer.



Dr. Roger Dube holds a leaf of bitter lettuce which has long been used by Indigenous peoples as a pain killer. This plant grows in abundance in North America and is just one example of how Indigenous people have an understanding of the health benefits from the natural environment. (Ruth Bonneville / Winnipeg Free Press)

“They think it’s hocus-pocus,” Dube says, bluntly. “That’s exactly the attitude. They think of this as, ‘Ah, you’ve got your bones and your feathers... go away.’ They just don’t have a lot of respect for it, because it’s not that Western methodology they’ve been taught to respect.” “If you’re in the sciences and you’re Native, you’re going to be challenged,” he says. “The attitude is, ‘We brought you all of this technology, you gave us nothing except land.’ That’s how they view the situation, like nothing was happening (before contact). ‘They didn’t know how to farm, they’re just hanging out and hunting in the woods when they need to. That’s it.’”

The STEM of Turtle Island

Dr. Roger Dube¹

¹Rochester Institute of Technology

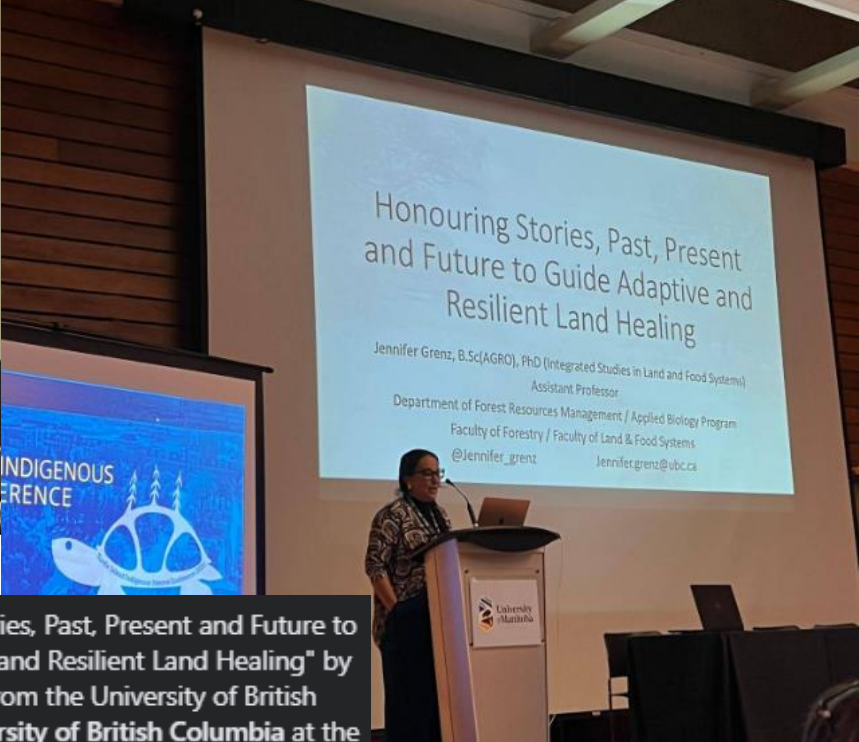
Email: rrdube@gmail.com

Contrary to accepted “western” beliefs, the Indigenous nations across Turtle Island were prodigious inventors and observers of science in nature. Archeological evidence of inventions over time show two important facts. First, the rate of innovation by our ancestors across Turtle Island was increasing exponentially until the arrival of the Europeans. Second, many of the inventions, such as the scalpel, the compass and astronomical precision, often predated the same invention elsewhere in the world by centuries. In this talk, we will review these important findings and focus on how the Indigenous approach to science and mathematics differs from “western” approaches and can lead to insights that produce significant advances in STEM.



"The STEM of Turtle Island", presented by Dr. Roger Dube, Rochester Institute of Technology at the 2022 Turtle Island Indigenous Science Conference at UM (Facebook)

"The Autoethnography and Science of an Ininiw from God's Lake, Manitoba, Canada: First Nation Water Governance Flows from Sacred Indigenous Relationships, Responsibilities and Rights to Ask" by Stewart Hill, Manitoba Keewatinowi Okimakanak.

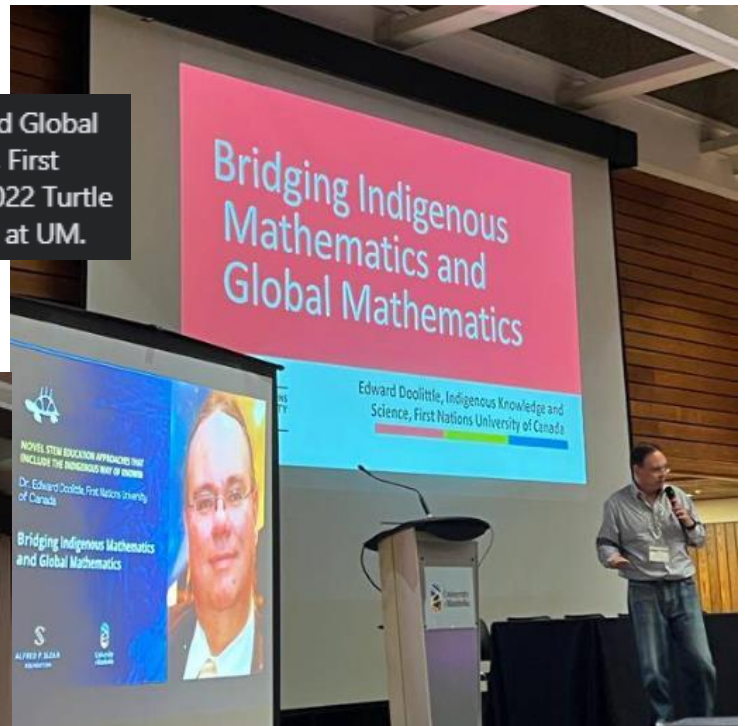


"Honouring Stories, Past, Present and Future to Guide Adaptive and Resilient Land Healing" by Jennifer Grenz from the University of British Columbia University of British Columbia at the 2022 Turtle Island Indigenous Science Conference at UM University of Manitoba



"Unearthing Indigenous soil knowledge for supporting sustainable Prairie agroecosystems" by Dr. Melissa Arcand from the University of Saskatoon at the 2022 Turtle Island Indigenous Science Conference at UM University of Manitoba

"Bridging Indigenous Mathematics and Global Mathematics" by Dr. Edward Doolittle, First Nations University of Canada at the 2022 Turtle Island Indigenous Science Conference at UM.



Keynote talk: Scientific Knowledge Embedded in Indigenous Languages by Dr. Jeannette Armstrong from the University of British Columbia at the Turtle Island Indigenous Science Conference @UManitoba .



Dr. Jesse Popp
@JessPopp



WOW. The [#TurtleIslandIndigenousScience](#) conference presenters were all so empowering & inspirational! Chi-miigwetch to organizers & [@umanitobasci](#) for providing the opportunity/space to learn, build relationships & great memories. A few awesome conference scholars to follow: 1/2



7:42 AM · Jun 17, 2022 · Twitter for iPhone

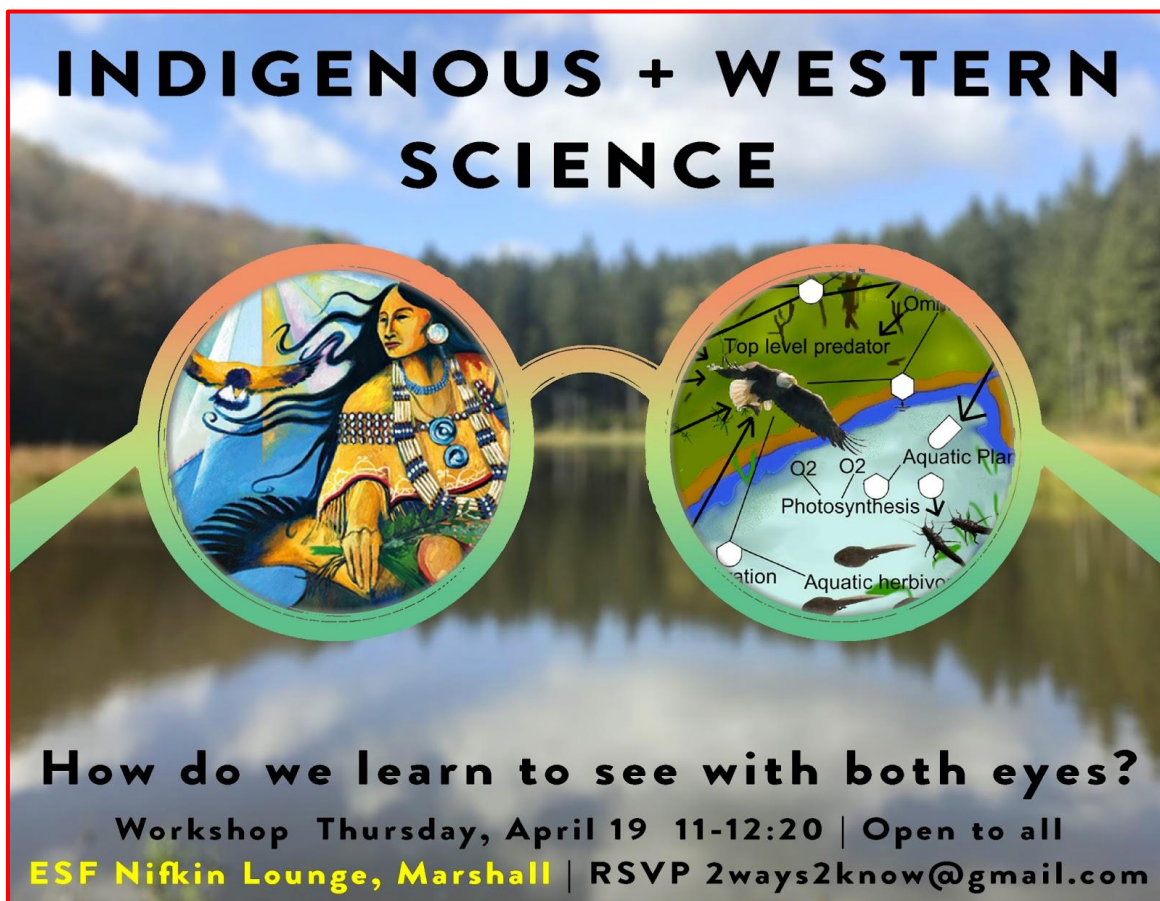


Dr. Jesse Popp
@JessPopp



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[@ckempers123](#) [@kate_yarchuk](#) [@akmenzies](#)
[@MyrleTraverse](#) [@SueChiblow](#) [@DrMakokis](#)
[@mmarcand](#) [@sci_news_now](#) & many more! (please feel free to add to the list) 2/2

7:42 AM · Jun 17, 2022 · Twitter for iPhone



**INDIGENOUS + WESTERN
SCIENCE**

How do we learn to see with both eyes?

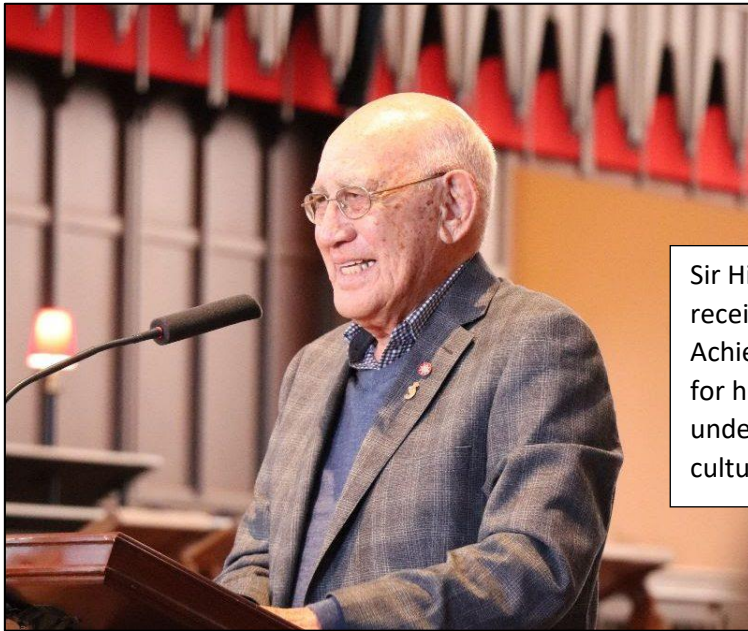
Workshop Thursday, April 19 11-12:20 | Open to all
ESF Nifkin Lounge, Marshall | RSVP 2ways2know@gmail.com

Following on from energetic discussions in New Zealand in 2021 regarding the place of Maori knowledge in their school and university science curricula (see articles in our previous bulletins of Aug '21, Nov '21, Feb '22 and May '22), the debate continues.

Understanding Mātauranga Māori

(Hirini Moko Mead, E-Tangata: 19 June 2022)

The term “mātauranga Māori” is in use seemingly everywhere now — by both Māori and Pākehā. Its use can ignite intense debate about what it is or isn’t — as happened, for instance, when the proposed inclusion of “mātauranga Māori” in the school curriculum prompted a group from Auckland University to assert that mātauranga Māori is “not science”. Although it’s often used to refer to very old concepts and practices in te ao Māori, the term itself is a modern one. When mātauranga first started to be spoken about by those in education about a decade ago, Sir Hirini Moko Mead wrote a critical essay to help teachers and others start to grasp its purpose and meaning. If there’s anyone who is well-placed to offer a view on what mātauranga Māori may or may not encompass, it’s Sir Hirini, who was awarded a knighthood for his extensive writing and teaching on tikanga Māori. “It is still very relevant today,” he tells us about his 2012 essay, which is republished here with his permission.



Sir Hirini Moko Mead, who this week received the Award for Lifetime Achievement at Ngā Tohu Matariki o Te Tau for his contribution to the promotion and understanding of Māori arts, language and culture. *(Photo: Huia Publishers)*

What exactly was it that Māori students entering the classroom possessed that took so long for the education system to recognise? The answer was “mātauranga Māori”, which is Māori knowledge complete with its values and attitudes. Over the last few decades, the term “mātauranga Māori” has become increasingly important as more and more people are engaged in efforts to understand what it means. Put simply, the term refers to Māori knowledge. However, once efforts are made to understand what the term means in a wider context, it soon becomes evident that mātauranga Māori is a lot more complex. The observations made by members of a society about the nature of the universe, of the environment, of the stars in the sky, of the sea and its cycles of change, of the creatures that live in the sea, of what is edible and good for human beings and what is bad and likely to lead to death, of the proper ways to carry out ceremonies, the nature of human behaviour, notions about what is good art, have all been noted and added to the pool of knowledge.

Some of this accumulated knowledge is remembered in proverbs. Some of this knowledge is found in stories that are scoffed at today and relegated to being considered as “old wives’ tales”. Some of this knowledge is incorporated into traditional songs, into place names, into the names given to people, in the names given to various wind directions, and so on. There are many ways to capture knowledge. In early Māori society, the pool of knowledge was closely related to the daily lives of the people. Individual members needed both the knowledge base, and the cautions within the base, to deal with the realities of their world. In their interactions among themselves and with the environment, they added their interpretations and made their contributions to the knowledge base. They were able to amend some earlier ideas and were certainly able to introduce new ideas.

What is Indigenous knowledge?



A map of the Inuit homeland that spans from eastern Russia to Greenland. "Our first protocol comes with the key phrase: 'Nothing about us without us,'" Liubov Taian, president of ICC Chukotka, said. "It has everything: The call, the principle, the foundation, and the rule. I believe that our protocols will help us live in harmony with everyone." (Inuit Circumpolar Council Alaska. 2020. Food Sovereignty and Self-Governance: Inuit Role in Managing Arctic Marine Resources. Anchorage, AK. Page 15.)

"Indigenous Knowledge is a systematic way of thinking applied to phenomena across biological, physical, cultural and spiritual systems. It includes insights based on evidence acquired through direct and long-term experiences and extensive and multigenerational observations, lessons, and skills. It has developed over millennia and is still developing in a living process, including knowledge acquired today and in the future, and it is passed on from generation to generation. Under this definition, it is recognized that Inuit Knowledge is a way of life. It goes beyond observations, ecological knowledge, and research, offering a unique 'way of knowing'."

