Indigenous Science Network Bulletin

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Promoting First Nations' science, teaching & education

Year 8 science students from Rockhampton State High School in Queensland, Australia, attended a workshop with Rocky Instincts in September 2022 to practice a range of fire-starting techniques used by First Nations people. This activity supported their science unit of work for Term 3. *Image from* Rockhampton State HS *Facebook, 15 Feb 2023.*

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. In this issue we have stories from the following countries / First Nations peoples:

Australia: Aboriginal – Aṉangu, Gugu Badhun, Menang, Barkandji, Bidjara, Ngugi, Badimia, Boon Wurrung, Wemba Wemba, Kaiadilt, Bagaarrmugu-Guggu Yalanji, Yuin, Wiradjuri, Kungarakan, Yolngu;
Torres Strait Islands – Erubam, Badulaig
New Zealand: Māori
USA: African American; Native American – Blackfeet/Métis, Potawatomi, Karuk, Wailacki, Apache, Dinė̀; Native Hawaiian
Canada: Anishinaabe, Yup'ik, Syilx, Osoyoos, Salteaux, Inuit, Inupiat, Qalipu Mi'kmaq, Cree
Mexico: Maya Colombia: Yanomami Myanmar: Karen
Tanzania: Masaai Malaysia: Bidayuh India, Ethiopia, Samoa, Fiji

NEW MEMBERS OF OUR FIRST NATIONS BOARD

We welcome Yolanda Lopez-Maldonado and Torres Webb to our First Nations editorial board. Yolanda is of Maya descent and has a wealth of experience working across cultures in science. She is currently based in Vienna, where she works as a Science Consultant. Yolanda also has her own Indigenous Science website which can be viewed here. Torres comes from Erub (Darnley Island) in the Torres Strait Islands. He has long worked to promote Indigenous knowledge and science through mainstream institutions. Currently he is employed as a Cultural Capability Officer with the CSIRO here in Cairns. See more on Torres here. We are very fortunate to have them join us.

NISTEMPN HOLDS THEIR INAUGURAL GATHERING IN SYDNEY

A very significant gathering of Australian Indigenous STEM professionals was held recently in Sydney. They are looking to build a strong network to promote and build capabilities, with mentoring at the core, and to share, facilitate success, and to collaborate on and advance their work, research, Knowledges and practices. Some of them are part of this network. We wish them every success in finding solidarity and innovation through their lived experiences as First Nations peoples involved in STEM. Hoping to bring more on this important initiative in coming bulletins. View their homepage here.

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

MEMBERS HELPED COLLATE THIS ISSUE

Due to unavoidable circumstances, I needed extra hands to get this issue out. Big thanks to Dr Valerie Stone and Nick Pattison who sifted through the many hundreds of potential stories my search engine produces to find the gems.

Mark Linkson, Coordinator ISN, Cairns Queensland AUSTRALIA

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 (We welcome Ron Vave as our Pasifika rep. Thanks Ron!!)

PASIFIKA

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

AFRICA

Keith LANGERHOVEN, University of the Western Cape, SOUTH AFRICA
Sina Joshua FAKOYEDE, Federal University Oye-Ekiti, NIGERIA

ASIA

Prem PHYAK, Chinese University of Hong Kong, CHINA
Indra Mani RAI, Tribhuvan University, NEPAL
Shalini DHYANI, The Council of Scientific & Industrial Research, INDIA

AMERICAS

Coimbra SIRICA, Burness Global, USA

EUROPE

Michael Reiss, UCL Institute of Education, London UK

ISN Facebook page and Twitter account

The Facebook page now has around 1600 followers and the Twitter account has 2154 followers (as at 15 Feb 2023). Most of these people are not official members of the network (not having supplied an email address) but some do contact us via those sites to 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.

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 (15 March 2023). 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

Partnership with ACER

ACER PROVIDES ONLINE HOME FOR THE BULLETINS AND THIS NETWORK
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.

Contents

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

INDIGENOUS SCIENCE NETWORK EDITORIAL: MARCH 2023

We are very pleased that Yolanda Lopez Maldonado, an environmental scientist of Maya ancestry and currently based in Austria, has agreed to join our Editorial Board. She has her own Indigenous Science website which can be viewed here. Yolanda writes of her work:

I am an Indigenous Maya woman and Science Diplomat, working on supporting decisions aimed at enhancing resilience and facilitating just and fair transitions at diplomatic level to help build international cooperation as a mechanism for improving relations and increase understanding of global challenges with key countries, regions, from local landscapes to international bodies and multilateral environments, including indigenous peoples.

