

Indigenous Science Network Bulletin

November 2022 (Volume 23, Number 4)

ISSN 1449-2091

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Promoting First Nations' science, teaching & education



The 2022 SACNAS National Diversity in STEM Conference

October 27-29, 2022

San Juan, Puerto Rico



The Society for Advancement of Chicanos / Hispanics and Native Americans in Science (SACNAS) is an inclusive organization dedicated to fostering the success of Chicanos / Hispanics and Native Americans, from college students to professionals, in attaining advanced degrees, careers, and positions of leadership in STEM. Their 2022 conference was held recently in Puerto Rico. For more on SACNAS, see [here](#).

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 taken 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.** 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 –Gamilaraay, K’Gari, Butchulla, Kakadu, Gunggari, Ballardong, Whadjuk, Nyungar, Wajarri, Yamatji, Yalanji; **Torres Strait Islands** – Zenadth Kes

New Zealand: Maori – Ngāti Awa

USA: African American; Native American – Wairakki, Pomo, Arapaho, Shoshone, Apache, Ojibwe, Diné, Iroquois, Keweenaw Bay; Native Hawaiian

Canada: Dene Tha’, Anishnaabek, Métis, Mi’kmaw, Inuit, Innu, Gwich’in, Cree, Mushkegowuk, Matawa, Alexis

Mexico: Zapotec, Maya Ch’orti’ and Binnizá, Aztec

Finland / Sweden: Sami

Bangladesh: Mro

Colombia: Curripaco

Philippines: Tagbanua

South Africa: Ashanti

Brazil, Puerto Rico, Nigeria,

Pacific Islands – Te Moananui

WIPCE 2022 AND SCIENCE

A very significant gathering of Indigenous educators was held recently in Adelaide, Australia. Being the World Indigenous Peoples’ Conference on Education. Many members of this network were in attendance including some of our Board members. Michelle Hogue came all the way from frosty Saskatchewan and has kindly written our editorial this issue about her experiences in Adelaide. There were numerous sessions on Indigenous science and we hope to bring information about them in our next issue. And can I once again remind members that we are always looking for original stories on Indigenous science. **If you were at a WIPCE session related to science that inspired you, please consider writing about it!** Examples [here](#).

The efforts to decolonise science and education now form part of our continuing series on the nexus of Indigenous and Western Science. In this issue we hear from those who oppose any pandering to Indigenous sensibilities and although tough reading at times, it is always useful to know how the other side thinks. Happily, it would seem that mostly they are a noisy minority. (I don’t know anyone who watches Sky News – the Aussie version of Fox). Read the articles [here](#).

You will notice a slight change in format compared to previous issues since 2020. Rather than summarise articles including authors and dates with links to the article, some articles are screen shot directly onto the pages of the bulletin (when permitted). Consequently, making this issue even bigger than previously, coming in at nearly 200 pages!! Popcorn and comfy chair required folks.

Mark Linkson, Coordinator ISN, Cairns Queensland AUSTRALIA

ISN First Nations Board (Co-Editors)

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

A. Professor Michelle M. Hogue, University of Lethbridge, CANADA

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

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Carly Jia, AERO, Melbourne

Jesse King, Aurora Education Foundation, Brisbane

Yolanda Lopez, UNESCO, Mexico City, MEXICO



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

ASIA

Prem PHYAK, Chinese University of Hong Kong, CHINA

Indra Mani RAI, Tribhuvan University, NEPAL

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

AMERICAS

Coimbra SIRICA, Burness Global, USA

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 1600 followers and the Twitter account has 2130 followers (as at 6 Nov 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 (29 November 2022).

Partnership with ACER

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.



The Indigenous Science Network 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.

A screenshot of the Indigenous Science Network website homepage. The page features a navigation menu with links for NETWORK HOME, ABOUT, BULLETINS, MY ACCOUNT, and CONTACT US. The main content area includes a section for 'Most Popular Papers', a 'Receive Email Notices or RSS' button, and a search repository section with a search bar and a dropdown menu for 'in this journal'. A profile picture of Professor Elizabeth McKinley is displayed, along with her name and title: 'Professor Elizabeth McKinley, ONZM, Chair, Editorial Board, Indigenous Science Network, Executive Director Atlantic Fellows for Social Equity, The University of Melbourne, Victoria, AUSTRALIA'. The page also includes a sidebar with links to 'Network Home', 'About', 'Aims', 'First Nations Editorial Board', 'Coordinator and Regional Agents', 'Bulletins', 'Membership', and 'Submissions to the Bulletin'.

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

INDIGENOUS SCIENCE NETWORK EDITORIAL: NOV 2022



Michelle Hogue (PhD) is an Associate Professor & Coordinator of the Indigenous Student Success Cohort (ISSC) at the University of Lethbridge in Alberta, Canada. She has helped ensure the success of many students at university, particularly in science-related programs. Of Métis heritage, her locally, nationally, and internationally recognized teaching and research focuses on building bridges between Indigenous and Western ways of knowing and learning. In her work she uses culturally relevant and innovative methodological approaches such as narrative and the arts, hand on learning by doing first and land-based education that blends required curricular and institutional demands with methodological teaching practices that attend to Indigenous Ways of Knowing and Learning. Her research explores best practices in Canada, Australia, and New Zealand to develop an inclusive, culturally responsive teaching practice and curricula through the philosophy of Bridging Cultures: Two-Eyed Seeing for Both Ways Knowing to enable Indigenous engagement, retention, and academic success broadly, as well as specifically, in the sciences and mathematics.

WIPCE 2022 - Panpapanpalya

Founded by Dr. Verna Kirkness, WIPCE - the World Indigenous Peoples Conference (Panpapanpalya) on Education, commenced in 1987 in Vancouver, British Columbia, Canada. That inaugural conference, for the first time, brought to the forefront the critically important and pivotal role of community, elders, and community knowledge keepers in the design and development of education for Indigenous peoples. Since then, it has become a global movement of individuals and organisations dedicated to ensuring that Indigenous Peoples have access to equitable, quality, culturally relevant, and intellectually enriching education, decent work opportunities and social protection. As the largest and most diverse Indigenous education forum in the world, it attracts education experts, practitioners, scholars, students, and communities from across the globe to share successes and strategies for culturally grounded education.



Linda Burney MP, Minister for Indigenous Australians, speaks at the conference.

Following that inaugural launch in 1987, WIPCE has met every three years at locations around the world (Australia, Canada, Hawaii, Mexico, Peru, New Zealand), the last one being held in Toronto, Canada in 2017. At that time, Australia won the bid for the 2020 WIPCE but due to the Covid-19 Global Pandemic, it would be deferred for the next two years. Finally, as the pandemic restrictions eased and many were lifted, the 2022 WIPCE became a reality. It took place September 26-30th, 2022, at Tarndanya (Adelaide) Australia on the lands of the Kaurna Nation, the original people of the Adelaide Plains, at the internationally renowned Adelaide Convention Center located on the banks of Karrawirra (River Torrens) as a hybrid conference. Notably the world's largest conference on Indigenous education, approximately 2400 people attended in person with another approximate 900 attendees online. The theme of the 12th WIPCE 2022-Panpapanalya, was *Indigenous Education Sovereignty: Our Voices...Our Futures*.

WIPCE 2022 included a rich cultural program of performances, experiences and forums throughout the five days beginning with a traditional welcome to country, the official opening by the first Aboriginal woman to serve as Minister for Indigenous Australians, the Honorable Linda Burney MP, and the welcome address by organizers. This was followed by the Parade of Nations where each of the communities or countries attending WIPCE introduce themselves, bring a welcome and parade across the front of the audience showcasing a tantalizing bit of their culture, song, regalia, language, dance, etc. It truly is a spectacular parade of culture.



Session Information

Official Opening of the World Indigenous People's Conference on Education 2022

- Welcome to WIPCE 2022 |
- Welcome to Country |
- Official Opening |
- Welcome Address |
- Parade of Nations

My Session Notes

Tuesday 27th – Friday 30th September featured seven Indigenous keynote speakers (Redmond Barry Distinguished Professor Marcia Langton AO, Professor Mark Rose, Honorable Linda Burney MP, Distinguished Professor Aileen

Moreton-Robinson, Dr Elmer Guy PhD, Mikkel Eskil Mikkelsen, Hayley McQuire and Professor Simone Ulalka Tur) who addressed the WIPCE themes of Sovereignty, Voice, Youth and Futures, along with over 300 workshops from First Nations across the globe. Unlike most other conferences where presenters are often in sessions with multiple presenters, and as a result have very limited and short presentation times, WIPCE presenters were afforded individual blocks of 45 minutes, thus allowing them to truly present and have critically important dialogues enabling an opportunity to truly share and learn. It was a rich program of cultural performances, films, interactive workshops, discussion forums, dialogues, and networking. Importantly, WIPCE is a safe space for Indigenous peoples and allies to give voice and have critically important conversations about Indigenous education, sovereignty, and the future.

WIPCE 2022 ended with a closing ceremony and the 2025 handover and final acknowledgements by Professor Peter Buckskin (PSM FACE) which can be seen here:

<https://www.youtube.com/watch?v=AoftCDIK9Ik>

The next WIPCE will be held November 2025 in Tāmaki Makaurau Auckland, Aotearoa New Zealand. The theme will be: *WIPCE ki TUA – Huke ana! Oke ana! - WIPCE and BEYOND – Challenging the narrative.*

This was my first WIPCE and it was probably one of the best conferences I have ever attended, and perhaps made even more so following the 2-year postponement due to the Covid-19 Pandemic. I encourage everyone to attend WIPCE 2025. I know I will.

Dr. Michelle M. Hogue
Associate Professor
Coordinator Indigenous Student Success Cohort
University of Lethbridge, Alberta, Canada

 **Guy Cameron @DrGuyCameron · Sep 29** ⋮

Day 4 of [#WIPCE2022](#). Amazing work happening in higher education to embed Indigenous knowledge in curriculum. Yet it's clear that institutions need to better recognise and support the workload of Indigenous scholars, whilst facilitating opportunities for their career development



WIPCE 2022 Tarndanya



Angela Barney-Leitch
@angela_leitch

HaleyMcquire keynote #wipce2022. "Schooling taught me, how to operate in a white world rather than building my own empowerment and freedom"
#wipce2022 @HayleyMcQuire



3:00 PM · Sep 29, 2022 · Twitter for Android



Jacinta Koolmatrjie
@JKoolmatrjie

A standout presentation for me on how Indigenous women maintain their inner fire while working in colonial institutions. Can't wait to read more about this research. Plus, everyone in the audience got gifts 🥰
@NehiyawSpirit #WIPCE2022



5:34 PM · Sep 29, 2022 · Twitter Web App



Kayla Chester
@KaylaChester

"Education has to be founded in our culture"
@LindaBurneyMP #WIPCE2022



2:49 PM · Sep 26, 2022 · Twitter for iPhone

WIPCE 2022 - INDIGENOUS SCIENCE RELATED SESSIONS (abridged)

Learning on Country pedagogy in Melbourne: Josh Cubillo, Indigenous Programs Manager, University of Melbourne

The education of Indigenous students, and the education about Indigenous peoples, in Australia are deeply contentious, political practices. Curricula is informed by past and present Australian government policies that have sought to displace and erase Indigenous people and knowledges through a settler colonial mandate. Throughout my Masters, I argued in favour of the pedagogical practice of Learning on Country as a means of unsettling the Eurocentric curriculum and embedding Indigenous knowledges in the curriculum. Through attending to both aspects, Learning on Country I have claimed contests Setter colonial discourses and can be used as a practice of decolonialisation.

Decolonizing STEM: Centering Place and Sense of Place through the implementation of STEMSA2: Dr Tara O'Neill, Professor, University of Hawaii – Manoa

At the United States federal level, STEM education policy is driven primarily by industry and military needs, and content is framed in an exclusively white western lens. When seeking to address education equity and access, issues arise of whose knowledge matters. The proposed seminar addresses 'Future—Always was and always will be, sub-theme of STEM/STEAM, by illustrating how native Hawaiian STEMSA2 master's alumni have taken steps to decolonize instruction in STEM fields.

Science is Spirit: Environmental Science at Yellowhead Tribal College: Ms Jocelyn Verreault, Department Head Yellowhead Tribal College

First Nations have long recognized that science has spirit; it is a part of spirit and to natural law. What governs people, the land, not everything is made up, and everyone needs to work with the spirit of the land. This is governance and we need to work with it in order to protect things for the future generations. This was in mind in the creation of the Indigenous Environmental Stewardship and Reclamation program. Students learn about the spirit, natural law and land-based education that prepares them to become advocates and leaders in environmental science. This session will talk about the journey of balancing both the First Nations science and mainstream science together for the benefit of everyone.

Indigenous STEAM Education: Linda Parker, Six Nations Polytechnic

Six Nations Polytechnic (SNP) STEAM Academy is transforming education, educational outcomes and success of Indigenous youth through a grade 9 to 14 model. The early success of Indigenous youth enrolled at the SNIP STEAM Academy is unmatched in Canada. Indigenous youth are highly engaged and adept at acquiring industry identified skills and competencies through responsive teaching, learning and delivery strategies, inclusion and innovative design. Learners are supported as active agents in their own well-being and as culturally-embedded navigators of their educational journey. Program design and delivery at the Science, Technology, Engineering, Art and Math (STEAM) focused school mimics a highly successful tuition-free, secondary to post-secondary education model that operates in 21 countries. The model demonstrates effective cooperation among employers, secondary and higher education providers, and government. SNIP STEAM Academy students are commuted to a rigorous course of study in STEAM and developing their career early while acquiring essential 21st-century skills such as leadership, problem-solving and critical thinking; enabling the next generation of innovators.

The Two-Way Science Initiative: Stephen Pigram, Two-way Science Principal Consultant, West Australian Department of Education

The Two-way Science Initiative (the Initiative) supports schools to build partnerships with local Aboriginal communities to develop integrated culturally responsive learning programs that connect the Western Australian Curriculum: Science to Aboriginal knowledges. Phase 1 of the Initiative (2021 — 2022) 'Proof of Concept' is underway with 20 schools and communities in remote, regional and metropolitan contexts in Western Australia. Aboriginal staff from the Western Australian Department of Education's Two-way Science Initiative team from the Kimberley, Goldfields and Metropolitan regions of Western Australia will share practical transferable tools and approaches that support schools and communities to work together. The workshop will feature a demonstrated example of local cultural community engagement to develop a curriculum-linked Two-way Science teaching and learning program.

Leading on-the-land science camps with Indigenous youth: towards reciprocity in research: Andrea Reid, PhD Candidate, Carleton University

Land-based learning and knowledge systems form the foundation for many Indigenous education systems in Canada and worldwide. However, colonial power systems are embedded in educational institutions, schools; and disciplines in Canada that have historically worked to disconnect Indigenous youth and families from the lands and waters. Hence, for many Indigenous communities, there is pronounced distrust in the education system and an ongoing movement towards self-determination in education. Alongside these colonial legacies, the effects of climate change are disproportionately impacting Indigenous communities in Canada. Changes in the landscape alter local knowledge and disrupts generational knowledge transfer. Today, there is great concern that youth are not learning the necessary skills and knowledge for the continuation and well-being of both the culture and the surrounding natural world. It is thus imperative that youth are educated about ongoing changes; through both Indigenous and dominant knowledge systems, to be empowered to measure, monitor, and respond to ongoing impacts for the continuity of Indigenous cultures and knowledges.

Indigenous Ways of Knowing and Learning in STEM through Bio-cultural and Environmental Monitoring Land-based Learning: Michelle Hogue, Associate Professor, University of Lethbridge

There is a critical under-representation of Indigenous people in science, technology, engineering, and mathematics (STEM) — related fields at all levels, and even with the current mandate to improve access to education and programs, little success has been realized. For Indigenous learners, the challenges begin in elementary school and most often accumulate as they progress to secondary school resulting in high incompleteness and attrition rates from the sciences and mathematics which precludes them from entering into STEM pathways. Indigenous ways of knowing and learning (IWKL) differ greatly from those expected in the Eurocentric-based western system. As educators and curriculum developers we need to begin by indigenizing our methodological approaches to teaching such that they attend to IWKL. This requires we step outside our current teaching box, move away from the traditional textbook-theory-based practice and explore different methodologies that engage Indigenous learners, attend to IWKL and create bridges to the western system.

If you were at a WIPCE session related to science that inspired you, please consider writing about it! If you presented a science related session at WIPCE, please consider summarising your presentation for members of this network to view in a future bulletin.



Can-SOLVE CKD Network - Le réseau Can-SO... @cansolv... · Oct 6 ...
#WIPCE2022 is the largest & most diverse #Indigenous education forum in the world with representation from 90 countries. IPERC co-chair Helen Robinson-Settee & Knowledge Keeper Dr. Mary Wilson presented on Knowledge Keepers in Research and Wabishki Bizhiko Skaanj Learning Pathway



WIPCE 2022 Tarndanya



Carly Jia
@carlyjia

What an incredible #WIPCE2022 I've had. My session was jam packed, supported by the best in the game. I appreciate every single one of you, tirelessly working in the space and making educational experiences and outcomes for our students more equitable and accessible!



12:40 AM · Sep 29, 2022 · Twitter for iPhone

[Aspiring lama marine biologist Madeina David wins university science award](#)

(Tom Zaubmayr, National Indigenous Times, 30 Sept 2022)

Trailblazing Zenadth Kes (Torres Strait) islands marine biologist Madeina David has been recognised as one of her university's top alumni at a ceremony this month. Ms David, 24, was in September awarded James Cook University's early career outstanding alumni for the College of Science and Engineering. The award recognises Ms David's work with the Torres Strait Regional Authority connecting traditional knowledge and modern science, while inspiring young Zenadth Kes islanders scientists to protect and preserve their homes.

[Indigenous knowledge bringing endangered djungarr home to Far North Queensland](#)

(Emma Ruben, National Indigenous Times, 29 Sept 2022)

Artificial dens are being built for the djungarr (northern quoll) in Far North Queensland by Aboriginal rangers to entice the species to return to 'quoll country'. Terrain NRM, Gulf Savannah NRM, Australian Wildlife Conservancy, James Cook University and Western Yalanji Aboriginal Corporation have begun working together in far north Queensland to deliver artificial dens, genetic research and cultural burning. The djungarr can be found in Western Australia's Pilbara region, the Northern Territory and in Far North Queensland.

[Remote Wajarri students participate in two-way learning program about Earth's oldest rocks](#)

(Emma Ruben, National Indigenous Times, 27 Sept 2022)

Indigenous students from Pia Wajarri Remote Community School have had the chance to learn the science behind some of Earth's oldest rocks from their Country. Their learnings are part of a two-way program which in turn teaches scientists from Curtin University and CSIRO about the cultural significance of the rocks. The reciprocal partnership has been put together by CSIRO through its STEM Professionals in Schools program. Located 330km north-east of Geraldton, the students travelled to Perth to learn about geology, space exploration, the planets, and visited Scitech and Curtin's Centre for Aboriginal Studies.

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.

Water justice: 'Aqua nullius' threatens the water security of all Australians

This article appears courtesy of [Monash Lens](#) under [Creative Commons By-NC-ND licence](#).



5 MINUTE READ

Share

FEATURING



Kate Harriden

Research Fellow, Monash Sustainable Development Institute



Katie O'Bryan

Lecturer, Faculty of Law



Bree Williams

Teaching Associate, Higher Degree Researcher, Faculty of Law

REPUBLISH ARTICLE



Unlike the separation of land and water found in current water legislation and policies, First Nations ways of being don't separate the two. Even though First Nations peoples' connections to land are now legally well-established, their connections to water are not, legally or socially.

This situation is reflected in one description of *aqua nullius* as a structural ["omission of Indigenous peoples' water rights and interests"](#).

A clear consequence of this omission is that the power and profit associated with water remains firmly in the hands of colonial authorities, institutions, and non-Indigenous peoples. First Nations peoples are unable to express their sovereign rights to water, participate fully in water debates, or reap the associated social, political or economic benefits.

Further, and critically, *aqua nullius* [inhibits](#) elevating First Nations health, strengthening wellbeing, spiritual and cultural connections to Country, and achieving self-determination.

Indigenous cultural camps teach city school students on Gunggari country

(Anthea Moodie, ABC Southern Qld: 17 Sep 2022)

On the quiet banks of the Maranoa River in south-west Queensland, a group of students from the city is getting the lesson of a lifetime. Mitchell is seven hours' drive away from the glitzy tourist hub of Noosa, where these year 10 students hail from, but it may as well be a world away. They're on Gunggari country getting a taste of Aboriginal culture for the first time. Student Faith Pink admits she did not know what to expect. "I haven't properly met an Aboriginal person before and got to know them," Faith said



Cultural camps on Gunggari country (ABC Southern Queensland)

 **AssocProf Bradley Moggridge** @bradmoggo · Sep 7 ...
Replying to @siwi_water and @biralnas
Yes, you missed the Indigenous voices at @siwi_water 2022, they were strong and are crucial for adapting and surviving in a water scarce world. Old knowledge for modern day water challenges. We have been innovative for thousands of generations. @WaterPartnersAU @UC_CAWS

  3  10 

 You Retweeted

 **AssocProf Bradley Moggridge** @bradmoggo · Sep 6 ...
Paving a pathway for a diverse science and tech workforce | Minister for DISR. This quote got me Minister- "Of First People, only half a percent hold university-level STEM qualifications."
As one of those 0.5% I demand better Minister @strom_m
minister.industry.gov.au/ministers/husi... ✓

 1  1  8 



STEM EQUITY MONITOR

In focus: engaging Aboriginal and Torres Strait Islander Girls in STEM

Gendered experiences of Aboriginal and Torres Strait Islander girls in STEM

The 2019–20 Youth in STEM survey highlighted that some challenges for students entering into a STEM career are strongly gendered. Girls were more likely to report lower confidence in STEM subjects than boys (particularly in engineering and technology). Girls also identified the fewer women working in STEM fields and the need for more role models as challenges to engaging in STEM.

In the 2020–21 STEM Influencers - Teachers and Career Advisers survey, educators also reported that more visible women role models are needed to help improve girls' attitudes towards STEM. They also reported that it is important to align STEM with girls' interests and make it more relevant to their experiences.

Some of the challenges and views from the surveys noted above were also reflected in the Aboriginal and Torres Strait Islander girls qualitative research. The challenges mentioned in this qualitative research were raised for Aboriginal and Torres Strait Islander students of all genders, but to a greater extent for girls.

Some of the educators interviewed identified lower confidence levels leading to self-doubt among their students, particularly amongst Aboriginal and Torres Strait Islander girls in secondary school.

Educators also:

- emphasised the need for more relatable role models in STEM, including Aboriginal and/or Torres Strait Islander people and particularly those who are women, local, within community and/or within the school
- raised the importance of making STEM learning more tangible and showing its real-world connections and impact.

[Parks co-management agreement marries traditional and modern scientific knowledge](#)

(Giovanni Torre, COSMOS: 30 Aug 2022)

A historic co-management agreement has been reached between Kurna Yerta Aboriginal Corporation and the South Australian Government for three Adelaide national parks. The agreement provides a formal platform for co-management of Winaityinaityi Pangkara (Adelaide International Bird Sanctuary National Park), Aldinga Conservation Park, and Torrens Island Conservation Park. A Kurna parks advisory committee of representatives from Kurna Yerta Aboriginal Corporation and South Australia's Department for Environment and Water will provide management advice to the Minister and the National Parks and Wildlife Service. Kurna Yerta Aboriginal Corporation chairman Les Wanganeen says this is the first step in establishing a relationship between the corporation and the state to protect the environment for future generations.



Winaityinaityi Pangkara (the Adelaide International Bird Sanctuary National Park) is one of three co-managed national parks in Adelaide (Photo by Peripitus, [Adelaide International Bird Sanctuary National Park—Winaityinaityi Pangkara banner](#), [CC-BY-SA 4.0](#)).

DEADLY SCIENCE

DeadlyWeather

DeadlyScience and **Toyota Community Trust** have an exciting project that will provide high-quality STEM learning resources including weather stations and resources to selected remote and very remote schools and all over Australia.



[The student helping engineers connect with Traditional Owners](#)

(Rowan Lamb, CREATE: 14 Sept 2022)

Curtin University Civil Engineering student and Engineers Australia member Tahlia Prior StudIEAust was recently named Shell Aboriginal STEM Student of the Year at the Western Australia Premier's Science Awards. Prior is a proud Ballardong Whadjuk Nyungar, Wajarri Yamatji woman, and her focus throughout her studies has been Elder and Traditional Owner community representation, and in connecting with industry partners and opportunities. Prior has a personality quiz at school to thank for introducing the idea of engineering. "The top recommendation was engineering, and architecture was second. At that point I didn't really know what engineering was – until then I thought it was just working on cars," she says.



Closing the other gap: instilling Indigenous knowledge in young hearts and minds



31 AUG 2022 | KAY HARRISON

This extract appears courtesy of [Monash Lens](#) under a [Creative Commons By-NC-ND licence](#).



Meaningful engagement with Indigenous knowledge in education is vital for reconciliation.



Fostering a culturally supportive learning environment improves educational outcomes for all students.
Photo: Supplied.

Researchers from the [UNSW School of Education](#) are engaging with local Indigenous communities to address a critical knowledge gap around First Nations people and cultures in schools.

"If we want to close the knowledge gap around Indigenous culture, we need to prioritise life-long learning around, and appreciation of, Australia's shared history," Dr Amazan says.

Introducing Indigenous knowledge to our children's education in authentic ways is vital for Reconciliation, Dr Amazan says.

"Research shows that partnerships between schools and Indigenous communities, and the embedding of Indigenous cultural knowledge and perspectives in schools, can improve schooling for all students," Dr Amazan says.

"Every child across this vast continent deserves to learn from the wisdom of the first custodians of the country they live on," says A/Prof. Lowe, a Gubbi Gubbi man.

"This way, the next generation will be equipped to make better decisions that impact the lives of First Nations peoples."



Dr. Nazz @Nazz_Oldham · Sep 28



What a thinker, what a speaker. The amazing Marcia Langton just raised the roof discussing the urgent need for sovereignty in Indigenous education at the World Indigenous Peoples' Conference on Education [#WIPCE2022](#)



NISEP
@NISEP01



We are all ready with the Aboriginal artefacts as part of our [@NISEP01](#) Indigenous Science Experience school day for [@Aus_ScienceWeek](#)



10:36 AM · Aug 17, 2022 · Twitter Web App



Mysterious marks on boomerangs reveal a ‘forgotten’ use of this iconic Aboriginal multi-tool

Published: August 23, 2022 12:13pm AEST



Two traditional style boomerangs. Manufactured by Paul Craft. Photo by Eva F. Martellotta, Author provided

This extract is from [The Conversation](#) under a [Creative Commons BY-ND licence](#)



Nothing ‘primitive’ about working stone

When we think about stone tools, we associate them with “primitive” technology. Nothing could be further from the truth.

Manufacturing stone tools requires an advanced understanding of fracture mechanics, extensive planning, and years of hands-on practice to produce even the most basic of tools.

Not unlike the contents of today’s kitchen drawers and garden sheds, human groups living in the deep past had access to an assortment of tools for all sorts of everyday activities.

The ability to carefully modify the edge of stone tools was crucial not only to



indigenous_gov  @indigenous_gov · Aug 20 ...

Do you know a young Aboriginal and/or Torres Strait Islander woman who is interested in STEM subjects?

Applications to join the Young Indigenous Women's STEM Academy are now open! To apply visit csiro.au/en/education/P... 

[#ScienceWeek](#)

[@Aus_ScienceWeek](#)



 18

 18



‘You can’t just show up and start asking questions’: why researchers need to understand the importance of yarning for First Nations



Non-Indigenous researchers need to stop conducting research 'on' First Nations communities, and instead work 'with' them to gain knowledges. Gundjeihmi Aboriginal Corporation, Vincent Lambert/AAP

It’s essential for non-Aboriginal researchers to establish relationships with First Nations people when conducting research in their communities.

Past research practices have left a legacy of mistrust towards non-Indigenous researchers among many First Nations people. This is because research has been steeped in colonial practices, including viewing research as something done *to* Indigenous peoples without them having a say in how they are represented.

First Nations people and communities have had data about them collected with little or no input into the processes or questions asked. Even now, standard questions used for data collection do not always acknowledge that First Nations ways of living may be different from the rest of the population.

This includes things like the effects of intergenerational trauma, the fact First Nations family systems often involve more people than are blood related, and different cultural needs within health services.