-Utqiagvik Declaration 2018

Reading the Earth

(Queensland Museum & The University of Queensland: 12 Mar 2022)



Western science... believed man could force nature to reveal its secrets; the Sioux simply petitioned nature for friendship (Sioux scholar and activist, Vine Deloria, Jr.). The greatest impediment to knowing and apprehending truth since the European Enlightenment, is science's delusion of being the only legitimate mode of rigorous and methodical inquiry. Science has become normalised and synonymous with concepts such as truth and

objectivity, yet western scientific method reflects only one knowledge system, which has gained celebrity and prominence not because it is more truthful but because of global power imbalances effected by colonialism. In conversation with prominent Aboriginal, Māori and Pacific scholars, this discussion begins with the starting point that the validity of Indigenous scientific knowledge comes from hundreds and thousands of years of engaging physically and metaphysically with the earth, cosmos and ocean. Indigenous science is unequivocally spiritual, personal, visionary, pragmatic, rigorous and, consequently, has underpinned millennia of Indigenous prosperity and survivance. Reading the Earth is presented with The University of Queensland



FEATURING



VICENTE DIAZ



AILEEN MORETON-ROBINSON



RANGI MATAMUA



BRONWYN FREDERICKS

How scientists are working for greater inclusion of Indigenous knowledge

(Donna Lu, *The Guardian*: 31 July 2022)




Pakana woman Zoe Rimmer says the rise of scientific racism tied to colonialism resulted in the collection and widespread distribution of Aboriginal remains. *Photograph: Jillian Mundy*

Aboriginal academics say the culture of science needs to change so that more First Nations people are the researcher, not the research. When the second part of the latest Intergovernmental Panel on Climate Change report was published earlier this year, it had a notable inclusion. The instalment, which focused on the human and ecological impacts of climate change, featured Indigenous knowledge alongside Western scientific research for the first time. The Australasian chapter, however, did not include any Indigenous lead authors. Instead, three First Nations scholars were invited to contribute to specific sections of the report through the goodwill of the lead authors, rather than through government selection. It was a reminder, the contributors wrote in March, of how “Indigenous Australians have been largely excluded from climate change decision-making”.

One of the IPCC contributors was Bradley Moggridge, a Kamilaroi man and an associate professor in Indigenous water science at the University of Canberra. “We’re always advisory, we’re never decisionmakers,” he says. “We should be having a voice.” It is well recognised that Indigenous communities around the world contribute the least to greenhouse gas emissions but are disproportionately vulnerable to the impacts of climate change. “In the Torres Strait, they have been experiencing climate change for a number of years,” Moggridge says, citing the 2016 extinction of the Bramble Cay melomys. The demise of the rodent, which lived on a small island in the eastern Torres Strait, was the first mammal extinction in the world thought to be caused by anthropogenic climate change.

Global conservation policy has failed to recognise the importance of Indigenous land management, says Michael-Shawn Fletcher, a Wiradjuri scientist and associate professor at the University of Melbourne. “Biodiversity loss and catastrophic fires: they began immediately after the invasion by the British into the Australian continent and the removal of Aboriginal burning,” he says. Science is often thought of as being objective. “It’s not,” says Fletcher. “The questions that you ask, the way you view a topic, which then leads to your hypothesis generation ... is deeply cultural and come from your set of understandings of the world. “The exclusion of different perspectives limits our capacity to truly understand what’s happening.”



Ok_Programmer1052 · 18 hr. ago

We determine if information and anecdotes that people give are true or not via the scientific method

If the First Nations person is putting their own knowledge through scientific rigour to prove their claims then they would be authors of the paper

If they only gave the anecdotes and stories and gave guidance on what to look for - then they are contributors


SIMPLE

Indigenous v western science explored on social media

(Mark Linkson, Coordinator, ISN: 1 Aug 2022)

WARNING: Some robust language

Above is a recent article from the Guardian which explores the role and power of Indigenous knowledge holders in relation to the climate change debate. Also above and following are some responses seen on Reddit to the article (and then a tweet by Jess Hernandez). Cultural and other nuances are never easy to convey especially in the MSM, but can be particularly fraught when dealing with a topic which many commentators see as purely fact based such as science. I present this material for further exploration and understanding of the reasons why many Indigenous commentators shy away from getting involved in explaining / defending the position that Indigenous knowledge is science. Very happy to print the response of any network members to this ongoing debate.









 Equivalent-Ad5144 · 8 hr. ago


I'm a scientist working in northern Australia, and am deeply involved with integrating Indigenous knowledge with western science. There's so much to say on this topic and obviously reddit comment section just isn't always the best place for discussion, but it seems pretty clear to me that so many commenters here have a poor understanding of science and indigenous knowledge, and how they are being brought together. Yes, this article is a bit annoying because like most science journalism it's overly simplified and they just grab the juiciest quotes to try to sum it all up to get a reaction.

No one is talking about science abandoning the scientific method, ffs. Yes, you do get some people who don't understand science and think that any opinion should be put on the same level as science, and you also get some people who think that anyone who isn't a scientist doesn't know anything. Those few people are each ignorant of the other's side and really don't help the situation.

I work in environmental management. So here's the thing - science actuality knows very little about the state of the environment in northern Australia. There's fuck all good baseline data, good monitoring systems, or good long-term data sets. They do exist for some species and in some areas, yes, but it's a tiny fraction of the whole. What most non-scientists don't see is that behind scientific studies is a huge amount of local or informal knowledge that goes into knowing what question to ask, how to go about answering it, what data to collect, how to collect it, and most importantly how to interpret it. Most of that background knowledge is not 'scientific knowledge', but it's nevertheless an incredibly important part of the scientific method. Most people probably also don't know just how much indigenous knowledge has given to Australian science in the past by informing that part of the method (and has usually not been credited, but that's a whole other rant).

Let me give a recent example of how they can work together: scientific data recently showed a strong decline in biomass of a sea grass meadow. Guess what the team of scientists working on it wanted to do to understand it better? Ask the Traditional Owners. "Is this normal? Has it happened before? What do you think caused it? Has the water been different lately? How? What about the currents?" Etc etc etc. They asked them because the Traditional Owners have the best shot at answering these questions. Note that they don't just ask any random indigenous person, that's not what this is about, and they will also ask local community people who may not be Traditional Owners (e.g fishermen).

 7   Reply  Give Award  Share  Report  Save  Follow



 twistedrapier · 16 hr. ago


The hell is this nonsense. If indigenous knowledge is accurate, it will stand up to the scientific method. Otherwise, it's just superstitious garbage better reserved for cultural purposes.


 PossibleBuffalo418 · 19 hr. ago

Science is often thought of as being objective. "It's not,"


Well that's a fucking garbage article if I've ever seen one 🤔





 63   Reply  Give Award  Share  Report  Save  Follow

 You Retweeted


 **Jessica Hernandez, Ph.D.** @doctora_nature · Jul 9

Indigenous knowledge is science
 Indigenous knowledge is science
 Indigenous knowledge is science
 Indigenous knowledge is science
 Indigenous knowledge is science
 Indigenous knowledge is science
 Indigenous knowledge is science
 Indigenous knowledge is science

 You can reply to this conversation






 93  7,898  28K 


Check out the comments in response by clicking on the text above. Plenty of fodder (both informed and ignorant) for the Indigenous v western science debate. Further highlights (lowlights) below:

 **Scott Preston** @fourfoldvision · Jul 9

Replying to @doctora_nature






Indeed. Physicists David Bohm and F. David Peat made note of the affinities between the indigenous worldview and that of quantum mechanics. Peat even wrote a book entitled *Blackfoot Physics*.


 1  19  127  

 **John Smith** @LargeMolecule · Jul 9

Replying to @doctora_nature






Yeah but its not. Science is a specific method of testing theories through methodical examination and analysis of data, which they did/do not use (which is why much of their knowledge was/is incorrect, except cherry picked examples). knowledge about something isnt "science"

 4  43  3,029  

 **Brian J Griffith** @brianjgriffith · Jul 9

Replying to @doctora_nature

Indigenous epistemologies don't need to be justified by the standards of modern science. The impulse to draw an equivalence, here, almost assumes that science is somehow superior to indigenous knowledge. They're different ways of knowing, and that's okay.

 4  304  1,862  

 **Lando** @Lando05503298 · Jul 9

"Indigenous knowledge is data" would probably be a better way of framing the original statement


 1  14  376  

 **Concerned Pixelated Old Fart** @ZanesTheAdult · Jul 9

Replying to @doctora_nature






Science media: "look how revolutionary: using fish skin as gause is more efficient than gause!"
 The brazilian tribes whove been doing it for milenia: "Yeah we told you so like one hundred times"

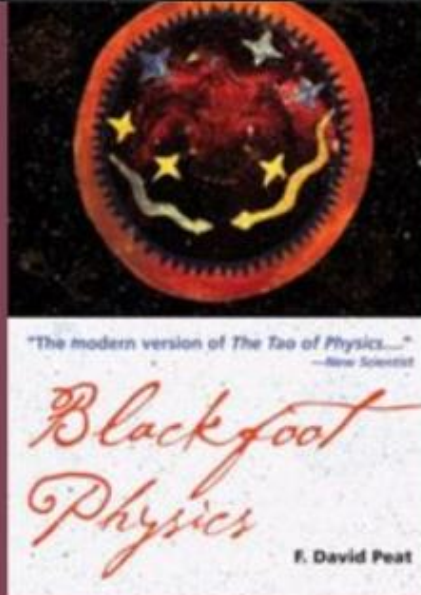
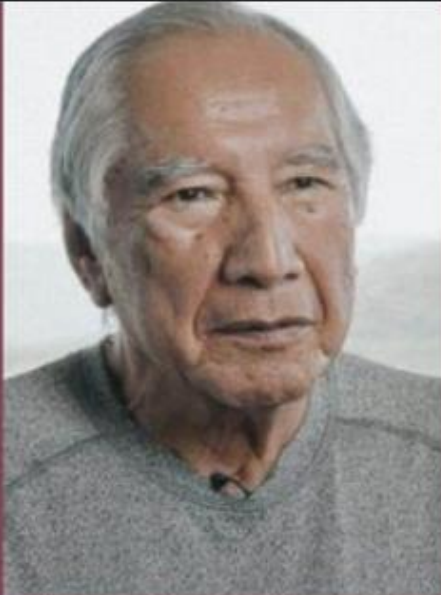
  4  58  

 **Gigi Goodgame** @GigiGoodgame · Jul 9

Replying to @doctora_nature

indigenous knowledge is superior to science. indigenous knowledge is holistically conscientious and time-tested and better serves us by prioritizing safety and sustainability for all over careless, expensive, and hazardous advancements benefiting the privileged and harming all.

  67  71  



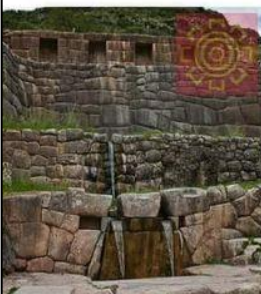
Leroy Little Bear and David Peat

"The flux itself - everything in existence - everything in creation - consists of energy waves. Now in classical physics we talk in terms of matter, particles, subatomic particle... Well in the Native way we talk in terms of energy waves and those waves are very special. Why? because it's those energy waves that know. It is not you. It is those energy waves that know. All of us are simply combinations of energy wave and it is the energy waves that we refer to as Spirit." - Leroy Little Bear

Discoveries in modern physics are showing us that the observer cannot be separated from the observed. The consciousness, perceptions and senses of the scientist are always intimately participating in the outcomes of the observation. Not only that, but the observer is always changed, too, in the act of participatory observation.

Indigenous science has long acknowledged this participatory relationship: "Within the indigenous world the act of coming to know something involved a personal transformation. The knower and the known are indissolubly linked and changes in a fundamental way...it is a dynamic and living process, as aspect of the ever changing, ever-renewing process of nature." - David Peat

BY 750 A.D., MAYANS HAD MASTERED WATER PRESSURE AND HAD RUNNING WATER



THE INCA AND AZTECS WERE SOPHISTICATED HYDRAULIC ENGINEERS WHO BUILT AQUEDUCTS, CANALS, FOUNTAINS, DRAINAGE SYSTEMS, AND EXPANSIVE IRRIGATION

THE AZTECS HAD FLOATING GARDENS, HYDROPONICS, TOILETS, AND SEWAGE



...WHILE EUROPEANS WERE STILL THROWING THEIR SH*T IN THE STREET AND DYING OF CHOLERA BECAUSE THEY HAD NO CLEAN WATER.

NOTE: the tweet below links to a short but fascinating exploration of the ways white explorers and colonists, with the help of the Catholic Church and the Doctrine of Discovery, found no place for acknowledgment of Indigenous people' science. And yes, I presumed Rupert Land was named after Rupert Murdoch but no, watch the video!! And on a related matter, that Doctrine of Discovery has been in the news quite recently as the Pope toured Canada and apologised for the harmful effects of the residential schools. The Doctrine is still yet to be rescinded!

Biology · See more

 **Az Klymiuk, PhD.**
@AzKlymiuk

If you missed my talk at [#Botany2022](#):
drive.google.com/file/d/1KDwajH... ✓. Wish I'd had an hour to really delve into this, so many stories & individuals I wasn't even able to mention for lack of time. Sadly, when people don't learn history, you have to spend time developing context.



3:57 AM · Aug 1, 2022 · Twitter Web App

 **Rebecca Nagle**
@rebeccanagle

For the unfamiliar, the Doctrine of Discovery was a series of papal bulls that said Christian Nations became the rightful owner of any land they found occupied by non-Christian people. Europeans used it to colonize most of the earth. It's never been rescinded.

 **Sarah Leavitt** @sarahleavittcbc · Jul 29
"RESCIND THE DOCTRINE"

As the procession came to an end for the Holy Mass at Sainte Anne de Beauré, individuals held up a banner in front of the pulpit for all to see.

[Show this thread](#)



0:10 270.7K views

3:16 AM · Jul 30, 2022 · Twitter for iPad

RESOURCES - AUSTRALIA

Indigenous seasonal knowledge showcased in 'Many Lands, Many Seasons' television series (CSIRO: 30 June 2022)

CSIRO, Australia's national science agency, and the Australian Broadcasting Corporation (ABC) have partnered with Aboriginal communities to showcase Indigenous seasonal knowledge in a new television series. The series, which airs from Monday 30 May 2022 on ABC ME, provides an opportunity to learn about Indigenous seasonal knowledge by taking a virtual visit on Country and hearing from Elders and school children as they walk the audience through their seasons. The show is based on Indigenous seasonal calendars that have been produced by senior Aboriginal knowledge holders, with support from CSIRO. Each of the four episodes highlight the diverse and unique knowledge held by different Aboriginal language groups across the Top End of Australia. Aboriginal and Torres Strait Islander peoples, Australia's First Scientists, have always held a deep understanding of their seasons. Over tens of thousands of years, their observations of the environment have led to a highly detailed understanding of the interactions between plants, animals, water, weather, fire and even the stars. These inform Aboriginal and Torres Strait Islander peoples of which seasonal foods are ready for harvesting, when different animals are breeding, and what land and sea management actions should take place at any given time.



ABC presenter Rulla Kelly-Mansell talks with Milikapiti School children during filming on the Tiwi Islands, NT.



AssocProf Bradley Moggridge
@bradmoggo



I made the 7 and 1st up [@ausgeographic](#) for NAIDOC, I get up everyday to make a difference, this is me Standing up.

NAIDOC Week 2022: 7 podcasts for 7 days - Australian Geographic

australiangeographic.com.au/news/2022/07/n... ✓

[@UC_CAWS](#) [@UniCanberra](#)



australiangeographic.com.au

NAIDOC Week 2022: 7 podcasts for 7 days

Enjoy these seven Talking Australia podcasts during NAIDOC Week.

2:20 PM · Jul 6, 2022 · Twitter Web App

2021 State of the Environment Report released (Minister for the Environment and Water, Australian Government: 19 July 2022)

The State of the Environment Report 2021 was released on 19 July 2022 by the newly appointed ALP Federal Minister for the Environment and Water, Tanya Plibersek at her State of the Environment address at the National Press Club in Canberra, ACT. The report had been presented to the previous LNP Federal government last year, but they decided not to release it for reasons undisclosed.



Overview

Written by Dr Ian Cresswell, Dr Terri Janke and Professor Emma Johnston AO FTSE FRSN

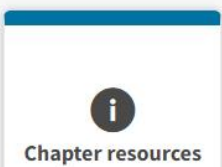
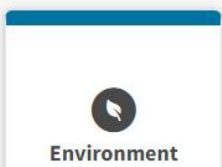
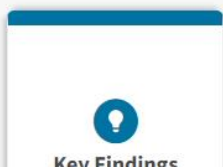
Dhawurayina, ngurayina, gawarwarri ngaladji.
Our Country, our Homeland, is always in our hearts.

Ngurawari, gawar dhawurangu wanggiraldjiny, winanganguru nimidjanguru.
In our Homeland our hearts heed the Country, with strength and with health.

Ngunnawal Nation

The health and wellbeing of Country and people are connected. The world's oldest continuing cultures, Australian Aboriginal and Torres Strait Islander cultures, have held this truth for tens of thousands of years. In this report, Indigenous and non-Indigenous people have worked together to create the first holistic assessment of the current state of Australia's environment.

About Artwork



3. Indigenous knowledge and management are helping deliver on-ground change

This includes traditional fire management, which is being recognised as vital knowledge by land management organisations and government departments.

For example, Indigenous rangers manage 44% of the national protected area estate, and more than 2,000 rangers are funded under the federal government's [Indigenous rangers program](#).