I possess deep understanding of how components of the global system dynamics and resilience absorb, transmit and link together social and ecological shocks and the role of the biosphere, including the contributions of indigenous peoples, in regulating Earth system's stability.

My fields of expertise include in-depth knowledge of theories, frameworks, methods and analytical techniques to investigate complex systems undergoing global change, including concepts from Ecology (the basis of resource management) to Resource Governance (to understand rules for decision-making) and Systems dynamics (resilience, etc.), and robust knowledge in the promotion and defence of the diversity of ideas, knowledge, values and forms of self-expression of Indigenous Peoples.

My educational background is in Human Ecology and Human Geography at PhD level (Ludwig Maximilian University of Munich, Germany). I have worked for international academic and non-academic organizations, and consistently achieved high-level results and policy engagement by collaborating with international institutions at different levels in social issues and science fields including the UN's Permanent Forum on Indigenous Peoples Issues, the International Institute for Applied Systems Analysis, Austria, the Beijer Institute of Ecological Economics, The Royal Swedish Academy of Sciences, Sweden, and the Department of Natural Resources Management, University of Manitoba, Canada, to mention a few.

My motivation to create Indigenous Science emerged from a simple fact: as an Indigenous scholar, I realized that the belief and knowledge system I inherited from my ancestors was different from the Western science that I was being educated in. However, non-Indigenous scientists who are not familiar with our traditional beliefs will barely recognize this rationale since our knowledge "does not make sense to science", thus it has been often set aside from academic discourses and institutions. The aim of Indigenous Science is to provide free advice and support to Indigenous Communities involved in research and projects by ensuring that their different worldviews are represented in planning and decision making in an attempt to meet their needs.

Indigenous Knowledge, Science Team Up to Save Species

Australian Dept of Climate Change, Energy, Environment & Water: 10 Jan 2023 Link

A long-running conservation program to ensure the survival of the endangered mala (rufous hare-wallaby) at Uluru-Kata Tjuta National Park has proven successful. A census conducted by Parks Australia to measure the mala population at Uluru-Kata Tjuta National Park (UKTNP), shows that mala numbers have increased significantly from about 25 in 2004 to a stable population of over 300 in 2022. The mala (*Lagorchestes hirsutus*) is a small marsupial that once inhabited spinifex grass country throughout Central Australia but are now extinct in the wild. They only survive on the mainland in populations held in large predator-proof enclosures in the Northern Territory and Western Australia. The mala's near extinction in the early 1990s was due to habitat degradation caused by European settlement, reduction of traditional Aboriginal burning practices and predation by cats and foxes.

The Mala Conservation Program was established in 2004 and for the past 18 years Parks Australia's rangers and science teams have worked alongside Aṉangu, UKTNP's Traditional Owners, to manage and preserve the mala population, combining traditional Aboriginal knowledge with modern scientific research methodology. Anangu traditional knowledge was used to locate mala, identify their food sources and to better understand their habitats and ecosystems. Knowledge of wild mala behaviours was captured through oral histories and traditional fire management practices were adopted to lessen the impact of bushfires on the mala's habitat. The Mala Conservation Program also ensures that traditional ecological knowledge is handed down to young Aṉangu.

(Text from Australian Government press release)

Lagorchestes hirsutus Gould, 1844, Mala (Rufous Hare-Wallaby), Barna Mia Sanctuary, Dryandra, WA, Australia, 12 January 2018. This image by Donald Hobern, Wikipedia is licensed under the Creative Commons Attribution 2.0 Generic license.