This extract is from [The Conversation](#) under a [Creative Commons BY-ND licence](#)

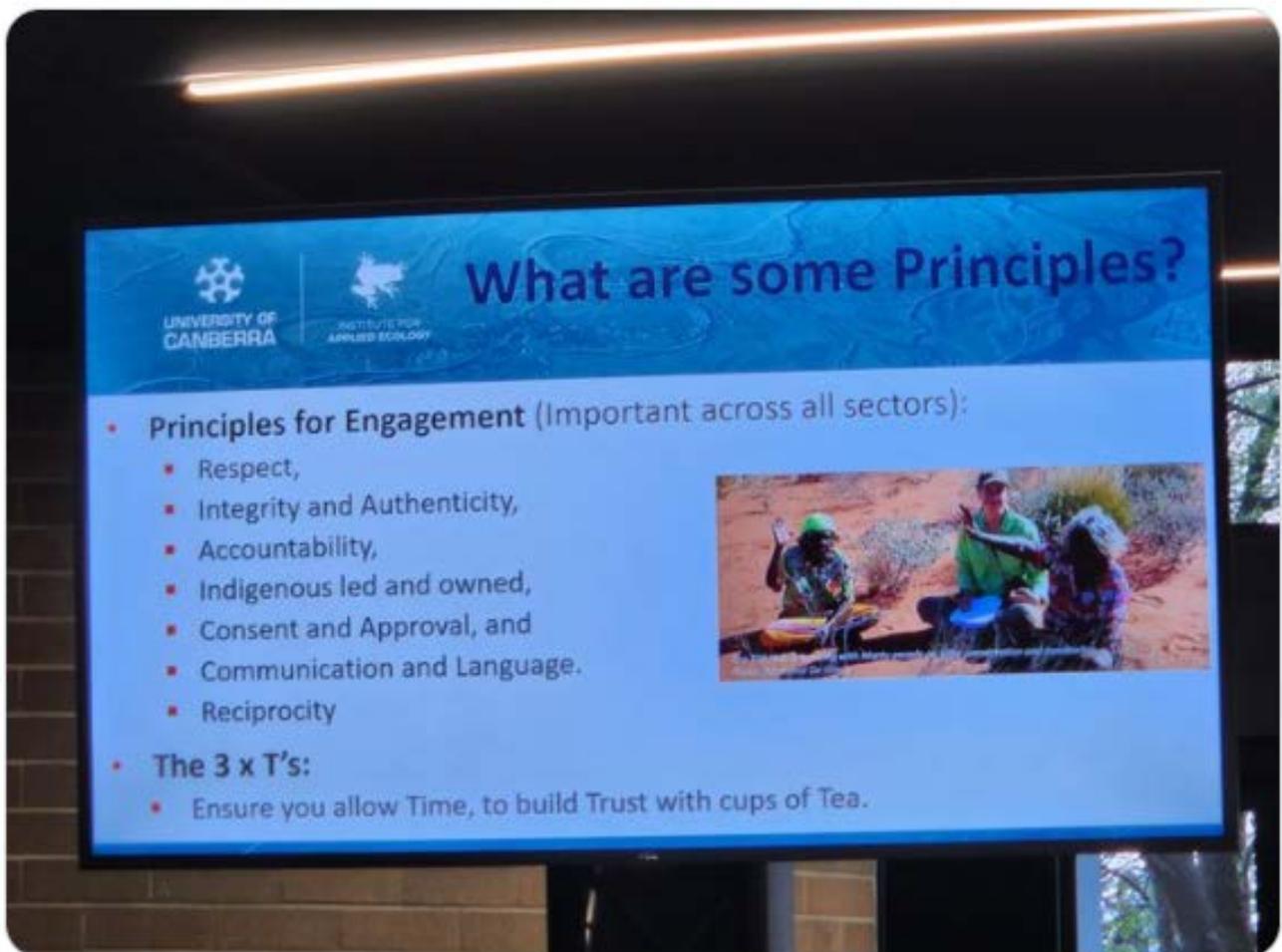




Maria Barrett
@barretmj



Love @bradmoggo 3 x T's principle for engaging with Australia's First People ... Time, Trust and Tea
#CONASTA69

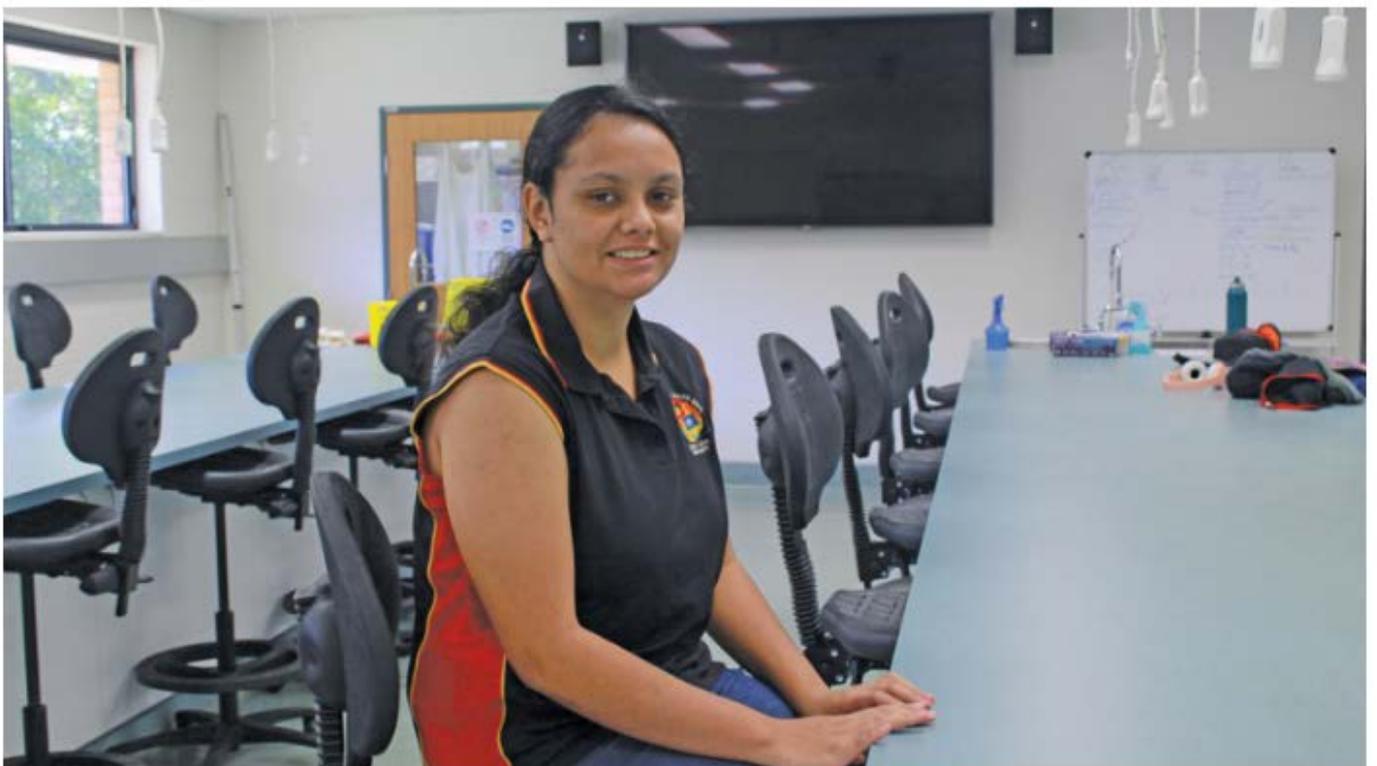


5:02 PM · Sep 27, 2022 · Twitter for Android

Passion for drones leads to STEM success

(The Express: 20 Aug 2022)

A MAREEBA local with a passion for science, drones and preserving her Aboriginal history and heritage has been selected as a keynote speaker for the upcoming STEM Aboriginal Learner Congress in August. Through her love of drones and passion for her traditional country, 19-year-old Bachelor of Science student Gullara McInnes (pictured) has been invited to speak at the upcoming congress on 18-19 August, hoping to inspire other young indigenous women to pursue careers in STEM. The congress is hosted by the Young Aboriginal STEM Thinkers of South Australia, run by young Aboriginal people for young Aboriginal people. It aims to engage young indigenous Australians with science, technology, engineering, math and industry experiences. Ms McInnes's fascination with drones was born during her time as a student at Mareeba State High School where she learned the wonders of geospatial mapping.



Mareeba's Gullara McInnes will be a keynote speaker at the upcoming STEM Aboriginal Learner Congress.



Murrup Barak
@MurrupBarak



Congratulations to all Aboriginal and Torres Strait Islander graduates - be proud of your achievements, hard work, and determination. Celebrating Blak excellence is deadly @UniMelb @melbconnect



[The floods tell us the river is sick. We should listen to Indigenous knowledge to help Country heal](#)

(Oliver Costello, The Guardian, 18 August 2022)

The only way to learn is from the river, like our old people did when they sat on its high banks of red and green.

Oliver Costello is a Bundjalung man who has lived most of his life in the upper catchment of the Wilsons River and tributaries. This article is an edited excerpt from his personal submission to the [NSW flood inquiry report](#).

The river was once healthy and the locals knew it well. The truth is that people are both the problem and the solution, not the river. The only way to learn is from the river, like our old people did when they sat on its high banks of red and green. Now it is so sick, it is hard, if not impossible, to know the abundant beauty it once held. Instead of being celebrated as it was once, it is cursed and treated as a drain.

We need to heal the river so it can teach us good ways to live with it and all that she brings. Healing the river will help heal people too. Hopefully we will all learn and share these connections. We need to trust the river more now than ever before. The river and the weather are telling us the Country is unhealthy, not just here but globally because temperatures, rainfall and other indicators are changing more rapidly and to greater extremes.

The climate is clearly changing. It is because most people have forgotten the Lore of the sky, land and water. Bundjalung Jagun was once a very healthy place for our old people and the ones before them. Our ancestors have lived in abundance here since time began.

To restore the rivers, we need to start with the stories bringing knowledge holders together to share the knowledge of Country to identify important places and values of significance. We need to start a journey and we need to keep walking, talking and flowing together.

 **Stronger Smarter Institute**
@StrongerSmarter

Who do we accept applications from for our Teachers of STEM Initiative?

All Aboriginal and/or Torres Strait Islander women who fit any of these groups can register their interest to get support

Apply here: strongersmarter.com.au/teachers-of-stem-initiative-support ✓

[@indigenous_gov](#)

WHO CAN APPLY FOR THE TEACHERS OF STEM INITIATIVE SUPPORT?

Aboriginal and Torres Strait Islander women who fit these groups:

- University student
- Primary School Teacher
- Community Member
- Relevant STEM Degree Holder
- Indigenous Education Worker
- Aboriginal Teaching Assistant
- Secondary School Teacher

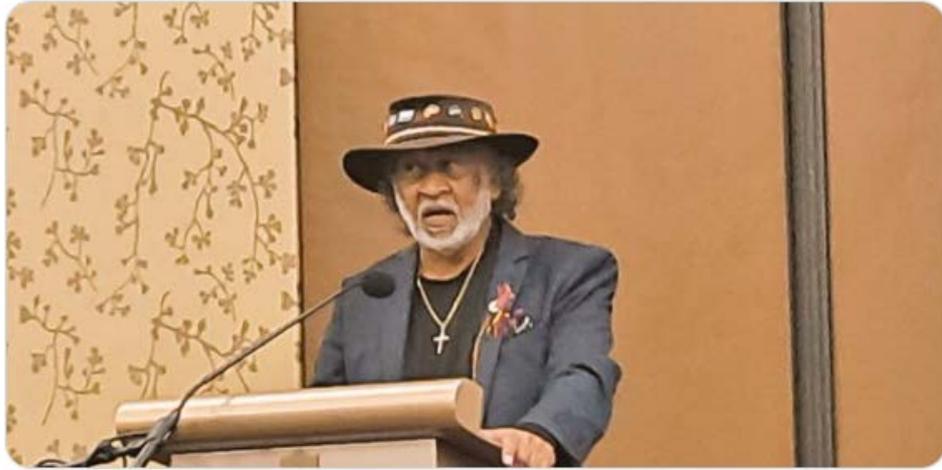
 **NIAA** 

9:12 PM · Oct 5, 2022 · Sprout Social

 **Indigenous Science Network**
@IndigenousSci1

Uncle Ray Minniecon reminds us that Indigenous children already have PhDs in environmental science, astronomy, geography etc. Education systems fail us when they don't recognise this. Word.

illuminatefnq.org ⓘ



9:46 AM · Aug 19, 2022 from Shangri-La Hotel · Twitter for Android

Indigenous peoples teach the world First Nations wisdom through technology

Aug 10, 2022



If we seek the perspectives of Indigenous peoples and take into account their deep connections with the earth, ways of being, law and cultural practices, we de-risk the process of commercial fishing, extracting minerals and other commercial activities.

Image: Reuters/Thomas Peter

In Australia, schoolchildren and educators, both Indigenous and non-Indigenous, are having their eyes opened – quite literally – to the Indigenous ways of knowing, being and doing. After listening to stories from our Elders, they are learning how to code, they are creating in 3D, and they are designing their own augmented reality experiences. Children are playing and experimenting with technology, donning virtual reality headsets and being taught about the deep connection that Indigenous peoples have with their Country. Country to us is the landscape of our home, it is the waterways, the people, the plants and trees and the animals.

This extract is from [The World Economic Forum](#) under the [Creative Commons Attribution-Non Commercial – No Derivatives 4.0 International Public](#)

Invasive myrtle rust fungus poses 'unprecedented' risk to native trees

ABC Science / By Anna Salleh

Posted Wed 10 Aug 2022 at 6:00am, updated Wed 10 Aug 2022 at 9:47am



There are worries about how the fungus affects the ability of paperbark trees like this to bounce back after bushfires. (Supplied: Glenn Leiper)

Native trees like the paperbark are central to the culture of the traditional owners of K'Gari (Fraser Island).

"These species are living stories," says Matilda Davis, who works with the Butchulla Aboriginal Corporation as a biosecurity and climate change officer on the World Heritage-listed island.

Apart from many being edible or medicinal, these trees have ancestral and spiritual connections, and are key to the health of Butchulla country, she says.

For example, the paperbark (*Melaleuca quinquenervia*) — called "deebing" by the Butchulla people — can let them know when it's safe to sustainably harvest certain foods.





‘I am Country, and Country is me!’ Indigenous ways of teaching could be beneficial for all children

Published: August 4, 2022 12:12pm AEST

The authors are cultural men who have undertaken learning on and through Country with Elders in NSW, Queensland, and the Northern Territory. This piece is the product of their own experience and understanding and is not intended to represent the views of all Indigenous people.

As we acknowledge National Aboriginal and Torres Strait Islander Children’s Day, it’s important to recognise Indigenous Knowledge as vital to all children’s education.

When old Aboriginal people, like Kakadu Man Bill Neidjie and our cultural grandfather Damu Paul Gordon, say “I am Country, Country is me”, they are not speaking metaphorically. Our people have known for tens of thousands of years we come from the land, with our bodies composed of earth and water. The land is our big mother or Gunni Thakun, “Mother Earth” in the Ngemba language spoken by Damu Paul. If we damage her, we damage ourselves.

This extract appears from [The Conversation](#) under a [Creative Commons BY-ND licence](#)



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ACER
@acereduau



"Just as teaching is responsive to the needs of students, so assessment should be responsive.'
from 'Reimagining assessment in culturally responsive ways' the thought provoking presentation from Dr Carly Steele and A/Prof Graeme Gower from
[@CurtinEducation](#)
[#researchconf22](#)



11:50 AM · Aug 23, 2022 · Brandwatch



ATSISUQ
@atsisug



Congratulations to Hon Professor Henrietta Marrie & the team on being awarded an [@arc_gov_au](#) Indigenous Discovery grant for research on the past, present & future of Indigenous ethnobotanical knowledge - [rms.arc.gov.au/RMS/Report/Dow...](#) 🌱 [#Indigenous](#) [#Science](#) [#ScienceResearch](#) [#WomenInSTEM](#)



You and 6 others

4:45 AM · Oct 12, 2022 · Twitter for iPhone

[How scientists are working for greater inclusion of Indigenous knowledge](#)

(Donna Lu, The Guardian, 31 July 2022)

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 decisionmaking”.



ACER
@acereduau



"Just as teaching is responsive to the needs of students, so assessment should be responsive.'
from 'Reimagining assessment in culturally responsive ways' the thought provoking presentation from Dr Carly Steele and A/Prof Graeme Gower from [@CurtinEducation](#)
[#researchconf22](#)

Curtin University

Culturally responsive assessment

Assessment of student learning

Establishing goals for learning

Planning of appropriate teaching strategies

Teaching and learning

https://whatworks.edu.au/upload/1311206854407_file_CoreIssues10.pdf

Humanities | School of Education

ONCOS Provider Code 003014

Carly Steele

11:50 AM · Aug 23, 2022 · Brandwatch

Meeting of the waters: Aligning the traditional knowledge and science



Ten Mile Swamp, Kowanyama

Griffith University researchers partnered with Traditional Custodians to tell the story of how science interweaves with the Traditional Knowledge of Wawu Budja (the Mitchell River).

The [Mitchell River Story Map](#), a collaboration between researchers with the National Environmental Science Program (NESP) and the Mitchell River Traditional Custodian Advisory Group (MRTCAG), is an innovative and accessible way to bring together the latest research on the Mitchell River with the cultural knowledge of Gugu Yalanji seasons.

“Scientific approaches can teach us how these ecosystems function, but often our science is only ‘new knowledge’ if we ignore the wealth of traditional knowledge that has existed for thousands of years,” said [Dr Ben Stewart-Koster](#), project lead and senior research fellow at the [Australian Rivers Institute](#).

Published

 August 9, 2022

Author

 Colin Hutchins



AssocProf Bradley Moggridge

@bradmoggo



What a great honour to meet and discuss Indigenous knowledge and groundwater with Dr Pema Gyamtsho, DG @icimod (International Centre for Integrated Mountain Development) thanks John, Lizzie & @dfat for facilitating. How can we maintain discussions @WaterPartnersAU? @UniCanberra



4:30 PM · Sep 26, 2022 from Canberra, Australian Capital Territory ·
Twitter for iPhone

Respecting the environment and listening to Indigenous wisdom

(Wendy Williams, Pro Bono Australia, 11 July 2022)

Could our past save our futures? Sandrine Charruyer and Sophie Lepowic talk to Wendy Williams about their documentary, *Inferno Without Borders*, and the growing need to recognise the value of Aboriginal fire and landscape management practices.

At the heart of the French/Australian documentary *Inferno Without Borders* is the importance of recognising Indigenous knowledge.

Cool burning, often referred to as cultural burning, is a practice where small fires are set alight to clear the underbrush. The central idea is that it uses a low-intensity “cool” fire which moves slowly and is closely monitored so only the underbrush is burnt.

The nature of the practice, which has been done for thousands of years, means that animals and insects are given enough time to escape, trees can survive, it encourages regrowth of grasses, and the fire is often self-extinguishing.

In contrast, hazard-reduction burns, which are commonly used to reduce fuel loads and threats to people and property from wildfires, remove whole areas of bush and can be much hotter than cool burns, ultimately damaging the ground.

Charruyer recalls a conversation she had with Uncle Nook (Noel Webster) that helped her to understand the consequences of current fire management techniques.



Amphietom Productions, YouTube, [Inferno Without Borders - Official Trailer](#)

The unprecedented bushfire crisis that struck Australia during the 2019-2020 summer sparked numerous controversies and its abnormality revealed underlying major issues with bush management and Australia’s part in contributing to global warming. The nation-wide disaster enflamed by years of drought, drier fuel, unusually high temperatures and severe winds, was the worst in world history. As the population is faced with devastating losses, a number of questions arise:

- Could more hazard prevention methods have been implemented in order to reduce the severity of the natural disasters? If so, would these have been effective?
- Could it have been beneficial to reintroduce traditional fire management techniques stemming from Aboriginal cultures? By adopting these practices, could future generations look forward to an Australia of regenerated wildlife and healthy landscapes?

[New research in Arnhem Land reveals why institutional fire management is inferior to cultural burning](#)

(By David Bowman, Christopher I. Roos and Fay Johnston, The Mandarin, Sunday July 24, 2022)

One of the conclusions of this week's shocking [State of the Environment report](#) is that climate change is lengthening Australia's bushfire seasons and raising the number of days with a fire danger rating of 'very high' or above. In New South Wales, for example, the season now extends to almost eight months.

It has never been more important for institutional bushfire management programs to apply the principles and practices of Indigenous fire management, or 'cultural burning'. As the report notes, cultural burning reduces the risk of bushfires, supports habitat and improves Indigenous wellbeing. And yet, the report finds:

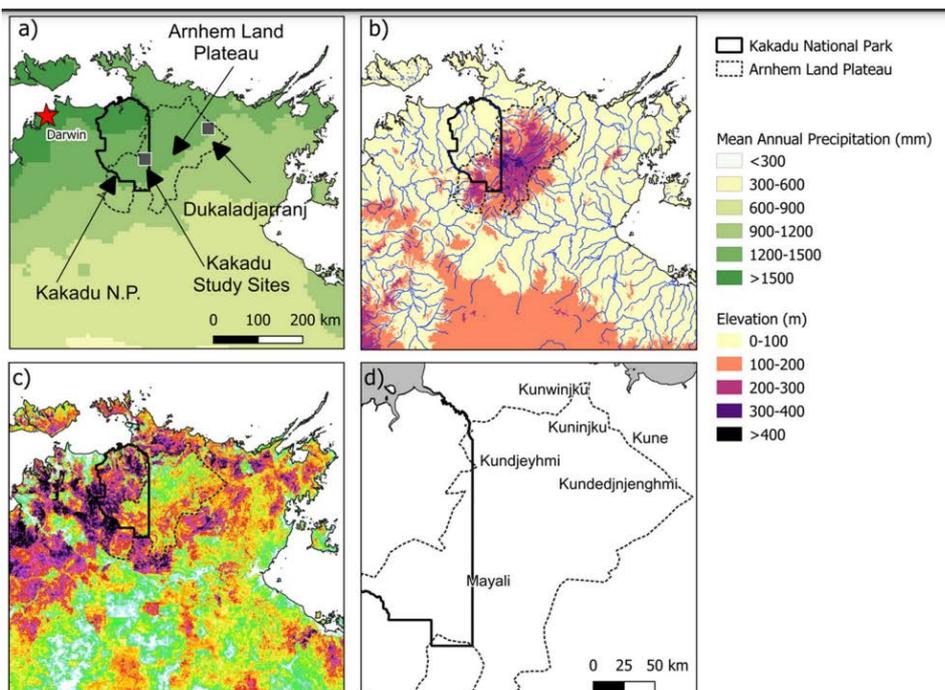
with significant funding gaps, tenure impediments and policy barriers, Indigenous cultural burning remains underused – it is currently applied over less than 1% of the land area of Australia's south-eastern states and territory.

[Population collapse of a Gondwanan conifer follows the loss of Indigenous fire regimes in a northern Australian savanna](#)

David M. J. S. Bowman, Grant J. Williamson, Fay H. Johnston, Clarence J. W. Bowman, Brett P. Murphy, , Christopher I. Roos, ClayTrauernicht, Joshua Rostron, & Lynda D. Prior

Scientific Reports (2022) 12:9081

Colonialism has disrupted Indigenous socioecological systems around the globe, including those supported by intentional landscape burning. Because most disruptions happened centuries ago, our understanding of Indigenous fire management is largely inferential and open to debate. Here, we investigate the ecological consequences of the loss of traditional Aboriginal fire management on fire-exposed savannas on the Arnhem Plateau, northern Australia, using the fire-sensitive conifer *Callitris intratropica* as a bio-indicator. We contrast Kakadu National Park, where traditional Aboriginal fire management was severely disrupted during the early twentieth century following Aboriginal relocation to surrounding settlements, and an adjacent Aboriginal estate where traditional Aboriginal fire management endures.



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[Project bringing science and traditional knowledge together in northern Australia wraps up](#)

(Jarred Cross, National Indigenous Times, July 15, 2022)

The Federal Government's National Indigenous Australians Agency and land rights peak body the National Native Title Council hope cooperation of tradition and science continues to empower Indigenous communities after the recent end of a long-running project.

In 2017 national science agency the CSIRO partnered with First Nations stakeholders to develop projects for developing business opportunities in northern Australia.

In the five years since, tourism, pastoralism and environmental management have been key areas of focus for collaboration between First Nations organisations, research institutions and industry.

NNTC chief executive and Gundjitmara Djabwurrung man Jamie Lowe said the partnership was grounded in collaborations in North Queensland and Western Australia and had built a foundation of case studies; developing “how to” information to support First Nation on-country development elsewhere.



Image: State of Queensland, [Talaroo Hot Springs from a drone](#), License: [CC BY 4.0](#).

Indigenous science solutions for tomorrow

(Louise Jeckells, CSIRO: 6 JUL 2022)

For tens of thousands of years Aboriginal and Torres Strait Islander peoples have developed deep knowledge, understanding, care and respect for the lands and waters of this country. This makes Indigenous scientists, Australia's first scientists. By bringing Indigenous science and western science together, we can solve Australia's greatest challenges. Here are some examples of how we're doing just that.

Aboriginal and Torres Strait Islander peoples don't have equal access to healthcare in Australia. One of the main reasons for this is a lack of access to health services. This is especially the case in remote communities. So we're working with remote Indigenous communities in Northern Australia to increase access to eye care services. There is a large number of people living in remote communities in Northern Australia with diabetes. It's a disease that can cause eye problems and, if left undetected, can result in blindness. The remoteness means it isn't easy for people to see a specialist and get the services they need. So we're working with Queensland Health, Laynhapuy Homelands Aboriginal Corporation, Marthakal Homeland and Resource Centre Aboriginal Corporation, and Gidgee Healing to establish a telehealth service to tackle this problem.



Indigenous Science Network
@IndigenousScie1



Jesse's article on Glass also formed the editorial for our August Bulletin! Some nice images included in this Australian Museum hosted item.

research.acer.edu.au/isn/vol23/iss3... ✓

australian.museum/learn/first-na... ✓ via @austmus



australian.museum

A First Nations lens on glass in Australia

As a Waanyi descendant, 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...

11:32 AM · Aug 14, 2022 ·



Victor Steffensen
@V_Steffensen



Lovely first burn on Gundungurra country in Southern Blue Mountains country. Beautiful land and the people were so happy that more support is building around them. Really special country.



4:39 PM · Aug 8, 2022 · Twitter Web App

a) PASIFIKA

In New Zealand, Conservation Is Buoyed by Indigenous Knowledge

(Rina Diane Caballar, Undark Magazine, -9 May 2022)

Blending Māori knowledge into federally funded crayfish research makes for better science.

Freshwater crayfish have inhabited New Zealand for millions of years. They have dark, hard, and mottled shells, allowing them to blend in with logs and mud as they seek cover from predators. At night the crustaceans search for food, their strong pincers finding and cutting up fish, mayflies, plants, and snails. They are known here as kōura, a name given to them by the Māori, the Indigenous Polynesian people who first arrived in New Zealand in the 1300s and who now comprise more than 15 percent of the country's population.

For Māori, the crayfish are economically and culturally significant, both as a delicacy and as part of a traditional value called mahinga kai, which upholds the importance of natural foods, their ecosystems, and the practices of gathering and sustaining them.

Today, kōura populations are on the decline and are considered at risk of becoming threatened due to habitat loss, overfishing, and poor water quality. Makarini Rupene, a mahinga kai expert and cultural land management adviser with the local government of Canterbury, has watched this decline in the country's South Island. "I was brought up fishing on the rivers, the lakes, the coastline, the ocean," he said. As a child in the 1970s and '80s, he learned traditional practices and their relationship with mahinga kai. Now when he returns to the waters of his childhood, he finds few crayfish.

This article was originally published on Undark.

Tohunga Tohorā: Ramari Stewart awarded Honorary Doctor of Science (NZ Herald, 31 August 2022)

Tohunga Tohorā (whale expert) Ramari Stewart of Ngāti Awa has been awarded the Honorary Doctor of Science from Waipapa Taumata Rau. At a ceremony held at the University's Fale Pasifika, the university acknowledged Stewart's commitment: "Ramari Stewart is found most deserved of the award of Honorary Doctor of Science." Born and raised in Te Horo near Ōhope, Stewart is known internationally, particularly for her commitment to mātauranga Māori (Indigenous knowledge) and science practices surrounding whales.



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!



Native Hawaiians gain more authority over future of sacred mountain, astronomy site

[Nation](#) Aug 20, 2022 2:39 PM EDT

HONOLULU (AP) — For more than 50 years, telescopes and the needs of astronomers have dominated the summit of Mauna Kea, a mountain sacred to Native Hawaiians that's also one of the finest places in the world to study the night sky.

That's now changing with a new state law saying Mauna Kea must be protected for future generations and that science must be balanced with culture and the environment. Native Hawaiian cultural experts will have voting seats on a new governing body, instead of merely advising the summit's managers as they do now.

The shift comes after thousands of protesters **[camped on the mountain](#)** three years ago to block the construction of a state-of-the-art observatory, jolting policymakers and astronomers into realizing the status quo had to change.

This extract appears with permission from PBS NewsHour.

Study supports a return to Indigenous-led solutions to reverse plastics pollution

(Newcastle University: 16 Aug, 2022)

The dumping of plastics in the Pacific Islands (Te Moananui) is a form of waste colonization, leading to disproportionate plastics pollution in the region and threatening the health and livelihoods of its people. In a paper published today in the *Journal of Political Ecology*, researchers demonstrate that prioritizing the perspectives of Indigenous caretakers, rather than the concerns of settler-colonizers and commercial companies with vested interests, is crucial to reversing plastic pollution and ending the exploitation of Te Moananui as a dumping ground. Co-author Dr. Sascha Fuller, environmental anthropologist and Pacific Engagement Coordinator at the University of Newcastle, said that despite their known harms, the rate of toxic plastics production and consumption is accelerating worldwide..



Credit: Unsplash/CC0 Public Domain

Racism, exclusion and tokenism: How Māori and Pacific science graduates are still marginalized at university

by Tara McAllister, Leilani Walker and Sereana Naepi, The Conversation

This extract appears from The Conversation under a Creative Commons licence.



A word cloud displays the most common descriptions of Māori and Pacific postgraduate experiences in ...

Given most New Zealand universities have goals for increasing Māori and Pacific student and staff numbers, we need to ask why their numbers still remain stubbornly low in the research sector—and even lower within "STEM" (science, technology, engineering and mathematics) departments.

Our [previous research](#) showed that one New Zealand university had failed to employ a Māori or Pacific academic in their science department for at least 20 years.

But while the numbers provided a snapshot of the workforce, they don't explain *why* so few Māori and Pacific researchers stay in the tertiary system. Our [latest research](#) aims to explain this better by looking at the experiences of 43 past and present postgraduate STEM students.

We show that simply bolstering university enrolments and plugging more students into a broken pipeline will not solve the under-representation of Māori and Pacific peoples. Furthermore, a lack of representation is negatively affecting those Māori and Pacific postgraduate students already in STEM courses.

Next generation of Native Hawaiian and Pacific Islander scientists shine

University of Hawaii, UH News, August 5, 2022

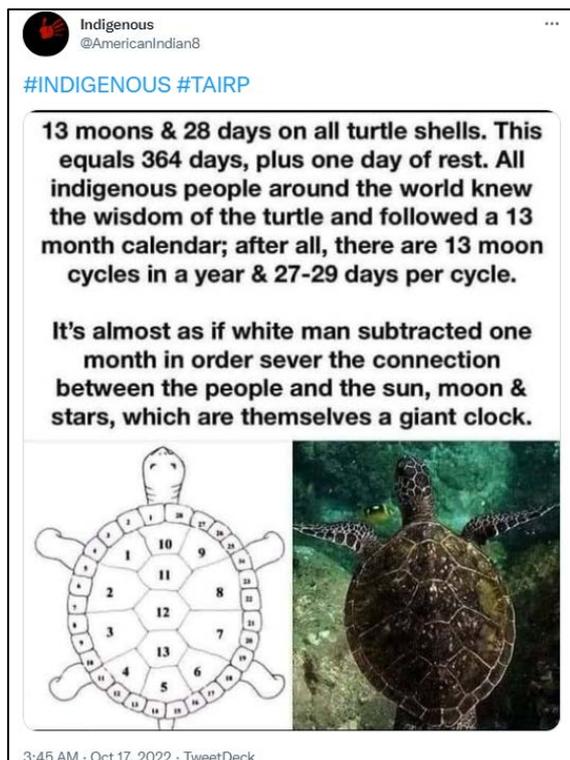
A summer research program provided 11 Native Hawaiian and other Pacific Islander (NHPI) college students from across the Pacific a valuable opportunity to develop their scientific research skills while tackling challenges facing Pacific Island communities. The 10-week program, hosted by the University of Hawai'i at Mānoa, culminated with student presentations and a celebration at Ulupō Heiau State Historic Site on August 5.

The students performed cutting-edge research in environmental biology within the watershed of Kailua in Windward O'ahu. Student projects focused on various topics including systems biology research to solve issues identified by the Kailua community, fishery science, sustainable agriculture systems, ecological restoration, invasive species science and management, and disease ecology. The place-based focus promoted science learning by linking it with Indigenous Pacific knowledge, fostering an opportunity for effective community engagement and encouraging collaboration among interns.