Work must still be done to empower Indigenous communities and enable Indigenous knowledge systems to improve environmental and social outcomes.

You Retweeted



ACU Library
@LibraryACU

...

Are you researching [#Indigenous](#) perspectives in [#science](#)? The [#openaccess](#) Indigenous Science Network Bulletin (ISN)

research.acer.edu.au/isn/vol23/iss2... ✓

[@IndigenousSci1](#) includes articles, resources, opinion, academic papers & conferences re: [#Indigenousscience](#) [#teaching](#) and [#education](#).



4:18 PM · Jun 30, 2022 · Hootsuite Inc.

The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.

AITSL releases final report into building cultural competency among teachers

(Sian Petricevich, Policy and Project Officer, AITSL: 26 July 2022)

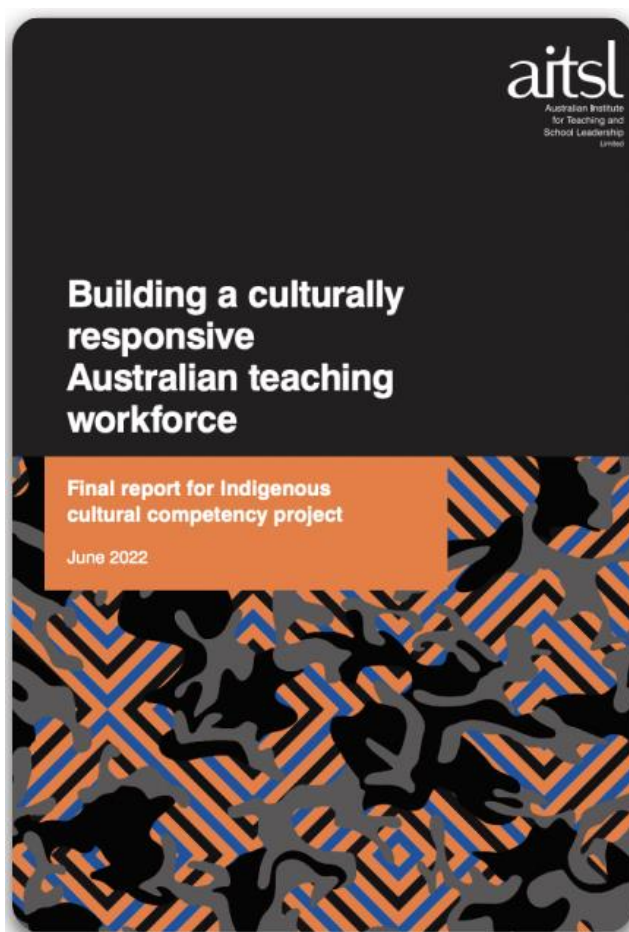
[AITSL](#) is the Australian Institute for Teaching and School Leadership. One of our ISN First Nations Advisory Board members, Carly Jia, was instrumental in the planning, researching, liaising and writing of this very significant report while with AITSL. Congratulations Carly!



Carly Jia
Principal Policy Analyst, Indigenous Education
Australian Education Research Organisation, Sydney, AUSTRALIA

We are pleased to share with you AITSL's report, *Building a culturally responsive Australian teaching workforce* which has been released today on our website. The report contains findings and recommendations from extensive research and consultation over the past three years for the Indigenous Cultural Competency project. We would like to gratefully acknowledge the input of the wide range of Aboriginal and Torres Strait Islander education experts, students, families, and communities to the development of this report and the body of important work it represents. The report builds towards a vision for a better education system that is more culturally inclusive and responsive – not only for the benefit of Aboriginal and Torres Strait Islander learners, but all learners, and for the wider community.

In response to the recommendations, AITSL will release resources in the coming months to help teachers understand their level of cultural responsiveness and to improve or enhance their practice. The resources will begin to address themes indicating a strong desire from the profession to be better equipped to provide culturally safe learning environments for Aboriginal and Torres Strait Islander young people and to teach about their histories and cultures. We look forward to working with you in the future to support the progress of these recommendations and implementation of the resources.



Foreword



Indigenous cultural competency in the Australian teaching workforce

June 2022

Over the last three years, the Australian Institute for Teaching and School Leadership (AITSL) has had the privilege of facilitating work to explore Indigenous cultural competency in the Australian teaching workforce. This report brings together findings from the extensive research and consultation effort that has taken place as part of this project.

AITSL has consulted widely with the profession, Aboriginal and Torres Strait Islander education experts, students, families, and communities. I thank every person who so generously offered their time, knowledge and experiences; whether by responding to the discussion paper, participating in an online forum or joining us on Ngunnawal Country at the National Dialogue last year.

I wish to particularly acknowledge Ms Carly Jia for her contribution to this work. Carly is a Badulaig, Meriam and Yidinji woman and the Senior Adviser for Aboriginal and Torres Strait Islander Education at AITSL. She has led this project with distinction, supported by members of the AITSL Advisory Group for Aboriginal and Torres Strait Islander Education. I am confident that in time we will find this work has made a lasting impression not just at AITSL, but on the profession as a whole.

It is clear that teachers must do more than simply know and deliver Aboriginal and Torres Strait Islander cultural content. Teachers must immerse themselves in Indigenous knowledges and experiences, supported by institutional action at the school, system and sector level.

Teachers play a formative role in the lives of all Australian children – and so it is incumbent on each of us to advance the important work of reconciliation. We must be prepared to have uncomfortable conversations, to reflect on our unconscious biases, to acknowledge the great wrongs that occurred in our past, and to challenge ourselves to work towards a better future.

In the coming months, AITSL will release online resources that support teachers to identify their existing level of cultural capability and guide them into the areas where they should focus efforts to further develop their knowledge and skills.

I encourage all teachers to take up this opportunity and commit themselves to advancing along the cultural continuum – not only for the benefit of Aboriginal and Torres Strait Islander learners, but for all learners, and in turn for the benefit of our nation.

Emeritus Laureate Professor John Hattie
Chair, AITSL Board of Directors

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ATSI Maths Alliance
@atsimaAU

...

ATSIMA Online Learning Series Coming Soon!
All sessions free for ATSIIMA paid members
JOIN UP HERE - atsima.com/membership/ ✓
#education #maths #culture
#aboriginalandtorresstraitislander #firstnationspeople
#mathematics #STEM

ABORIGINAL & TORRES STRAIT ISLANDER MATHEMATICS ALLIANCE

ONLINE
LEARNING
SERIES



TEACHING CULTURE = DEEP LEARNING

This online learning series will begin with the importance of the new 90+ content elaborations in the latest Australian Curriculum: Mathematics in Aboriginal and Torres Strait Islander histories and cultures.

The program of 6 sessions will include:

- a
- a
- v



ATSIMA.CO

8:49 PM · Jul 4, 2022 · Twitter Web App






ATSI Maths Alliance
@atsimaAU

...

Wow! This is a fantastic ATSIIMA resource where Prof. Chris Matthews explains 'What is Culture?'
atsima.com/resources/#vid... ✓
#education #maths #culture
#aboriginalandtorresstraitislander #firstnationspeople
#mathematics #STEM


Aboriginal and Torres Strait Islander Mathematics Alliance

ATSIMA RESOURCE

WHAT IS CULTURE?

As Prof. Chris Matthews explains, when you teach from different cultural perspectives, it allows you to 'open up the classroom' and encourage students to consider how their own cultural lenses affect how they approach mathematics. He also demonstrates the knock-on effects cultural influences can have on maths education. This video resource is exclusive to ATSIIMA members. To see a preview of this resource or join up as a member, go to: www.atsima.com.



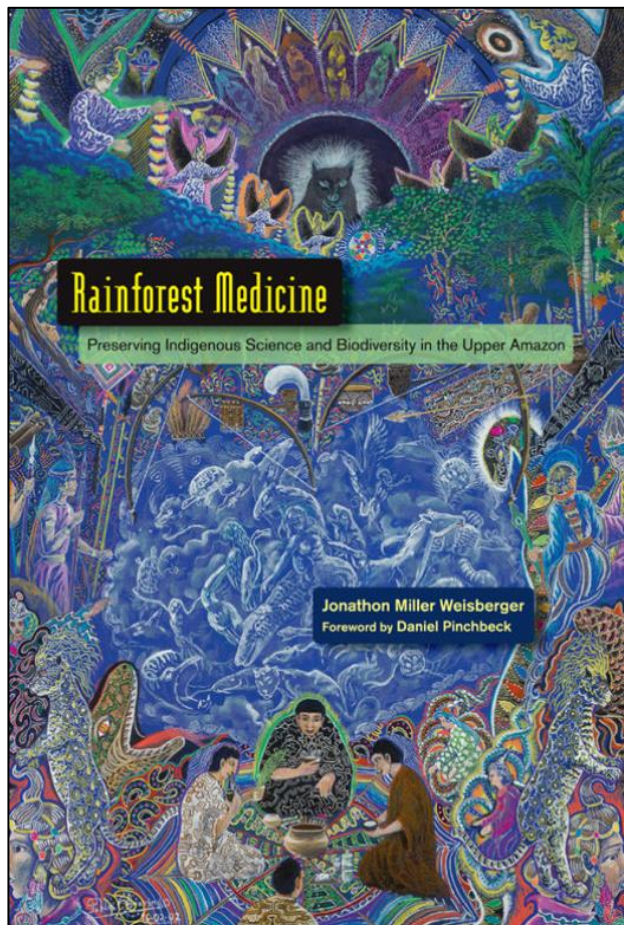
Chris Matthews

1:39 PM · May 23, 2022 · Twitter Web App

RESOURCES – THE WORLD


Rainforest Medicine: Preserving Indigenous Science and Biodiversity in the Upper Amazon (Jonathon Miller Weisberger, North Atlantic, 2013)

Please excuse the age of this resource, but its content fully fits within our network aims.



"Chronicling the practices, legends, and wisdom of the vanishing traditions of the upper Amazon, this book reveals the area's indigenous peoples' approach to living in harmony with the natural world. Rainforest Medicine features in-depth essays on plant-based medicine and indigenous science from four distinct Amazonian societies- deep forest and urban, lowland rainforest and mountain.

The book is illustrated with unique botanical and cultural drawings by Patricia Escobar and San Francisco Botanical Garden curator Thomas Y. Wang as well as by the author himself. Two color sections showcase photos of the plants and people of the region, and include plates of previously unpublished full-color paintings by Pablo Cesar Amaringo (1938-2009), an acclaimed Peruvian artist renowned for his intricate, colourful depictions of his visions from drinking the entheogenic plant brew, ayahuasca ("vine of the soul" in Quechua languages).



Arjun Raj
@arjunrajlab

Over the years, the lab and I have come up with various materials for science process (writing, presenting, reviewing, etc.). Here they are, loosely organized in a Google Doc. Hope it is useful!

docs.google.com
Tools for science
Tools for science Over the years, my team and I have assembled/created a set of materials for improving science ...

2:47 AM · Jul 2, 2022 · Twitter Web App

You Retweeted

NMJ Will Breathe!
@profnicolej

Pre-orders are now available at the [@Harvard_Ed_Pub](#) website hepg.org/hep-home/books... 🟢! This book is a labor of love/dedicated to every Black girl who ever felt like she did not belong in math. I hope this book brings healing from any psychological violence you faced in mathematics.

Making Black Girls **Count in Math Education**

A Black Feminist Vision for Transformative Teaching

NICOLE M. JOSEPH
Foreword by Erica N. Walker

L. J. Merciless NDN Savage @ecohugger · Jul 9

I know there are tons of scientists out there who write about Indigenous Peoples but so many of you (and the journals you publish in) don't use proper Indigenous writing standards. Please consult this book before writing about us: Elements of Indigenous Style

L. J. Merciless NDN Savage @ecohugger · Jul 9

Replying to @doctora_nature

This is the reference I use for why Indigenous Peoples is always capitalized

Google Books

Elements of Indigenous Style

ELEMENTS OF Indigenous STYLE

A Guide for Writing By and About Indigenous Peoples

GREGORY YOUNGING

9 30

My Journey as an Indigenous Biochemist

(Dr. Dustin King | SFU's Indigenous Science Speakers Series: 19 July 2022)



Dr. Dustin King will be starting as an Assistant Professor in the Department of Biochemistry and Molecular Biology at SFU (July 2022). Dr. King is half Ojibwe Anishinaabe and is a proud member of the Thessalon First Nation near Sault Ste. Marie Ontario. In Canada, decolonizing and indigenizing our academic institutions is central to making our society more inclusive and to striving toward reconciliation. This endeavour is particularly challenging in STEM disciplines, where there is a lack of

indigenous representation and where knowledge is often compartmentalized into highly specialized areas in western science. Here, Dr. King shares his journey as a scientist and uses examples from his research to weave together western science and an indigenous worldview. In doing so, he discusses his biochemistry research into how organisms sense carbon dioxide gas to drive adaptive responses. His hope is that through this approach, he can illustrate how these two ways of thinking can complement one another to enrich our understanding.



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Xwi7xwa Library

Xwi7xwa Library is a centre for academic and community Indigenous scholarship. Its collections and services reflect Aboriginal approaches to teaching, learning, and research. Everyone is welcome to visit Xwi7xwa Library.

Search our catalogue Search

Today's Hours

Today's Hours	Reference Hours
11am - 3pm	11am - 3pm

Note:

Due to construction related to the expansion of the First Nations House of Learning (FNHL) Longhouse, Xwi7xwa Library will be closed to the public until Fall 2022. The collections can be accessed by ordering through the online

Decolonization & Anti-Racism Research Guide

https://guides.library.ubc.ca/antiracism/decolonization_anti-racism



“The Traditional Diet Seems More Like A Better Diet.”


(*Mind and Body: accessed 22 July 2022*)

MINNEAPOLIS — Bison pastrami is not typical school lunch fare, but it’s a crowd favorite at a preschool in Minneapolis. Fawn Young bear-Tibbetts — the seemingly always on-the-go coordinator of Indigenous foods at the Wicoie Nandagikendan Early Childhood Urban Immersion Project — is frequently found tweaking recipes in the kitchen or offering homemade goodies like flourless black-bean brownies. Young bear-Tibbetts, a longtime Minneapolis resident and member of the White Earth Band of the Minnesota Chippewa Tribe, has made it her mission to bring traditional recipes to the 178 children attending Wicoie, who are taught several hours each day in the Dakota and Ojibwe languages. She said the dishes not only help Native American students and their families connect with their culture, but also bolster their nutrition. “Part of it is getting their palates [used to] eating traditional foods so that they want it,” she said. “Our kids are so used to eating all of this processed food — the snacks, the sugar.” She hopes students develop a taste for healthier food they will carry through their lives. Across the breakfasts, lunches, and snacks Wicoie Nandagikendan serves, Young bear-Tibbetts incorporates sweet potatoes, fresh fruits, leafy greens, fish, and meat from large game animals like bison, which is extremely low in fat, she said. Recently, she distributed a donation of 300 pounds of bison to students’ families.

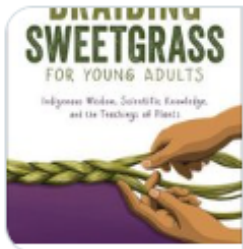


Bison meat is extremely low in fat.
torstenvelden/Room/Getty Images

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 **Jo Chrona**
@luudisk

Braiding Sweetgrass for Young Adults: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants (Pre-Order for Nov 1/22)

 goodminds.com
Braiding Sweetgrass for Young Adults: Indigenous Wisdom, ...
Braiding Sweetgrass for Young Adults is the adaption of Robin Wall Kimmerer's best-selling book Braiding ...

1:32 PM · Jul 7, 2022 · Twitter Web App

The 2nd Annual Indigenous Knowledge Symposium (Utah State University: 25 Mar 2022)

This symposium took place on March 25, 2022. Our theme was Making Connections Between Indigenous Cultural Teachings and the Scientific World. We had three fantastic presenters in the fields of archaeology, mathematics, and environmental science. The goal of the event is to bring together campus faculty, staff, and students to learn more about the importance of Indigenous knowledge across academic disciplines and our speakers did a wonderful job of meeting that goal. **Click on the image below to view the recording.**

Once again, the event was held virtually and we had over 150 participants join us from across the United States and Canada. Another 200 individuals registered for the event and received a link to the recording. We have received great feedback on the event and look forward to the 2023 symposium.



INDIGENOUS KNOWLEDGE SYMPOSIUM

MAKING CONNECTIONS BETWEEN INDIGENOUS CULTURAL TEACHINGS AND THE SCIENTIFIC WORLD

Everyone is welcome!
Join us March 25th from 1:00 - 3:30 PM MST via Zoom
Register here - bit.ly/3tjlzOA



Dr. Kisha Supernant, PhD
*Associate Professor of Anthropology
University of Alberta*

Dr. Kisha Supernant (Métis) is Director of the Institute of Prairie and Indigenous Archaeology and an Associate Professor of Anthropology at the University of Alberta. Her research focuses on Indigenous archaeology, archaeological remote sensing,



Dr. Henry Fowler, PhD
*Associate Professor of Mathematics
Navajo Technical University*

Henry H. Fowler is from Tonalea, Arizona. He is a member of the Navajo tribe and is an associate professor of mathematics at Navajo Technical University in Crownpoint, New Mexico. Mr. Fowler is born for Bitter Water and born into the Zuni



Dr. Tommy Rock, PhD
*Postdoctoral Research Associate
Princeton University*

Tommy Rock is a member of the Navajo Nation from Monument Valley, Utah. Dr. Rock received his Ph.D. in Earth Science and Environmental Sustainability and hopes to integrate issues of health, environment, and culture—especially related to

Engaging Indigenous Knowledge in Archaeology

Dr. Kisha Supernant (Métis)
Director, Institute of Prairie and Indigenous Archaeology
University of Alberta

Today, I want to talk to you a little bit about how I engage indigenous knowledge and cultural teachings into my archaeological practice, and how I bring it into some of the scientific methods that I use as I study the

Kisha Supernant

UNIVERSITY OF ALBERTA INSTITUTE OF PRAIRIE AND INDIGENOUS

00:08:39 / 02:42:09

Indigenous Science Network
@IndigenousScie1

A beautiful exploration of Navajo math by Dr Henry Fowler, A/Professor of Math at Navajo Technical University. Go to 1:01:00 to view, one of three at an Indigenous Knowledge Symposium held 25 Mar '22 by the University of Utah.

bit.ly/3beC6iT ✓

@atsimaAU @NavajoMath

Navajo Math Circles

- Over 80 mathematicians across the states
- Train teachers to run math circles
- Annual Math Festival
- Summer math camp
- Integrate Navajo culture to teach mathematics

And I really support this initiative, for our students, too, find opportunities and strength within themselves, and find their passion so that they can choose a career in stem.

01:04:22 / 02:42:09

University of Utah and 2 others

9:20 AM · Jul 30, 2022 · Twitter Web App

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01:04:22 / 02:42:09

Danielle Rivera, PhD @danielle_zoe

Looking at existing Environmental and Climate Justice syllabi that barely feature scholars, activists, and communities of color. So I've given myself the (VERY easy) task of writing a syllabus that features almost exclusively writers of color. Feel free to share readings here!

8:26 AM · Jul 12, 2022 · Twitter Web App

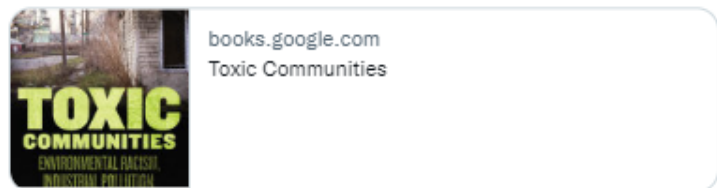
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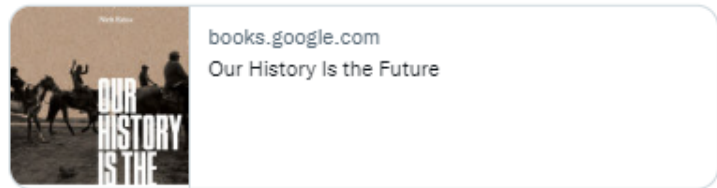
Danielle Rivera, PhD @danielle_zoe · Jul 12 Replying to @danielle_zoe

Here's what's on my radar thus far, though I do have more! "Toxic Communities" by Dorceta Taylor 1/x



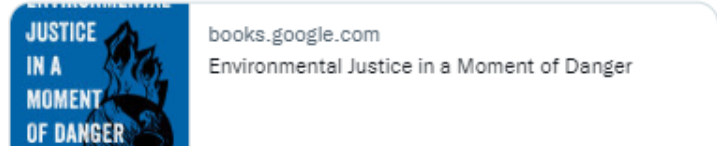
2 11 158

Danielle Rivera, PhD @danielle_zoe · Jul 12 "Our History is the Future" by Nick Estes 2/x



3 9 144

Danielle Rivera, PhD @danielle_zoe · Jul 12 "Environmental Justice in a Moment of Danger" by Julie See 3/x

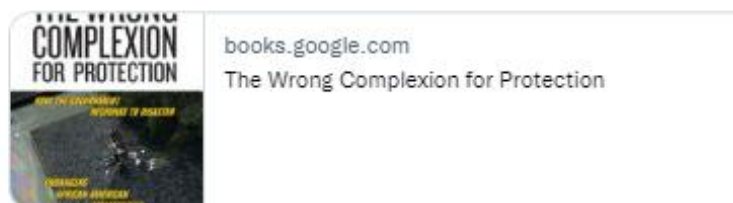


Danielle Rivera, PhD @danielle_zoe · Jul 12 "Pollution is Colonialism" by Max Liboiron 4/x



1 10 167

Danielle Rivera, PhD @danielle_zoe · Jul 12 "The Wrong Complexion for Protection" by Beverly Wright and Robert Bullard 5/x



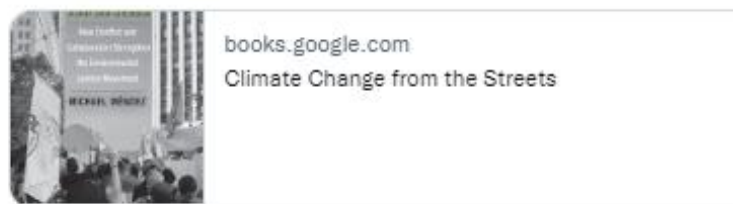
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Danielle Rivera, PhD @danielle_zoe · Jul 12 "As Long as the Grass Grows" by Dina Gilio-Whitaker 6/x



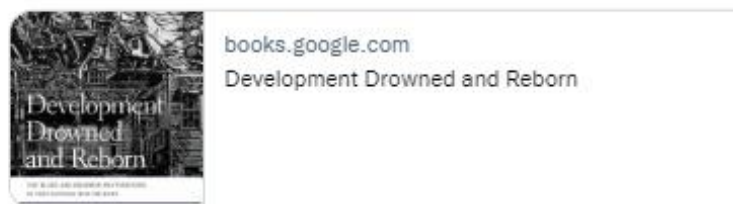
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Danielle Rivera, PhD @danielle_zoe · Jul 12 "Climate Justice from the Streets" by Mike Mendez 7/x



1 6 104

Danielle Rivera, PhD @danielle_zoe · Jul 12 "Development Drowned and Reborn" by Clyde Woods 8/x



Humanity's Last Chance Saloon: Indigenous traditional knowledge & custodianship (*Minority Rights Group International: 27 May 2022*)

The destruction of circular economies in pursuit of wealth and their replacement by extractive models of systemic exploitation have brought humanity to the brink of survival. Enlightened policy design and implementation are vital for an urgent reversal. However, international decision-making processes' ingrained bias towards institutional rather than planetary preservation and their continued privileging of large-scale commercial interests are major obstacles. Changing behaviour requires bespoke plans for locations driving the crisis, embedding new standards, and framing deterrence crimes around inter-generational wealth transfer, reparation for unjust enrichment and ecocide. To safeguard the future, the task requires sincere reach-out to nature's most effective custodians: listening, learning, synthesizing and scaling-up time-honed environmental solutions from well beyond the limited but still dominant realm of western models of development.

Watch the event



In the spirit of this, after a brief introduction to climate mitigation and adaptation issues as viewed by indigenous communities, this event will focus on the central role of indigenous traditional knowledge in safeguarding the environment. Drawing on the experiences of four indigenous spokespeople from around the globe, alternative models for sustainable environmental custodianship will be suggested with a clear call to action rooted in indigenous peoples' rights and backed by climate science.

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Dominic HK Beaudry
@DhkBeau



In Ojibwe our word for coat is biiskowaagan (pronounced bee-sko-waa-gun). This Ojibwe coat from 1789 predates Canada becoming a country.



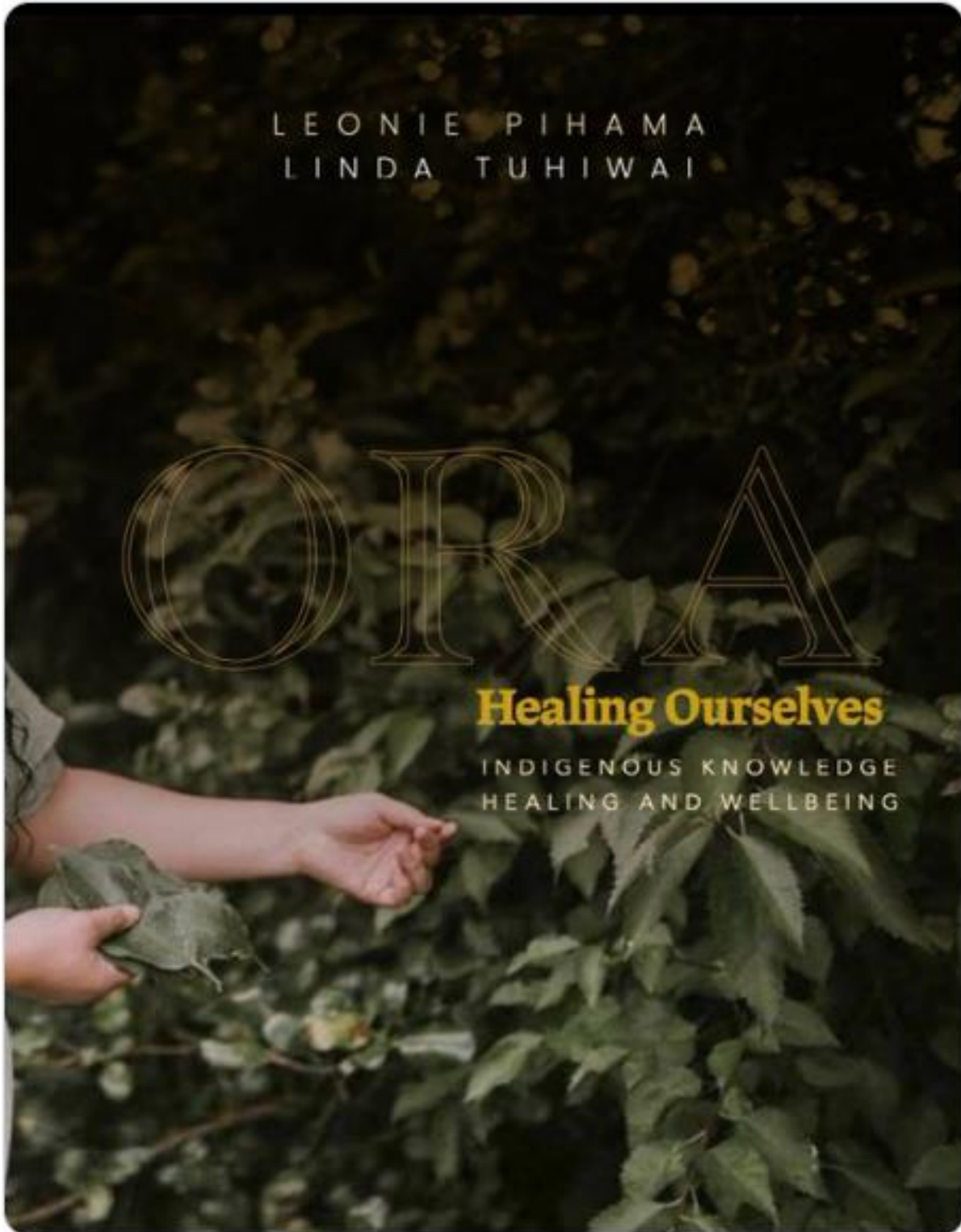
12:13 AM · Jul 7, 2022 · Twitter for iPhone



Leonie Pihama
@kaupapamaori



Co-edited Book with Linda Tuhiwai Smith coming soon with [@HuiaPublishers](#) including some wonderful Māori and Indigenous Authors



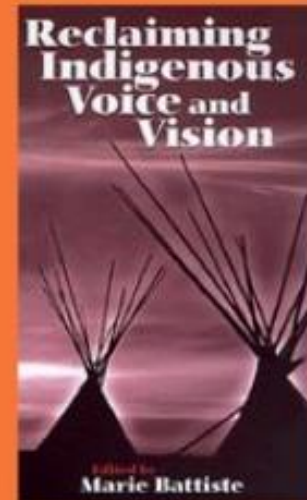
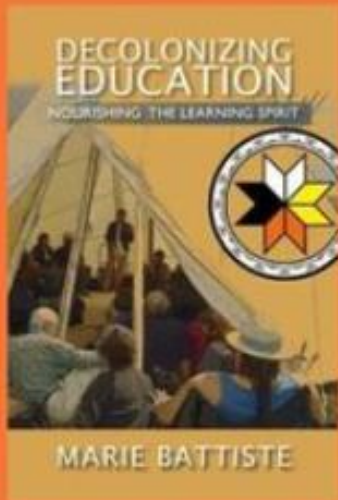
7:33 PM · Jun 11, 2022 · Twitter for iPhone



Laura Batson ▸ Indigenous Knowledges in Science Education

June 30 at 6:52 AM · 🌐

I've been posting some slides on significant scholars in Indigenous science education in my journey to decolonize my scientific practice (from Canada, Turtle Is... [See more](#))



"The decolonization of Eurocentric science can only be achieved when all voices are allowed to emerge, when we do not give up on all that others have come to know, or all the forms and techniques of thinking that have been developed, and we find ways to make use of whatever can help us to think not only within but also about the dominant tradition. To reject other knowledge systems is to subject students to selective silences and collective ignorance. The exclusivity of Eurocentric science must be transformed, not just corrected or supplemented. It requires that we understand how these traditions of hegemonic knowledge in science and the humanities gained power and prestige, how the terms and systems came to express and shape the curricula, and recognize that equality need not mean sameness." p.120-121 Decolonizing Education

Laura Batson

June 24 · 🌐

Professor Marie Battiste is a Mi'kmaw educator from the Potlotek First Nation, Nova Scotia and full professor at the Department of Educational Foundations at the University of Saskatchewan. She was the first Indigenous scholar whose work I dove into and was transformed by. She articulates so brilliantly, beautifully and painfully, the structures of oppression and colonialism that "run unchecked through our knowledge generating systems". I see her holding ground so firmly and at the front lines of these institutions of academia, inspiring me and so many more to step up and reclaim our knowledge. 🔥



Decolonizing Teaching Indigenizing Learning

[Welcome](#)[FAQ](#)[Curriculum Bundles](#) ▼[Curated Resources](#) ▼[Orange Shirt Project](#) ▼[Decolonizing Together Symposium](#) ▼[Home / Curriculum Bundles](#)

Curriculum Bundles

These Curriculum Bundles have been assembled by Indigenous educators from around British Columbia, most of whom are students and graduates of the NITEP program. Each of them focuses on a particular skill, resource, or place, and includes:

- important background information for educators
- suggestions for working in respectful ways and with humility
- information on how to acknowledge sources
- how to invite community members in to help with student learning

You will also find clear connections to the **First People's Principles of Learning**, as well as **curricular connections** that take into account as many subject areas and grade levels as possible. Explore the subjects that interest you to develop learning experiences that are meaningful to you and your students.

Before you begin, please take some time to hear from **Elder Gerry Oleman** of the St'at'imc Nation from Tsal'alh (Shalalth B.C.) as he discusses why he remains involved with education, and what Indigenous wellbeing means to him.



Here you will find a variety of links to support your work with the Curriculum Bundles.

- [Foundational Resources](#) covers the basics, including terminology, legislation, and governance
- [Decolonizing and Antiracist Resources](#) offers resources for holding conversations about Indigeneity and race
- [Curriculum Resources](#) covers a variety of provincial and regional content to support you and your students' learning
- [News Resources](#) offers a few key sites to visit frequently and keep up to date on emerging Indigenous stories
- [Residential School Resources](#) offers several key sites that support learning about Indian Residential Schools and the process of Reconciliation
- [Arts Based Resources](#) offers a rich variety of Indigenous cinema from all over Turtle Island
- [Museum Resources](#) offers a variety of virtual field trip opportunities and more ways to learn about Indigenous arts and culture
- [Ressources Français](#) offers links for both French immersion and FSL classrooms



the stories & science of
real world scientists.

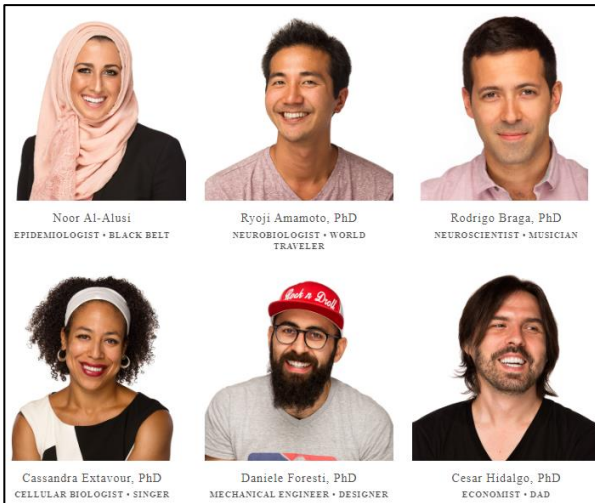
AN INITIATIVE FOR INCLUSIVE STEM EDUCATION.