Indigenous stories, historical data build a new AI-generated picture of Porirua

(Kate Green, Stuff NZ: 9 Aug 2022)

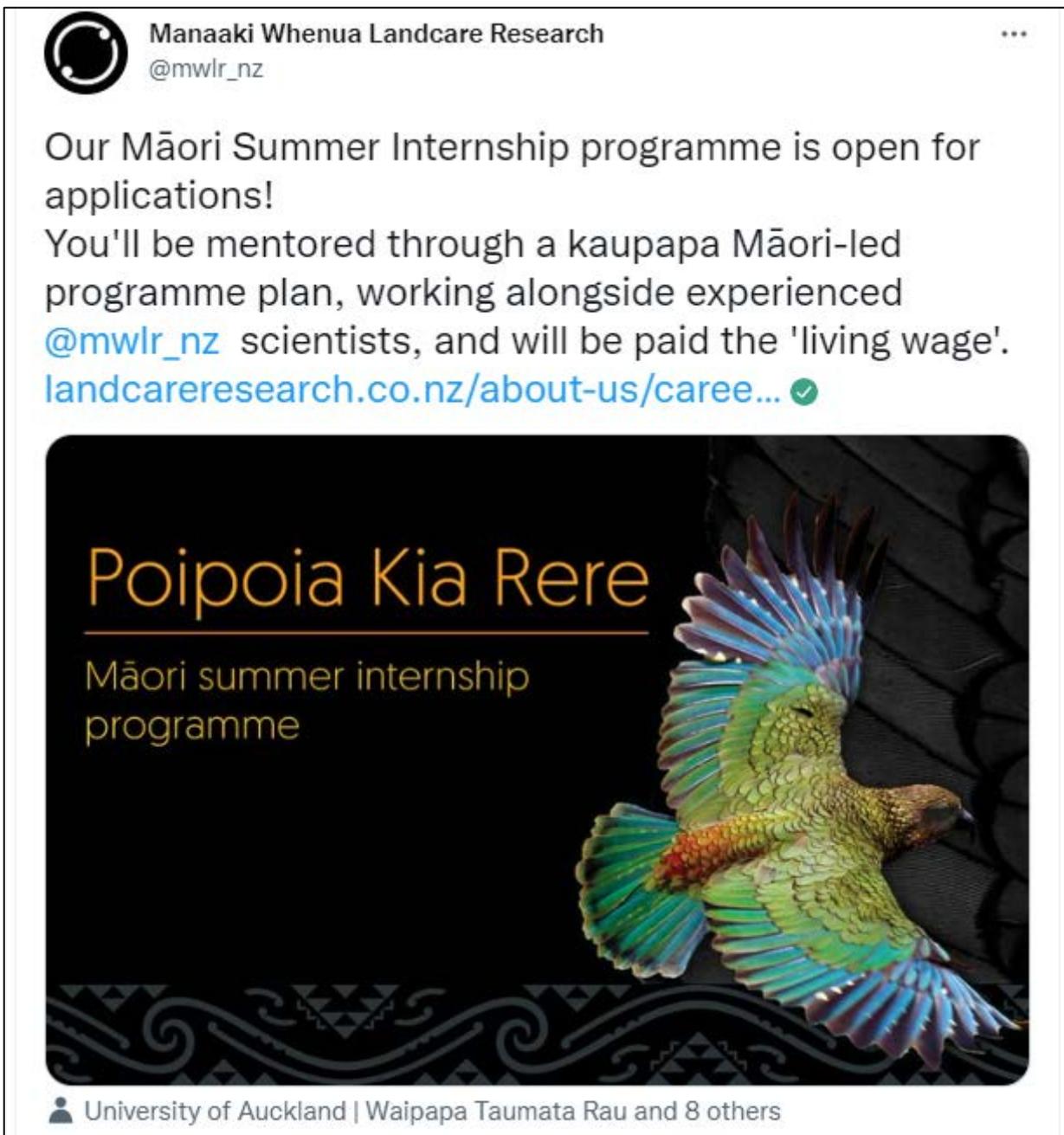
For the first time, stories from mana whenua combine with Western science to build a virtual city, showing how landscapes are affected by human decisions. The tool focuses on Porirua and is a blueprint for the future of data sharing. It shows environmental hazards like sea level rise and pollution alongside video interviews with rangatira and kuia from local iwi Ngāti Toa. It's a collaboration between the iwi, Microsoft and the Ministry for the Environment (MfE), aimed at understanding how improved environmental data management could help New Zealanders understand humans' impact on the environment. As well as using historic data and records to build a detailed map of Porirua Harbour and Kenepuru Stream as they used to be, the online tool is intended for use when planning environmental restoration or issuing building consents – and while this one is purely an example, the team has high hopes for the future of data presentation.



[AI catfish counter catches supreme science tohu](#)

(Adam Gifford, WAATEA News: 4 July 2022)

A Mokoia Intermediate School pupil has won the supreme prize at a mātauranga Māori science fair for his project to monitor catfish numbers. Alex Malcolm says he has been involved in Te Arawa Lakes Trust's catfish programme for more than five years, and wanted to come up with a new way of finding out what's happening under the surface. His solution, combining traps and underwater cameras with artificial intelligence, won the sustainability category and the Scion Ngā Huarahi ki Te Ao Award as well as the Te Arawa Lakes Trust Ngā Karu Atua Supreme Award at the first Te Tūkōhu Ngāwhā Science and Design Fair, which is a joint kaupapa between Te Arawa Lakes Trust and Bay of Plenty Regional Council.



Manaaki Whenua Landcare Research
@mwlr_nz

Our Māori Summer Internship programme is open for applications!
You'll be mentored through a kaupapa Māori-led programme plan, working alongside experienced @mwlr_nz scientists, and will be paid the 'living wage'.
landcareresearch.co.nz/about-us/caree... ✓

Poipoia Kia Rere
Māori summer internship programme

University of Auckland | Waipapa Taumata Rau and 8 others

b) ASIA

[Indigenous women know how to nurture nature. We need to listen to them](#)

(Rani Yan Yan, The Daily Star: 8 Aug 2022)

SungAw, a word in Mro language, defines both nature and environment, as Mro people do not distinguish between the two. In their own way, Mro women explained that all natural elements are intrinsically and harmoniously linked to each other, and harming one element will eventually have an impact on other elements, initiating a string of causal effects that are deemed to create an imbalance in the natural world. Humans, like any other living beings, cannot escape the consequences. Driven by such experiential knowledge passed down from generation to generation, these communities have been religiously practising sustainable natural resource management, long before the scientific community came up with the term. It is now widely acknowledged around the world that Indigenous traditional knowledge is contemporary and dynamic, and is of equal value to any other form of knowledge.

[Indigenous belief systems bolster mangrove reforestation in Palawan](#)

(KeithAnthony S. Fabro, Mongabay.com, 9 September 2022)

According to historical accounts, the fisheries of Malampaya Sound in the Philippines' Palawan province were once so rich it was difficult to wade to shore without stepping on crabs.

This bounty fueled migration to the area from across the Philippines, and by the turn of the 20th century, much of the areas' mangroves had been cleared or degraded, leading to a decline in fish catches.

From 2011-2013, mangrove restoration efforts were initiated as part of the Philippines' National Greening Program, but, as elsewhere in the country, the initiative performed far below target.

Today, however, thanks to ongoing outreach initiatives, community partnerships and Indigenous belief systems, the importance of preserving mangroves is widely recognized and the area's coastal forests and fisheries are seeing a recovery.



Mongabay, YouTube, [Philippines Mangrove Rehabilitation](#)

UNESCO-NFSJ Science dialogue series on "Ethnobotany and Indigenous knowledge" commences

(THT Online: 27 Aug 2022)

KATHMANDU, AUGUST 27 - The United Nations Educational, Scientific, and Cultural Organization (UNESCO), in collaboration with the Nepal Forum of Science Journalists (NFSJ), organised its first science dialogue session on the theme of "Ethno-Botany and Indigenous knowledge" on Friday. Tribhuvan University Professor Emeritus Ram Prasad Chaudhary spoke during the session where he emphasized the intimate relationship between ethnobotany and indigenous knowledge systems. He shared his thoughts on the contribution of women to knowledge generation and preservation and highlighted the significance of protecting Intellectual Property Rights (IPRs) through evolving legal frameworks. He also discussed how organisations, forums, and media play a crucial role in showcasing the origin and usefulness of indigenous knowledge systems and in disseminating the findings of ethno-botanical research.



UNESCO-NFSJ Science dialogue series on "Ethnobotany and Indigenous knowledge" commences, August 26, 2022. Photo: UNESCO

[Indigenous lands, knowledge are essential for saving primates from extinction, says new study](#)

(Kimberley Brown, [Mongabay.com](#), 11 Aug 2022)

A new study in Science Advances finds that primate species found on Indigenous people's land face significantly less threats to their overall survival compared to species found on non-Indigenous lands. To guarantee the survival of primates, we must guarantee Indigenous people's autonomy over their territory, says the paper.

The population of non-human primates – like monkeys, apes, tarsiers or prosimians – are declining rapidly around the world. At least 68% are in danger of extinction, while 93% have declining populations globally.

Traditional Indigenous beliefs, practices and knowledge systems reflect the need to exploit resources in the environment, but in sustainable ways that do not also deplete resources primates depend on.



Image: [Gerald Tan](#), [CC BY-SA 3.0](#), via [Flickr](#)

[What is your understanding of indigenous science Why is it important?](#)

(Olivia Jones, [VeryWellWiki.com](#): 3 Jul 2022)

Indigenous science informs place-specific resource management and land-care practices important for environmental health of tribal and federal lands. We require greater recognition and support for tribal consultation and participation in the co-management, protection, and restoration of our ancestral lands.

What is your understanding of indigenous science What are some example?

This includes knowledge of plants, animals and natural events, as well as techniques for hunting, fishing or farming. These understandings, skills and philosophies have been passed down over many generations to ensure survival.

What is indigenous science all about?

Like Western science (WS), Indigenous science (IS) relies upon direct observation for forecasting and generating predictions; it's power lies in its ability to make connections and perceive patterns across vast cycles of space and time.

FOR MORE OF THIS ARTICLE, SEE [HERE](#)

c) AFRICA

 Ibrahim Muhammad S. (Climate Alaramma) 🇳🇮 🌍
@dheenykhair

Indigenous knowledge, languages and craftsmanship are tools to build resilience and promote [#Adaptation](#) in an era of the [#ClimateCrisis](#).

[#WhatHasChanged](#) in our efforts to leverage on indigenous [#ClimateSmartSkills](#) as a tool for building resilience in grassroots communities?



 Climate Crusader and 9 others

[Science began in Africa – extractivism, not science, is to blame for colonialism and ecocide](#)

(Mamphela Ramphela, Daily Maverick: 27 Sept 2022)

Ancient Africa was not only the cradle of humanity, but of the first human civilisation. This first human civilisation left indelible footprints on human history, including science, that remain unacknowledged by many Africans and the world at large. Asking the wrong questions often leads us further astray from the narrative we need to co-create and live by as a society. The assumption that the “scientific mindset” is entirely attributable to the European Renaissance leads to the erroneous attributions of science as Western and alien to indigenous people of Africa and other parts of the world. Further confusion is sown by suggesting that the scientific mindset led to colonial conquest and its devastating consequences the world over. Instead, colonial conquest was driven by an extractive mindset of Europeans that spawned slavery and dispossession of peoples across the world.



 The Cradle of Humankind Heritage World Site in Johannesburg. (Photo: Gallo Images / Sydney Seshibedi)

[African Biodiversity Network engage stakeholders in Tamale on indigenous practices](#)

(Nurudeen Ibrahim, Modern Ghana, 15 Aug 2022)

The African Biodiversity Network (ABN) in partnership with Rains-Ghana has held a sensitization workshop in Tamale, the Northern Regional capital to discuss sacred sites-related issues and to complement science and indigenous knowledge.

The 3 days workshop in Tamale brought members of the African Biodiversity Network from Kenya, Uganda, Togo, Burkina-Faso, Benin, Ghana, custodians of land (Tindanima) and some staff of Rains-Ghana to consider an action plan to protect sacred natural sites and right of nature.

[Celebrating and upholding Indigenous women – keepers of Indigenous scientific knowledge](#)

(Dr. Anita Tzec, IUCN Blog, 9 August 2022)

Across the globe, Indigenous women are recognised as custodians of traditional knowledge systems, holding fundamental roles in their preservation and intergenerational transmission. The Indigenous knowledge systems they preserve encompass Indigenous worldviews, facilitating the resilience of Indigenous Peoples to not only safeguard their intrinsic relationship with Mother Nature throughout history, but also to build their resilience to today's concurrent climate and biodiversity crises.

On the [International Day of the World's Indigenous Peoples](#), IUCN recognises and celebrates the crucial roles that Indigenous women play in preserving nature.



IUCN Gender and the Environment, YouTube, [Celebrating and upholding Indigenous women](#)

Why Science and Indigenous Knowledge are Important for Conservation

(News Centre: 23 July 2022)

Conservation consultants have emphasised that science and know-how should be mixed with indigenous information for efficient biodiversity conservation in Africa. It is likely one of the numerous suggestions made through the African Protected Areas Congress, which convened over 2000 delegates together with authorities officers, conservation organizations and curiosity teams from numerous international locations. On 22 July the delegates have been introduced with a report on the challenges, alternatives in addition to suggestions that have been assessed and included their enter and chart strategies on the First African Congress of Protected Areas. When presenting the report, conservationists made a case for together with African indigenous strategies of conservation together with the scientific approaches used.



d) AMERICAS

Put out wildfires before they begin with Indigenous fire stewardship

(James Michael Collie, Hannah Verrips. Originally published on *Policy Options*, October 4, 2022)



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ENVIRONMENT | INDIGENOUS

Put out wildfires before they begin with Indigenous fire stewardship

Canadian governments need to better engage with Indigenous fire stewardship to counter increased wildfire occurrence and severity

by James Michael Collie, Hannah Verrips

October 4, 2022



[She'll Be the First Indigenous Woman to Take to the Stars](#)

(Candice Helfand-Rogers, The Story Exchange: 3 Oct 2022)

NASA astronaut Nicole Aunapu Mann is set to fly to space this week with SpaceX's Crew-5 mission. When Nicole Aunapu Mann heads into space this week, she'll be making history. The NASA astronaut, who first joined the agency in 2013, will soon become the first Indigenous woman ever to fly in space. And she's extremely excited, as well as proud. "It has been a long journey, but it's been so well worth it," she told Reuters in August. She's going as mission commander of SpaceX's Crew-5 mission, which is scheduled to launch this week. (Departure may be delayed slightly by Hurricane Ian, as the launch will take place from the Kennedy Space Center in Florida.)



Nicole Aunapu Mann will make history as the first Indigenous woman ever to fly in space. (Credit: NASA)

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.

We Need Indigenous Science

Native study of the natural world is thousands of years old and exceptionally nuanced and deep. When our body of knowledge excludes that expertise, we distort our understanding of ecosystems and put species at risk.

By Jeanine Pfeiffer

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Corine Pearce of the Redwood Valley Little River Band of Pomo Indians is a nationally renowned basket weaver and indigenous knowledge holder. Here, she tends native willow plants used in traditional basketry. Pearce's decades-long fieldwork involves stewarding ancestral gathering grounds including oak woodlands, manzanita chaparral, and riparian corridors throughout Mendocino County, California. Her work has enabled culturally significant species to endure increasingly catastrophic wildfires resulting from climate change. Credit: Jeanine Pfeiffer

Supporting Alaska's Next Generation of Indigenous Scientists: A Q&A with Dr. Courtney Carothers and Dr. Jessica Black

By [Emma Johnson](#) 

October 6, 2022

The land that we now know as Alaska has been cared for by Alaska Native peoples for thousands of years. [Eleven distinct peoples](#) live on this landscape, representing a wide array of languages, livelihoods, and histories. Today, Alaska Natives collectively make up almost 20 percent of the state's population. Despite the long-standing presence of Alaska Native peoples on this land, they are vastly underrepresented in institutions of power such as universities or state and federal management agencies. The exclusion of Indigenous knowledge in academic courses and resource management practices has been and continues to be harmful to Alaska Native peoples and the health of Alaska's natural environment.

One group working to address these inequities is [Tamamta](#), a program within the University of Alaska Fairbanks (UAF) funded by the National Science Foundation. Tamamta is aiming to transform graduate education and research in fisheries science by elevating Indigenous knowledge and supporting Indigenous students. EESI spoke with two UAF professors helping to lead Tamamta: Dr. Jessica Black, a Gwich'in scholar researching governance and wellbeing among Alaska Native peoples, and Dr. Courtney Carothers, a settler scholar focusing on environmental anthropology in fisheries systems.



Tamamta's fall retreat at the Howard Luke Gaalee'ya Spirit Camp at Chena Village. Photo credit: Tamamta

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[Chantel Akinneah shared her experiences navigating the sciences as a Dene Tha' woman](#)

(Arthur Macatangay, The Gateway: 30 Sept 2022)

Chantel Akinneah reflected on her intersectionality as a Dene Tha' woman studying neuroscience and physiology at the U of A. Akinneah is an executive for the ISU and chair of the Aboriginal Relations and Reconciliation Committee (ARRC). Akinneah started her speech by shedding light on an experiment that used malnourished Indigenous children as “human laboratories.” Starting in 1942, researchers explored the “bare minimum” nutrition required for the survival of Indigenous children in northern Manitoba and six other residential schools. The experiment was the basis of current nutritional programs in Canadian schools and Canadian nutritional guidelines. Akinneah touched on the colonial condemnation of the Indigenous way of knowing, “the same way the church condemned science in the 16th century.” “As a STEM major, it is important for me to realize that I am studying under colonial science, and therefore all science is political,” Akinneah said.



Arthur Macatangay

Chantel Akinneah highlighted the importance of inputting Indigenous teachings in the sciences.

Report calls for Indigenous Peoples' knowledge to be included in climate policy

by University of East Anglia



Credit: Unsplash/CC0 Public Domain

A new report highlights how recognizing Indigenous Peoples' and local communities' knowledge systems could do more to address climate change than many current approaches.

It also argues for ensuring the full and equitable inclusion of Indigenous Peoples and local communities within policy processes.

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Traditional ecological knowledge connections at Central Wyoming College's Alpine Science Institute

(Central Wyoming College: 29 Sept 2022)

On Friday, September 30, 2022, Central Wyoming College students and staff will commemorate the cultural significance of the Alpine Science Institute with a day of cedaring, song and recognition of our tribal student accomplishments with local Native American leaders. The celebration will commence with cedaring by the Eagle Society members. Central Wyoming College's Tribal Education Services Coordinator Ivan Posey will serve as the master of ceremonies. Posey launched Central Wyoming College's Tribal Wisdom Society last year introducing students to the contributions of tribal people and communities across the West through governance, history and contemporary issues. Traditional songs will be performed by the Little Brave singers coordinated by Salem Ynostrosa, a CWC student. Dr. Tarissa Spoonhunter, Central Wyoming College's Professor of Indigenous Studies, William C'Hair, Arapaho Language & Culture Commission and Wyman Weed Sr., Shoshone THPO Advisor will share Traditional Ecological Knowledge with students.



County 10 Photo - CWC Alpine Science Institute

4 min

September 28, 2022



Indigenous youth face significant barriers to accessing computer science—here's how Amazon is helping to close the gap

Written by Amazon Staff



Native American students are among the most underrepresented in computer science. Amazon Future Engineer is committing \$2.25 million to engage 10,000 Indigenous students in computer science by 2025.

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Indigenous youth face significant barriers to accessing computer science (CS) instruction and opportunities in schools on Native American reservations. In turn, the lack of a robust CS curriculum for K-12 students has created a concerning educational disparity.

[Amazon Future Engineer](#), Amazon's global philanthropic computer science education program, recognizes the need to support Indigenous leaders in creating solutions that work for Indigenous communities. Through the program, Amazon has announced a commitment of \$2.25 million to

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The Heart of the Monster is a landform that comprises the present day Jocko Valley in Arlee, Montana.

Indigenous stories reveal the science of the world around us

OGAS

Indigenous stories hold clues to hydrological and geographical features, providing insights into the science of the world around us.

Dr. Shandin Pete, assistant professor of teaching in UBC's department of earth, ocean and atmospheric sciences, investigated a story that may have helped his Seliš ancestors judge when to safely cross rivers along the buffalo trail. Dr. Pete explains what scientific clues Indigenous stories reveal.

What is the 'Heart of the Monster' and what clues does it hold?

The Heart of the Monster is a landform that comprises the present day Jocko Valley in Arlee, Montana. The story, which has always been known in my community, goes that it is the remnant of a monster's heart cast onto the mountain by Coyote (we don't tell this story after winter so that's all I can say at this time). In 2008, I was fortunate enough to have come across a piece of information from the older members of my community that hinted at an additional purpose of the landform, relating to river behaviour. The single sentence, documented in the 1950s, detailed that the heart could be seen when snow melted from its surface in the spring. When the snow was completely gone, it was thought that river flooding had ended.



Melinda Adams
@Scholar_Melinda



Dago te'. Welcome all, Melinda here. Scholar, Apache woman, Native scientist, sometimes beader, dancer - full time good fire plant/soil ecology & Native American Studies nerd 🌿



Arup's Canadian offices have launched a new scholarship through [Indspire](#), a national Indigenous registered charity. This initiative will support Indigenous students enrolled in science, technology, engineering and math (STEM) and related programs.

"This scholarship not only represents a significant new opportunity for First Nations, Inuit and Métis students who want to pursue STEM careers, but also is a tangible sign of reconciliation in action," says Mike DeGagné, president and CEO of Indspire, which invests in education through financial awards, resources and role models. "We look forward to walking this productive path together with Arup."

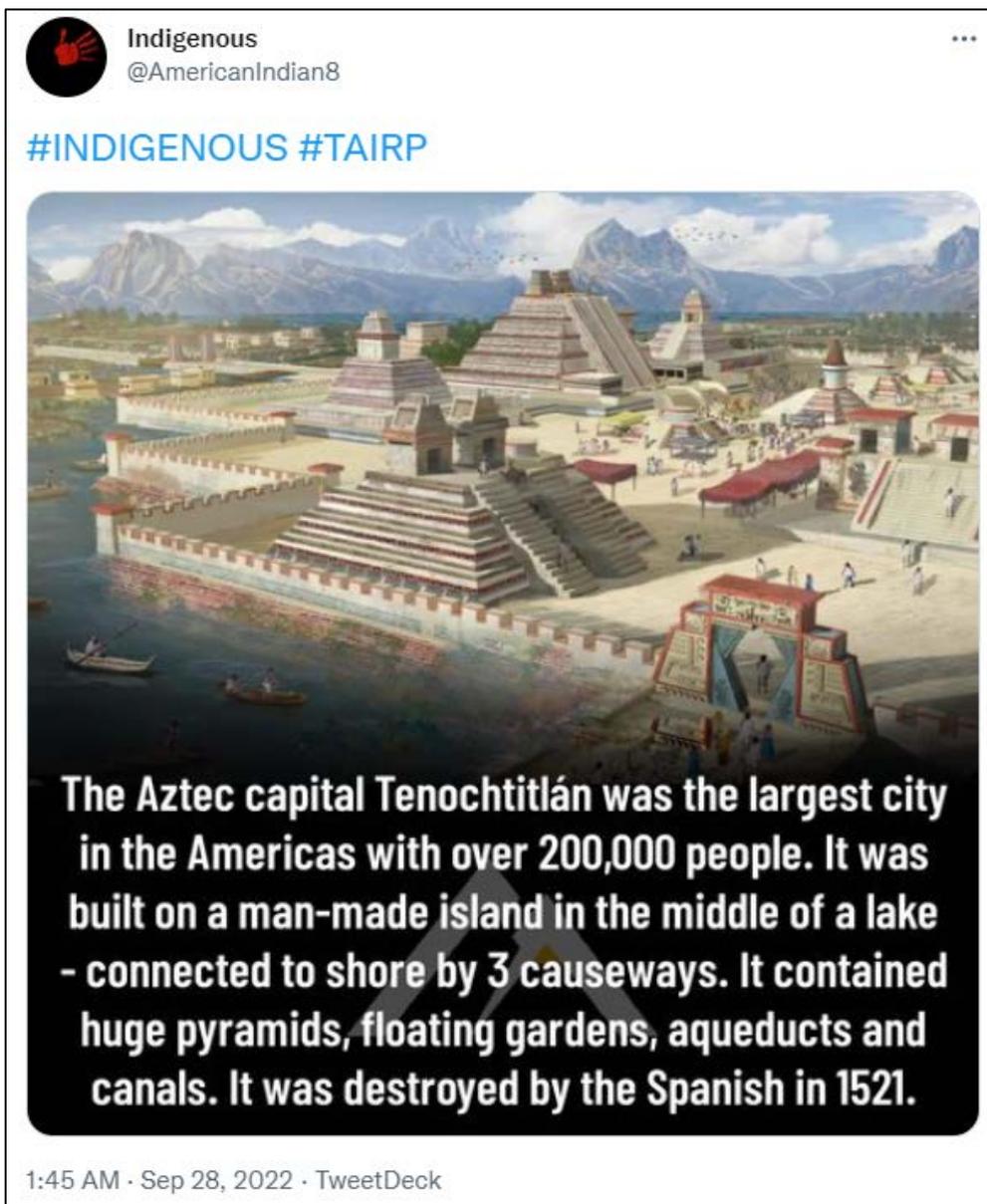
Arup's \$25,000 donation will fund a minimum of five bursaries over a five-year span. As part of a Reconciliation Action Plan (RAP) set to be released later this fall, the firm's Canadian business will use the scholarship to foster relationships with recipients, also providing mentorships and internships.

"By committing to this scholarship with Indspire, Arup acknowledges access to education for Indigenous students is a systemic challenge," says Sean Meadows, principal and Americas North leader. "We look forward to providing internship and learning opportunities."

[Arup launches scholarship for Indigenous students](#)

(Canadian Consulting Engineer: accessed 2 Nov 2022)

Arup's Canadian offices have launched a new scholarship through Indspire, a national Indigenous registered charity. This initiative will support Indigenous students enrolled in science, technology, engineering and math (STEM) and related programs. "This scholarship not only represents a significant new opportunity for First Nations, Inuit and Métis students who want to pursue STEM careers, but also is a tangible sign of reconciliation in action," says Mike DeGagné, president and CEO of Indspire, which invests in education through financial awards, resources and role models. "We look forward to walking this productive path together with Arup."



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!

[New wave of university programs puts Indigenous knowledge at its core](#)

(Jessica Wong, *CBC News*, 2 Nov 2022)

Kallie Drummond took the University of Prince Edward Island's new Indigenous teachings course as an elective this past summer, but the second-year student already knows she wants to learn more. The young Métis woman from Treaty 1 territory in Manitoba hopes to weave Indigenous studies into her university course load and her longer term goal of becoming a teacher.

"I actually would really love to have the opportunity to minor in Indigenous knowledge and teachings," said Drummond, who's eyeing a bachelor's degree in education after completing her current program studying science and mathematics. "Once I become a classroom teacher, [this knowledge] would be something I could just continue to widely spread and hopefully help future generations understand."

[Learning on the land: students experience Métis heritage in pilot course](#)

(Geoff McMaster, *Folio*, University of Alberta: 23 Sept 2022)

Struggling to maneuver a heavy river canoe down a steep embankment, 12 students follow in the very footsteps of Métis from a bygone era. As they paddle together down the North Saskatchewan River, they channel the spirit of co-operation — or *wahkohtowin* — required to live in harmony with the land. "It was humbling and almost sacred for me," says third-year Native studies student Joanna Schmidt of her immersive experience on Métis land last August. "I felt like I was paddling with my ancestors ... I have an entirely new appreciation for my kin that traversed her waters." The exercise was part of a pilot course on Métis land-based learning, launched this summer by Nathalie Kermaal, director of the Rupertsland Centre for Métis Research and acting dean of the Faculty of Native Studies, and Amanda Evans, Métis citizen and PhD student in the Faculty of Native Studies. The course is designed to provide Indigenous and non-Indigenous students "the opportunity to think about the land in a Métis context, and for Métis students to reconnect to the land," Kermaal says.



Native studies students and course facilitators work together to haul a heavy river canoe — part of a land-based learning experience launched this summer to help students from all backgrounds better understand Métis history and cultural practices. (Photo: John Ulan)

How Indigenous Knowledge Reconnects Us All to Fire

(JAZMIN "SUNNY" MURPHY, Yes Magazine: 20 Sept 2022)

Our human relationship with fire goes back thousands and thousands of years," says Damon Panek, wildland fires operations specialist for the Fond du Lac Band of Lake Superior Chippewa and enrolled member of the Mississippi Band of White Earth Ojibwe. The Ojibwe people of Lake Superior Chippewa alone have more than 700 life-sustaining uses for fire, and Oshkigin, the spirit of fire, is defined as "the thing or mechanism that makes things new." Since time immemorial, the Great Lakes Anishinaabeg have used fire to manage the landscape across what is now called North Dakota, Minnesota, Wisconsin, Michigan, and parts of Canada. Despite fire's universal value to humanity, European settlement put an abrupt stop to the traditional practice of controlled burns, deeming fire an entirely destructive force. The resulting damage has rippled across centuries. The wildfires that currently rage across western North America are post-colonial scars of that ideologically driven mismanagement.



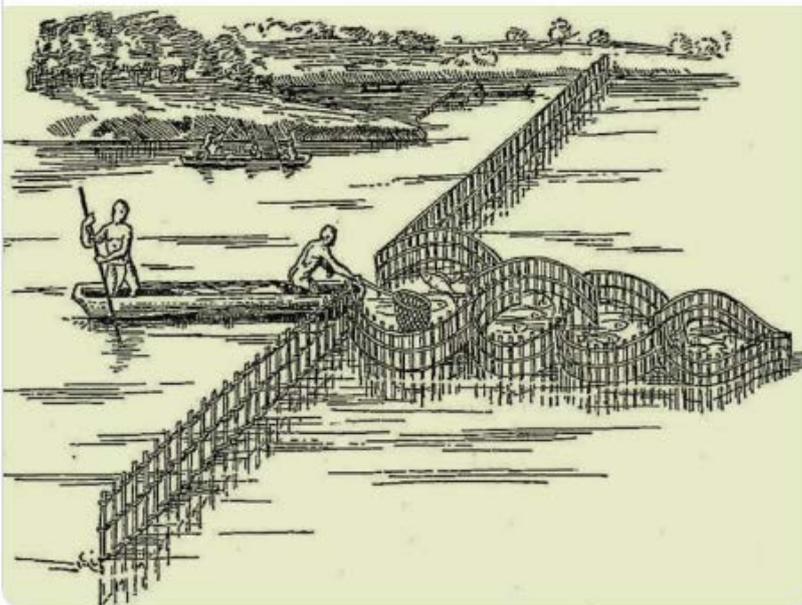
As they prepare for the controlled burn in Camp 8, wildland fires operations specialist Damon Panek (Fond du Lac Forestry/Fire) talks to the forestry group, which includes Kyle Gill (University of Minnesota Cloquet Forestry Center), Scott Posner (Bureau of Indian Affairs Great Lakes Agency), Paul Priestly (Fond du Lac Forestry/Fire), and Carl Crawford (Bureau of Indian Affairs Minnesota Agency).
PHOTO BY LANE JOHNSON



Indigenous Science Network @IndigenousScie1 · Oct 23
Ancient Indigenous aquaculture.



Dominic HK Beaudry @DhkBeau · Oct 23
In Ojibwe our word for weir is m'njikaning (pronounced min-ji-ka-ning).



What if experiential learning can make STEM more accessible for students of colour?

Students of colour continue to be underrepresented within STEM. Opportunity gaps between different groups of people make it challenging to address this imbalance. **Dr Corliss Thompson** of **Northeastern University** is an advocate for experiential learning, which she believes can help combat inequity in STEM recruitment and careers



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We all know that it is easier to learn about a topic when it feels relevant to us. However, people relate to topics differently, depending on a whole range of factors – such as cultural background, parents’ experiences, and expectations for the future. Backed by a growing body of evidence, Dr Corliss Thompson of Northeastern University, USA, believes that this is a key reason why fewer students of colour enter scientific careers. “Studies have shown that there can be disconnections with the curriculum for many students, especially students of colour,” says Corliss. “This is partially due to cultural and linguistic disconnections in the classroom, and also because of the ‘education debt’ that contributes to structural racism around the world.”

This ‘education debt’ Corliss mentions is the fact that students of colour, both historically and in the present, typically have fewer educational resources available to them than their white counterparts, as a result of longstanding social, political and economic patterns that reinforce disadvantage. This is a difficult cycle to escape from – but Corliss believes that experiential learning could be part of the solution, if carried out correctly.