#IAMASCIENTIST

Science reflects the biases of
society.

To counteract the stereotypes and ensure a more equitable future for STEM, we need more classrooms and resources that celebrate the incredible range of personalities, interests, backgrounds, and pursuits that drive discovery and progress.

Because **every student** deserves a chance to see themselves in science.



EXPERT SPOTLIGHT

CHANGING THE CULTURE OF STEM EDUCATION

JOIN US FOR A CONVERSATION WITH
INTERNATIONALLY ACCLAIMED SCIENTIST,
SCHOLAR & SCIENCE COMMUNICATOR:
RAVEN BAXTER (AKA RAVEN THE SCIENCE MAVEN)

Explore ways of making STEM more accessible to your students!

MONDAY, OCTOBER 26

3:00PM to 3:45PM PST / 6:00 to 6:45PM EST

Facebook.com/groups/rise.in.STEM

IAmAScientist.info/LIVE



Promoting indigenous science in the realm of modern science in developing countries (*John Fungulupembe Kalolo, Thinking Skills and Creativity, Volume 45, 2022*)

<https://doi.org/10.1016/j.tsc.2022.101058>

ABSTRACT

Indigenous science (IS) is becoming a topical area of interest for most Afro-centric researchers. The areas of concern include the undervalued status of IS and its contribution to the development of modern science (MS) in developing countries and specifically on how the two knowledge paradigms relate to and define one another in practice and whether their relationships are mutual and equitable. The discussion in this article was guided by the generic post-colonial lens and used the integrative research review method. The article examined various studies to determine the role of “IS” in developing MS. Apart from highlighting the analytical relationship between the two knowledge systems and its implications in the practice of MS, the article suggests some promising ways to promote the role of IS in the realm of MS and describes the uncertain relationship between the two knowledge paradigms.

In vitro study on efficacy of PHELA, an African traditional drug against SARS-CoV-2

(*M. G. Matsabisa, K. Alexandre, Collins U. Ibeji, S. Tripathy, Ochuko L. Erukainure, K. Malatji, S. Chauke, B. Okole & H. P. Chabalala, Sci Rep 12, 10305 (2022)*)

<https://doi.org/10.1038/s41598-022-13599-y>

ABSTRACT

In 2019, coronavirus has made the third apparition in the form of SARS-CoV-2, a novel strain of coronavirus that is extremely pathogenic and it uses the same receptor as SARS-CoV, the angiotensin-converting enzyme 2 (ACE2). However, more than 182 vaccine candidates have been announced; and 12 vaccines have been approved for use, although, even vaccinated individuals are still vulnerable to infection. In this study, we investigated PHELA, recognized as an herbal combination of four exotic African medicinal plants namely; *Clerodendrum glabrum* E. Mey. Lamiaceae, *Gladiolus dalenii* van Geel, *Rotheca myricoides* (Hochst.) Steane & Mabb, and *Senna occidentalis* (L.) Link; as a candidate therapy for COVID-19. In vitro testing found that PHELA inhibited > 90% of SARS-CoV-2 and SARS-CoV infection at concentration levels of 0.005 mg/ml to 0.03 mg/ml and close to 100% of MERS-CoV infection at 0.1 mg/ml to 0.6 mg/ml. The in vitro average IC₅₀ of PHELA on SARS-COV-2, SARS-CoV and MERS-COV were ~ 0.01 mg/ml. Secondly in silico docking studies of compounds identified in PHELA showed very strong binding energy interactions with the SARS-COV-2 proteins. Compound 5 showed the highest affinity for SARS-COV-2 protein compared to other compounds with the binding energy of – 6.8 kcal mol⁻¹. Our data showed that PHELA has potential and could be developed as a COVID-19 therapeutic.

Community participation in coastal and marine research and monitoring in Inuit Nunangat: a scoping literature review (A.K. Drake, A. Perkovic, C. Reeve, S.M. Alexander, V.M. Nguyen, and K.M. Dunmall: Facets, Vol 7 No. 1: Published 23 June 2022) [Link](#)

ABSTRACT

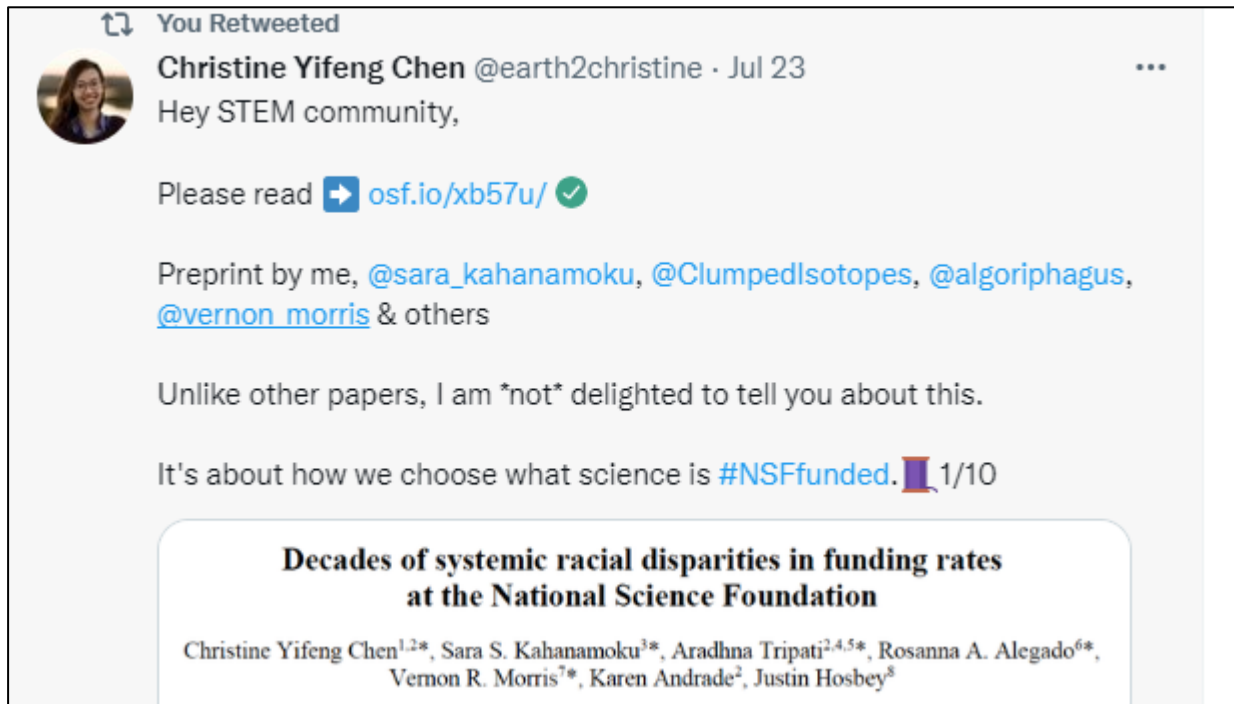
In Canada, the participation of Indigenous communities in research and monitoring is growing in response to calls for partnerships and heightened interest in bridging Indigenous and Western science-based knowledge. Yet, as settler scholars, we have noted inconsistencies in the articulation and operationalization of community participation in peer-reviewed literature. We conducted a scoping review of community participation in coastal and marine research and monitoring across Inuit Nunangat. This resulted in 72 studies, most of which were undertaken in Nunavut. Fourteen terms were used to articulate community participation, the most common being: participate, collaborate, community-based, consult, or variations of these terms.

Among the studies that used community participation terms, we found that authors only defined terms 10% of the time. Community participation was operationalized primarily through interviews, mapping, and field observations. We assessed studies across a spectrum of community participation levels and found that most studies (81%) reflected minimal levels of participation (i.e., consultative, contractual, and less than contractual). Our results highlight the need for clarity in language use, transparency in reporting research practices, and stronger efforts to support Indigenous leadership and decision-making authority, all of which must be defined on a community or project basis.

Table 1. Definitions of key concepts.	
Term	Definition
Bridging knowledge systems	Bridging knowledge systems refers to a process that maintains the integrity of each knowledge system while enabling the reciprocal exchange of understanding for mutual learning (Rathwell et al. 2015; Johnson et al. 2016a).
Indigenous knowledge	A cumulative wealth of environmental knowledge held by Inuit (in this paper) through interactions with ecosystems and experiences on the land, sea, and ice. This knowledge is subjective and dynamic, and is passed down through generations in oral tradition, observation, and practice (Ingold and Kurttila 2000; Berkes 2018). Similar terms include: Inuit knowledge, traditional knowledge, traditional ecological knowledge (TEK), local knowledge, local ecological knowledge (LEK), and Inuit Qaujimagatuqangit (IQ), which encompasses Inuit values and worldviews.
Western science	An evolving body of objective and quantitative knowledge that favours analytical and reductionist methods, anchored in Greek philosophy and the Renaissance (Mazzocchi 2006).
Participation	A process where individuals, groups, or organizations take a role in making decisions that affect them during the research process, which can include initiation, design, implementation, analysis, interpretation, and dissemination (adapted from Reed 2008).
Community	A "group of people with a shared identity or interest that has the capacity to act or express itself as a collective" (CIHR et al. 2018 p. 109).

Researchers call for feedback on study into racial funding disparities at the National Science Foundation

Dear ISN members, see below and follow up with the author if interested:



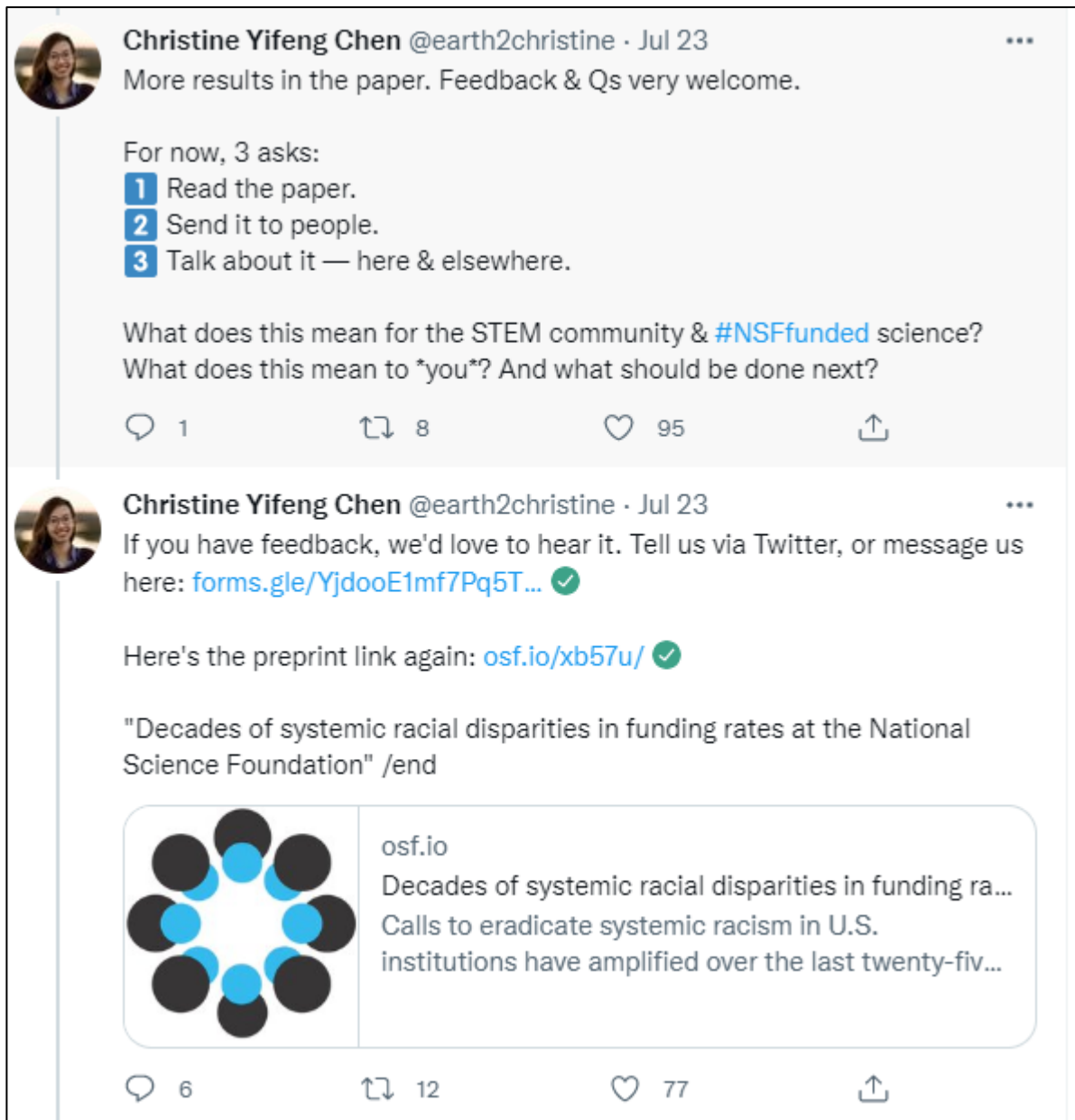
Decades of systemic racial disparities in funding rates at the National Science Foundation

Christine Yifeng Chen^{1,2*}, Sara S. Kahanamoku^{3*}, Aradhna Tripathi^{2,4,5*}, Rosanna A. Alegado^{6*}, Vernon R. Morris^{7*}, Karen Andrade², Justin Hosbey⁸

Abstract

Calls to eradicate systemic racism in U.S. institutions have amplified over the last twenty-five years. We investigate National Science Foundation data on funding rates, award types, and proposal ratings from 1996 to 2019 and find pervasive racialized disparities. White principal investigators (PIs) are consistently funded at higher rates than most non-White PIs. Funding rates for White PIs have also been increasing relative to annual overall rates with time. Disparities occur across all disciplinary directorates and are greater for research proposals. Review scores also exhibit systematic racialized biases. Similar patterns are observed in other funding agencies, suggesting that racialized disparities are widespread. Cumulatively, these racialized funding disparities have cascading impacts that perpetuate an advantage to White PIs across all of science, technology, engineering, and mathematics.





The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.



**A First Nations approach to addressing climate change—
Assessing interrelated key values to identify and address adaptive management for country**

Larissa Hale, Yuku-Baja-Muliku Land Trust (✉ Larissa.Hale@archerpoint.com.au)

Karin Gerhardt, Great Barrier Reef Foundation

Jon C. Day, ARC Centre of Excellence for Coral Reef Studies, James Cook University

Scott F. Heron, Physics & Marine Geophysical Laboratory, College of Science and Engineering, James Cook University

ABSTRACT

The Yuku-Baja-Muliku (YBM) people are the Traditional Owners (First Nation People) of the land and sea country around Archer Point, in North Queensland, Australia. Our people are increasingly recognizing climate-driven changes to our cultural values and how these impact on the timing of events mapped to our traditional seasonal calendar. We invited the developers of the Climate Vulnerability Index (CVI) to our country in Far North Queensland with the aim to investigate the application of the CVI concept to assess impacts of climate change upon some of our key values. The project was the first attempt in Australia to trial the CVI process with First Nations people. By working with climate change scientists, we were able to develop a process that is Traditional Owner-centric and places our values, risk assessment, and risk mitigation and management within an established climate change assessment framework (the CVI framework). Various lessons for potential use of the CVI by other First Nation communities are outlined.

Note: The authors on this paper all worked together to tell the project from a first-person narrative, which was the lead author's voice.

INDIGENOUS ASTRONOMY

Indigenous Moon

(Wilfred Buck, Researcher and Knowledge Keeper, Opaskwayak Cree Nation, Manitoba: Accessed 15 July 2022)

[Link](#)

Every culture on the face of the Earth sees the Moon in a very unique way and each has stories about the Moon and its various faces, that it shows us throughout the month. Throughout the Americas, the Moon and the Sun were very central to the people's lives. Both the Moon and the Sun held prominent places in the lives, beliefs, ceremonies and understandings of the people. One aspect regarding the Moon was the passage of time. For most cultures in the Americas, the passage of time was noted with the cycle of the moons. From the full Moon cycles, it was noted that certain things happened in the environment. The weather, plants, animals and temperature seemed to follow the cycles of the Moon. One of the patterns that became apparent was that there were 13 full moons that occurred before everything seemed to start all over again. Thus a [13 moon cycle](#) was identified.

When Europeans made contact with the First Nations peoples of the Americas, it was evident that some Indigenous peoples followed a lunar calendar depicted on the back of a turtle's shell. Turtle shells have 28 smaller outer edge scutes, representing the number of days from one full Moon to the next, and 13 larger central scutes, representing the 13 moon cycles. The turtle (Mikinak Ministik, see right) held a special place in the various cultures of Indigenous people. One of the origins of the term Turtle Island is the lunar calendar.