EXPERIENTIAL LEARNING

“Experiential learning is a form of acquiring knowledge and building skills through active engagement in immediate, relevant activities, followed by processing and

[McGill University unveils new space for Indigenous learning in medical school](#)

(CBC News: 17 Sept 2022)

McGill University's faculty of family medicine in Montreal has opened a new space on campus with the aim of passing more Indigenous knowledge on to future doctors. Assistant professor Richard Budgell says the space will serve as a cultural centre for Indigenous students and scholars. It will also be a learning space for non-Indigenous medical students as the university works to make Indigenous health a bigger part of the curriculum, he said. "So that they're going into Indigenous settings with better knowledge of the people they are encountering," he said, noting many graduates go on to work in Indigenous communities or in urban settings where they have many Indigenous patients. This comes after the death of Atikamekw woman Joyce Echaquan, 37, in a Joliette hospital in 2020. Echaquan had filmed nurses hurling insults at her. A coroner's report found racism and discrimination contributed to her death.

[I am the Land: Native Islander uses Ancestral Wisdom to Help Return Puerto Rico to its Indigenous Roots](#)

(Josee Malavi, Palabra, 10 Sept 2022)

Filmmaker Josee Molavi spent three months last year in Puerto Rico learning from those who identify with the taíno community and documenting the living history of the island. Her documentary "I Am the Land," explores the key intersections of modern science, environmental activism, and indigenous spiritual knowledge in the pursuit of climate justice.

The jungle is alive along the dirt path to the ancient ball fields of Tibes Indigenous Ceremonial Park. Leading the way on the familiar stretch, Po Araní walks through the abundant green foliage, passing familiar flora and fauna that is eager to provide the tools for healing and sustenance. Ancestral knowledge buzzes through his brain as he recalls centuries of information passed down through generations of his taíno indigenous roots on the island of Puerto Rico, or as his ancestors called it, Borikén.



Pulitzer Centre, [I am the Land, a film by Josee Molavi](#), YouTube



Consortium of Aquatic Science Societies
@CASSocieties



Just completed an inspiring plenary session at the @sacnas #NDiSTEM2022 conference featuring BIPOC women scientists sharing their whole selves in their science. Thank you Drs @DrRubidium, @AnaMaPorras, @JudithSimcox, and @1NativeSoilNerd for sharing your truths!



ALT

4:28 AM · Oct 29, 2022 from Puerto Rico Convention Center · Twitter for Android



New mural in Sinsheimer Laboratories building celebrates diversity in science

The mural by artist Paul Lewin was commissioned as part of the healing process after disturbing incidents of vandalism targeting Black Lives Matter posters. As one step in the healing process, a new mural by the artist Paul Lewin now brightens the first-floor entrance to the Sinsheimer Labs. “My art and life have always been inspired by science,” Lewin said. “In the mural, there is a central figure, an ancient ancestral spirit, performing a ritual that celebrates the interconnectedness of all life on earth.” Story [here](#).

Linguistics program gives Native students a leg up on STEM

(Victoria Sanchez, Around the O: 12 Sept 2022)

Two University of Oregon linguistics professors have received funding from the National Science Foundation for a collaborative seminar, Research Experiences for Undergraduates, to be conducted over three summers. Melissa Baese-Berk and Gabriela Pérez Báez developed the program to offer opportunities to engage in linguistic research for students who have either limited or no access or opportunities to pursue majors in the science, technology, engineering and math fields, known as STEM. Using the \$342,051 grant, Research Experiences for Undergraduates began this summer and will run again for eight weeks each summer for the coming two years, hosting a group of eight students who identify as American Indian or Alaska Native. By teaching broadly applicable research skills and using linguistics as a lens, the program opens the door for students to engage in research across STEM fields.



Victoria Sanchez 2022

With old traditions and new tech, young Inuit chart their changing landscape

(CHERYL KATZ, *Canadian Geographic*: 9 Sept 2022)

For generations, hunting, and the deep connection to the land it creates, has been a mainstay of Inuit culture. As the coastline changes rapidly—reshaping the marine landscape and jeopardizing the hunt—Inuit youth are charting ways to preserve the hunt, and their identity. Perched like a figurehead on the bow of the boat, the girl hoists the harpoon. She scans the waves for a streak of white, a plume of red, guiding her to her target below. Around her, a chorus of outboard motors screams into the brisk breeze. Flocks of gulls keep raucous watch from above, while polar bears patrol silently on distant shoals. All are after the same quarry—a pod of beluga whales swimming along the coast of Hudson Bay in Nunavut, part of the Inuit homeland in northernmost Canada. “There, over there,” come excited yells, arms waving toward a circle of roiling water about 20 meters ahead. A young beluga, wounded by gunshot, is thrashing. A fin stabs the surface. Then a patch of belly flashes toward the sky. Now it’s up to Rolanda Uquuyuq Tiktaq, a young Inuk out on her first hunt, to plant the harpoon and claim her first kill.



Rolanda Uquuyuq Tiktaq, a participant in the Aqqiumavvik Society's Ujjiqsuiniq Young Hunters program relaxes on a rocky islet in Hudson Bay, while her group waits for belugas.

Tall and slender, the middle schooler from Arviat—a 2,900-some, predominantly Inuit hamlet on Hudson Bay’s west shore—may not fit your classic hunter stereotype. She rocks a diva headwrap, glam rhinestone sunglasses, and a stylish maroon parka. Her favourite subject in school is math. She wants to be a cosmetologist when she grows up. But she also wants to learn the life skills of her ancestors and gain the environmental wisdom passed from generation to generation of Inuit hunters. As Rolanda, a native Inuktitut speaker, puts it in her shy English: “I want to learn about the land.”



Indigenous @AmericanIndian8 · Oct 4



#INDIGENOUS #TAIRP



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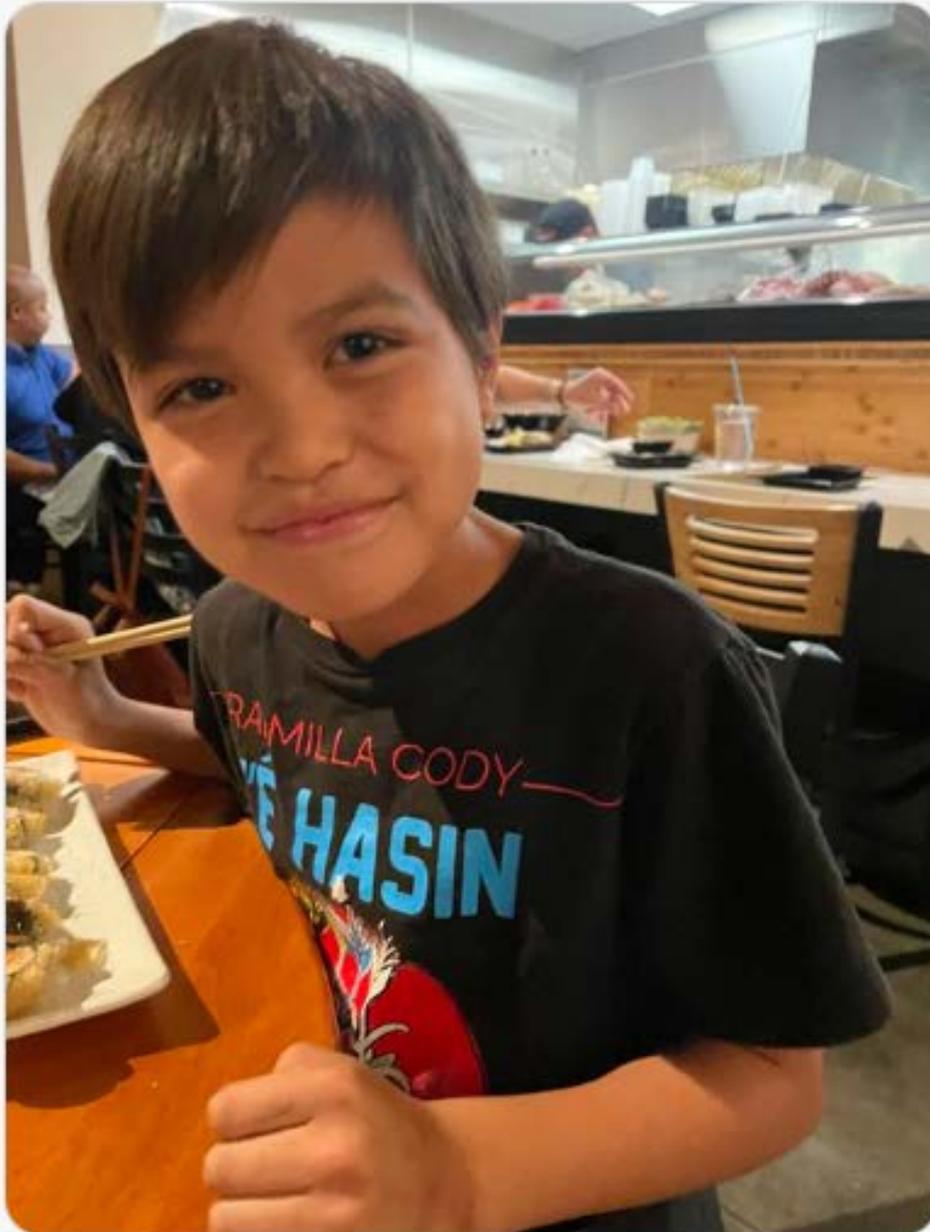
5,448





Karletta Chief @nativehydro · Oct 29

“When is your next Diné culture day at school?” I ask my son. He says everyday is culture day mom!! 😍 I love that my son goes to a Navajo immersion school!



💬 2

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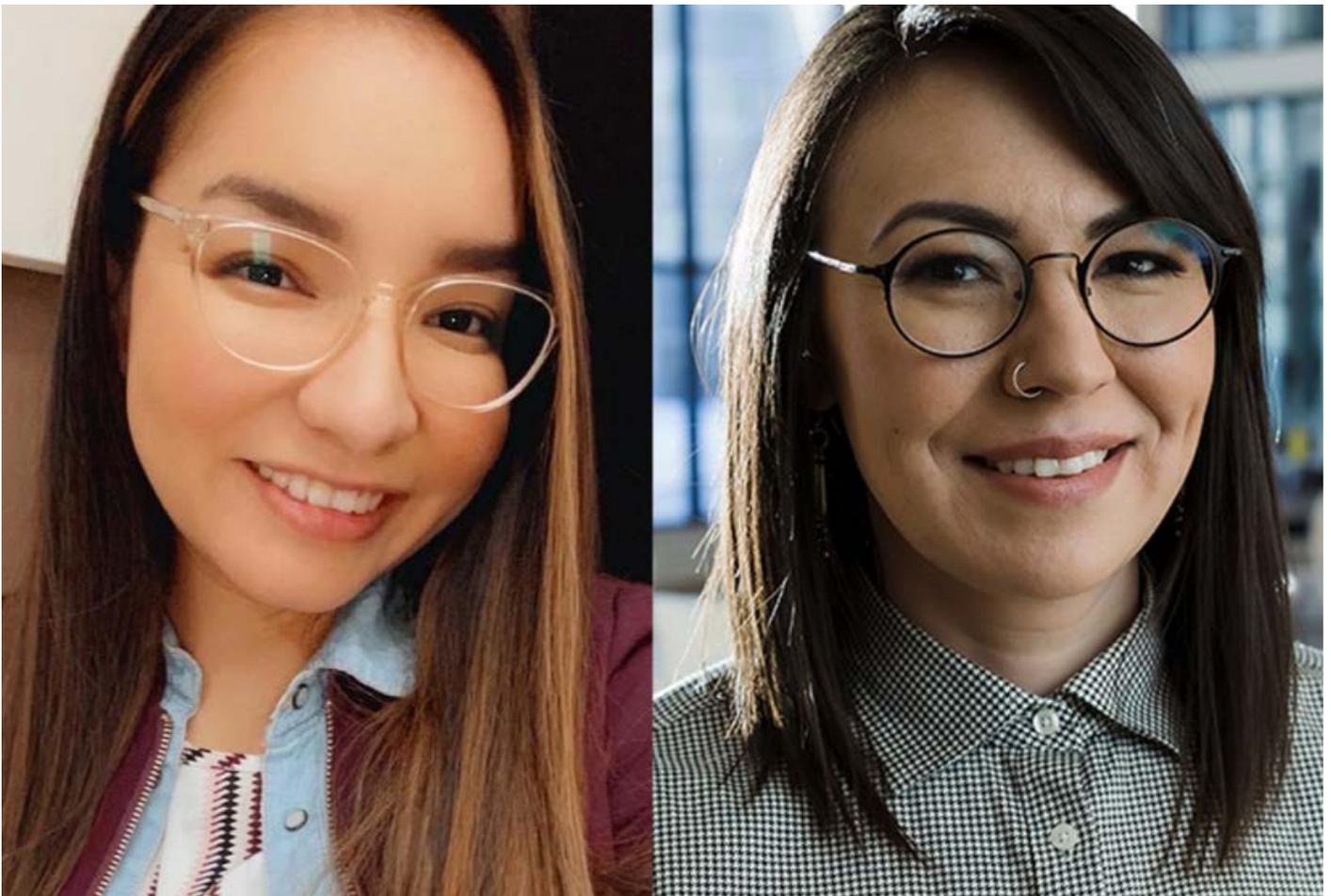
❤️ 82



USask's Indigenous Student Achievement Pathways program marks 10-year anniversary

(SHANNON BOKLASCHUK, USAK News: 30 Aug 2022)

ISAP welcomes First Nations, Inuit and Métis students to the College of Arts and Science, with academic and social programming that builds confidence, knowledge and skills. A University of Saskatchewan (USask) program committed to Indigenous student achievement is celebrating its 10th anniversary this fall. For the last decade, Indigenous Student Achievement Pathways (ISAP)—formerly called the Aboriginal Student Achievement Program—has welcomed First Nations, Inuit and Métis students to USask's College of Arts and Science with academic and social programming that builds confidence, knowledge and skills. Leanne Harris credits ISAP with helping her to succeed as a post-secondary student. Harris, who is from Pelican Lake First Nation, began her studies at USask in 2018 with ISAP and has since served as an ISAP summer program assistant. As she sets her sights on convocation, Harris is encouraging new Indigenous students to participate in ISAP, noting that the program's small cohort approach—with many classes and tutorials capped at 30 students—fosters a sense of community and enables Indigenous students to build long-lasting friendships.

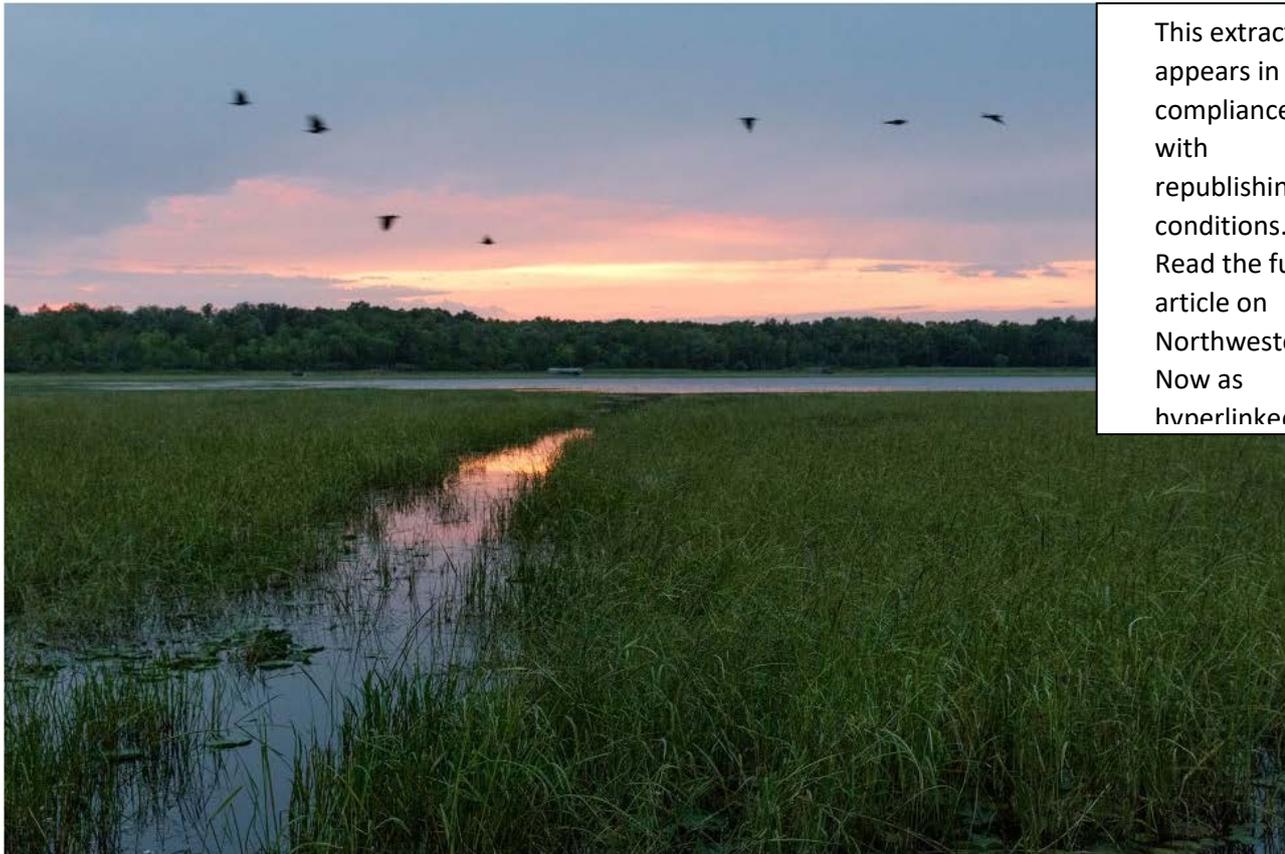


From left: Leanne Harris is studying sociology in the College of Arts and Science. Micheala Merasty will receive a Bachelor of Science degree in environmental biology at USask's Fall Convocation. (Photos: supplied)

Northwestern partners with Indigenous scientists to conserve Great Lakes wetlands

Project is first NSF-funded Coastlines and People Hub for the Great Lakes region

August 29, 2022 | By [Amanda Morris](#)



This extract appears in compliance with republishing conditions. Read the full article on Northwestern Now as hvnerlinked

Manoomin at sunset on Big Sandy Lake in McGregor, Minnesota. Photo by Lorie Shaull

A Northwestern University-led research team has received a [\\$5 million grant over five years from the National Science Foundation](#) (NSF) to develop new methods to help mitigate the effects of climate change on the Great Lakes and its surrounding natural ecosystems.

By partnering with Indigenous and Native American scientists, conservation agencies and government agencies, the team will focus on manoomin (the Ojibwe word for wild rice), a critical — yet declining — part of the Great Lakes ecosystem and a sacred food that connects Native communities to the land.



Conservation through Reconciliation Partnership

@IndgLed_Conserv



“The impact it has on our communities when we honour Indigenous leadership, the healing and the connection it promotes when we honour Indigenous knowledge, it’s immense.” - [@dahtirose](#)
[@ILInationhood](#)



cabinradio.ca

Private donors and Indigenous leaders continue funding talks

Meetings continued last week for Project Finance for Permanence, a conservation model that would pair investors with governments to protect NWT...

4:01 AM · Oct 27, 2022 · Hootsuite Inc.



ashley grupenhoff 🌱🌲
@AGrupenhoff



Amazing time burning near the #ucdavis McLaughlin reserve with @TERATribalEco and the Lake Co TREX. My first time co-leading a rx burn & feel so honored to have so many experienced folks prepare me for this moment! #goodfire



1:34 AM · Nov 3, 2022 · Twitter for iPhone

[New land-based tutorial program combines Western science and Indigenous custom](#)

(Feleshia Chandler, CBC News, Aug 19, 2022)

Faraway from his dwelling in northern Ontario, Moxy Manitowabi simply these days joined 16 totally different Indigenous youth in rural Nova Scotia to meld standard data with Western science in a program generally known as Melkiknuawti — Mi'kmaw for 'which offers you energy.' "I moved proper right here from Ontario, merely me and my mom and I felt truly disconnected from the land and the custom spherical proper right here... I felt like I needed to be additional linked. So, yeah, it has been very fulfilling," talked about Manitowabi, a member of the Wiikwemkoong First Nation on Manitoulin Island in Lake Huron. "It's critical to stay linked and by no means neglect our custom, our language, and our land." The week-long program is hosted at a former farm now generally known as Windhorse on Nova Scotia's South Shore. It's developed by Ulnooweg Coaching Centre, an Indigenous registered charity, and SuperNOVA , an initiative from Dalhousie Faculty promoting STEM — which stands for science, experience, engineering and arithmetic.

[How a rare Colombian flower cultivated with Indigenous know-how is changing lives](#)

(Soraya Kishtwari, Mongabay, 18 Aug 2022)

The Inírida flower, known as flor de Inírida, grows in a small area along the Colombian-Venezuelan border. An Indigenous leader and botanist successfully worked together to domesticate this rare and little-known flower. Its conservation helps ensure the long-term protection of other species while offering potential bioremediation against contaminated soil. Inírida's commercialization plays a vital role in the region's green economy, bringing in revenues for Indigenous families.



WCS Canada
@WCS_Canada



By blending traditional knowledge & Western science, [@WCS_Canada](#) [@LFLS_Namew](#) conservation scientist [@ClaireE_Farrell](#) says scientists and communities can work to protect species that are at risk in Ontario and vitally important to First Nations. [#RingOfFire](#)



cbc.ca

How this First Nation is fighting to protect its way of life in the Ring of Fire
Staring down a united effort by government and industry to extract the Ring of
Fire's critical minerals needed to build electric vehicles, Neskantaga First Natio...

2:45 AM · Oct 26, 2022 · Sendible



Centre for Indigenous Environmental Resources
@yourcier



An open mind gathers more knowledge. For a millennia Indigenous people have observed the land, lived the land, celebrated & cared for the land using [#Indigenousknowledge](#) passed down from ancestors that's now being accepted by western science as integral to restoring our planet.



10:59 PM · Sep 8, 2022 · Twitter Web App



PLOS Biology
@PLOSbiology



After decades of feeling isolated in the field, a group of Black marine scientists and allies came together to create the first ever BIMS Week. Find out more about [@blackinmarsci](#) from their CEO [@curly_scientist](#) in our Perspective plos.io/3TreBUg [#OceanSolutions](#)



12:41 AM · Oct 25, 2022 · TweetDeck



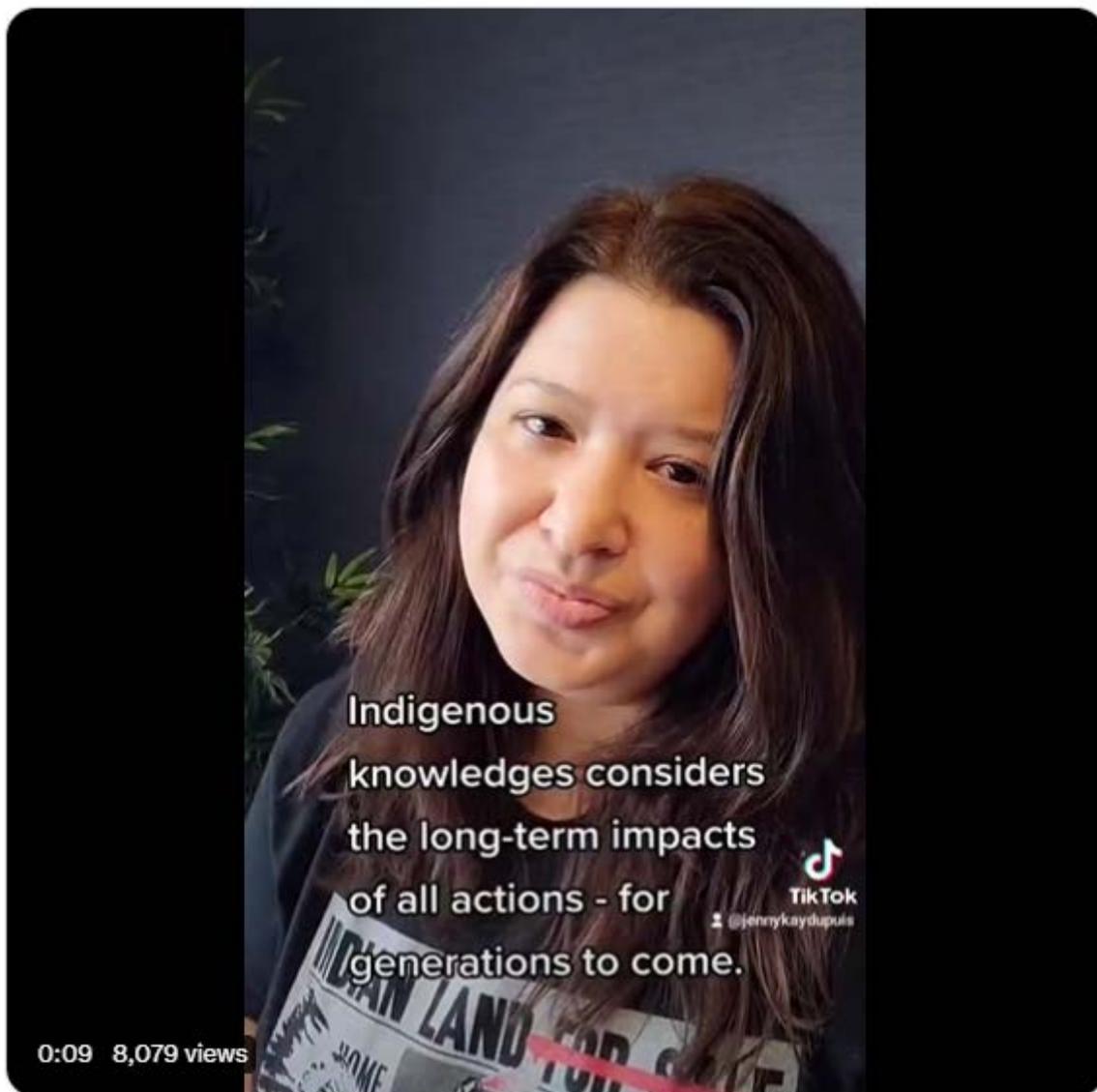
Dr. Jenny Kay Dupuis
@JennyKayDupuis



A message for Indigenous educators from around the world starting another school year and bringing Indigenous knowledge systems into classrooms & other educational spaces. [#BackToSchool](#)

You matter.

vm.tiktok.com/ZMNTKoTF9/ ✓



[Chiefs want more Indigenous content in new science curriculum](#)

(TBnewsWatch.com Staff: 9 Aug 2022)

The Chiefs of Matawa First Nations are joining other Indigenous stakeholders in calling for more Indigenous content in Ontario's elementary school science and technology curriculum. "We're troubled by what Ontario has done," says the Matawa Chiefs Council's spokesperson for education, Neskantaga Chief Wayne Moonias. Concerns were raised earlier this year after it was reported that education ministry staff who had prepared a revised curriculum were directed to remove parts of an overarching theme that would have given students instruction on connections between Indigenous and Western science. A Globe and Mail report said the deleted language was part of three "expectations" that would contribute to the shaping of lessons throughout the curriculum.



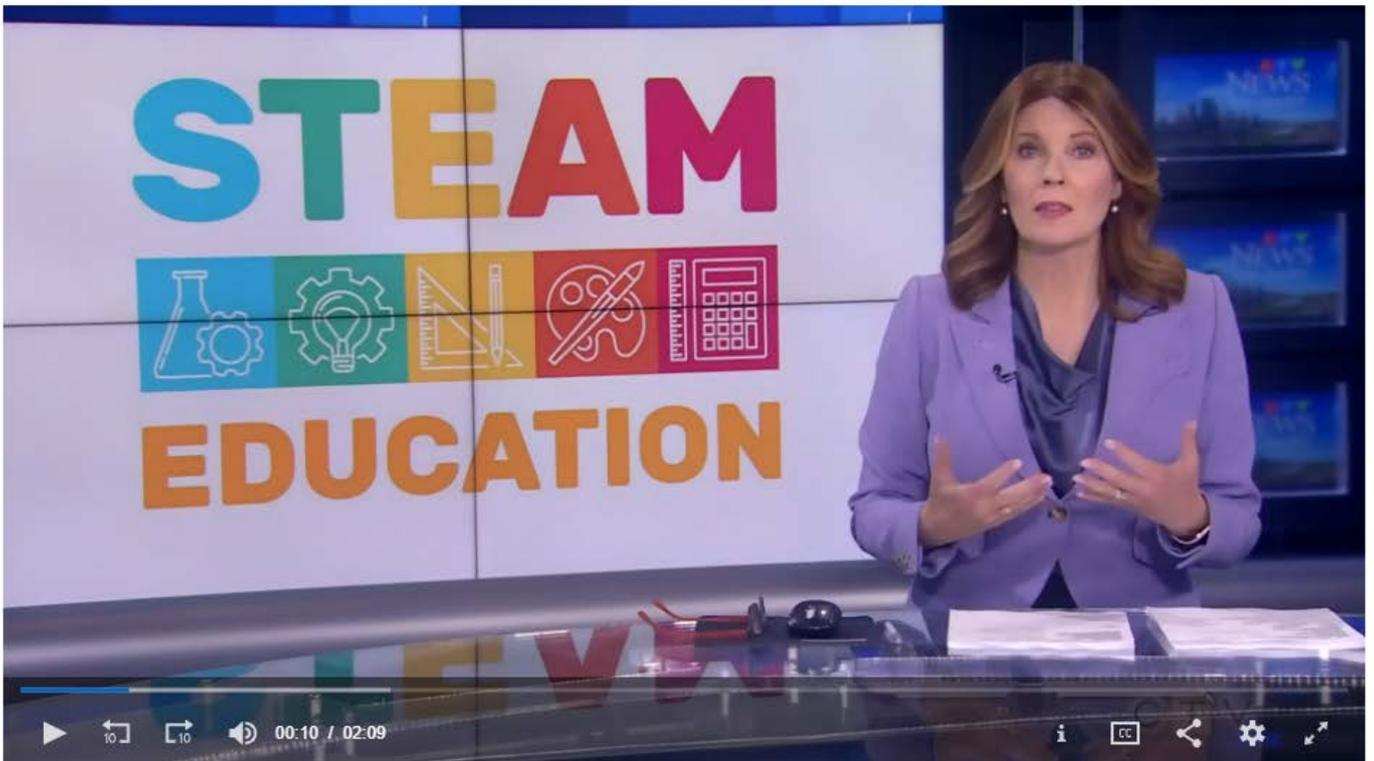
Neskantaga First Nation Chief Wayne Moonias is the Matawa Chiefs' spokesperson for education (TBnewswatch)

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!

Indigenous kids learn about robotics at summer camp

(Kevin Fleming, CTV News: 10 Aug 2022)

A group of Indigenous students are split into two classrooms at the University of Calgary where one group learns how to code and the second builds robots from Lego kits. Rob Cardinal is the co-founder of IndigeSTEAM and the STEM coordinator for the Siksika Board of Education. He's not physically at camp but overseeing it with the help of an Ohmi Telepresence Robot. It allows him to listen in to the teaching and even help students learn through a video monitor and camera attached to a stand on wheels that he can maneuver from his computer. The students see and talk to him in real time. "With IndigeSTEAM we're really trying to make access to camps like this more available to our Indigenous youth," said Cardinal. "It's the hands-on learning that we're after giving them."



CTV News 9 Aug 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.