Bi-monthly Cultural Astronomy Forum


(Ray Norris, School of Science, Western Sydney University & CSIRO Space & Astronomy: via email 27 Apr 2022)

I would like to advertise a bi-monthly Cultural Astronomy Forum, held on zoom. No registration is required - you just turn up. Details are on <http://ocaf.pbworks.com/>

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 Advisory Board made up of eight First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!



Starry Sky
 David Bosun, 2017
 100cm x 100cm
 Linocut
 This artwork is a representation of the Torres Strait Islands and the surrounding region. It features a central figure, likely a person, surrounded by a complex network of lines and symbols that represent the stars and constellations of the region. The artwork is a linocut, a traditional Indigenous Australian art form.

 **Australian Indigenous Astronomy** is with **The First Astronomers** and **Bon Mott**.
 May 22 · 🌐

I'm excited to announce that the 'Star Knowledge of the Torres Strait' exhibition is now on display in the walkway through the David Caro building (School of Physics) at the [The University of Melbourne](#). It features 5 astronomy themed linocut artworks by [David Bosun](#), Tommy Pau, and Glen Mackie.

We are grateful to have the full support of the School of Physics in showcasing the rich and complex layers of astronomy embedded within Indigenous Knowledges through exhibitions, books, research programs, and degrees.

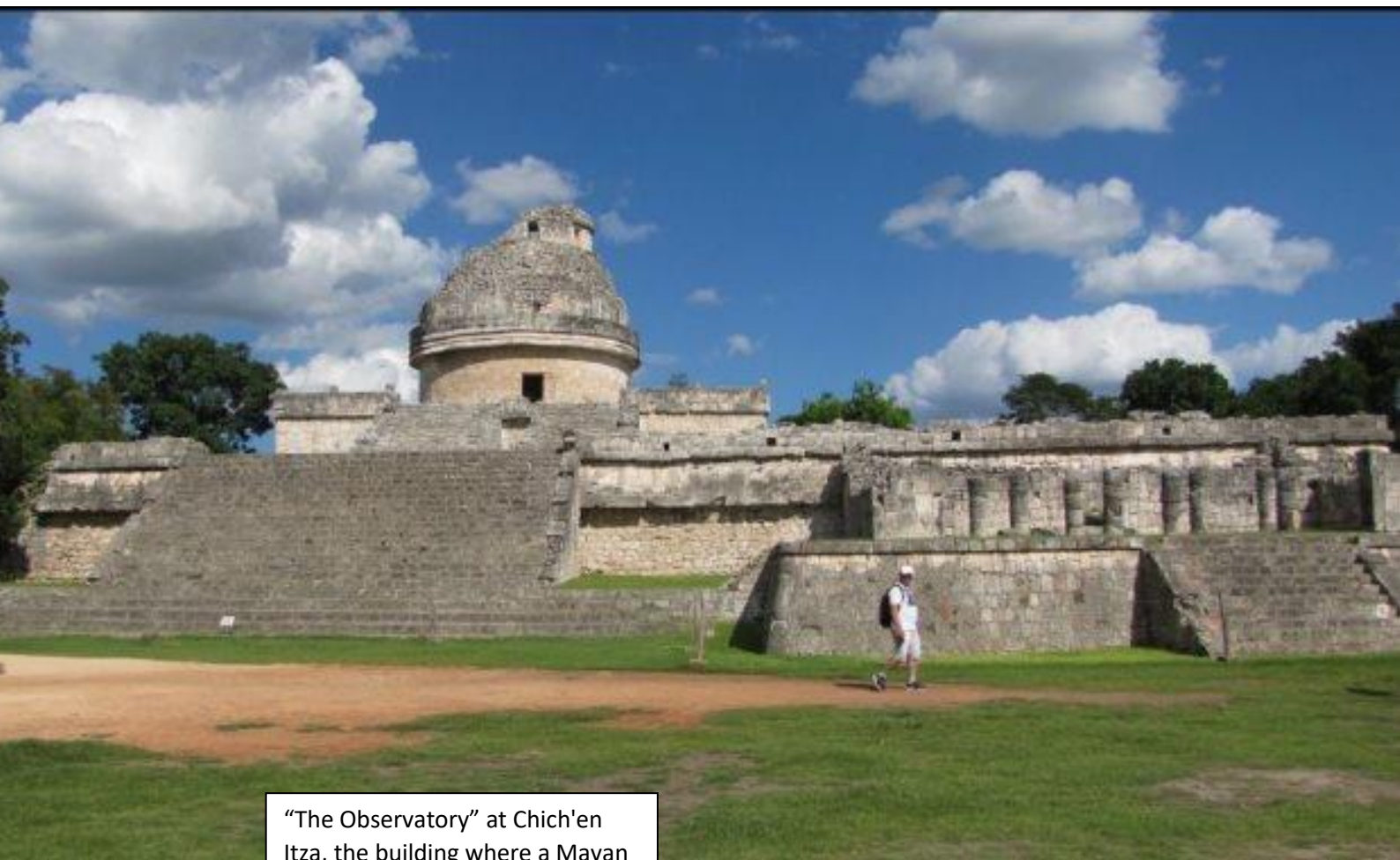
Curated and installed by [Duane Hamacher](#) and [Bon Mott](#). This is part of the exhibition featured at [Second Space Projects](#) last November.



Archeologists reveal Mayan achievements in astronomy

(Mustafa Marie, Egypt Today: 13 June 2022)

CAIRO – 13 June 2022: Archaeologists announced weeks ago that they had deciphered a 2,300-year-old Mayan inscription carrying a calendar format, proving it was in use for thousands of years by the Mayans who lived across southeastern Mexico and Central America. The 260-day calendar is an engine that still spins within what was once a much larger machine of Mayan knowledge that includes a wide range of indigenous sciences, which divided the natural world and human existence into interlocking cycles of days. Mayan astronomers described the movements of the sun, moon, and planets with world-leading accuracy, for example, they tracked lunar eclipses. In the 19th century, Western science began to absorb the development of Mayan knowledge, discovering a table of dates in a rare Mayan text that traces the movements of Venus in the 260-day calendar, according to Science. This discovery, or rediscovery, launched a wave of research still underway in Mayan astronomy, as researchers searched archaeological sites and Mayan texts in for references to the universe.



“The Observatory” at Chich'en Itza, the building where a Mayan astronomer would have worked.
Photo Credit: GERARDO ALDANA



THE STARGAZERS

The historic Maya oriented their lives by the heavens. Today, their descendants and Western scholars team up to understand their sophisticated astronomy

2 JUN 2022 • BY JOSHUA SOKOL

Indigenous cultural astronomer and researcher Carla Guedes is passionate about improving cultural competence and connection with First Nations People *(Melissa Compagnoni, SBS News: 1 July 2022)*

Carla Guedes looked at the Square Kilometre Array (SKA), an international project to build the world’s largest radio telescope, and one of the largest scientific endeavours in history. The project is being developed in two Indigenous lands – in Australia and South Africa. The Traditional Custodians are the Yamatji people from WA, and the South African San People. They were consulted from the beginning of the project which already has full approval from the Indigenous communities. “They have unique, beautiful ways to explain why the sky looks like it does,” Carla says. “Indigenous artists from both regions were invited by the SKA scientists to do paintings and other artistic representations based on their traditional stories of the night sky.” The concept has been named SKA Shared Sky to reflect a new and exciting form of knowledge sharing. “So by showing interest, finding collaborative ways of working, respecting the culture and accepting that Indigenous peoples have relevant knowledge about the sky, SKA scientists found the best way to relate with the Owners of the lands they intend to use.”



Determined to revive her interest in cultural astronomy, Carla Guedes migrated from Portugal to Australia in 2014 to pursue her research. Her studies revealed 40 years of conflict between First Nations people wanting to manage and protect their lands, and Western astronomers wishing to build research facilities on those lands. *Supplied.*

GIIZHIGOONG WEBINAR SERIES

BIMAADIZIJIG MIINWAA AYAAGASHIMAADIKAMIGAK: LIFE, LIVING, RELATIVES, AND CREATION



OUR FINAL SPEAKERS FOR THE
GIIZHIGOONG WEBINAR SERIES WILL BE
KYLIE FOX-PELTIER AND BEEDAHBIN PELTIER

Drawing from their own understandings of sky teachings, these new parents will share how the Sky World teaches us about raising babies and children and the ways in which we can look to the stars for guidance on governance within our communities.

Webinar Series Info:

Welcome to the Giizhigoong Webinar Series! March is Astronomy Month at TRACKS and to celebrate the Sky World and star teachings, TRACKS has created a 3-part webinar series. Each webinar is 90-minutes long, including a 60-minute talk by a featured knowledge holder(s) and followed by 30-minutes of Q&A facilitated by TRACKS Coordinators Kelly King and Maggie Cummings. The webinars are free and recordings will be available after each session.

The Giizhigoong program is supported through a memorial fund set up by the family of Adam Evans. We are proud to support the legacy of science education in the field of Astronomy made possible through this funding. Miigwech!

Our final speakers for the series will be Kylie Fox-Peltier and Beedahbin Peltier. Drawing from their own understandings of sky teachings, these new parents will share how the Sky World teaches us about raising babies and children and the ways in which we can look to the stars for guidance on governance within our communities.

How Black Space Week is building community and representation in astronomy

(Mark Zastrow, *Astronomy*: June 21, 2022)

In the spring of 2020, after George Floyd was murdered by a Minneapolis police officer and Breonna Taylor was shot by police in her Louisville apartment, planetary astrochemist Ashley Walker began tweeting under the hashtag #BlackInAstro. Walker, a graduate student at Howard University, contributes to the student-led blog [Astrobites](#) and had recently pitched her fellow writers on running a series of posts about Black experiences in astronomy. As protests calling for racial justice and equity swept the U.S., her idea took on even more urgency. The result was the first #BlackInAstroWeek in June 2020, including daily posts at Astrobites highlighting Black astronomers. The campaign went viral and attracted attention from media outlets like [Scientific American](#). For Walker, it showed there was a pent-up demand to hear these stories — and to create spaces to tell them.



BlackInAstro organizers. Top row, from left to right: Ashley Walker (President), Howard University; Caprice Phillips (Vice President), Ohio State University; Dr Ronald S. Gamble, Jr (Vice President), NASA GSFC/University of Maryland-College Park. Bottom row, from left to right: Bryné Hadnott, MSc (Communications Officer), Stanford University; Cheyenne Polius, MSc (Social Media Coordinator), St. Lucia National Astronomy Association; KeShawn Ivory, MSc (Events Coordinator), Vanderbilt University. *Woods & Walker, Nature Astronomy (2022) + Photography by Nathan Morgan (bottom right).*

“For the longest time, I had been wanting to tell these stories,” she tells Astronomy. “I’m really grateful that I got the chance to tell these stories, and not just to tell the stories of the lives of Black people, but to understand and actually see progress, whether it’s really big, or very minuscule progress.” The field of astronomy certainly has a long way to go. A 2007 survey found Black astronomers made up about 1 percent of the field. And the situation has not markedly improved since then. According to statistics from the National Science Foundation, roughly 300 astronomy and astrophysics Ph.D.s are awarded by U.S. universities and institutions every year. Out of those, over the past five years, the average number of astronomy Ph.D.s awarded to Black students is two. But BlackInAstro organizers are determined to change the situation, and their activism is making an impact.

 **NASA JPL** ✓
@NASAJPL

On [#Juneteenth](#) and every day, we are proud to honor the Black scientists, engineers, astronauts, and other experts who help send humankind to the stars. Here are their stories:



[youtube.com](#)
The Color of Space: A NASA Documentary Showcasing the Stories of...
The Color of Space captures the personal stories of seven current and former Black astronauts, each selected to become part of NASA's astronaut corps an...

1:57 AM · Jun 20, 2022 · Twitter Web App



Astrophiz: An Astronomy Podcast

Brendan O'Brien hosts a fabulous fortnightly astronomy podcast about Astrophysics, Astrophotography, Space Science and Particle Physics. Listen to a different special guest each month, plus our regular monthly 'SkyGuide' feature with Dr Ian 'Astroblog' Musgrave.

Astrophiz 144: 'The First Astronomers' with Associate Professor Duane Hamacher

Listen: <https://soundcloud.com/astrophiz/astrophiz144-the-first-astronomers-duanehamacher>

Duane is based in the School of Physics at the University of Melbourne and is part of the ARC Centre of Excellence for All Sky Astrophysics in 3D. This episode covers Duane's entry into science and culture then his journey as a graduate from the University of Missouri-Columbia who ventured down to Sydney Australia to do his Masters Degree by Research followed by his Doctorate in Cultural Astronomy at Macquarie University, and without too many spoilers on his magnificent book, we cover his epic adventure into Indigenous Astronomy which represents 14 years of research and 4 years of writing for Duane and the co-authors he worked with.

With Allen & Unwin, this amazing newly-released book is called 'The First Astronomers ~ How Indigenous Elders read the Stars' which he co-authored with 6 First Nations Elders and Knowledge Holders, including Yuwaalaraay Senior Law Man Ghillar Michael Anderson, who is the only surviving member and one of the founders of the original Aboriginal Tent Embassy outside Parliament in Canberra, which still proudly stands there 50 years later.

Astrophiz 142 – Krystal De Napoli ~ Star Formation & Indigenous Astronomy

Krystal is a fabulous indigenous astronomer who is carving out a brilliant career for herself while she improves the educational prospects for indigenous Australians. She is currently based in Melbourne but grew up in the closest town to me here in North-East Victoria. After being awarded her first science degree, she is extending her B.Sc with Astrophysics Honours Research at Monash University.

She was recently awarded the Out for Australia 'Young Professional of the Year' prize for her outstanding outreach and contributions to indigenous communities

In this episode we hear about Krystal's early struggles and how she now works on a regular radio show as she continues her Honours studies, and we get to put our science hats firmly on to hear how Krystal does research into star formation itself and how star formation rates can vary in different galaxies.

You will not hear a better description of what it is like to help passengers to observe auroras on an Antarctic bound 747, which Krystal has done, as well as how various indigenous storylines across Australia interpret auroras depending on their Latitude.



Welcome to *Native Skywatchers!*

Designed by Annette S. Lee (2007), the *Native Skywatchers* initiative seeks to remember and revitalize indigenous star and earth knowledge. The overarching goal of *Native Skywatchers* is to communicate the knowledge that indigenous people traditionally practiced a sustainable way of living and sustainable engineering through a living and participatory relationship with the above and below, sky and earth.

We aim to improve current inequities in education for native young people, to inspire increased cultural pride, and promote community wellness. We hope to inspire all people to have a rekindling or deepening sense of awe and personal relationship to the cosmos.

For fourteen years we have been leading indigenous astronomy revitalization efforts starting with our own communities, Ojibwe and D/Lakota. We invite you to join our effort in

Happenings...



Native Skywatchers Educator & Community Workshop Summer 2022 - Indigenous STEM and Wellness

Join us for an exciting, action-packed, two-day livestream event! Indigenous Knowledge Holders, scholars, Indigenous scientists, scholars, and educators at the forefront of Indigenous STEM and Indigenous Astronomy revitalization movements will share their work and perspectives. June 18 & 19, 2022, 9 am to 1:30 pm cdt |

[More info](#)



"Winter Solstice Livestream"

Join us for a Winter Solstice Event... Educators share their *Native Skywatchers* projects as an inspiration for all! Tuesday, Dec. 21, 2021 from 7- 8 pm cst = 3 - 4 pm hst. Everyone welcome...Here is the zoom webinar link:

<https://us02web.zoom.us/j/82971369188>



"We are Stardust - Summer 2021 Educators"

Join us for a Video Production Premiere... Educators share their stories to inspire all, we are stardust! Friday, Sept. 24, 2021 from 7- 8 pm cdt. Everyone welcome... [More](#)



Australian Indigenous Astronomy

July 20 at 9:04 AM · 🌐

Orange Regional Museum will be opening their latest exhibition "Mulaa Giilang" on Friday 5th August 6 PM, featuring Wiradjuri stories of the night sky. The exhibition will run until 30th October. Be sure to visit the museum if you are passing through the Central West NSW.



Discover the Indigenous Night Sky

Learn | By Laura La Rosa | June 20, 2022

The stars have always played a part in Indigenous culture. Learn about Aboriginal astronomy and how to spot Indigenous constellations.

Share:     



UManitoba Science
@umanitobasci



Wilfred Buck, Elder, Star knowledgekeeper, Sun Dance Chief, Astronomer, Author talks about Scientific Knowledge Embedded in Indigenous Languages at the 2022 Turtle Island Indigenous Science conference at UM!

[#umanitoba](#) [#umanitobasci](#) [#umindigenous](#)
[#indigenousscienceconference](#)





Australian Indigenous Astronomy

June 3 · 🌐

A little stash of books about [#IndigenousAstronomy](#)

"Four Circles" and "Dark Sparklers" by Hugh Cairns and Yidumduma Bill Harney

"Astronomy: Sky Country" by Karlie Noon and Krystal De Napoli

"Songlines: tracking the Seven Sisters" edited by Margo Neal

"Night skies of Aboriginal Australia: a noctuary" by Dianne Johnson

"Garnkiny: Constellations of Meaning" edited by Alana Crane

"Emu Dreaming: an Introduction to Australian Aboriginal Astronomy" by Ray and Cilla Norris

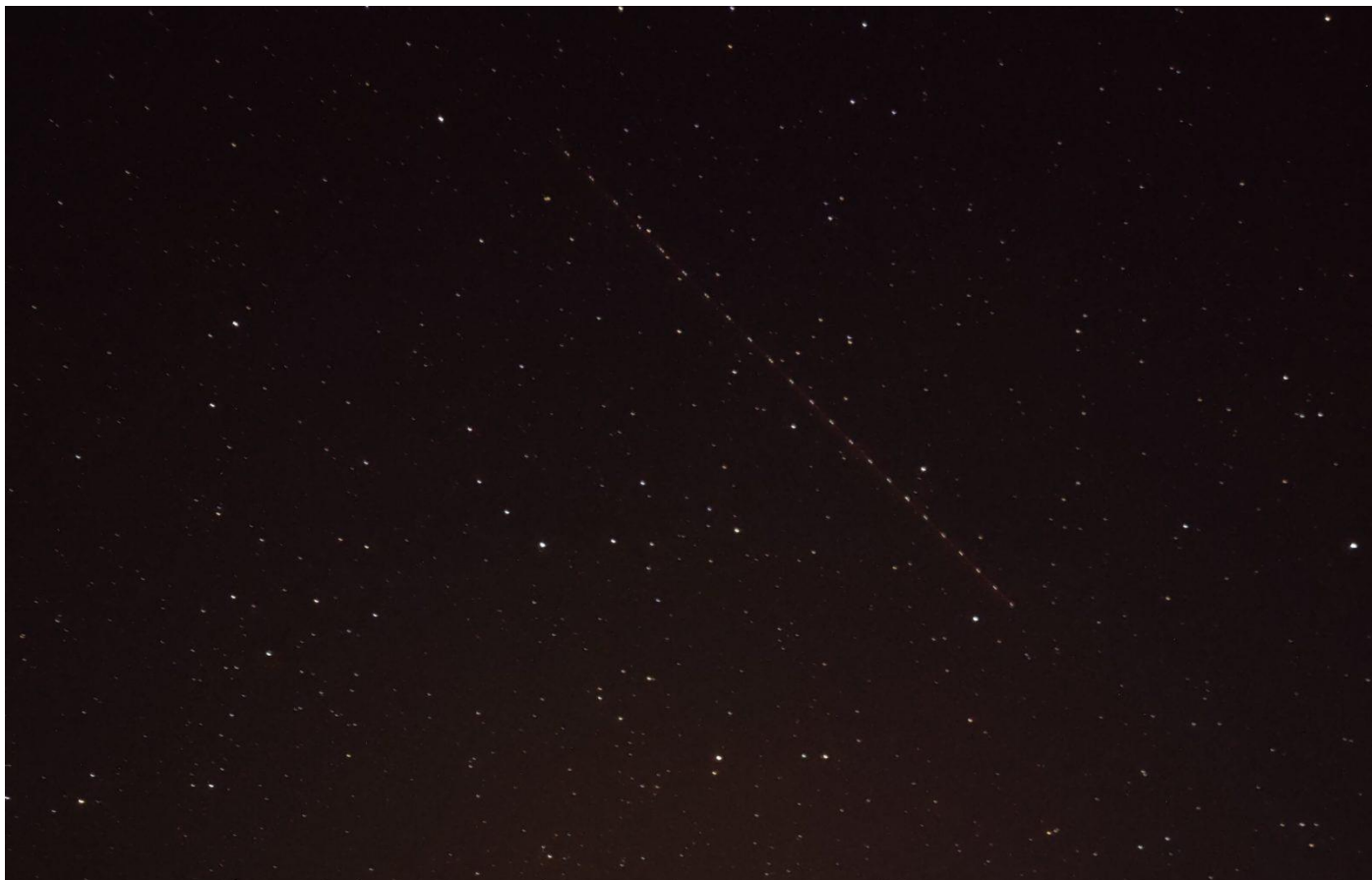
"The First Astronomers: how Indigenous Elders read the stars" by Duane Hamacher with Elders and Knowledge Holders



In Earth Orbit, We Have Let Loose a New Invasive Species: Artificial Satellites

(Thomas Lewton, *The Wire – Science*: 18 May 2022)

The band of orbital space just above our atmosphere is becoming so densely populated with satellites that it may threaten the practice of astronomy. Whereas the main source of light interference used to be the cities below, it is now increasingly the satellites above. These artificial stars can be a billion times brighter than the objects astronomers hope to study, and they emit radio waves that can interfere with telescopes. By some estimates, around one in twenty images from the Hubble Telescope are affected by the streaks of passing satellites. By 2030, the authors say, a third of Hubble's images could be impacted.



A train of Starlink satellites visible over Grebenov, Ukraine, in July 2021.

Photo: Anastasiia Moskalenko

Clutter in low-Earth orbit also threatens ways of life for entire communities of people here on the ground. The traditions and cosmologies of many Indigenous peoples, for example, are rooted in the movements of the stars. Polynesian sailors' feats of navigation by starlight are unparalleled. The Palikur people of the Amazon see constellations as boats driven by shamans that bring rain and seasonal fish. The recent deluge of light pollution in our night skies is more than a headache to these and other Indigenous peoples, whose cosmologies may wither if the numbers of satellites aren't kept in check. New artificial mega constellations could mask those that have been relied on for millennia. (This issue may provide rare common ground between Indigenous peoples and professional astronomers, the latter of whom have historically been aligned with colonialism and courted controversy with the construction of new telescopes on sacred Indigenous lands.)

🔄 You Retweeted



Omaka Observatory
@OmakaStargazing



Great Matariki gathering at Rarangi this morning. Thanks to Marlborough Youth Trust for organising. We got a glimpse of Matariki through 6" scope and also captured in the photo below. Venus is bright and in the centre of the photo, Matariki is to the bottom left of Venus.



6:36 AM · Jun 23, 2022 · Twitter Web App

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 Advisory Board made up of eight First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education, please consider telling your story here!

TELUS SPARK SCIENCE CENTRE & LIMELIGHT MULTIMEDIA PRESENT

BLACKFOOT SKIES MAKOIYOHOKOYI



This short film is an adaptation of an original Siksikaitsitapi story gifted to the science centre in the early 1990's by the late Dan Weasel Moccasin. It is an adaptation of a Blackfoot story about the Wolf Trail, or Milky Way in the English language. It tells of a time, many moons ago when humans were starving, and it was the wolf ancestors that guided humans back to a life within the circle, to live in reciprocity with the Land and animals. The stories originated in the Blackfoot language and were told for hundreds of years by the Niitsitapi.

Dan Weasel Moccasin alongside Elders and Knowledge Keepers from the Blackfoot community helped create a planetarium film that was shown in 1992. Makoiyohokoyi: the Wolf Trail, was inspired from those gifted stories. Through the Elders Advisory Circle at Spark, the idea was introduced to create a short film of one of the stories, to be shared in teaching settings throughout Treaty 7 in a portable dome theatre.

The asteroid belt just got a lot more Indigenous
(*APTN News: May 18, 2022*)



You Retweeted



Indigenous Desert Alliance
@IDA_Australia



Cool nights and campfires with dark emu overhead.

Great picture from the Walungurru and Anangu Luritjiku Rangers from the @CentralLandCouncil taken while looking after country around the Cleland Hills with Traditional Owners.

Image by MeThinks Media





Peter Swanton and Leah Troy at Indigenous Work Experience Program, at Mt Stromlo Observatory. Photo Kerrie Brewer.

Indigenous Astronomy encourages young mob to reach for the stars

Anja de Rozario ♦ June 3, 2022

The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.

Indigenous Education Institute



Sense of Place Series: Indigenous Perspectives on Earth and Sky



Rena Priest : Indigenous Perspectives on Earth, Water and Sky.

July 14, 2022



Swinomish Elder Larry Campbell : Indigenous Perspectives on Earth, Water and Sky.

Jan. 20, 2022

WEBSITES

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

- www.aboriginalastronomy.com.au
- www.facebook.com/AboriginalAstronomy
- twitter.com/aboriginalastro
- <http://ocaf.pbworks.com/>

The screenshot shows the homepage for National Science Week 2022. At the top left is the logo for 'national science week' with a lightbulb icon and the dates '13 - 21 AUGUST 2022 - AUSTRALIA WIDE'. To the right are the Australian Government crest and the 'Inspiring AUSTRALIA' logo. A navigation bar contains links for HOME, GET INVOLVED (with a dropdown arrow), SCHOOLS, RESOURCES (with a dropdown arrow), NEWS, and STATES (with a dropdown arrow). The main content area features a large title 'National Science Week 2022' and a subtitle 'In-person and online events, virtual tours, DIY science and more, all across Australia, from 13 - 21 August'. Below this is a search bar with the placeholder text 'Enter your suburb or postcode' and a red button labeled 'Find an event'. On the right side, there is a cartoon illustration of a boy in a red shirt holding a tablet displaying a human skeleton.

What is National Science Week?

National Science Week is an annual festival of science that takes place in August each year. This celebration aims to raise the profile and increase the public understanding and public appreciation of science, innovation, engineering and technology, and their role in maintaining and improving our society, economy and environment.

In schools around the nation, thousands of teachers and students from early childhood to senior secondary levels contribute to National Science Week celebrations by organising and participating in a diverse range of activities and events. It provides an opportunity to acknowledge the contributions of Australian scientists' to the world of knowledge. It also aims to encourage an interest in science pursuits among the general public, and to encourage younger people to become fascinated by the world we live in.

How Do SCHOOLS Get Involved?


Apply for a school grant

- Schools can apply for up to \$500 to help them conduct a National Science Week activity/event. Applications for the 2022 grant round have now closed. Please check back in early 2023 for details of the 2023 grant round.

Go to a National Science Week in-person or virtual event

- Approximately 1000 events take place around Australia during National Science Week each year, including those delivered by universities, schools, museums and science centres. Enjoy a range of activities in your region or online at home. These events attract a wide audience from children to adults, and science amateurs to professionals. Over one million people participate in science events across the nation, with another 160 000 taking part in school activities. Visit the National Science Week website to discover what events are available in 2022.

The Indigenous Science Experience Online sessions are now open for registrations!



**The
Indigenous
Science Experience**

ONLINE sessions are now open for registrations:

Harnessing Knowledge of the Land and the Sea - Monday, Aug 15, 7.00-8.00 pm
Indigenous History and Artefacts - Thursday, Aug 18, 7.00-8.00 pm
Weaving Workshops - Sunday, Aug 21, 10.00 am and 1.00 pm

Please go here: <https://nisep.org.au/indigenous-science-experience>

For more info and registration links. We'll be holding two evening webinars and two online weaving workshops. The online sessions are FREE but tickets are limited. These are live online events ONLY; they will not be distributed as recordings.

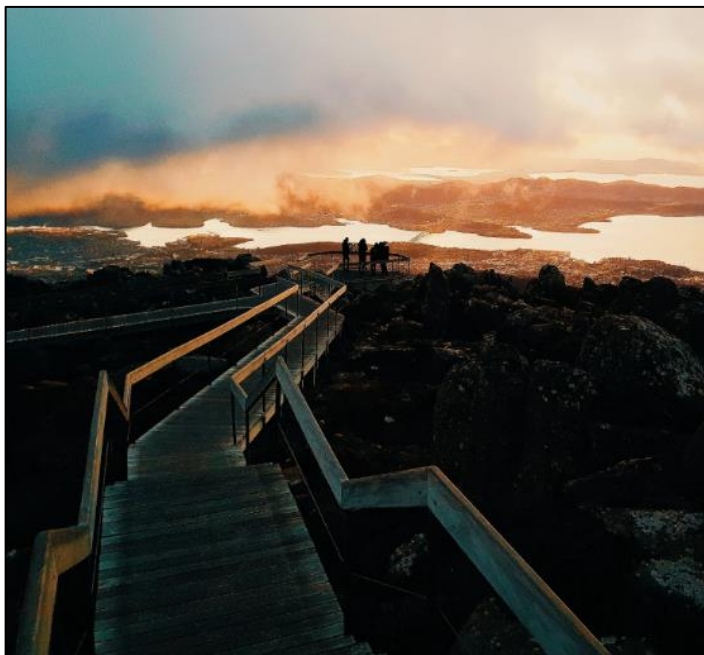
The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and November each year.

BEAKER STREET FESTIVAL

SCIENCE AND ART IN LUTRUWITA/TASMANIA
5-14 AUGUST 2022

NORTH SOUTH EAST COAST

Beaker Street Festival is an annual celebration of science and art in lutruwita/Tasmania. We've packed some of the most engaging scientists, compelling ideas, and innovative artworks you'll find in Australia into a ten-day extravaganza that covers nearly every corner of our beguiling island.



WURANGKILI LIWARI

NIGHT SKY STARGAZING ON KUNANYI

8:00PM | 07/08 | HOBART

[BUY TICKETS](#)

EXPERIENCE THE SOUTHERN STARS FROM KUNANYI/MT WELLINGTON

Join [Walk on kunanyi](#) and Theresa Sainty at the Springs on kunanyi/Mt Wellington for an evening walk centred around our southern stars.

Inside a mountain hut warmed by the roaring fire you'll soak up the powerful stories of wurungkali liwari/night sky shared by Pakana (Tasmanian Aboriginal) woman and UTAS Senior Indigenous Scholar Theresa Sainty. Explore the southern night sky starting with the Moon and our solar system. Depending on the time of year we may be able to see other planets of our solar system. Then we'll look further out to the Milky Way and into deep space.

PANEL DISCUSSION

IS SCIENCE REALLY FOR EVERYONE?

7:40PM | 05/08 | HOBART

[BUY TICKETS](#)

Science can be defined as the study of the world around us through observation and experiment — activities that all cultures have engaged in likely since the earliest humans. Why is it then that so many people and so many cultures feel excluded from, and even exploited by “science”? Are the traditions, practices, and protocols of “Western science” the only legitimate way to engage in science, and if science is something more universal, where did these limitations originate? In this panel discussion, we'll hear directly from members of the Tasmanian Aboriginal community, one of the oldest continuous cultures in the world, about how the limitations of the Western scientific tradition often delegitimise, exploit, and exclude Indigenous knowledge, leaving a gaping hole where some of the longest held human knowledge doesn't register.

You Retweeted



Australian Science Teachers Association
@ASTA_online

...

"Glass: More than meets the eye" is the theme for #scienceweek in 2022! Jump onto the ASTA website to download our teacher resources now! Visit bit.ly/3tivil0q to get your copies.



9:00 AM · Jul 9, 2022 · Sendible

Aboriginal Ranger STEM virtual excursion into published books – Turtle monitoring

Tuesday 16 Aug

2:00pm - 3:00pm (AEST)

Recording of a live event: Aboriginal Rangers from 80 Mile Beach in the Kimberley, WA, and Cape York in Queensland discuss their turtle monitoring program. See footage of digging up the nests and counting the hatchlings' success. See how the Rangers use technology to document data and how & why this data is analysed.

Rangers discuss the 'How, What, and Why' of scientific inquiry and demonstrate:

- data collection and analysis;
- conservation strategies; and ask
- what can we do?

There is also an option for teachers to automatically collect students' learning and art into published digital books, and PDF to print on demand.

Indigenous Science Experience at Redfern

National Indigenous Science Education Program, Redfern NSW, Sat 20 Aug 2022



Please note: registration for this event is not required. Please feel free to join us on the day! What can Aboriginal astronomy tell us about the night sky? How is our native flora used in bush medicine and soap making? How do Indigenous Australians make axes from stone? What can we learn about sustainable living from 60 000+ years of Indigenous culture? Find out the answers to these questions and more at the Indigenous Science Experience. This free, community

open event is a celebration of Indigenous and Western science and highlights the relevance of science, technology, engineering and mathematics (STEM) to our everyday lives. Come along to get hands-on with a diverse range of interactive science activities accessible to all ages. Activities will include: Yarning with Elders on bush foods and medicines, Indigenous astronomy, maths puzzles, making Aboriginal tools, physics and chemistry activities, and much more! You will also meet Indigenous Elders and student leaders from the National Indigenous Science Education Program who will be assisting in demonstrating the activities. The event will begin with a traditional smoking ceremony and official welcome (10 am). There will also be the opportunity to purchase food and Aboriginal arts and crafts. This event is part of National Science Week. It is organised by the National Indigenous Science Education Program, Macquarie University, and hosted by Redfern Community Centre. It is made possible through the support of Inspiring Australia and grant funding from the Australian Government.