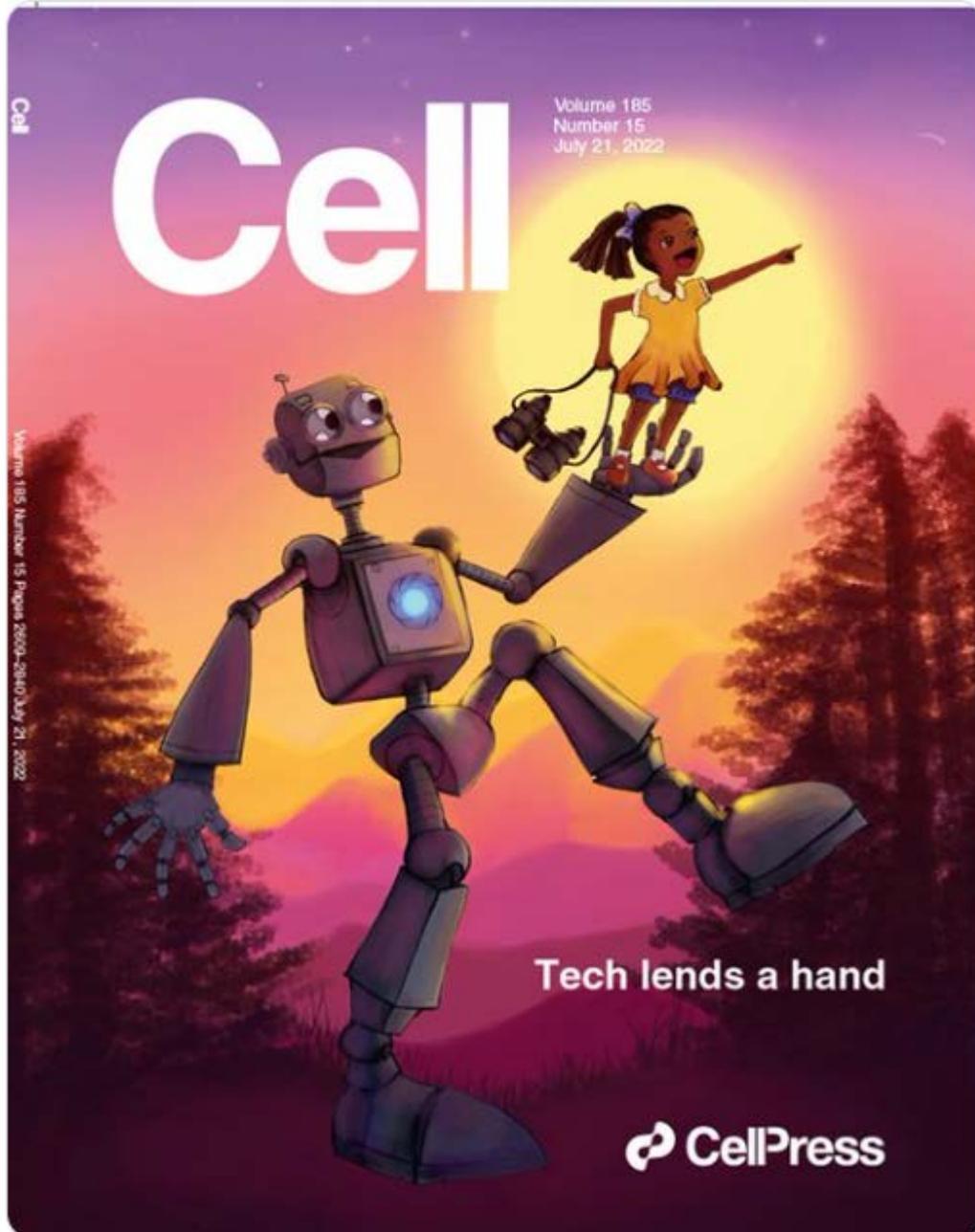


Cell
@CellCellPress



Tim Mackey, Alec Calac, Chenna Keshava, Joseph Yracheta, Krystal Tsosie & Keolu Fox on Establishing a blockchain-enabled Indigenous data sovereignty framework for [#genomic #data](#), take a look.

[@UofCalifornia](#) [@NativeBio](#) hubs.li/Q01hMCc40 ✓



1:10 AM · Aug 9, 2022 · HubSpot



L. J. Merciless NDN Savage
@ecohugger



Are there any Indigenous scholars out there who are searching for a place to publish a manuscript about data sovereignty/data governance? If so, let me know! I'm searching for a manuscript on these topics to add to a peer reviewed book about TEK and Indigenous Value Systems.

6:59 AM · Oct 21, 2022 · Twitter for iPhone

104 Retweets 162 Likes



Tweet your reply

Reply



L. J. Merciless NDN Savage @ecohugger · Oct 22
Replying to @ecohugger
Mvto everyone for the retweets! ❤️



Alison Tedford Seaweed @alliespins · Oct 21
Replying to @ecohugger and @DeondreSmiles



I'm so looking forward to reading this & wish I was educated enough to qualify as a "scholar". I did data analysis in the federal prison system & have thoughts on how data definitions can shape perceptions, particularly around identity & how well colonial institutions serve us.



2



6



L. J. Merciless NDN Savage @ecohugger · Oct 21
Replying to @alliespins and @DeondreSmiles



The manuscript doesn't have to be by a scholar or academic but does have to be by Indigenous authors. If you want to chat about things, send me a dm! ✨



5



[Drum dancing and science: Tuktoyaktuk summer camp pairs STEM with traditional skills](#)

(Karli Zschogner, CBC News, 7 Aug 2022)

On a rainy Thursday in Tuktoyaktuk, N.W.T., last week a group of children, using paper and a sewing needle, built an amplifier for the turntables they were learning to make. It was part of a four-week camp in July that incorporates traditional learning with science, technology, engineering and math — also known as the STEM fields. "I'm finding it amazing," said 10 year-old Olivia King, who was part of the camp. "The people here are amazing, they really do care about everyone. Make sure they're safe." Making turntables was part of the music and storytelling part of the camp, where King and over 15 youth in Tuktoyaktuk learned about the history of recording music. The day was incorporated with local elders giving drum dancing lessons.

[Indigenous knowledge entwined with Arctic research for 75 years in Utqiagvik](#)

(Yereth Rosen, Alaska Beacon: 5 Aug 2022)

In the nation's northernmost community, about 100 scientists, engineers and other Arctic experts are gathered this week to celebrate a cutting-edge research program that started in the 1940s. The event in Utqiagvik, also known by its former name of Barrow, is a conference marking the 75th anniversary of the Naval Arctic Research Laboratory, or NARL. The institution was originally created to support oil and gas exploration on the North Slope, but in short order became a world-class center for Arctic science. Beyond establishing Utqiagvik as an Arctic research heavyweight, NARL has another legacy: respect for Indigenous knowledge and partnership, a characteristic missing in much of the scientific world.



Pearl Brower, president of the Ukpeaġvik Iñupiat Corporation, speaks to visiting scientists at an Aug. 1 welcoming event kicking off a week-long conference marking the 75th anniversary of the Naval Arctic Research Laboratory. (Photo by Yereth Rosen/Alaska Beacon)

“The NARL facility has been a huge part of our North Slope Iñupiat community for 75 years,” said Pearl Brower, president of the Ukpeaġvik Iñupiat, or UIC, the local Native corporation. It is a mutually beneficial relationship, she said in a welcoming address. “Indigenous people are the first ecologists, the first scientists of our lands. When we entwine generations with firsthand knowledge of place with western scientific models, we are stronger and more informed,” she said.

[In Minnesota's forest management, Indigenous knowledge now shapes scientific practice](#)

(MATHEW HOLDING EAGLE III and KIRSTI MAROHN, SAHAN Journal: 29 July 2022)

If you come into contact with people working in and around natural resources in Minnesota you may hear the term TEK. It's a popular buzzword, which, confusingly, has little to do with technology. It's the acronym for Traditional Ecological Knowledge, an umbrella term for information about the natural world collected by countless generations of Indigenous people. Through observation and life experience, they gained knowledge—what plants were good to make teas to soothe a sore throat, what bark to harvest to bring down a fever, how certain species adapted to changes in climate and how fire can revitalize the forest floor to produce an abundance of berries. That knowledge was shared, often orally through stories or songs. Once dismissed as unscientific, there's now increasing interest in incorporating Indigenous knowledge into the policies and practices of Minnesotans working with forestry and wildlife.



BJ Gotchie, forestry and fire restoration coordinator for the Leech Lake Band of Ojibwe and a tribal member, talks about how prescribed burns have helped rejuvenate the forest and spurred the growth of blueberry bushes and other native shrubs. Credit: Kirsti Marohn | MPR News

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How Indigenous Sea Gardens Produced Massive Amounts of Food for Millennia

Communities created bountiful food without putting populations at risk of collapse

Ashley Braun, Hakai

July 25, 2022

This extract appears in compliance with republishing conditions. Read the full article on Smithsonian Magazine as hyperlinked.



On Calvert Island, British Columbia, the subtle rock line of an extant clam garden is a reminder of how Indigenous peoples turned the sea into a shellfish garden. Courtesy of the Hakai Institute

For those who know how to read them, the signs have long been there. Like the towering mound of 20 million oyster shells all but obscured by the lush greenery of central Florida's Gulf Coast. Or the arcing lines of wave-weathered stone walls strung along British Columbia's shores like a necklace. Such features, hidden in the landscape, tell a rich and varied story of Indigenous stewardship. They reveal how humans carefully transformed the world's coasts into gardens of the sea—gardens that produced vibrant, varied communities of marine life that sustained Indigenous peoples for millennia. And in certain places, like on the west coast of North America in what is now Washington State and where the Swinomish are building a new sea garden, these ancient practices are poised to sustain them once again.

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[Indigenous peoples use ceremonial burns as Redwood Forest management tool in Santa Cruz mountains](#)

(Spencer Christian & Tim Didion, 7 News: 16 July 2022)

SANTA CRUZ, Calif. (KGO) -- As a senior land manager with the Sempervirens Fund, Ian Rowbotham has seen the effects of wildfires on the San Vicente Redwoods property in the Santa Cruz mountains. "So right here on this larger Doug fir, you can see some of the fire scarring from the 2020 CZU fire," he says pointing to darkened bark. But at the same time, Rowbotham and his colleagues have been working to protect and nurture the majestic Redwood grove, in part by reaching back into the past and drawing on those practices. A ceremonial burn, conducted with the Amah Mutsun Tribal Band, helps manage the forest, according to the organization.



EMBED <->

MORE VIDEOS ▶

When it comes to Bay Area forest management, The Sempervirens Fund and Amah Mutsun Tribal Band are looking at traditional Indigenous practices.

New role enhances Indigenous presence in Science

TUESDAY, JULY 5, 2022

Today, Savannah Sloat steps into the role of Manager, Indigenous Science Initiatives. The new position will identify systemic and systematic changes that move beyond Truth and the Reconciliation Calls to Action and develop a Faculty of Science-specific response and long-term vision for Science.



Sloat is an Indigenous woman with mixed ancestry. Her father is Lenape and Haudenosaunee, born and raised on the Six Nations of the Grand River reserve, and her mother is descendent from Scottish settlers in the Waterloo region.

"I am excited to be joining the Faculty of Science in this new role that supports Indigenous education and community development," says Sloat. "I am passionate about experiential learning and supporting the recruitment and retention of Indigenous students. I look forward to making a positive impact in the Indigenous student experience at UWaterloo."

Sloat brings her lived, professional and academic experiences along with a passion for supporting Indigenous peoples and practices.

She is a student affairs educator with nearly ten years of experience in training, development, strategic planning, curriculum design, student retention project management and program administration. Before joining Science, Sloat worked in the Office of Research as the Project Manager, Indigenous Initiatives.

In her new role as Manager, Indigenous Science Initiatives, Sloat will be a support and advisor to senior Science Leadership and act as the Science liaison with Indigenous communities. She'll advise researchers on Indigenous Ways of Knowing and on Indigenous research themes, methodologies and practices.

Key initiatives of the role include: the development of an action plan for the Indigenization of the Science curriculum; creating a more inclusive environment for Indigenous students and faculty; and enhancing the recruitment of Indigenous undergraduate and graduate students as well as faculty.

Additionally, Sloat will develop a communications strategy and online resources to grow awareness of Indigenous initiatives and issues as well as create an Indigenous presence in the Faculty of Science, including a dedicated space for Indigenous Science students.

Permission to include URL references to this information for non-commercial purposes is granted provided that each such reference acknowledges that the information resides at and is the property of the University of Waterloo.

e) EUROPE

[What a Saami-led project in Arctic Finland can teach us about Indigenous science](#)

(Ellis Quinn, Eye on the Arctic: 11 Feb 2019)

A successful Saami-led, salmon rewilding project on the Näättä river in Arctic Finland illustrates the success of partnership between Indigenous knowledge and western science on environmental questions, say the authors of a recent paper, but outdated perceptions and prejudices means these kinds of partnerships elsewhere still too often fail. “(Scientists and policy makers) still struggle with ways of knowing that are beyond what science is able to capture,” said Tero Mustonen, a geographer and one of the paper’s authors, in a phone interview with Eye on the Arctic from Finland. “The argument is often that Indigenous knowledge can’t be measured and reproduced like scientific data can, but the limits of science are also real,” he said, pointing out that a scientific presence most parts of the Arctic, outside of Russia, rarely goes back more than 100 years, compared to the thousands of years of knowledge available to traditional knowledge holders.



Skolt Saami, along with Indigenous and local delegations from across Eurasia, surveying co-management actions and restoration sites in Arctic Finland, at the 2014 Festival of Northern Fishing Traditions . (Chris McNeave/Courtesy Snowchange Cooperative)



AssocProf Bradley Moggridge
@bradmoggo



A meeting of Indigenous peoples at the Australian Ambassador's residence in Stockholm
With special guests the Sami of Sweden.
Our circle of collaboration has been formed.
[#worldwaterweek2022](#) [#waterunites](#) [#respect](#)
[@UniCanberra](#) [@WaterPartnersAU](#)



5:29 AM · Sep 1, 2022 from Stockholm, Sweden · Twitter for iPhone

INDIGENOUS AND WESTERN SCIENCE – DECOLONISE, COLLABORATE, CELEBRATE

**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

Beginning with energetic discussions in New Zealand in 2021 regarding the place of Māori knowledge in their school and university science curricula (see articles in the previous five bulletins from Aug '21 to Aug '22), the debate continues. We have also included a series of commentaries on issues around decolonisation and racism.

CONTENT WARNING: Some of the following articles align with white supremacist views.

Australia TV host Rowan Dean, panel slam mātauranga Māori

(Stefan Dimitrof of Whakaata Māori: 31 Aug 2022)

Sky News Australia host Rowan Dean has just come rather late to the party over the controversy about mātauranga Māori being included in academic science. Earlier this year some academics objected to the inclusion of mātauranga Māori while others including several universities and the respected Royal Society of New Zealand defended its use. But Dean hit out at mātauranga Māori science on his show this week, saying the Royal Society of New Zealand is pushing its "woke agenda on to students". On the show *The World According to Rowan Dean*, Dean said if people questioned Māori science, they were termed racists. Author James Macpherson, a guest on Dean's panel, said science has been "kissing up to every 'wokey' fad; science has become completely politicised".



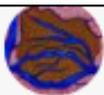
Rowan Dean said if people questioned Māori science, they were termed racists. Photo / Supplied



emmy rākete ●●●
@cannibality

Richard Dawkins wouldn't be capable of saying the word "mātauranga." He's simply not qualified to comment on the Māori intellectual tradition.

10:42 AM · Oct 27, 2022 · Twitter for Android



AssocProf Bradley Moggridge @bradmoggo · Oct 22



Why did I choose a career, a passion, a way to express myself that doesn't reciprocate, there is no critical mass, no mentors, no rights & no champions?

Why doesn't science come sit at our sacred fires to listen and learn?



[nature.com](https://www.nature.com)

Overcoming racism in science: A Nature special issue

A guest-edited collection of features, comment and analysis examines researchers' experiences of racism, the impacts of systemic racism an...



AssocProf Bradley Moggridge
@bradmoggo



Replying to @strom_m

234years of doing it the wrong way eg [#fishkills](#),
[#coralbleaching](#) [#wildfires](#) [#floods](#)
[#millenniumdrought](#) this has to change, I know

Indigenous knowledge will be well down the list but we are here, even us Indigenous scientists

12:27 PM · Sep 28, 2022 from Canberra, Australian Capital Territory ·
Twitter for iPhone

1 Retweet 6 Likes



[The Sun Sets on Science in Canada](#)

(Michael Melanson, Woke Watch Canada: 20 July 2022)

Environment and Climate Change Canada (ECCC) has recently announced a new Indigenous Science division and has appointed Dr. Myrle Ballard as its first director. ECCC says it has created the new division to advance reconciliation in its science and research activities. However much reconciliation might be the current zeitgeist in Canada, it is a political objective and its application to science is as bizarre as it is forced. Dr. Ballard sees her role as changing mindsets, "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." Right away she is declaring her mission is ideological. "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." What has any of that got to do with studying the environment and climate change? Did the ECCC establish the new Indigenous Science division to actually do science or is the whole point to validate this bundle of conceits?



Photo by [National Cancer Institute](#) on [Unsplash](#)

In a Post-Roe World, Students Deserve Access to Fact-Based Science Education

By Whitney Aragaki Aug 30, 2022

This extract is taken from EdSurge under Creative Commons Attribution 4.0 International License

Culturally Responsive Science

Biology is often a student's final health-focused class before graduation. As such, the definition of life is a common theme explored in most biology curricula and textbooks nationwide. Over the last 10 years, I've fielded questions from hundreds of students that ask, "When does life begin?" and "How do we determine what is living and what is not?" Furthermore, to live in Hawai'i is to know that cultural competence is foundational to national science standards. To honor the Indigenous Hawaiian worldview, we not only question the meaning of life, but we also ask: Is spirit synonymous with life?

...to live in Hawai'i is to know that cultural competence is foundational to national science standards. To honor the Indigenous Hawaiian worldview, we not only question the meaning of life, but we also ask: Is spirit synonymous with life?

I aim to teach and engage in class with the authenticity of my whole self. I love, honor and see all my students as individuals and beloved members of multiple communities. Engagement with students through a social justice lens should not only appeal to the narrative, and student voices have the power to cut through the media's vitriol. I will continue to have conversations about the beginnings of human life, and our class will engage in thoughtful and caring dialogue as we have done in the past. **This is the value of science — to openly question, reflect and critically engage with societal assumptions and observations.**

As a woman of color, science teacher and parent, I remain concerned about the threats to bodily autonomy in our communities. It is clear that science can either be used to liberate us or weaponized against us. However, I believe in the power of education and the responsibility I have to provide a facts-based education to all students who seek their own truth and interrogate oppression on their own terms.



Remington 🇨🇦 (remthebathboi)
@bath_boi



On indigenous science:

- Indigenous knowledge is on the front line in the fight against climate change. They are the first to see effects, usually before ecologists and other western scientists are sent to investigate/research.
- From the indigenous (academic/scientific) circles

8:33 AM · Jul 11, 2022 · Twitter for Android

1 Retweet 11 Likes



Tweet your reply

Reply



Remington 🇨🇦 (remthebathboi) @bath_boi · Jul 11



Replying to @bath_boi

I'm in, there is emphasis on *collaboration*, not the usurpation of western science by indigenous knowledge.

- A good analogy to draw would be towards the resurgence of oral tradition in history. Ethnographers used to dismiss indigenous oral history before realizing that it's

1



4



Remington 🇨🇦 (remthebathboi) @bath_boi · Jul 11



often more correct than traditional archeological methods.

- The idea that the people who lived in these areas of the world for millenia and know the intricacies of the nature around them better than western scientists should... not be surprising??? The history of biology is



Appropriate_Strike19 · 4 mo. ago

This 'indigenous knowledge is science' trend that pops up on social media every so often gets real annoying. We can recognize that certain cultures had methods and practices that worked, that's not surprising, human beings are smart and we are good at figuring out stuff in our environment. But this obsession with having to measure this stuff against "modern" practices and standards is bizarre to me.

↑ 94 ↓ Reply Give Award Share Report Save Follow



Gorddammit · 4 mo. ago

sweet tea driven

This 'indigenous knowledge is science' trend that pops up on social media every so often gets real annoying.

Get ready for the critical lense powerful enough to set Queen Elizabeth on fire.

'indigenous knowledge is science' is white supremacy.

It would heavily imply, if not outright state, that the only value to be gained from these practices is from their similarity to western scientific tradition and practice. According to this Indigenous and non white practice can't have value on its own it has to come from it's proximity to newton. Oral tradition can't have value in and of itself, or from it's usefulness, it has to be attributed to a modern eurocentric concept.

YoUR tHe ReAL RaCist

↑ 3 ↓ Reply Give Award Share Report Save Follow



Efficient_Tonight_40 · 4 mo. ago

Traditional indigenous practices aren't science because their findings weren't found through the scientific method, but that doesn't mean we shouldn't consider or learn about those perspectives, after all they did it for thousands of years perfectly fine so there is obviously merit to it

↑ 1 ↓ Reply Give Award Share Report Save Follow



Angela Barney-Leitch

@angela_leitch



Hayley Mcquire [#wipce2022](#) talking on colonialisation not being over so interactions in education are still being fought with a major power imbalance.

[@HayleyMcQuire](#)

3:11 PM · Sep 29, 2022 · Twitter for Android



Indigenous Science Network
@IndigenousSci1



very useful descriptions of colonisation as still practised by settlers...

L. J. Merciless NDN Savage @ecohugger · Oct 11
An educational for settlers on #IndigenousPeoplesDay.

What is settler colonialism? What is colonization? What happened when settlers arrived? What did they bring with them?

[Show this thread](#)



10:17 AM · Oct 11, 2022 · Twitter Web App



Samson Kaunga Ndanyi, PhD @kaunga23 · Sep 2



A reviewer rejected my paper coz it ignored "leading voices" in the field. All the "leading voices" they meant were Europeans and Americans. I used leading voices/authors from Africa. I complained to the editor. The editor agreed with me. The paper is forthcoming. BOOM!

135

1,424

14K



Settler colonialism is a specific mode of domination where a community of exogenous settlers permanently displace to a new locale, eliminate or displace [I]ndigenous populations and sovereignties, and constitute an autonomous political body.

(Veracini, 2010)



Colonization is Not a Historical Event

- A specific and **continuous process that requires maintenance and infrastructure**, which support the continuation, ideological embodiments, and ongoing organizations and violence of settler colonialism that pervade political and social structures
- The **continued occupation and appropriation** of Indigenous Peoples' lands, waters, and environments, and settler-colonial value systems that maintain harmful relationships with and access to Indigenous lands and waters, governmental 'natural resource' management policies, and modern conservation and environmentalism-based efforts
- **Maintenance of oppressions and dispossessions**

The Arrival of Settlers & Manifest Destiny

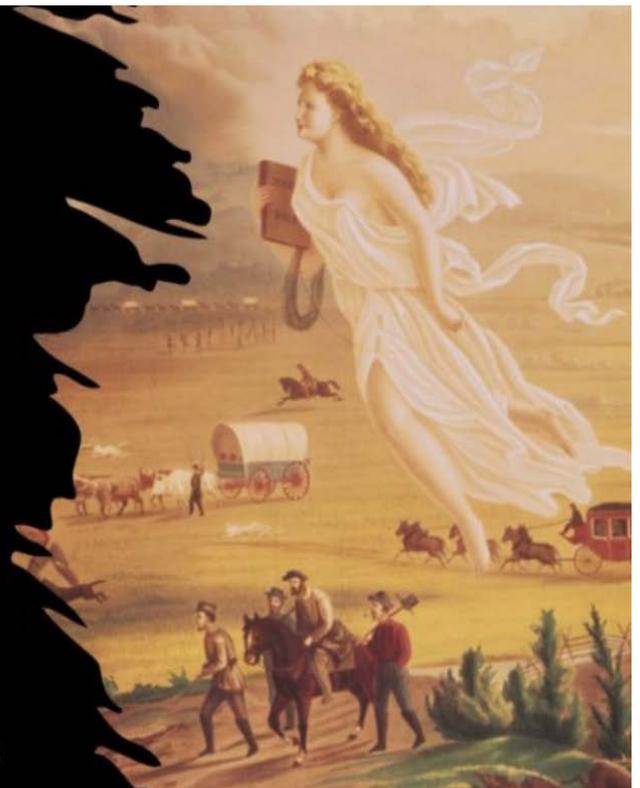
European Settler Arrival

- New value systems
- New forms of Knowledge
- Concept of Manifest Destiny

Manifest Destiny

- God-sanctioned movement and ideology
- Permits the spatial motion, control, colonization, and ownership of Indigenous territories by non-Indigenous peoples
- Centered on the development and maintenance of 'civilization'
- Directly connected to the concept of the Doctrine of Discovery

(Czarnecki, 2011; Merchant, 2010, pg. 201)

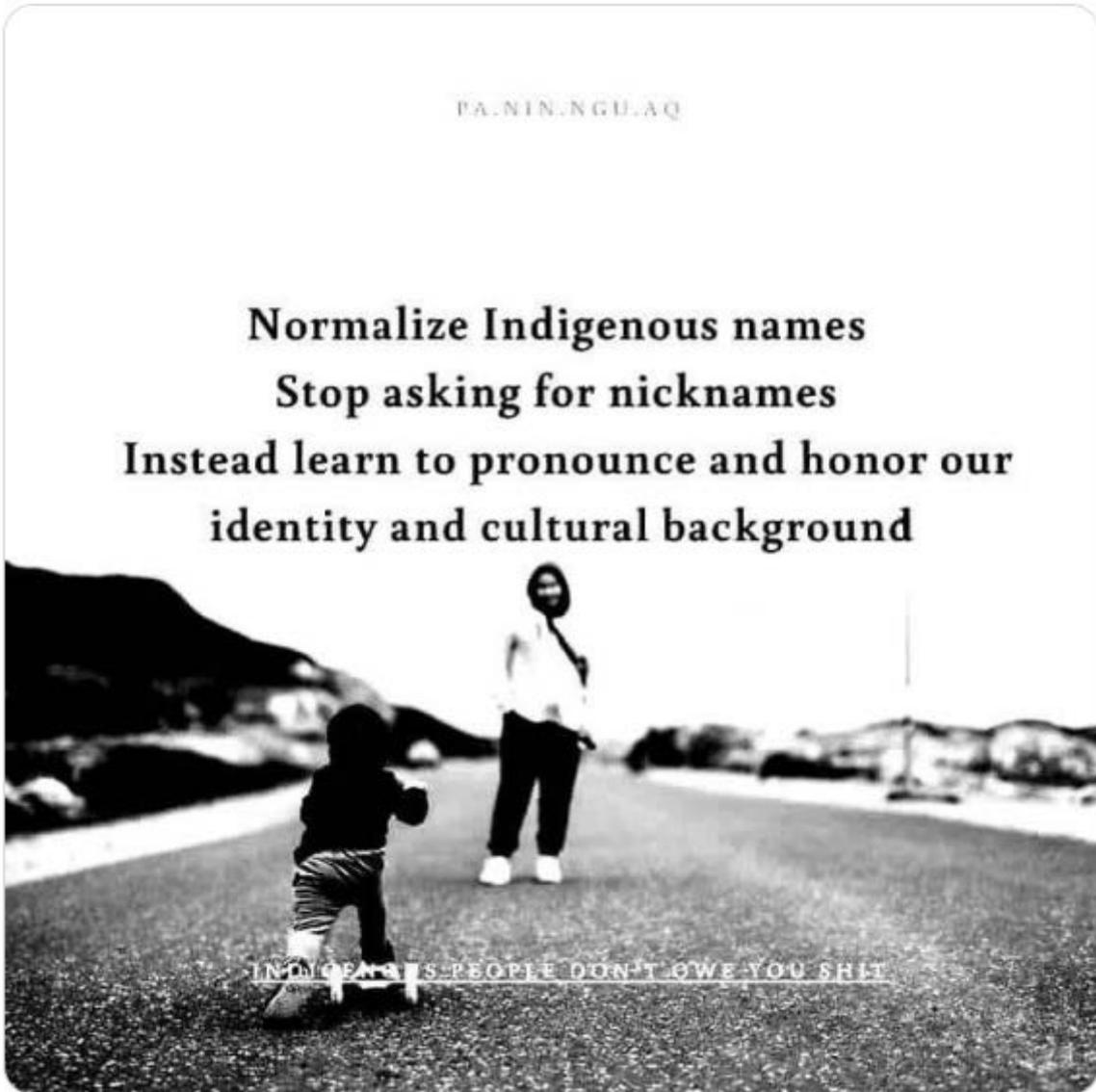




Mad 
@Allakariallak



Inuit atiapingit tusarnirisuukka so it hurts when they're butchered.



9:03 AM · Aug 15, 2022 · Twitter for iPhone

[Slave traders' names are still stamped on native plants. It's time to 'decolonise' Australia's public gardens](#)

(Brett Summerell, The Guardian, Sat 1 Oct 2022)

For too long we've dismissed Indigenous knowledge of the natural world. At Sydney's botanic garden, signage is starting to reflect Aboriginal names.

The article's author, Dr Brett Summerell is chief scientist of the Australian Institute of Botanical Science



Image: HarveyChi, [A view of Royal Botanic Garden taken from Sydney Tower](#), February 2019, [Licence CC-BY-SA 4.0](#)



Pitt Rivers Museum
@Pitt_Rivers



In the The Mākereti Papakura Inaugural Lecture, Linda Tuhiwai Smith (@waikato) speaks about her involvement over 50 years in multiple educational initiatives to revitalise #Māori language, knowledge and culture. Friday 14 Oct, 3pm bit.ly/3fVWhE9 ✓



University of Oxford and 6 others

8:53 PM · Oct 10, 2022 · Twitter Web App

'Messy cultural politics: Revitalising Mātauranga Māori (Māori knowledge) while decolonising the knowledge systems that tried to erase it'

In this talk I will explore the messy, sometimes joyous, sometimes profoundly sad and frequently maddening, politics that go with the simultaneous efforts of Māori people to revitalise our knowledge, language and culture and decolonise academic and cultural institutions. I draw from my work on decolonising methodologies in research, researching inter-generational trauma and the impacts of colonialism and colonisation and my involvement over 50 years in multiple educational initiatives to revitalise Māori language, knowledge and culture. In many ways Māori cultural revitalisation strategies demonstrate the messiness of decolonising knowledge.



Autumn BlackDeer, PhD
@DrBlackDeer



Our ancestors had controlled burns to help clear the land and fertilize the soil for new growth. So when we say sometimes decolonization requires burning it all down, its traditional

4:52 AM · Oct 9, 2022 · Twitter for Android



Debbie Reese (tribally enrolled, Nambé Pueblo)
@debreese



You may have seen posts about Three Sisters that use past tense. See the edits to this one? Pls consider interrupting content with past tense.



Native Americans ^{Have} ~~had~~ a planting technique where they ~~would~~ plant corn, bean, and squash crops close to each other. The corn provides a structure for the beans to climb, the beans give nitrogen to the soil, and the squash spreads on the ground to prevent weeds from growing. These companion crops ^{Are} ~~were~~ known as the "Three Sisters."

7:06 AM · Sep 4, 2022 · Twitter for iPhone

Massey University lecturer told Māori students they 'don't look Māori'

(Caroline Williams, Stuff NZ: 16 Sept 2022)

A senior lecturer at Massey University has apologised for telling two Māori students they “don’t look Māori”. Dr Chris Galloway, who teaches public relations at the university’s Albany campus, made the comment towards students Mikaela Matenga and Caleb Monk, who were representing Te Waka o Ngā Ākonga Māori (Māori Students Association) stall at Clubs Day on July 20. Matenga (Te Arawa, Rongowhakaata, Ngāti Tuhourangi), who is the president of the association, said Galloway told the pair: “I hope this isn’t offensive, but you guys don’t look Māori at all”. Matenga said she felt the comment was “highly racist”. She felt it was an attempt to minimise her and Monk’s identities as tangata whenua.



SUPPLIED

Massey University students Caleb Monk and Mikaela Matenga were told they “don’t look Māori” by a senior lecturer.

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!



L. J. Merciless NDN Savage
@ecohugger



Imagine if Indigenous Knowledges wouldn't have been ignored for so long by scientists & discounted as folklore. What state would our climate be in today if they would have listened our Peoples and let us continue to steward our lands and waters in good relations and reciprocity?



Ben See @ClimateBen · Aug 20

Did you know scientists now all agree that for a sustainable world we need fundamental changes to 'underlying values, worldviews, ideologies, social structures, political & economic systems, and power relationships'? It's as if they're hinting that today's system is killing us. 🇺🇸

[Show this thread](#)

5:51 AM · Aug 21, 2022 · Twitter for iPhone



Victor A. Lopez-Carmen (Waakiya Mani)
@vlocarmen



White environmentalists in the 70s made "Spear an Indian, save a fish" signs.

They spat, hurled slurs & encouraged arrests for our sustainable fishing practices/rights.

Colonialism disguised as environmentalism isn't new & we shouldn't forget this in climate change agendas.

1:43 AM · Oct 31, 2022 · Twitter Web App





Ángel A. García Jr.
@boricua_geo

...

I want to share some thoughts about the field trip that I co-lead during @sacnas dedicated to explore the intersection between #culture, #caves and #ecology in #PuertoRico (1/n)



10:25 AM · Oct 31, 20



Ángel A. García Jr. @boricua_geo · Oct 31

...

Constructing a field trip that is #culturally relevant and community centered, REQUIRES the participation of #community members. This is critical to keep the activity place-based because the narrative is place-based.





Ángel A. García Jr. @boricua_geo · Oct 31

...

Your trip needs to have a diversity of participants. Too many experts could intimidate the welcoming of questions that may work spark 🔥 curiosity. We had a mixture of undergrads (many majors), grad students, early career and late career faculty.



💬 1

↻ 2

❤️ 12

📤



Ángel A. García Jr. @boricua_geo · Oct 31

...

In addition, construct spaces for everyone to interact. If we want more diversity in [#Geosciences](#), in addition to inviting people, we need to [#ENGAGE](#) with them and made them feel [#welcome](#) (important)





Dr. Dr. Desi (she/her)
@native4data



Indigenous Peoples have always been scientists
Indigenous Peoples have always been data experts
Indigenous Peoples have the answers
Western science/scientists don't have to listen to
us/believe us, just stay out of our way!

Woke up very proud to be an Indigenous scientist 🔥



1:52 AM · Oct 30, 2022 · Twitter Web App



The Black Women in Computational Biology Network
@blkwomencompbio



HOT OFF THE PRESS:

BWCB is pleased to announce the publication of our editorial in [@PLOSCompBiol](#) titled "Ten simple rules for creating a global network in computational biology."

doi.org/jjhn ✓

The graphic features the logos for 'THE BLACK WOMEN IN COMPUTATIONAL BIOLOGY NETWORK' and 'PLOS COMPUTATIONAL BIOLOGY'. The text reads: 'NEW EDITORIAL TEN SIMPLE RULES FOR CREATING A GLOBAL NETWORK IN COMPUTATIONAL BIOLOGY'. Below the text is the URL 'https://doi.org/jjhn' and a row of five portrait photos of the authors: Jenea I. Adams, Taylor Ferebee, Melyssa Minto, Kayla Pennerman, and Nyasha Chambwe.

PLOS and 5 others

2:54 AM · Oct 29, 2022 · Twitter Web App

Don't conservatives hate VIRTUE SIGNALLING. Let's not acknowledge the natives unless real meaningful action occurs. And we shall define what that is! Such a cop out!!

[UW professor sues school over indigenous land acknowledgment](#)

(Cameron Sheppard, Vashon Beachcomber: 26 July 2022)

Anyone who has recently attended a city council meeting, a school board meeting, or a college graduation has probably heard an indigenous land acknowledgment spoken as part of the ceremony. It is a statement intended to recognize the privilege and prosperity enjoyed by institutions and communities established by colonizers and settlers on land that had long been the ancestral lands of the Coast Salish people and their many tribes across the region. A land acknowledgement is a tip-of-the-cap, so to speak, that has been widely adopted by institutions in the Puget Sound region. But for many, its value is little more than an empty gesture. Recently, a University of Washington professor protested the recommended inclusion of an indigenous land acknowledgment in the syllabus of his computer science course in objection to both the principle and the message. He is now under investigation and faces possible disciplinary action or even termination for his stance on the issue.



University of Washington Professor Stuart Reges (Screenshot from Foundation of Individual Rights and Expression video)

However, is this support for the professor's position (from previous page)?

 **Karletta Chief**
@nativehydro

“Your Land Acknowledgment Is Not Enough but is a a
“settler move to innocence. Land acknowledgment
without action is an empty gesture, exculpatory and
self-serving.”



hyperallergic.com
Your Land Acknowledgment Is Not Enough
Land acknowledgment without action is an empty gesture, exculpatory and self-serving.

10:43 AM · Oct 29, 2022 · Twitter for iPhone

Marysville school's new approach embraces 'Indigenous ways of learning'

(Mallory Gruben, HeraldNet: 10 Aug 2022)

MARYSVILLE — Starting this fall, school and tribal leaders plan to “decolonize” Tulalip Heritage High School. Years ago, educators and the Tulalip Tribes started a small learning community tying the classroom to traditional learning styles. The goal was for Indigenous students to see themselves in the curriculum. Students drummed, sang and made regalia and cedar carvings. The school brought in Indigenous artists and speakers to teach classes, and it gave students leeway to attend tribal ceremonies or shadow jobs on the reservation during the school day.



Heritage High Principal Dr. Nathan Plummer and Tulalip Education Division Executive Director Jessica Bulstad stand out front at Heritage High School on Thursday, Aug. 4, in Marysville. (Ryan Berry / The Herald)



Bryson The Not An Elder Gaytive @ArnallLabrador · Oct 28



Okay so here is a Mi'kmaq specific land acknowledgement. I have been finding that LAs that I've heard lately are too safe, too hollow, too appealing to white fragility for my taste. They should make you uncomfortable and resonate with you, (1)

34

169

755



[Indigenous partnerships: Committed to building mutually beneficial relationships based on trust and respect](#)



Aboriginal and Torres Strait Islander people and the Australian Institute of Marine Science are building strong and productive relationships in marine science.

Natural synergies exist between AIMS' research and the management and protection of sea country by Traditional Owners on the coasts and continental shelf of northern Australia – from Exmouth to the southern Great Barrier Reef.

We partner with Aboriginal and Torres Strait Islander people, learning from each other through two-way knowledge sharing of the marine environment, to ensure its future for all.

For example, our scientists partnered with the Anindilyakwa Rangers and elders on Groote Eylandt in the Gulf of Carpentaria to complete the largest mapping and research project of its kind.

We have worked with the Bardi-Jawi Rangers in Cape Leveque, Western Australia to develop resource baselines and setup monitoring programs in designated Indigenous Protected Areas (IPAs).

Through the AIMS Strategy 2025 and AIMS Indigenous Partnerships Plan, and backed by our Indigenous Partnerships Policy, we work with Traditional Owners to create new shared research that weaves Indigenous Knowledge of sea country with other sciences.

This extract appears courtesy of [Australian Institute of Marine Science](#) under a [Creative Commons Attribution 4.0 licence](#).

Australia's tropical marine research agency

The Australian Institute of Marine Science's research supports the sustainable use and protection of our oceans.



Indigenous Science Network at the Australian Cardijn Institute

AUGUST 23, 2022

Video: Australia's Indigenous Science Network



Mark Linkson was the presenter for our August ACI webinar on "Australia's Indigenous Science Network."

A former YCW leader from Adelaide, Mark has taught in Indigenous communities in northern Australia and the Torres Strait islands for more than 30 years. He also taught for two years in Ethiopia.

With this wealth of experience, he has become the Australian coordinator for the Indigenous Science Network (ISN), a global initiative based in Australia that promotes the use of Indigenous science in education and highlights the work of Indigenous scientists.



wayne.fossey@gmail.com
@FosseyWayne



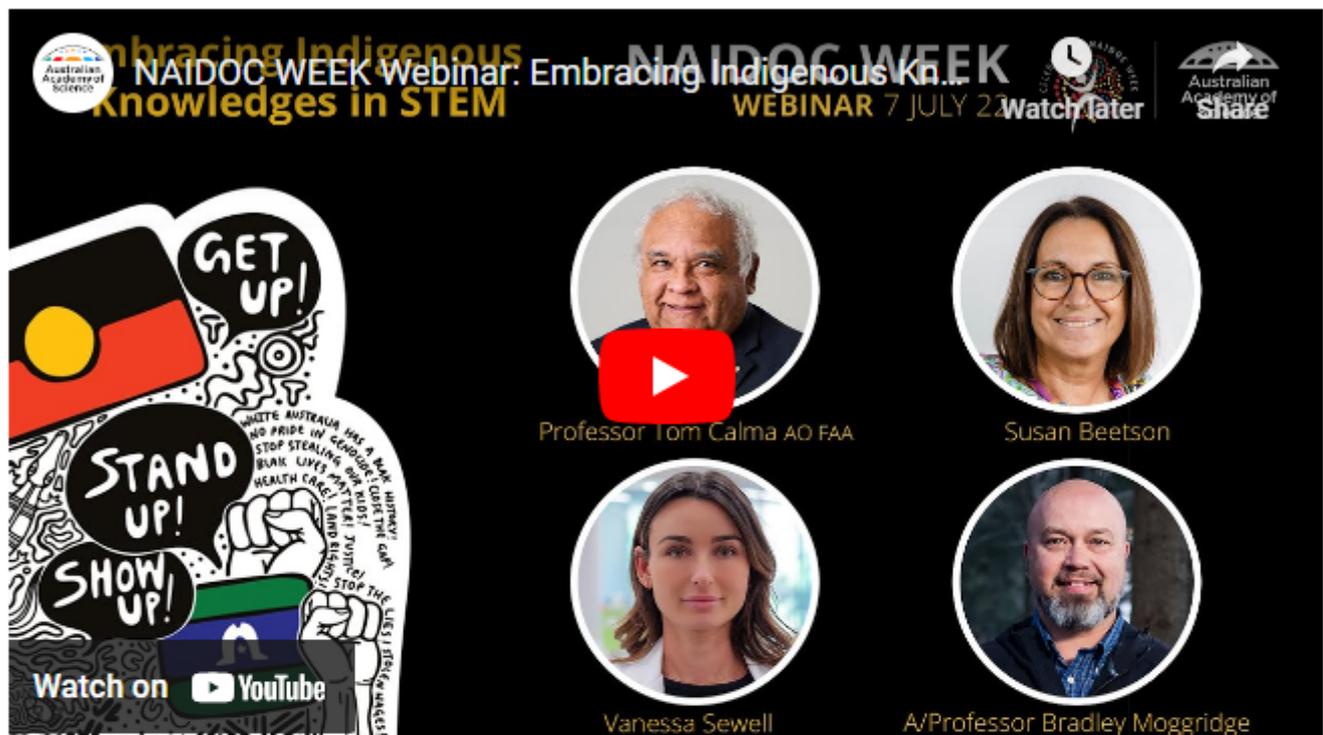
Big grass spear trees are found across the Toowoomba ridges. The recent wet has given a boost to their survival. The spear on top of the plant forms a weapon, but it is also a food, glue, fire starter and fire survival plant.



11:41 PM · Oct 5, 2022 · Twitter for iPhone

Embracing Indigenous Knowledges in STEM the focus of NAIDOC Week webinar

July 21, 2022



The video's opening image was adapted from the 2022 National NAIDOC logo ([CC BY-NC-ND 4.0](https://creativecommons.org/licenses/by-nc-nd/4.0/)), with the addition of text and images relevant to the event.

The Australian Academy of Science celebrated NAIDOC Week recently by hosting a virtual webinar on 7 July. In a Q&A format, four Indigenous STEM professionals shared their journeys in STEM and discussed their experience embracing Indigenous Knowledges in STEM and the ways in which they foster a more inclusive and diverse STEM sector.

The webinar was hosted by Indigenous health champion and Academy Fellow, Professor Tom Calma, Aboriginal Elder from the Kungarakan tribal group, and Chancellor of the University of Canberra (UC). He was joined by Associate Professor Bradley Moggridge, Kamilaroi man, also from the University of Canberra, Susan Beetson, Ngemba/Wayilwan and Wiradjuri woman, from the University of Queensland, and Vanessa Sewell, Worimi

This image courtesy of the Australian Academy of Science under a Creative Commons Attribution licence.

[The Indigenous women using traditional knowledge and science to protect the Great Barrier Reef](#)

(Marina Trajkovich, 9News: 16 July 2022)

Yuku Baja Muliku woman Larissa Hale once felt like the only woman in the room, but now stands among dozens of female Indigenous rangers passionate about protecting the Great Barrier Reef.

The women attending the recent Queensland Indigenous Women's Ranger Network forum in Far North Queensland, ranged from people like Hale's aunty — who has worked on the reef since the 1980s — to new, younger rangers ensuring the work continues for future generations.

"It was quite emotional. It was a very proud moment," Hale said.



9 News 2022



Michael Fletcher
@theotheroad



Nice to see our book finally out! Great work
@ProfLesleyHead Zena Cumpston 👣🌿🖤🟡❤️



thamesandhudson.com.au

Plants | Thames & Hudson Australia & New Zealand

The First Knowledges series offers an introduction to Indigenous knowledges in vital areas and their application to the present day and the future. Exploring ...

8:34 AM · Sep 28, 2022 · Twitter Web App



CSER Adelaide
@cserAdelaide



Thought provoking! So many ideas & considerations for incorporating Aboriginal & Torres Strait Islander histories & cultures in to lesson planning in DT. Thanks to Jesse King & Toni Falusi & everyone that participated this afternoon! @StrongerSmarter #GoogleEducatorGrant2022



8:54 PM · Sep 27, 2022 · Twitter for iPhone



Krystal De Napoli @KrystalDeNapoli · Sep 5



I am thrilled to have received this mighty fine addition to the First Knowledges series!!
In stores September 27th! 🌱

Plants: Past, Present and Future by Zena Cumpston, Michael-Shawn Fletcher & Lesley Head.

I'm so excited to get stuck into it!
[@theotheroad](#) [@ProfLesleyHead](#)



13

62

384



International Day of the World's Indigenous Peoples Symposium

International Day of the World's Indigenous Peoples (IDWIP) marks the day of the first meeting, in 1982, of the UN Working Group on Indigenous Populations of the Sub-Commission on the Promotion and Protection of Human Rights.

To recognise the International Day of the World's Indigenous Peoples, the Indigenous Knowledge Institute hosts a symposium to showcase and celebrate a variety of Indigenous knowledges from across the University of Melbourne and the community.



Associate Professor Michael-Shawn Fletcher, Maddison Miller, Dr Jack Pascoe, and Matt Shanks: "Using Indigenous Knowledge to Manage Healthy Country"

This panel asks what constitutes 'Healthy Country' and discusses the design and efficacy of Healthy Country management plans. The panel will consider how Healthy Country management plans can empower Indigenous communities and the broader Australian community. Healthy Country is a Research Theme program funded by the Indigenous Knowledge Institute at the University of Melbourne.



Professor Brian Djangirrawuy Gumbula-Garawirrtja: "How Yolŋu knowledge informs creative innovation"

This presentation will discuss the Yolŋu Manikay tradition of song and dance and its importance in maintaining and understanding Yolŋu culture in North-east Arnhem Land. It shows how contemporary Yolŋu creative practices build on knowledge held and transmitted through the Manikay tradition in various innovative ways.



Kinjia Munkara-Murray: "Ngapangimarri ngini waliwalinga ngirramini: How Ants can Inform Land Use and Management on the Tiwi Islands"

This talk will present a case study from the Tiwi Islands where Indigenous knowledge is being applied to research ant biodiversity. It will discuss the research project and where it sits within the Tiwi knowledge framework, and describe the benefits of this study to local decision-making bodies.

Kinjia Munkara-Murray is a Tiwi and Rembarrnga woman completing a Master of Bioscience at The University of Melbourne.



Enterprise Professor Bruce Pascoe: Aboriginal foods and the food industry

Enterprise Professor Bruce Pascoe is a Yuin, Bunurong and Tasmanian man. He has published 36 books including *Dark Emu* which won the NSW Premier's Award for Literature in 2016 and *Young Dark Emu* which won both the Booksellers Association Prize and the CBCA Non-fiction award in 2020. He has published numerous essays and journalism both in Australia and overseas. Bruce is also a farmer and grows Australian Aboriginal Grains and tubers. He is a Board Member of First Languages Australia, Black Duck Foods, and Twofold Aboriginal Corporation.





Fitzroy Valley: Indigenous seasonal calendars on Many Lands, Many Seasons

 **CSIRO** ✓
29.5K subscribers

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 14 |  |  Share

556 views Jun 1, 2022

Do you know that Aboriginal and Torres Strait Islander peoples have their own names and times for their seasons?

CSIRO and the ABC have co-produced a TV series called Many Lands, Many Seasons. Each episode centres on different Indigenous seasonal calendars that were developed in partnership between senior Aboriginal knowledge holders and CSIRO.

In the second episode we're visiting the Fitzroy Valley in Western Australia. Here, the mighty Martuwarra (Fitzroy River) winds through the town of Fitzroy Crossing, 400 kilometres inland from Broome. We explore the three seasonal calendars of the Walmajarri, Bunuba and Gooniyandi peoples.

Curious about calendars? Visit <https://www.csiro.au/en/research/indi...> ✓

Video transcript: <https://www.csiro.au/Indigenous-scienc...> ✓

Indigenous Science: What Would it Take to Transform the World?

with
Mary Smith,
Dr. Megan Bang,
and Sarah Redfield

Sponsored by the Caroline and Ora Smith Foundation

Monday September 19, 2022
2:00 PM - 3:15 PM
Livestream via YOUTUBE

Learn more at [MONAH.ORG](https://www.monah.org)

CAROLINE AND ORA SMITH FOUNDATION

Museum of Native American History

1.74K subscribers

Inspired by the 2020 documentary *Picture A Scientist* (available on Netflix or rented on Amazon Prime), Mary Smith, founder and president of the Caroline and Ora Smith Foundation, moderates what promises to be an engaging and inspiring conversation with Dr. Megan Bang, Professor of the Learning Sciences and Psychology at Northwestern University, and Professor and attorney Sarah Redfield, a Maine native whose work centers around unintentional bias and Diversity, Equity and Inclusion. The conversation will start with an overview of unintentional bias and its impact on Native American scientists. Then, it will move into broader issues of invisibility and the dangers of groupthink, which often silences the critical voices of diverse populations. There will be ample time for questions and discussion with the audience.

This panel is sponsored by the Caroline and Ora Smith Foundation.

Mary Smith (Cherokee) is the founder and president of the Caroline and Ora Smith Foundation, a organization dedicated to supporting Native American girls in science, technology, engineering, and mathematics (STEM). She is also President-Elect Nominee of the American Bar Association, and the first Native American woman to hold this title.

[Manitoba kid looking to inspire others with the help of his science videos](#)

(Mason DePatie, CTV Winnipeg: 31 Aug 2022)

A nine-year-old Manitoban is teaching others to follow their dreams – along with some interesting science facts – by creating YouTube videos. Simon Monteith, otherwise known as Simon the Scientist, has been sharing his passion for science through online videos. "I like being curious and finding out new things," said Simon. His desire to share his knowledge and passion started during the pandemic, when he made his first video explaining how COVID-19 spreads. "So when I was just seven years old, at the start of the pandemic, I had an idea of what COVID was." Two years later, he has created about 60 educational videos, covering topics like the human body and the water cycle. "I think that's what prompted this all, is that it's within Simon to reach out in a way that's original, that's understandable for all audiences," said Simon's mom Jacqueline. Simon is originally from Opaskwayak Cree Nation and is now a semi-finalist in the Canada-wide Powwow Pitch, a contest made to help Indigenous entrepreneurs.



CTV Winnipeg

 **Traditional Knowledge in Fiji for Anticipating, Aver...**  **Copy link**

Part 3: The deep history of Fiji – hints at knowledges now lost (1)
Climate change • Climate change refers to long-term shifts in temperatures and...

The earliest known human settlement in Fiji is at Bourewa in southwest Viti Levu Island.

- We discovered this site in 2003 and now have >60 radiocarbon ages from it, showing it was founded about 3100 years ago and was abandoned about 2500 years ago.
- It is characterised by some intricately-decorated pottery and “shell valuables” – their meanings and functions are uncertain.







Watch on  **YouTube**



Professor Patrick Nunn, Roselyn Kumar, and Taniela Bolea: "Traditional Knowledge in Fiji for Anticipating, Averting and Accommodating Environmental Risk"

People have lived on islands in the western Pacific Ocean for more than three thousand years, developing robust sets of site-specific protocols for anticipating environmental risk (including weather, earthquake, and eruption prediction) that spawned practices for averting risk (such as structures, rituals, and propitiatory behaviours) and accommodating risk (such as optimal settlement location, food-surplus production, and food preservation).

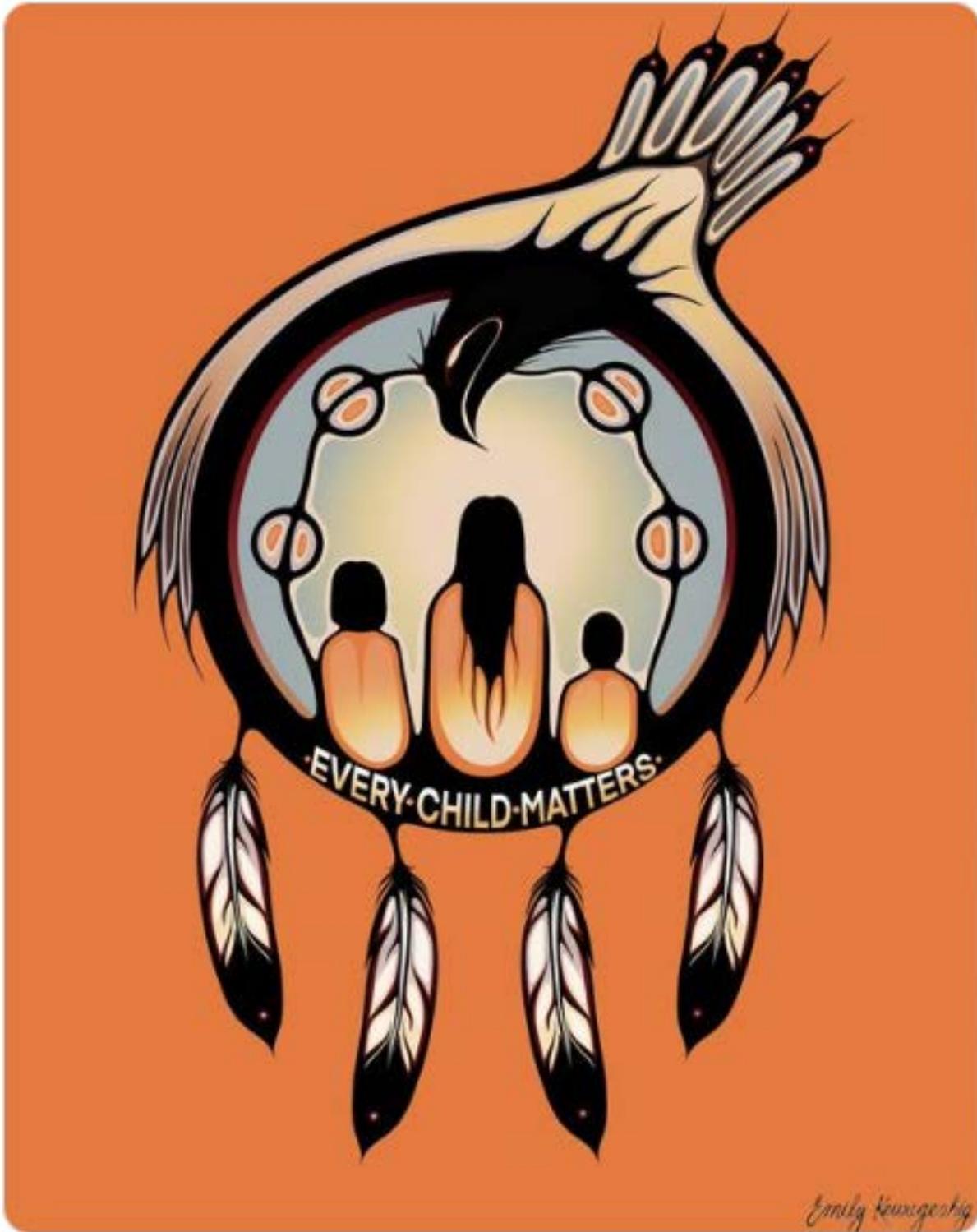
The Bulletin of the Indigenous Science Network is distributed four times a year via email directly to members. Membership is open to all. If interested in being a part of the Network, please contact the Coordinator via email at IndigenousSciNet@yahoo.com. Issues distributed in February, May, August and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



Canadian Paintings
@CanadaPaintings



Every Child Matters
Emily Kewageshig ~ Anishinaabe
2021



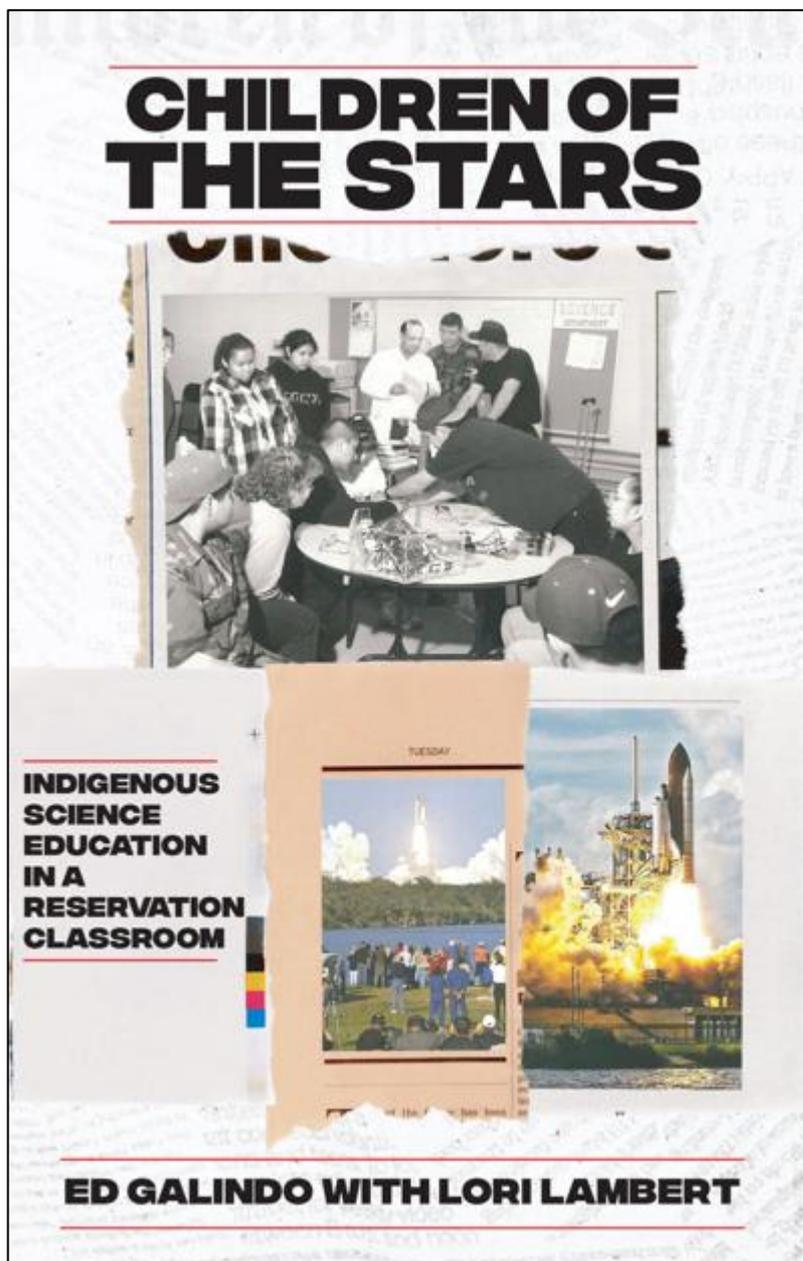
3:12 AM · Oct 1, 2022 · Twitter Web App



UOG Press review: "Children of the Stars: Indigenous Science Education in a Reservation Classroom"

(Justine De Fant, Pacific Daily News: 27 Aug 2022)

We all have looked up at the stars and wondered what life could be hiding beyond what our eyes can see. What infinite possibilities have yet to be discovered in the vast expanse of space? In "Children of the Stars: Indigenous Science Education in a Reservation Classroom" written by Ed Galindo with Lori Lambert, high school students from the Fort Hall Reservation in Idaho had the chance to explore this wonder. Galindo, a lifelong educator and Yaqui Indian, shares the inspirational story of his students from the Shoshone-Bannock tribe who earned a spot in a competitive NASA program in the 1990s, where they developed an experiment that NASA astronauts would pilot in space. The first hurdle the students had to contend with was what knowledge could teenagers from a small reservation contribute to NASA, a world-renowned agency known for hosting the best and brightest minds in the field of science and space explorations.



Supporting Indigenous land and data stewards for community centered science



Research on policy and practice

Our research helps identify gaps and needs in natural resource policy and practice and provides tangible, evidence-based solutions.

WHAT WE DO



Building a living resource

We are transforming our field by encouraging understanding of Indigenous ways of knowing and providing resources for relational and reconciliation-based work with communities.

RESOURCE HUB



Supporting Indigenous stewards

We support a growing community of Indigenous land and data stewards by providing mentorship and research support for up & coming generations.

WHO WE ARE

Photo by Brianne Dewani Lauro. Brianne's father, Steve Lauro, holds the outer layer of a fragrant maile vine as he puts together a lei.

Photo by Braelynn Lauro. Braelynn's sister, Brianne Lauro, holds her catch and three-prong spear after diving with her father for he'e (octopus).

We are building a living resource hub for scholars and community members who are interested in Indigenous science research and education. This page is designed for self-guided learning to connect you with a variety of helpful resources and sources for critical reflection. These resources emphasize community-engaged research that transcends disciplinary boundaries and that is grounded in reciprocity to land and community to support healthy lifeways.

This extract is from
<https://www.indigenouslandstewards.org>



Browse our resources



Beginning at the beginning:
Unburdening & healing our
histories



Understanding roles and
positionality in Indigenous
science & education



How to apply, survive, and
thrive in academia



Dr. Andrea Reid
@andreajanereid



Friends! Family! Fellow Fish!
The Centre for Indigenous Fisheries @UBC now has a
website: cif.fish ~
I love so much about our new digital home, but top of
the list is how much thought/care/beauty our team
member Nicole Jung imbued into every inch
[#IndigenousScience](#)



Centre for
Indigenous
Fisheries

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UBC Oceans and 9 others

7:17 AM · Sep 23, 2022 · Twitter Web App

Knowing Home: Braiding Indigenous Science with Western Science, Book 1

Edited by Gloria Snively and Wanosts'a7 Lorna Williams

Knowing Home attempts to capture the creative vision of Indigenous scientific knowledge and technology that is derived from an ecology of a home place. The traditional wisdom component of Indigenous Science—the values and ways of decision-making—assists humans in their relationship with each other, the land and water, and all of creation. Indigenous perspectives have the potential to give insight and guidance to the kind of environmental ethics and deep understanding that we must gain as we attempt to solve the increasingly complex problems of the 21st century.