You Retweeted

 Stronger Smarter Institute
@StrongerSmarter

1/2 Join Stronger Smarter's Chief of Impact, Jesse King & Toni Falusi @cserAdelaide in an exciting online workshop in September!
This FREE event will expertly enhance your capacity to incorporate culturally responsive approaches within Aust Curriculum: Digital Technologies lessons



JOIN US

First Nations Australians histories and cultures in Digital Technologies

Building teacher capacity to incorporate Aboriginal and Torres Strait Islander peoples histories and cultures into Digital Technologies

IT'S FREE!

Tuesday 27th September 2022 Online event

4:35 PM · Jul 17, 2022 · Sprout Social

International Science and Eco Festival, Cairns QLD

18 – 20 Aug 2022, Cairns Pier

Illuminate FNQ is a not-for-profit NGO aiming to increase Aboriginal and Torres Strait Islander community participation and success in STEM. Among a number of projects they are currently working on, there will be a three day event in Cairns which will increase public understanding and appreciation of the Great Barrier Reef, the rainforest, and other FNQ environmental features including the challenges facing them from global warming. For more information and to register your interest, please go to:

IGNITING THE FUTURE WITH ANCIENT WISDOM

Full program details and tickets available now www.illuminatefnq.com.au

FUZION
THE DINING EXPERIENCE

TOPIX
SCIENCE & ENVIRONMENT CONFERENCE

TRAX
TECHNICAL TOURS PROGRAM

YARNZ
WORKSHOP & SEMINAR CENTRE

DISCOVER
SCHOOLS ENTERTAINING EDUCATION PROGRAM

EXPO
CULTURE | ARTS
BUSINESS | SCIENCE
TECHNOLOGY

Thu 18 | Fri 19 | Sat 20 AUGUST

International SCIENCE & Eco FEST
ILLUMINATE-FNQ CAIRNS, AUSTRALIA 2022



National Indigenous STEM Professional Network—NISTEMP

Advancing the role, reputation and impact of Indigenous professionals and Indigenous Knowledges in STEM across Australia

Research · Milton, Qld · 69 followers



Joshua works here · 7 employees

+ Follow

Sign up ↗

More



Assoc.Prof Bradley Moggridge • 1st

Kamilaroi-Associate Professor in Indigenous Water Science at University of C...

14h · 🌐



National Indigenous STEM Professional Network—NI...

69 followers

14h · 🌐

+ Follow

Are you Aboriginal or Torres Strait Islander and a STEM Indigenous Knowledge keeper/holder, practitioner, academic or student?

If so, join our network and register your interest to attend the Inaugural Face-to-Face Gathering [University of Technology Sydney](#) 6-9 November, 2022; or contact one of our Leadership committee: [Susan Beetson](#)

[Assoc.Prof Bradley Moggridge](#) [Chris Matthews](#) [Ashley Marino](#)

[Kalinda Griffiths](#) [Luke Williams](#) [Corey Tutt](#) [OAM Grace Poole](#) . Made possible by our sponsors [RMIT University](#)

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[#AboriginalSTEM](#) [#aboriginalaustralia](#) [#cultureTech](#) [#IndigenousEngineers](#)

[#IndigenousScience](#) [#IndigenousTech](#) [#IndigenousMaths](#)

Dear Network Delegates and external Partners and Supporters

The National Indigenous Science, Technology, Engineering and Mathematics Professional Network (NISTEMP) leadership committee is announcing a **save the date** for our:

Inaugural face to face gathering—‘*Moving Forward, Looking Back*’ held at the University of Technology Sydney (UTS) 6th—9th November 2022

Our esteemed member Prof Chris Matthews has secured half the funding from the University of Technology Sydney (UTS) to hold the gathering. This funding aims to cover costs associated with Aboriginal and Torres Strait Islander attendance only, including travel, accommodation, and sustenance. Funds are limited, so we ask external Partners and Supporters to fund their own attendance, and thank you for your understanding. We will soon disseminate an expression of interest and registration to attend the gathering, together with costings associated for the attendance of our external Partners and Supporters.

The leadership committee includes the following members with relevant experience, expertise, diversity and geographic locations across a number of STEM disciplines:

- Professor Chris Matthews (Quandamooka)—Mathematics—UTS
- Dr Kalinda Griffiths (Yawuru)—Epidemiology | Bioinformatics—UNSW
- Grace Poole (Ngarigo)—Engineering—USYD
- Ashley Marino (Darumbal)—Archaeology | Marine Science—BHP
- Corey Tutt (Kamilaroi)—CEO Deadly Science
- Associate Professor Bradley Moggridge (Kamilaroi)—Water Science—UC
- Susan Beetson (Ngemba/Wayilwan, Wiradjuri)—Computer Science | Technology—UQ
- Luke Williams (Gumbaynggirr)—Toxicology—RMIT
- Michelle Hobbs (Bidjara)—Freshwater Ecologist—GU

For more information on the structure of NISTEMP and the aim of the gathering for 2022 - ‘*Moving Forward, Looking Back*’ see the attached communiqué.

We hope to see you there!

11 June, 2022

National Indigenous STEM Professional Network (NISTEMP)

Leadership Committee

committee@nistempn.org

NISTEMP is a non-profit organisation

ABN: 96 543 416 064

PO Box 2313, Milton Qld 4067

National Indigenous STEM Professional Network

Our Vision and Inaugural Gathering: 6-9 November 2022

For 67,000+ years (since time immemorial), Aboriginal and Torres Strait Islander peoples have continued custodianship, caring for waters, sky and country across this continent. Aboriginal and Torres Strait Islander peoples carry extensive historical, cultural, spiritual, and social knowledges, passing down thousands of years of experiences and observations of this ancient landscape through generations ('Indigenous Knowledges').

It is imperative Indigenous Knowledges is at the forefront of developing Science, Technology, Engineering and Mathematics (STEM) sectors in Australia. Indigenous peoples possess an intrinsic impetus and inherent right to care for, protect and restore our traditional lands, skies, freshwater and saltwater environments. Achieving this requires us to recognise, value and build on Indigenous capabilities, while acknowledging and facilitating Indigenous Knowledge sovereignty. This is especially important within the university sector with our students, and centring Indigenous ways of being, knowing and doing through Indigenous-led STEM research and practice.

Who We Are

The National Indigenous STEM Professional Network (NISTEMPAN) is a newly formed network for Indigenous STEM professionals, academics, Knowledge holders and students. We aim to create an environment that nurtures STEM specialists and provides opportunities to interact deeply with one another, to understand and share Indigenous knowledge across disciplines, to extend and benefit STEM for the broader Australian community. Our leadership team represents diversity across social, gender, age, geographic and ability—scientists, technologists, engineers and mathematicians, including diversity within each of these domains.

The NISTEMPAN leadership committee

- Professor Chris Matthews (Quandamooka) Mathematics—UTS
- Dr Kalinda Griffiths (Yawuru) Epidemiology/Bioinformatics—UNSW
- Grace Poole (Ngarigo) Engineering—USYD
- Ashley Marino (Darumbal) Archaeology and Marine Science—BHP
- Corey Tutt (Kamilaroi)—CEO Deadly Science
- Associate Professor Bradley Moggridge (Kamilaroi) Water Science—UC
- Susan Beetson (Ngemba/Wayilwan, Wiradjuri) Technology/Computer Science—UQ
- Luke Williams (Gumbaynggirr) Toxicology—RMIT
- Michelle Hobbs (Bidjara) Freshwater Ecologist—GU

Moving Forward—Looking Back: 2022

Our inaugural gathering for all members from across this continent, including the Torres Strait, will be held on 6-9 November 2022 to consolidate our network's mission and enable an exceptional opportunity for our most prominent and emerging Indigenous STEM professionals to share and collaborate on research, ideas, experiences and opportunities and mentor and grow our early career professionals, academics and students.

The theme of the conference is "*Moving Forward – Looking Back*"—a meeting in acknowledgment that we stand on the shoulders of those who came before us, in service of those who come after us. We will plan for building the future of Indigenous STEM in Australia.

NISTEMPAN has been supported by the Learned Academies and Science and Technology Australia to facilitate the charter of our Terms of Reference and continues to support this initiative. University of Technology Sydney has generously provided financial support for the inaugural gathering in 2022. To make this event accessible and equitable for all our 60+ Indigenous STEM students, academics and professionals, we need additional sponsorship from Partners (organisations and/or individuals) to realise this event and kick-start our network.

Benefits of being a Partner

- Contribute to influencing the importance of change
- Embrace genuine Indigenous STEM research and inter-disciplinary networking
- Foster problem-solving think-tanks and new collaborations in Indigenous led Australian research, climate adaptation strategies, systems that embrace difference and diversity and innovations forward
- Champion continuing Indigenous led conversations on Indigenous Knowledges extending Western Science
- Invited guests to sit alongside us, learn to listen and know when to step back by following Indigenous peoples. Understand Indigenous ways of doing, ensuring true respect, reciprocity, collegiality and congeniality.

National Indigenous STEM Professional Network (NISTEMPAN)

Leadership Committee

committee@nistempn.org

NISTEMPAN is a not-for-profit organisation—ABN: 96 543 416 064

PO Box 2313, Milton Qld 4067



Australian Science Teachers Association
@ASTA_online



CONASTA 69 is the long-awaited greatest reunion party of all time!
SEAACT is excited to be hosting the nation's premier science educators' conference here in Canberra from 25-28 September 2022. Register today at bit.ly/3axlq69 ✓



1:15 PM · Aug 5, 2022 · Sendible



CONASTA 69: SCIENCE REVEALED

25 - 28 Sep 2022 | St Edmund's College
Canberra/St. Clare's College, ACT, Australia

Early Bird Registration is NOW OPEN



Professor Brian P. Schmidt AC FAA
FRS

Vice-Chancellor and President, The
Australian National University



Dr Cathy Foley AO PSM
Australia's Chief Scientist



Dr Alex Held

Director, Centre for Earth
Observation, CSIRO Space and
Astronomy



Assoc. Prof. Bradley J. Moggridge

Indigenous Water Science,
University of Canberra



Associate Professor Cristopher
Brack

Forestry and Carbon Accounting,
Australian National University



Dr Emma Tucker

Space Medicine, Emergency
Medicine, Australian National
University



**WORLD INDIGENOUS PEOPLES' CONFERENCE ON EDUCATION
ADELAIDE, SOUTH AUSTRALIA, 26 – 30 SEPT 2022**



**WORLD
INDIGENOUS
PEOPLES'
CONFERENCE ON
EDUCATION**

WIPCE 2022
Panpapanpalya

*Indigenous Education
Sovereignty:
Our Voices ...
Our Futures*

26 - 30 September 2022 Adelaide,
Australia

2022 REGISTRATIONS OPEN NOW!

WIPCE 2022 HYBRID DETAILS HERE

Postponed from 2020 and 2021, WIPCE 2022 will feature an exciting Indigenous education program of keynote presentations, networking, interactive workshops and discussion forums with an associated rich and diverse cultural program. An estimated 370 million Indigenous peoples live in all continents of the earth and represent a significant part of the world's vast cultural and linguistic diversity and heritage.

Indigenous peoples possess unique knowledge systems, which are recognised as crucial for sustainable development. At the same time, social, economic and political marginalisation of Indigenous peoples is pervasive in all the regions across the world.

Indigenous peoples face fundamental challenges when attempting to reconcile their own forms of culturally transmitted learning with systems of formal education. Over the past 30 years, WIPCE has endeavoured to address this issue and has grown to become a major international event in the Indigenous education movement. The WIPCE conference draws Indigenous representatives from across the globe to share successes and strategies for culturally grounded education. The needs of young Indigenous educators and leaders will be a key feature of WIPCE 2021 youth forums. WIPCE attracts Indigenous education experts, practitioners, scholars, students and communities, with up to 5,000 delegates expected in 2021 – the largest and most diverse Indigenous education forum on earth.

<https://wipce2022.net/>

CONFERENCES / SEMINARS / WEBINARS – THE WORLD

The 3rd International Conference on Transformative Educational Research and Sustainable Development (4-6 November 2022, Nepal)

Transformative Educational Research and Sustainable Development (TERSD) is a scholarly forum that aims to conceive, enact and flourish the depth and scope of transformative capabilities, collaboration, embodied practice and praxis in education and research. Kathmandu University School of Education (KUSOED), Nepal, hosted two previous international conferences on Transformative Educational Research and Sustainable Development (TERSD). The first conference, held in 2016, promoted theoretically informed discussions on the need for relational ontology and multi-paradigmatic epistemologies in education and research. The second conference, held in 2018, focused on collective transformation through context-responsive wisdom and knowledge heritage. Both conferences contributed to expanding awareness of our situatedness and created a harmonious space by strengthening and enlarging an international network of transformative practitioners.



Home	Themes	Call For Papers	Paper Submission	Registration	Keynote Speakers	Committees
Organizer	Contact					

TERSD CONFERENCE 2022
Introduction
Conference Outcomes
Participants
Key Dates
Venue
Accommodation
Conference Program
Fees and Payment
Keynote Speakers
Dr. Suresh Gautam
Prof. Bal Chandra Luitel
Dr. Emilia Nhalevilo



The 3rd International Conference on Transformative Educational Research and Sustainable

Aki Kikinomakaywin - An Indigenous-led, land and water-based STEAM program for First Nation youth in Northern Ontario [Link](#)

(website accessed 18 July 2022)

Although a little late for this August issue but I believe some of you may appreciate hearing about this week of STEM activities for Native Americans.



From July 17th - 23rd the , Elders, Knowledge Holders, and youth with gather at Lakehead University in Thunder Bay, ON. A fun week of on-the-land and in-the-lab learning from Elders and Indigenous Knowledge Holders, plus activities to help revitalize Indigenous language along the way! Youth will learn about Indigenous Impact Assessments by practicing Indigenous ways of knowing and being, while also using science techniques and tools that are taught in university and college programs. We are aiming to connect youth and Indigenous Knowledge Holders from the north shores of Lake Superior and Lake Huron with a shared interest in learning about and protecting the lands and the waters. Aki Kikinomakaywin will also provide resources and support to youth excited about accessing post-secondary STEAM education and careers.

August 29th through September 1st, 2022

National Tribal & Indigenous Climate Conference

InterContinental St. Paul Riverfront

St. Paul, Minnesota & Online

The Institute for Tribal Environmental Professionals (ITEP) is excited to host the second Biennial National Tribal and Indigenous Climate Conference (NTICC) which will be offered as a hybrid event to ensure that our relatives from across turtle island can join us whether in-person or virtually.

As we did in 2020, we welcome all who are interested in participating or attending. This event will convene knowledge holders on climate change and resilience efforts with an emphasis on the intersection, inclusion and honoring of Traditional and Indigenous Knowledges.

We welcome and encourage all U.S. Tribal and Indigenous nations and Indigenous Peoples from throughout the world, including our Elders and Youth.

The NTICC Planning team includes representatives from ITEP's Climate Change Advisory Committee, internal ITEP staff, and external partners including the Bureau of Indian Affairs (BIA) Tribal Resilience Program and our generous Co-Hosts.





ICIES 2022: 16. International Conference on Indigenous Education Studies December 01-02, 2022 in Auckland, New Zealand

[International Conference on Indigenous Education Studies](#) aims to bring together leading academic scientists, researchers and research scholars to exchange and share their experiences and research results on all aspects of Indigenous Education Studies. It also provides a premier interdisciplinary platform for researchers, practitioners and educators to present and discuss the most recent innovations, trends, and concerns as well as practical challenges encountered and solutions adopted in the fields of Indigenous Education Studies.

2022 International Conference on Technologies in STEM 'LIVE'

13 & 14 Dec 2022, Singapore



We're pleased to announce that the 2022 International Conference on Technologies in STEM (ICTSTEM 2022), organized by East Asia Research and supported by Australia's Curtin University, will be a hybrid conference happening in Singapore from December 13-14, 2022! Learn from the

masters of STEM education at the premier conference for the global Educator community. The conference aims to further the application of technology education within STEM and specific learning areas. Within Technology education, students use design and/or computational thinking and technologies to generate and produce designed solutions both digital and physical for authentic problems. As such it applies to many areas of STEM. We invite practitioners and researchers to network and share their experiences. Teachers, heads of learning areas, and teacher educators, researchers, and HDR researchers from K to higher education are all encouraged to attend. A broad range of technology education topics, including significant developments as well as innovative uses of technology that promote learning, performance, and instruction, will be presented at ICTSTEM 2022.

Due to the persistence of COVID-19, the conference will be conducted in a 'Hybrid Format'. Participants can make oral/poster presentations onsite or send us pre-recorded video presentations and register as a 'Virtual Presenter'. They will indicate their preferred presentation medium when they register. The 'Early Bird Registration Deadline' is on July 14th, 2022.

NOW POSTPONED TO JULY 2023!