Book 1

KNOWING HOME

Braiding Indigenous Science with Western Science

Edited by
Gloria Snively & Wanosts'a7 Lorna Williams

Download this book

About the Book

Knowing Home attempts to capture the creative vision of Indigenous scientific knowledge and technology that is derived from an ecology of a home place. The traditional wisdom component of Indigenous Science—the values and ways of decision-making—assists humans in their relationship with each other, the land and water, and all of creation. Indigenous perspectives have the potential to give insight and guidance to the kind of environmental ethics and deep understanding that we must gain as we attempt to solve the increasingly complex problems of the 21st century.

Braiding Indigenous Science and Western Science is a metaphor used to establish a particular relationship. Linked by braiding, there is a certain reciprocity. Each strand remains a separate entity, but all strands come together to form the whole. When we braid Indigenous Science with Western Science we acknowledge that both ways of knowing are legitimate forms of knowledge.

The book provides a window into the vast storehouse of innovations and technologies of the Indigenous peoples who live in Northwestern North America. It is our hope that the Indigenous Science examples, research and curriculum models will inspire deep reflection regarding the under-representation of Aboriginal students in the sciences. It is intended that the rich examples and cases, combined with the resources listed in the appendices, will enable teachers and students to explore Indigenous Science examples in the classroom, and in addition, support the development of curriculum projects in home places.

This extract is linked from <https://pressbooks.bccampus.ca/knowinghome> and appears under permission provided by the Creative Commons Attribution 4.0 International License.

[Nature of Nogojiwanong: Peterborough scavenger hunt recognizes Indigenous sciences](#)

(THE MORNING SHOW ON CHEX: 15 July 2022)

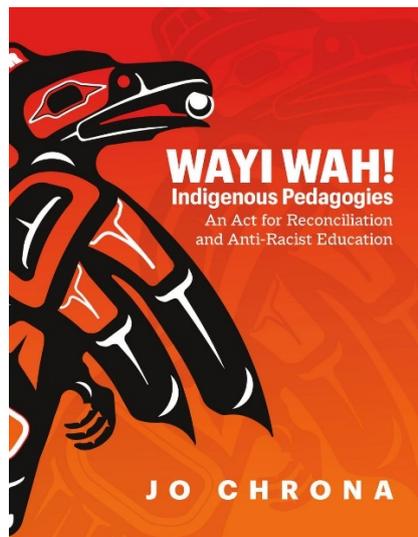
It's an opportunity to learn about Indigenous sciences by immersing yourself in nature. TRACKS Youth Program is running an all-ages scavenger hunt across Peterborough all summer, and boosting your Indigenous knowledge is not the only prize. Geneva Walker joined Noor Ibrahim on Global News Morning Peterborough to share about the goal of the event.

[Wayi Wah! Indigenous Pedagogies: An Act for Reconciliation and Anti-Racist Education](#)

(Jo Chrona, Portage and Main Press: Aug 2022)

How can Indigenous knowledge systems inform our teaching practices and enhance education? How do we create an education system that embodies an anti-racist approach and equity for all learners?

This powerful and engaging resource is for non-Indigenous educators who want to learn more, are new to these conversations, or want to deepen their learning. Some educators may come to this work with some trepidation. You may feel that you are not equipped to engage in Indigenous education, reconciliation, or anti-racism work. You may be anxious about perpetuating misconceptions or stereotypes, making mistakes, or giving offence. In these chapters, I invite you to take a walk and have a conversation with a good mind and a good heart. With over two decades in Indigenous education, author Jo Chrona encourages readers to acknowledge and challenge assumptions, reflect on their own experiences, and envision a more equitable education system for all.



Indigenous Knowledge & Wisdom Centre

Vision Statement:

Igniting the fire of our ancestors' ways of knowing.

Mission Statement:

We will:

- Honour the diversity among indigenous cultures
- Honour the inherent and treaty rights of our peoples
- Celebrate and sustain our environments, languages, cultures and identities
- Develop a legacy of knowledge and teachings for life long learning

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INDIGENOUS KNOWLEDGE & WISDOM CENTRE

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K-3 7-9

4-6 10-12

Students Parents Educators Alliance

[#proudMeducator](#) Steven Loonsfoot, Shepherd Elementary/Middle

School Teacher

(Accessed 18 Aug 2022)

The latest [#proudMeducator](#) video from the Michigan Department of Education (MDE) features Steven Loonsfoot, an elementary/middle school educator in Shepherd Public School District, and proud tribal member of the Keweenaw Bay Indian Community. While the video shows that he is a successful and popular educator among his peer educators and students, Mr. Loonsfoot adds that “it’s a huge thing for Indigenous people to have a presence in the schools.”



[#proudMeducator](#) Steven Loonsfoot, Shepherd Elementary/Middle School Teacher

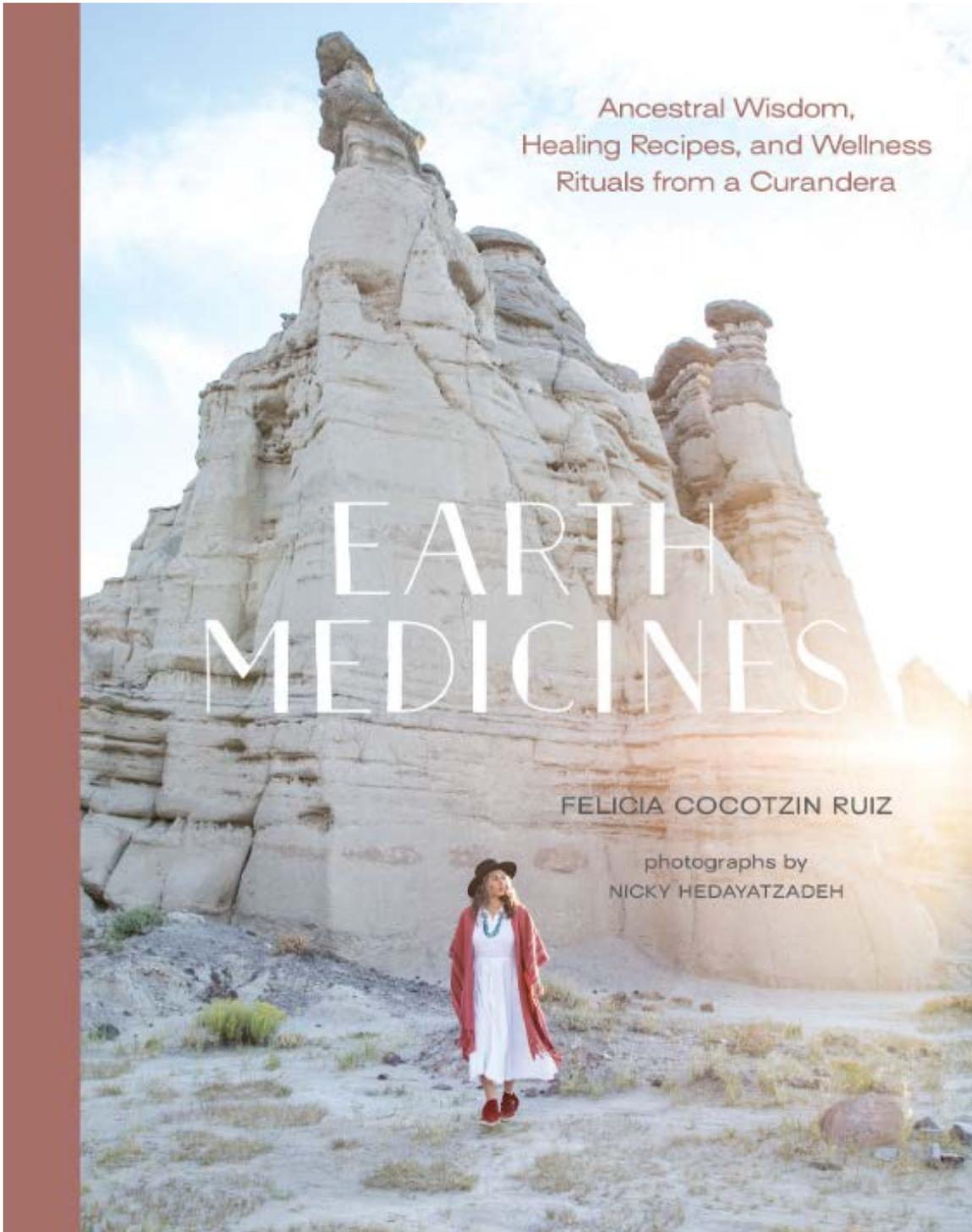
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Earth Medicines: Ancestral Wisdom, Healing Recipes, and Wellness Rituals from a Curandera

Author: Felicia Cocotzin Ruiz

ROOST BOOKS, 2022

ISBN-13 : 978-1611808438



[Kitchen Curandera's Book Highlights Indigenous Healing Practices](#)

(BAHAR ANOOSHAHR, Phoenix New Times: 22 Dec 2021)

In her new book, *Earth Medicines: Ancestral Wisdom, Healing Recipes, and Wellness Rituals from a Curandera* (Roost Books; 2021), Felicia Cocotzin Ruiz (aka the Kitchen Curandera) shares her knowledge through 23 years of apprenticeship and life experience with traditional healing medicines. The practice of curanderismo is a traditional healing practice of Mexican and Mexican-American cultures, which treats illnesses on three levels: material, spiritual, and mental. A curandera is a natural healer. The word comes from the Spanish word *curar*, meaning to heal. A curandera is a female healer, and a curandero is a male healer. Ruiz's love of medicine-making started as a child, as she followed her great-grandmother (who Ruiz lovingly calls Grandma Chiquita), holding a paper bag to help as her great-grandmother gathered plants. "I understood early on how, all around the world traditional healing systems included the elements," says Ruiz. "So, I brought that into the book."



Felicia Cocotzin Ruiz's new book is written in four sections, one for each natural element: air, earth, water and fire.
Nicky Hedayatzadeh



Conservation through Reconciliation Partnership

@IndgLed_Conserv



Have you heard about the [@IPCABasket](#)? The IPCA Knowledge Basket is a digital space that holds & shares more than 1,000 resources to inform, guide, & catalyze Indigenous-led conservation initiatives, including [#IPCAs](#). Start your learning journey here:



ipcaknowledgebasket.ca

Home - IPCA Knowledge Basket

Welcome to the IPCA Knowledge Basket, a digital space created to honour, celebrate, and catalyze Indigenous-led conservation pathways in Canada, ...

2:01 AM · Nov 5, 2022 · Hootsuite Inc.

The IPCA Knowledge Basket holds stories, videos, songs, government reports and policies, academic articles, resources, and artwork available to all who seek to support Indigenous-led conservation.

Because land and language are inextricably linked, Indigenous-led conservation can help support the revitalization of Indigenous languages.



NEA
@NEAToday



November is Native American and Alaska Native Heritage Month!

Use these teaching tools and resources to celebrate the history, culture, and contributions of Native Peoples with your students:



nea.org

Native American and Alaska Native Heritage Month | NEA

Explore Native American culture during November or any time during the school year with the following lessons, activities, and resources.

11:17 AM · Nov 2, 2022 · Sprout Social

During November, we celebrate the history, culture, and contributions of Native Peoples. To help educators with their curriculum plans, we've compiled Thanksgiving lessons and resources on learning about the tribes indigenous to North America.

Educators should be mindful of [cultural appropriation](#) when teaching about other cultures and understand that Native American students in class may experience lessons differently than non-Native students.

Lesson Plans

[Student-Centered Digital Learning Activities](#)

Check out these digital education tools, lesson plans, and resources available for free and downloadable from the National Indian Education Association.

The Color of Water

(Accessed: 1 Oct 2022)

The Color of Water Initiative was created by the Water Hub to build voice and visibility for people of color in the water movement. Our goal is to connect reporters with a more diverse set of experts, and build capacity for these experts to elevate the stories of their communities, which have often been left out of conversations around water. From water access and drought response in the West to lead pipes and PFAS pollution in the Great Lakes; to recurring flooding and water infrastructure failures in the South, Color of Water members have deep expertise and first-hand experience on water challenges and solutions all across the country.



[An extreme citizen science approach to digital mapping in Ethiopia](#)



An extreme citizen science approach to digital mapping in Ethiopia



SEI discussion brief
August 2022

Edward G. J. Stevenson¹
Marcos Moreu²
Dessalegn Tekle³

¹ Durham University
² University College London
³ Addis Ababa University

Key messages

- Participatory mapping activities enable laypeople to be part of the mapmaking process, which has historically been the preserve of experts.
- Lack of education is not necessarily a barrier to participation. When they know the landscape well, non-literate participants can provide information that is rich, detailed, and valuable for decision making.
- Challenges include the cost and accessibility of equipment and data, and hostile legal environments that obstruct restitution of common resources.

In this brief we describe an approach to digital map-making that includes as collaborators people who have tended to be excluded from such projects. Our work contributes to the emerging field of “extreme citizen science”.¹ The features that distinguish this from the standard citizen science model are, first, that the ends to which data collection is directed are determined by or co-created with the community of users; and second, that rather than targeting people with high levels of digital literacy, the approach includes collaborators regardless of literacy (Vitos et al. 2013).

Historically, mapping has been predominantly a tool of colonial and state power, representing reality primarily in ways useful to administrators and extractive projects. However, laypeople have long made their own maps and used them in resistance to forces that ignored claims to customary territory. In one celebrated case, maps produced by Torres Straits Islanders were used as evidence in a 1992 Australian High Court case that challenged the doctrine of *terra nullius* which had been used to justify colonization of Australia by British settlers. As Irene Watson has noted, this doctrine essentially meant, “There’s no people here, it’s ours” (Watson 2014: 509).

In the twenty-first century, new opportunities for participatory mapping have been opened up by more accessible mobile technology, increased internet coverage (ITU, 2021), and the use of mapping or navigation apps (e.g. Google Maps). Although some data collection apps have been designed to be used in resource-constrained environments (e.g. Open Data Kit²), substantial barriers remain regarding software design. Most mapping apps are designed for users with print and digital literacy – the often taken-for-granted skills required for interacting with phones and computers.

Indigenous knowledge in food system transformations

[Dhanya Vijayan](#) , [David Ludwig](#), [Constance Rybak](#), [Harald Kaechele](#), [Harry Hoffmann](#), [Hettie C. Schönfeldt](#), [Hadijah A. Mbwana](#), [Carlos Vacaflares Rivero](#) & [Katharina Löhr](#)

[Communications Earth & Environment](#) **3**, Article number: 213 (2022) | [Cite this article](#)

1216 Accesses | **32** Altmetric | [Metrics](#)

Indigenous food systems ensure ecological and socio-economic sustainability but remain marginalized in science and policy. We argue that better documentation, deeper understanding, and political recognition of indigenous knowledge can help transform food systems.

Indigenous knowledge is crucial for sustainable transformations of food systems but often remains marginalized in policy and practice. Controversies surrounding the 2021 UN Food Systems Summit have highlighted this issue, as a broad alliance of academics and activists boycotted the event by arguing that it disempowered indigenous people and constituted an effort by “multinational corporations, philanthropies, and export-oriented countries to [...] capture the global narrative of food systems transformation¹”.

This [article by Dhanya Vijayan et al.](#) is published in *Communications Earth & Environment*, under a [Creative Commons Attribution 4.0 International licence](#)

INDIGENOUS ASTRONOMY

[Mi'kmaw astronomer says we should acknowledge we live under Indigenous skies](#)

(CBC Radio: 29 Sept 2022)

As we mark Canada's National Day for Truth and Reconciliation, we can consider how science as an institution has the same duty to participate in reconciliation as the rest of society does. For science, reconciliation can mean, among others things, acknowledging the history of racism and exploitation of Indigenous people and their lands that science perpetuated. But another important part is understanding and incorporating Indigenous perspectives in research. Dr. Hilding Neilson is Mi'kmaw, and an astrophysicist at Memorial University of Newfoundland & Labrador, where has been working to integrate Indigenous knowledge and methodologies into astronomy. Here is part of his conversation with Quirks & Quarks host Bob McDonald about those perspectives, and some of the challenges he's faced in bringing them to the Canadian astronomical community.



Mi'kmaw astronomer Hilding Neilson says considering Indigenous perspectives can create a more inclusive field of study. (Submitted by Hilding Neilson)

What Indigenous cultures can tell us about astrophysics

(Jonah Johnson, NITV News, 17 August 2022)

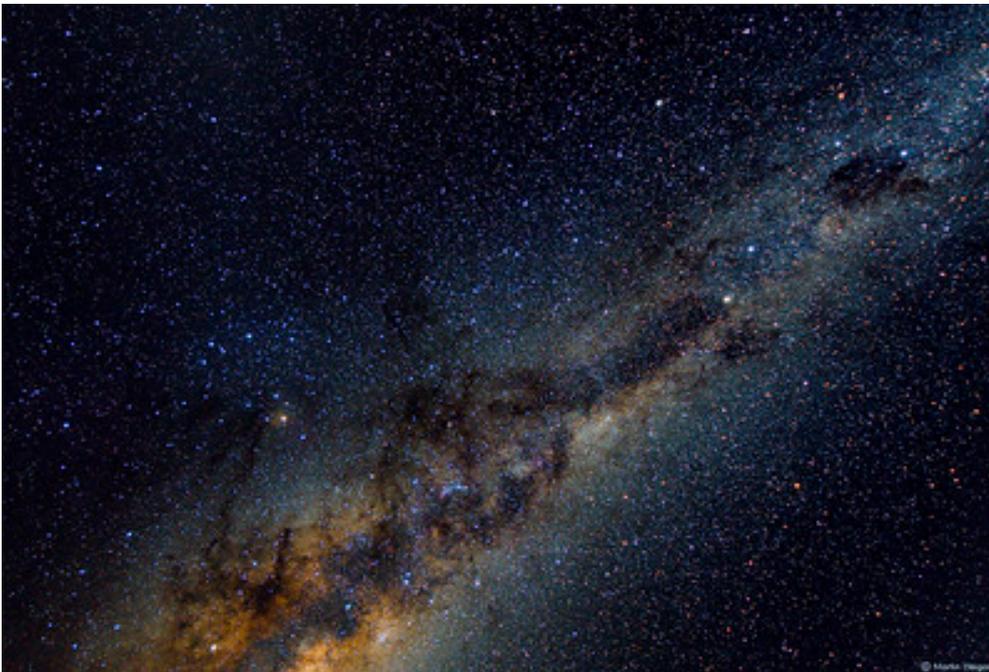
Gomerioi astrophysicist Krystal de Napoli is preserving First Nations knowledges about the environment and universe around us through scientific communication

Writer and astrophysicist Krystal de Napoli says there is a level misinterpretation and unawareness when it comes to Indigenous oral history and what the many millennia-old stories can tell us about the universe.

“People who have a very shallow understanding of Aboriginal and Torres Strait Islander culture will think of Dreaming stories as mythical,” she said.

“In actuality, [these] stories are the vessels in which we encode our science knowledge,” de Napoli said.

Long before modern scientific methods of recording data existed, Indigenous oral histories recorded and passed on environmental occurrences, with the observations accurately describing events that occurred in this country 30,000 years ago and more.



The Dark Emu of Aboriginal sky lore, seen within the Milky Way
(photo by Martin Heigan, [The Milky Way](#), [CC-BY-NC-ND](#))



Associate Professor Duane Hamacher: Indigenous astronomy in Mer

Duane Hamacher is Associate Professor of Cultural Astronomy in the ASTRO-3D Centre of Excellence and the School of Physics at the University of Melbourne. His work specialises in the intersection of astronomy with culture, heritage, history, and society. He earned graduate degrees in astrophysics and the social sciences and is leading initiatives in Indigenous astronomy and dark sky studies.

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.

NWU host first of its kind indigenous astronomy conference

(NWU: 2 Aug 2022)

The North-West University (NWU) proudly hosted the inaugural three-day International Indigenous Astronomy Conference from 27-29 July 2022 at the Royal Marang Hotel in Rustenburg. During the conference the International Indigenous Astronomy Experts Society was also launched. The theme of the conference, sponsored by the Department of Science and Innovation (DSI) and South African Tourism, was “Facing the reality, value and relevance of indigenous astronomy in the 21st Century”. The aims of the conference were to advocate the value of indigenous astronomy, contribute to the development of communication programmes, and improve research methodologies, epistemologies and philosophy. NWU vice-chancellor Dr Bismark Tyobeka welcomed attendees, explaining that the NWU placed the IKS Centre in the Faculty of Natural and Agricultural Sciences for a reason. “We acknowledge the scientific status of indigenous knowledge systems and the contribution it makes in the development and growth of communities and society.”



Dr Moheo Koitsiwe, Prof Thebe Medupe, Prof David Modise, Kgosi Nyalala Pilane, Dr Bismark Tyobeka and Captain Witbooi at the International Indigenous Astronomy Conference.

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!



Indigenous Astronomy: How Aboriginal Australian Stargazing Informs Science | 10 News First



10 News First
125K subscribers

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15



Share



937 views Jul 14, 2022

Australia's First Nations people - Aboriginal and Torres Strait Islanders - are the oldest astronomers and the oldest continuing cultures in the world. Australia's unique position in the Southern Hemisphere has provided unique opportunities for space research, allowing the country to recently launch several rockets into outer space. But have you ever been curious about how Indigenous Australians have been mapping the skies for thousands of years? Subscribe to 10 News First to get the latest updates and breaking news: <https://bit.ly/37DDbL1> ✓

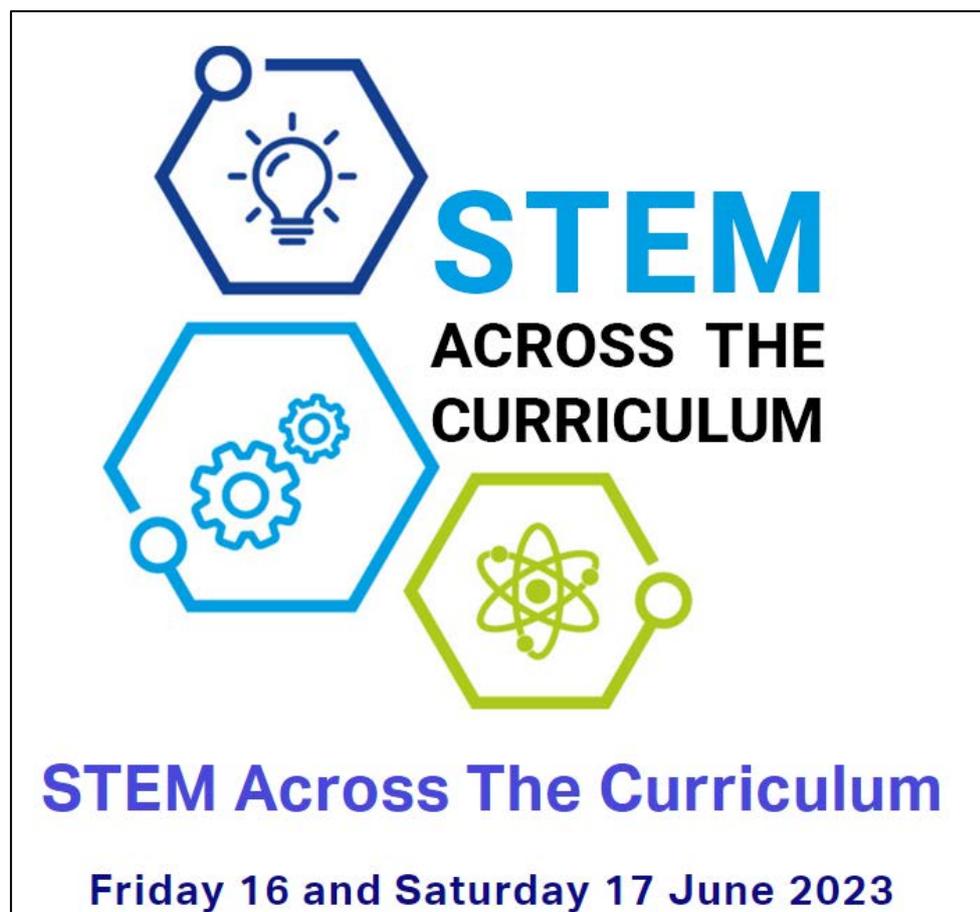
WEBSITES

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/>

In previous issues we have listed information about upcoming gatherings. However, there are so many occurring now that it is not possible to easily keep track. Hence, after listing upcoming events, we will also now include accounts of gatherings that have already been held.

UPCOMING EVENTS

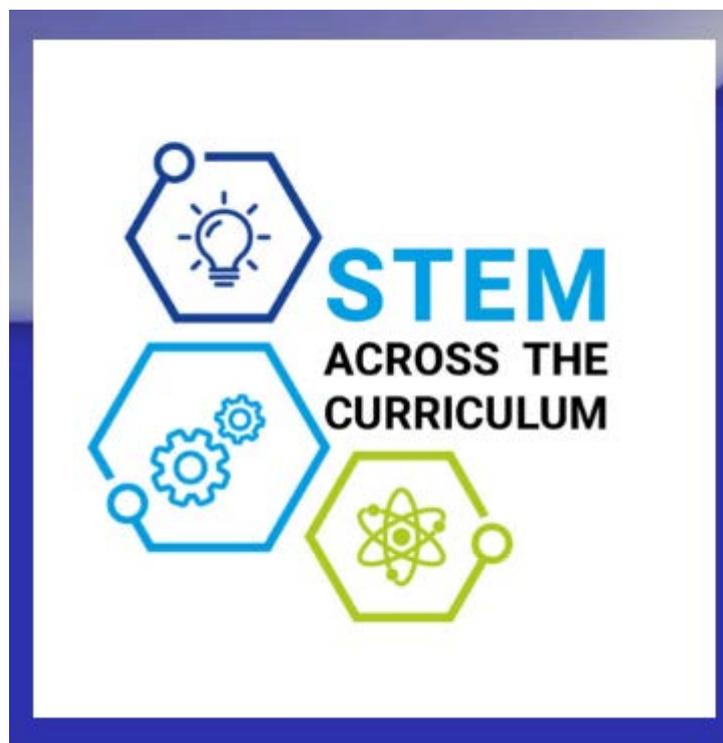


National Education Summit Australia

Inspiring professional development for Australian educators

The National Education Summit has continued to be an important key professional development event for Australian educators since it first took place in 2016. The Summit is continually evolving and in 2023 will hold several innovative conference events for teachers in two major cities, Melbourne and Brisbane. **Keep up-to-date** by subscribing to our [mailing list](#)

The Brisbane event will take place on Friday 4 and Saturday 5 August 2023 at the Brisbane Convention & Exhibition Centre.



ASERA 54
2023 Conference
27th-30th June 2023



Australasian Science Education Research Association (ASERA) 2023 Conference

ASERA 54

Tuesday 27th to Friday 30th June 2023

Cairns Convention Centre

Sponsored by



**JAMES COOK
UNIVERSITY**
AUSTRALIA

Conference Website



Photo: Tourism Tropical North Queensland



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ASERA 54 – 2023 Conference

Face to Face (F2F) Conference at the Cairns Convention Centre

Tuesday 27th June to Friday 30th June 2023

Banner Image courtesy of Tourism Tropical North Queensland

2023 School Program

22-24 March 2023

World Science Festival Brisbane's school program is for the inventors, explorers, creative thinkers and scientists of tomorrow. Engage your students in curriculum-aligned STEM programming with some of the world's greatest minds. Presented with QPAC.

[VIEW SCHOOL PROGRAM PDF](#)

Conversations and Talks

New York Videos

World Science U



Space to Innovate

CONASTA70

ADELAIDE

9-12 JULY 2023

UPCOMING KEY DATES

SEP
01

Call for Workshops open

NOV
25

Call for Workshops close



NESA ENDORSED PROFESSIONAL DEVELOPMENT FOR EARLY CHILDHOOD TEACHERS

TIPIAC - Building Educators' Cultural Intellect and First Nations perspectives in Early Childhood Education

A virtual Live PD day

DATES FOR 2023

COMING OUT SOON

8:45am - 2:45pm

Costs: \$300

REGISTER NOW

Only 50 spots available

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.

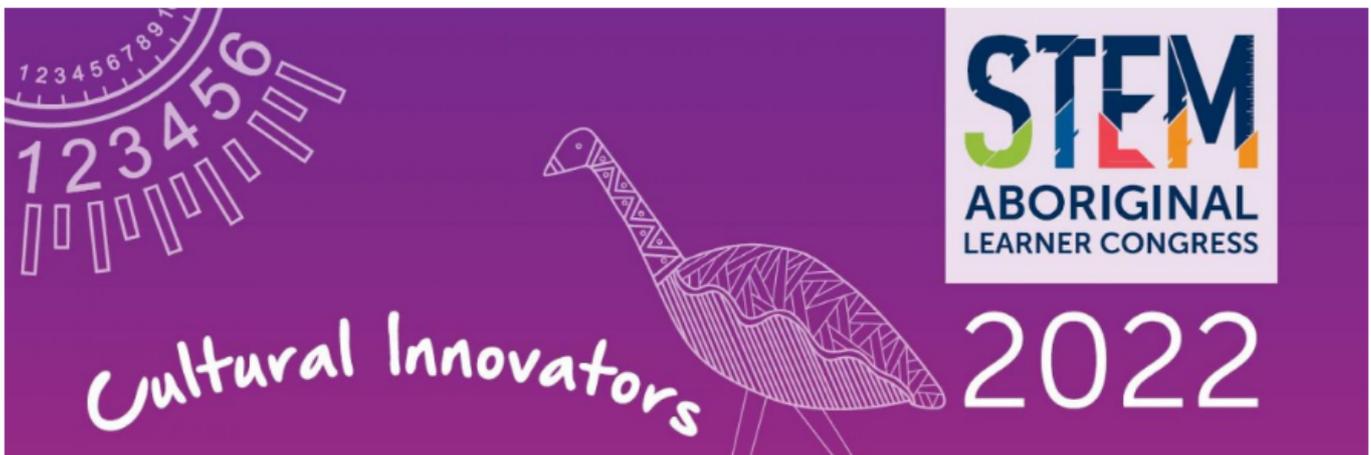
EVENTS ALREADY HELD

2022 STEM Aboriginal Learner Congress



2022 STEM Aboriginal Learner Congress

🕒 Posted on [Sep 16 2022](#) by [Susie](#)



The CSER Team were very pleased to be a part of the STEM Aboriginal Learner Congress again in Adelaide this year. We were fortunate to once again collaborate with our friends at ATSIMA ([Aboriginal and Torres Strait Islander Mathematics Alliance](#)) on a hands on workshop with congress participants.

The congress provides an opportunity for industry and education sector representatives to support Aboriginal learners in the important areas of STEM, The Young Aboriginal STEM Thinkers of Adelaide (YASTA) did an excellent job of creating an engaging event with wonderful guest speakers including past YASTA and congress participants who are now working in or studying STEM at tertiary level.



Joanne Jamie
@JoanneJamie2



I am so thankful for having been able to work alongside many passionate individuals, including exceptional First Nations peoples. Thank you to the ACSME team for the invitation to share my journey and hopefully inspire others to make meaningful and respectful impacts.



Lisa Akison @DrLisaAkison · Sep 28

@JoanneJamie2 from @Macquarie_Uni delivering the 1st Keynote for #ACSME2022. Discussing how to incorporate cultural knowledge into our teaching.



9:40 PM · Oct 2, 2022 · Twitter Web



NISEP
@NISEP01



Fantastic way to end our Indigenous Science Experience program for @Aus_ScienceWeek 2022 with 2 online weaving workshops from Renee Cawthorne. Thank you so much Renee for these beautiful sessions. Thank you to the participants who allowed me to share their weaving masterpieces.



3:08 PM · Aug 21, 2022 · Twitter Web App

ACSME 2022: It's a wrap

POSTED IN EVENTS, NEWS, TEACHING AND LEARNING ON OCTOBER 8, 2022 BY GLENDA KEY.



What a wonderful conference ACSME 2022 was! Just under 190 academics, professional staff and students came to share their experiences. Most participants attended in-person but the hybrid event enabled those unable to travel to Perth the opportunity to present remotely, and also engage with colleagues.

The theme “An Education for All: Accessible, Equitable, Sustainable” was evident throughout the conference with a variety of creative and inclusive approaches to science education discussed. This included recognising and accommodating the increasing diversity of our students and strategies to incorporate indigenous knowledge into the curriculum. It was also great to see how adjustment to teaching during lockdown is now generating improved assessment and resources that are more authentic and accessible.

Individual presentations ranged over a large number of topics and challenges, and showcased the breadth and depth of the work that goes into making the curriculum and experience of science students and graduates meaningful and of the highest quality.

Discipline day followed with workshops on – *Embedding diversity, equity and inclusion in Australian STEM higher education*; A participatory workshop – *Teaching science students to communicate*, and *Transitional approaches to teaching in the superlab environment*. In the afternoon this was followed by meetings for the discipline networks for discussions on topics of current interest: Chemistry Discipline Network; Biology and Biomedical Networks (VIBEnet / CUBEnet / Bioscience Education Australia Network); Environment Network – *Fieldwork for the new normal*; Physics Education Network (PEN); and the Mathematics Discipline



UniMelbPoche
@UniMelbPoche



Fantastic to be at #IRNet conference listening to Profs Gail Garvey, Alex Brown, Sandra Eades AO and Dr Janine Mohamed launch #OCHRE, Australia's NHMRC-funded National Indigenous Research Network.



9:38 AM · Sep 29, 2022 · Twitter for Android

3 Retweets 6 Likes



DeadlyScience @DeadlyScience · Oct 26



ATSE Activate 2022 - Corey and Susan Beetson from National Indigenous STEM Professional Network—NISTEMP— chatting with high school students about Indigenous knowledges in STEM and about being an Indigenous practitioner, academic and student.

#stemeducation #firstnationsscience



1

4





Alexandra Fowler
@AlexFowler2013



We are a wrapped audience ... so much for us to think about ... the Aboriginal people have maintained the longest running scientific knowledge in the world it's so important to remember that! #CONASTA69



5:02 PM · Sep 27, 2022 · Twitter



SEAACT
@seaact



Incorporating indigenous knowledge into the curriculum to manage water resources @bradmoggo #CONASTA69



4:36 PM · Sep 27, 2022 · Twitter Web App



Australian Academy of Science 
@Science_Academy



The Academy's Education team is excited to be at #CONASTA69 this week – @CONASTA is the annual conference of the Australian Science Teachers Association (ASTA) – to share experiences and learnings with science educators from around Australia! 📖



10:56 AM · Sep 27, 2022 · OneUp App



Maria Barrett
@barretmj



Having students make an seasonal calendar for their country is a fantastic way to embed indigenous perspectives in science #CONASTA69 Olivia Belshaw and Emily Murray



2:20 PM · Sep 28, 2022 · Twitter for Android

IGNITING THE FUTURE WITH ANCIENT WISDOM

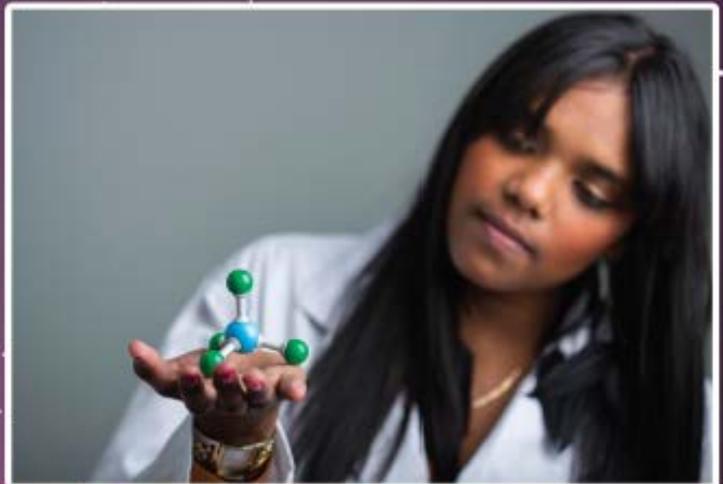
Full program details and tickets available now
www.illuminatefnq.com.au



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



Great Barrier
Reef Foundation



Batchelor
Institute



Adobe

IGNITING THE FUTURE WITH ANCIENT WISDOM



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



Illuminate FNQ

July 26 · 🌐

CALL FOR ACTION: HELP PROMOTE A DIALOGUE INCLUSIVE OF FIRST NATIONS TRADITIONAL SCIENTISTS

International Science & Environment Festival 18 -20 August
2022 – Shangri-La Hotel CAIRNS, Australia.

This is the first Science & Eco Festival in the country to be led by Aboriginal and Torres Strait Islander people, during Science Week 2022.

Addressing the critical need for greater partnership with engagement of Aboriginal and Torres Strait Islander communities in Science, Technology, Engineering and Maths (STEM) careers and educational opportunities.

The aim of the festival is to “Bring Science into The Community Agenda” to start asking serious questions about serious issues in our communities using evidence base model. Our team has secured a female (former) NASA Astronaut Dr Mary Ellen Weber who will come and play a key role at our festival along with other significant scientists and dignitaries.

Our role is to create the foundation for hosting a Science Festival in our region. Combining First Nations traditional scientists, traditional owners, schools, institutional, agencies, scientist and expertise within this project

The science sector needs urgently to interact with First Nations traditional scientists and traditional owners. It is imperative to close the gap between First Nations cultural protocols and practice and western science and technologies so those carrying traditional custodial responsibilities as knowledge holders can effectively manage country. First Nations Peoples are underrepresented in STEM with less than 12% of Indigenous HDR enrolments being in STEM fields in 2017 (p17). According to those 2017 statistics, fewer than 1% of HDR completions in 2017 were achieved by Indigenous HDR students.

SharonBonythonEricson

Panangka Heals ▸ Indigenous Knowledges in Science Education
August 23 · 🌐

recommending that you look into this work



Illuminate FNQ
August 21 · 🌐

Colin Saltmere presented a truly insightful workshop on spinifex at illuminate FNQ Festival in Cairns

Colin Saltmere is Managing Director of Dugalunji Aboriginal Corporation and has worked with AIBN for more than 13 years on studies of nanofibres from spinifex for applications including



illuminate FNQ Festival Talks 2022



Joanne Jamie
@JoanneJamie2



It was a beautiful welcome and very informative with significant science contributions of First Nations peoples noted throughout.

jackie randles @jackie_randles · Aug 31

Warm welcome to @austmus for this @eureka prizes #eureka prizes #eureka22



7:45 PM · Aug 31, 2022 · Twitter Web App



Aboriginal STEM Congress

APY LANDS STUDENTS BRANCH OUT ON A NEW STEM

DOUGLAS SMITH

SCIENCE, technology, engineering and maths have been a part of Aboriginal cultural knowledge for generations, but for students from the APY Lands, learning about STEM in a Western context is something new.

Ernabella Anangu School students will join hundreds of others from across the state for the STEM Aboriginal Learners Congress, which started on Thursday at the Adelaide Convention Centre.

"I'm excited to be here after a long drive," Charlotte Wells, 11, said. Her classmate, Phillip Marshall, 11, an avid reader, said he "can't wait to learn more about machines".

DeadlyScience founder Corey Tutt said the students had "a lot of potential" and also had the advantage of cultural knowledge. "We have art that lasts thousands of years, we have chemistry, bush medicine, we had everything we needed to live and thrive in this country for over 65,000 years," he said.

Bronwyn Milera, Aboriginal education director for the Education Department, said the theme "cultural innovators" paid tribute to 65,000 years of STEM by First Nations people.



Ernabella Anangu School students Joylene Brady-O'Toole, 12, Phillip Marshall, 11, Abby Raymond, 10, and Charlotte Wells, 11, will take part in the STEM Aboriginal Learners Congress. Picture: Roy VanDerVegt

7:47 PM · Aug 23, 2022 · Twitter for iPhone



indigenous_gov
@indigenous_gov



Check out Maria Cox and Quinaya Chulung from the @CSIRO Young Indigenous Women's STEM Academy leading a season wheel activity based on the Miriwoong Seasonal calendar 🌞📅 during a recent @naidocweek celebration in Kununurra, WA.
#ScienceWeek #ScienceSelfie



9:30 AM · Aug 20, 2022 · Sprinkl



NISEP
@NISEP01



Can you feel the vibrations? We had so much fun with Uncle Brendan Kerin and Darlington Public School students learning about vibrations and sound with Uncle Brendan Kerin [@Aus_ScienceWeek](#)



1:49 PM · Aug 17, 2022 · Twitter Web App



NISEP
@NISEP01



We are looking at natural resources from the land & the sea with Aunty Glenda from Yaegl Country, Sarah & James from South Coast Seaweed & Birdlife Southern NSW. The Plunkett Street School and Jarjum students are super engaged the [@Aus_ScienceWeek](#) Indigenous Science Experience.



11:27 AM · Aug 19, 2022 · Twitter Web App



Science at Melbourne

@SciMelb



What does healthy country mean? We're at [@IKI_Unimelb](#)'s International Day of the World's Indigenous Peoples Symposium "Using Indigenous Knowledge to Manage Healthy Country" with [@theotheroad](#), [@millermaddi_](#) and [@JackHPascoe](#)



2:10 PM · Aug 9, 2022 · Tv



Science at Melbourne @SciMelb · Aug 9



Replying to [@SciMelb](#)

Maddison Miller says an important part of having an Indigenous-led project is using Indigenous methodologies and working with Indigenous people. One practice she uses is deep listening - guiding people through a deep listening experience picturing Country and what it means.

1 1 3



Science at Melbourne @SciMelb · Aug 9



"Healthy country to me is: I can hear kids laughing, i can hear the birds and the river. What are we seeing and imagining?" says Maddison.

1 3



Science at Melbourne @SciMelb · Aug 9



She runs this exercise with Wurundjeri mob, councils and non-Indigenous people. "It was interesting what people had to say," she says. "Some people said being able to see swans on the river."

1 2



Science at Melbourne @SciMelb · Aug 9



Jack Pascoe tells his Uncle's story of a medicinal plant that helps women with childbirth. He shared the knowledge of the plant with other, but it became overused.

1 2



Science at Melbourne @SciMelb · Aug 9



"So Country can't be healthy unless we know about this plant, and Country can't be healthy unless people are respectful and ensure that plant stays where it is," Jack says.

UPCOMING EVENTS

NARST is a global organization for improving science teaching and learning through research. Since its inception in 1928, NARST has promoted research in science education and the communication of knowledge generated by the research. The ultimate goal of NARST is to help all learners achieve science literacy.

2023 ANNUAL INTERNATIONAL CONFERENCE



DATES:

April 18, 2023 - April 21, 2023

LOCATION:

Hilton Chicago, 720 S. Michigan Ave.

REFLECTING ON REFORM

Join us in Chicago for the NARST 96th Annual International Conference. We look forward to building on last year's theme of inviting and uniting as a community and coming together to reflect on global science education reforms. For members in the United States, 2023 marks the ten-year anniversary of NGSS.



2023 AISES in Canada Gathering Call for Session Proposals

The fifth annual AISES in Canada National Gathering will give Indigenous STEM (science, technology, engineering, and math) students and professionals an opportunity to gather, connect, and create long-lasting relationships within Canada and across the continent. About 200 attendees from Canada and the U.S. are expected to attend the three-day event. There will be activities for high school students, university students, and professionals. Attendees will enjoy several keynote speakers, various sessions, research posters, as well as morning blessings and traditional local food.

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.

Indigenous Research Conference: Sámi Perspectives in Teaching and Education

International Mix Party 2022 →

Sami Week 2022 Roundtable discussion →

For the third consecutive year, the research groups DivE and SPLP at Inland Norway University of Applied Sciences are delighted to invite to an online research conference on Sámi perspectives in teaching and education Friday 10 February 2023.

Time

10. Feb 2023 09:00 – 10. Feb 2023 16:00

[Add to calendar](#)



The conference is part of the Faculty of Education at Inland Norway University of Applied Sciences' ambition to strengthen Sámi perspectives in our teacher education programmes.

The conference will be opened with a keynote address by associate professor Hanna-Máret Outakoski (University of Tromsø and University of Umeå). The day will end with a keynote address titled «Kan vi lykkes med inkluderende opplæring for samiske elever i norsk opplæring?», given by associate professor Hege Merete Somby (Inland Norway University of Applied Sciences and Sámi allaskuvla).



Scholarship serving Indigenous peoples

NAISA is the largest scholarly organization that engages Indigenous issues and communities. Our international and interdisciplinary membership is comprised of professional academics, students, independent scholars, community-based educators and elders.

2023 Tkaronto (Toronto) Conference – May 11-13



NAISA Council is delighted to announce that we are moving ahead with plans for an in-person meeting in Tkaronto from **May 11-13, 2023!** We are grateful to Dr. Susan Hill, Dr. Karyn Recollet, and the Local Host Committee at the University of Toronto and beyond for undertaking this work on behalf of the membership in an extremely short timeframe, resuming plans for a Tkaronto conference that were disrupted at the last minute in 2020 due to the global health emergency. We eagerly anticipate reunions with friends and colleagues in 2023, and we remain mindful of the need for flexibility in planning processes as the COVID pandemic continues to impact our world.

Our annual gathering provides an important intellectual community, as well as the renewal of existing relations and the generation and fostering of new relations. It is much more than an academic conference, and we are all elated at the opportunity to be together once again as Indigenous peoples.



14th Annual Indigenous Teacher Education Conference/ Hybrid Event

Returning to our Languages and Ways of Knowing

June 23-24, 2023

Northern Arizona University College of Education will host the 14th Indigenous Teacher Education Conference June 23rd and 24th in the Eastburn Education Building. This conference for preschool, K-12, tribal, college, and university educators and concerned community members includes panels, workshops, and papers to share ideas for improving the lives and education of Indian children. Join your colleagues for two and a half days of career-empowering knowledge, practices, networking, and practical teaching solutions. The conference is designed with your specific needs in mind—providing strategies you can use immediately across all grade levels and subjects. NAU's College of Education has worked with Tribal Nations to improve the education of American Indian students for decades. It has hosted a variety of American Indian teacher and administrator preparation programs.

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!

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!

ICIET 2023: 17. International Conference on Indigenous Education and Training

December 06-07, 2023 in Kuala Lumpur, Malaysia



Conference Code: 23MY12ICIET029



 [Submit Your Paper](#)

[Author Registration](#)

[Listener Registration](#)

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[Venue](#)

[Call For Papers](#)

[Important Dates](#)

[Committees](#)

[Registration Fees](#)

[Program](#)

[Conference Photos](#)

[Flyer](#)

The International Research Conference Aims and Objectives

The International Research Conference is a federated organization dedicated to bringing together a significant number of diverse scholarly events for presentation within the [conference program](#). Events will run over a span of time during the conference depending on the number and length of the presentations. With its high quality, it provides an exceptional value for students, academics and industry researchers.

International Conference on Indigenous Education and Training 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 and Training. 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



“SHAWANE DAGOSIWIN”

Being respectful, caring and passionate about Aboriginal research

PLAN TO ATTEND THE 18TH ANNUAL ABORIGINAL EDUCATION RESEARCH FORUM

“Save the Date” – May 17 & 18, 2023!



GES Center - Genetic Engineering & Society Center
@GESCenterNCSU

Our DNA, our data, our health, our rights: thinking beyond inclusion in genomics datasets, & about equity & Indigenous data sovereignty.

Special guest @kstsosie of @NativeBio joins us as part of a 2-day series on decolonizing human genetic research

Details mailchi.mp/ncsu/ges-collo...

Genetic Engineering and Soc
Tuesday, 11/8/2022 at 12 PM.

**Indigeno
ethics in
and health**

Part of the two-
"Genes and So
Human Genetic

Krystal Tsosie, PI
Presidential Postdoctora
Co-Founder, Native BioC
Arizona State University

AN ALLY IN ACADEMIA

**DR.
KRISTA
TSOSIE**

Native BioData Co
Presidential Postd
at Arizona State U

TWO-DAY ENGAGE
AN EXPERT IN THE
DATA COLLECTION

GES Center - Genetic Engineering & Society Center and 9 others

2:27 AM · Nov 4, 2022 · Twitter Web App



2023
**OUTDOOR
LEARNING**
CONFERENCE
MAY 4-6, 2023
BANFF, AB

PLACE & PEDAGOGY:
Where Learning Happens

Join us in beautiful Banff National Park, Alberta for the chance to connect with experts in the field, colleagues, and community partners through workshops, panels, and keynote speakers.

Call for Presentations

The Outdoor Learning Conference Program Committee invites educators, practitioners, professionals, students and allied organizations immersed in this work to submit presentation proposals relevant to evidence-based best practices, innovative programs, facilitation techniques, management issues, theories/models, research, and other strategies and resources that advance and develop our sector of outdoor learning within the education system.

The three main areas of focus for this Conference will be **Indigenous Ways of Knowing, Health and Wellbeing, and Environmental and Climate Change Education.**

↳ Samantha Eldridge Retweeted



Native Forward
@Native_Forward



Tune in weekly for our [#CareerSeries](#) featuring [#NativeProfessionals](#)! Engage in discussion, ask questions, and network with working professionals.

‘Natives in Education,’ premieres on Nov. 8. Register here: tinyurl.com/yc6unc3k ✓

[#NativeForward](#) [#NativeTwitter](#)

Native Forward Career Series
EVERY TUESDAY IN NOVEMBER AT 12 P.M. MT

Nov. 8 is
“Natives in
Education”

Sponsored by

Dr. Jessica Buckless King
Bitterroot Salish

Vernon Miller
Omaha Tribe of Nebraska & Iowa

Vanessa Holmes
Dine & Hopi

Kyle Harvey
Navajo Nation

2:06 AM · Nov 4, 2022 · Twitter Web App

November

NATIVE AMERICAN HERITAGE MONTH

CELEBRATE WITH US!



NOV. 1 | 9:30 AM - 10:30 AM

Kick off Event: Native American Heritage Month
Joint Press Event
Office of the Mayor SLC Corporation
SLC City & County Building | SLC, UT



NOV. 1 | 10:30 AM-12 PM

Indigenous & Native American Leader Roundtable
SLC City Building | SLC, UT



All Month Online

Place Name a Day | nativeplacesatlas.org
American West Center University of Utah Website

All Month

Indigenous Health & History Books Display
Eccles Health Science Library | University of Utah



NOV. 2 | 8 AM - 2 PM

ITSA High School Conference
A. Ray Olpin Union | Saltair Room | University of Utah

NOV. 2 | 12 PM

MEDiversity Week
Indigenous Health Lecture: Evan Adams, MD, MPH
Zoom | [Register](#) | University of Utah



NOV. 3 | 5 PM

Coffee & Conversations: Resistance in Existence:
Indigenous People in the Struggle for Reproductive Justice
A. Ray Olpin Union | Room 411 | University of Utah

NOV. 4 | 10:30 AM - 5 PM

Restoring Ancestral Winds Conference
Rekindling Harmony and Balance: *Indigenous Healing from Trauma* | [Register](#)
SLC Public Library Auditorium | SLC, UT

NOV. 5 | 10 AM

Steps for Scholarships AIS MoccWalk
Wardle Fields Regional Park | Bluffdale, UT
www.mocccwalk.org

NOV. 12 | 1 PM - 4 PM

Unlocking Utah Boarding School Voices
Presented by Utah Diné Bikéyah
The Leonardo | SLC, UT

NOV. 16 | 12 PM

Reframing the Conversation: The Interfaith
Roundtable
Hinckley Caucus Room **or** [Livestream](#)
University of Utah

NOV. 16 | 12 PM

Community Conversations:
Indigenous Boarding Schools
Zoom | [Register](#) | University of Utah

NOV. 17 | 5:30 PM - 7:30 PM

OHEDI Blanket Exercise Workshop
Eccles Health Science Education Building
Alumni Hall | [Register](#) | University of Utah

NOV. 18 | 3 PM

"Roadtrip Nation" Film Screening + Q&A
Presented by the AIRC & UEN
Union Theatre | University of Utah

NOV. 21 | 10 AM

Tribal Enrollment and Blood Quantum
Presented by Ronee Wopsock
Zoom | [Register](#) | University of Utah



2022

EVENTS ALREADY HELD



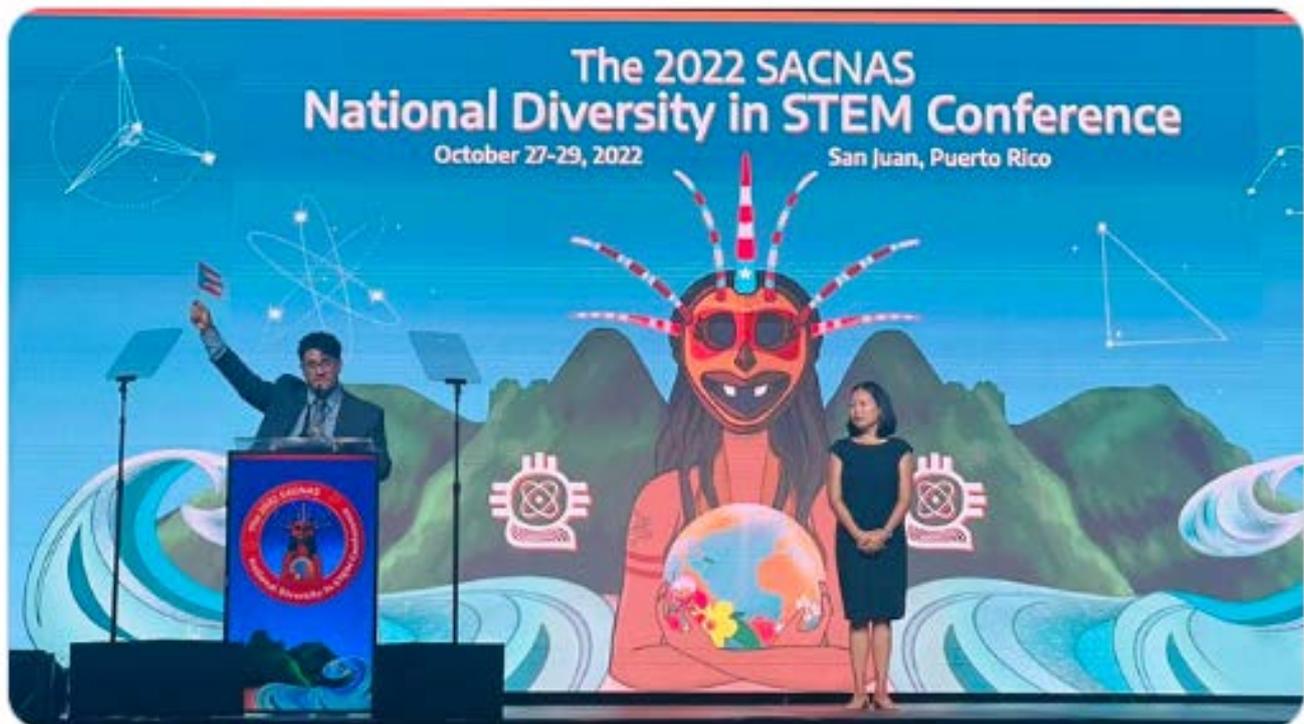
Dr. Marcos J. Ramos-Benitez
@dr_mjramos



“Is because of the UPR that I am standing here today”
- @ADiaz_PhD

During his speech Arnaldo emphasized the need of making the University of Puerto Rico a priority in our country. ❤️🇵🇷📍

@sacnas #2022NDiSTEM



5:40 AM · Oct 30, 2022 · Twitter for iPhone



Alyssa Iarussi @iarussialyssa · Nov 3

...

I am so honored to have attended the [#2022NDiSTEM](#) conference hosted in the beautiful San Juan, Puerto Rico this year! It was so amazing to see so many organizations pushing for more diversity in STEM!! Thanks so much to [@sacnas](#) for inviting me and to all the lovely people I met.



1



2

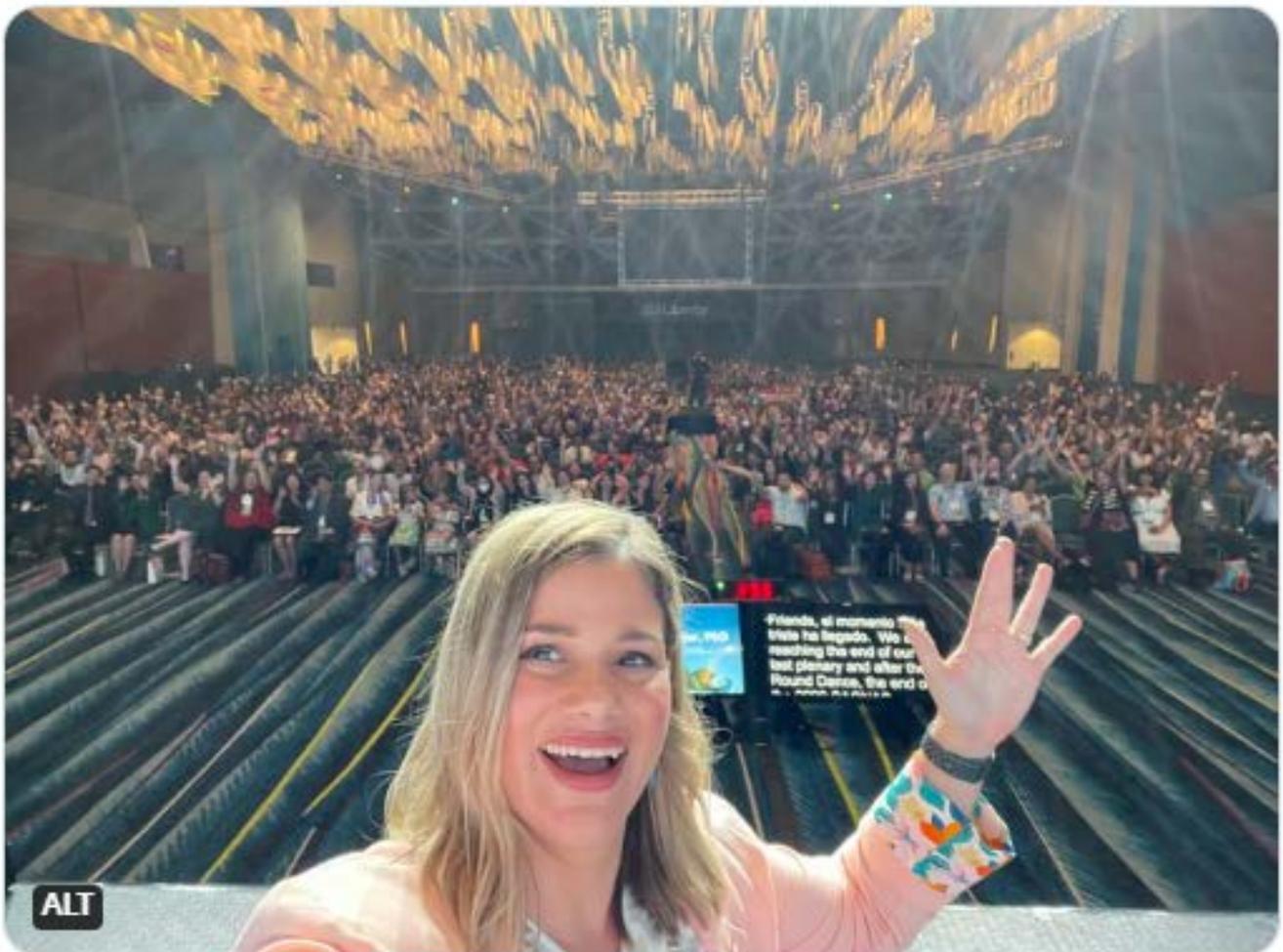




Dra. Mónica Feliú Mójér
@moefeliu



Finally processing the once in a lifetime experience of coming HOME to #PuertoRico, hosting my @sacnas familia, #2022NDiSTEM in 🇵🇷 for the first time, serve as conference emcee, & film a documentary. This SACNAS meeting was everything I dreamed of & more.



2:43 AM · Nov 1, 2022 · Twitter Web App

MANITOBA INDIGENOUS SCIENCE & ENGINEERING FAIR

Science, Technology, Engineering and Mathematic

[About](#) [Mission](#) [Goals](#) [Fair Information](#) [Important For 2022](#) [Sponsors](#) [Contact](#)

MISSION

The Manitoba Indigenous Science and Engineering Fair program will inspire, encourage, and support interest and participation in science and engineering by Indigenous students across Manitoba.

The Manitoba Indigenous Science and Engineering Fair is a volunteer-driven program designed to provide opportunity and support for Indigenous students across Manitoba to engage in project-based scientific research, and to showcase their work provincially and nationally. The organizational structure, resources, and support programs that underpin the program are developed and provided by River City Science Academy Inc. The MISEF event is co-sponsored and hosted annually by RCSA and the University of Manitoba, at the Max Bell Centre.

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.



Keepers of the Water
@KeepersOfWater



The 2nd of our hybrid symposia is happening this evening, 7pm MDT! We will be hosting Indigenous presenters who will speak on Indigenous Rights, Traditional Knowledge & the ever-growing toxic tailings "ponds" issue. [#WaterwaysNotWaterWaste](#)

Register here: bit.ly/3DKaON4 ✓

  <p>Elder Cleo Reece</p> <p>Cleo Desjarlais Reece was born in Fort McMurray, Alberta to Cree and Métis parents. She was raised in Edmonton and later moved to B.C, where she raised a family of four children.</p> <p>Cleo is a strong believer in advocacy and action and has been instrumental in many initiatives, including the first women's memorial march for missing and murdered Indigenous women; a founding member of Keepers of the Athabasca Watershed</p> 	  <p>Jean L'hommeccourt</p>  <p>Jean L'Hommeccourt is an Indigenous Denesulinè, Registered Member of Treaty 8 with the Fort McKay First Nation, AB. Raised traditionally on the Land by her parents, Norbert L'Hommeccourt and Annie L'Hommeccourt (nee Boucher), on the Eastbank of Athabasca River on the homeland territory called Poplar Point.</p> <p>She has spent years residing in the Northwest Territories in an</p>
  <p>Mike Mercredi</p> <p>Mike Mercredi is a member of the Athabasca Chipewyan First Nations, Land-Based Learning Instructor, Hand Games Instructor, and presently a Graduate student of the University of Sask School of Environment & Sustainability, Masters-Energy Security Program.</p>  <p>Mike lives in Fort Chipewyan, Treaty 8 and works as a contract worker. He has coordinated First Nations Land-Based Learning</p>	  <p>Daniel T'seleie</p>  <p>Daniel T'seleie is K'asho Got'ine Dene from Radili Ko (aka Fort Good Hope). He is a retired lawyer who currently works with Indigenous communities and organizations on issues relating to Indigenous rights and land protection. Daniel is also the N.W.T. Outreach</p>

11:15 PM · Oct 26, 2022 · Twitter Web App