A 7,000-Year-Old Indigenous Australian Myth May Recount a Real Event

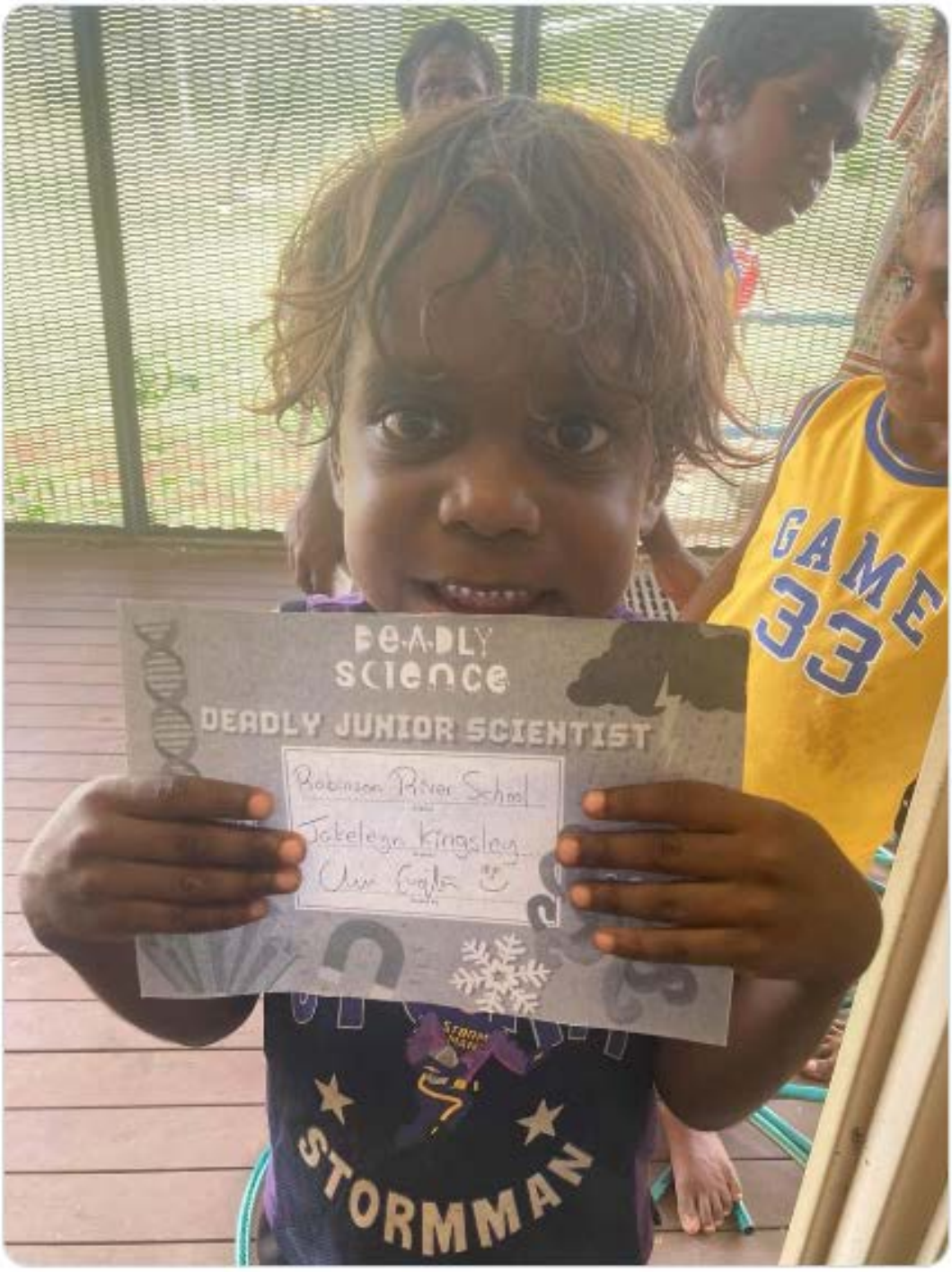
James Felton, ifl Science.com: 12 Jan 2023 Link

A myth passed down by Indigenous Australians for 7,000 years may be a record of an actual event. For thousands of years, the Gugu Badhun Aboriginal people have lived in the upper Burdekin River valley in Northern Queensland. Surviving likely from before the written historical records of Egypt or Mesopotamia, several tales of death, destruction, and the earth burning have been passed down for around 230 generations, all the way to today. "One Gugu Badhun tradition recounts the earth being on fire along the watercourses," a team studying the potential real-life inspiration behind the stories wrote, "while a second tradition tells of a time when a witchdoctor made a pit in the ground and lots of dust in the air; people got lost in the dust, and died."

A kangaroo rushes past a burning house in Lake Conjola, Australia, on Tuesday, Dec. 31, 2019. Bruce Detorres, Flickr. https://creativecommons.org/publicdomain/mark/1.0

Corey Tutt
@corey_tutt

We would like to give a special shout out to our very first DeadlyScience award winner of 2023.... It's Jakeleyn Kingsley 🥇👏. Jakeleyn embraced our Jubadidi picking excursion last week, following all the instructions of the Deadly teacher. @DeadlyScience



5:50 PM · Feb 20, 2023 · 53.4K Views

‘Decolonising’ classrooms could help keep First Nations kids in school and away from police

Aleryk Fricker and Bryan Fricker, The Conversation: 4 Aug 2022 Link

One way to address First Nations youth incarceration lies with schools and teachers acquiring the skills and confidence to begin the process of decolonising their classrooms. This requires teachers and schools to change their approaches to include First Nations contexts across all aspects of teaching and learning. There have been recent improvements in First Nations student retention and completion of year 12 qualifications, which was a target in the Closing the Gap strategy. However too much of the focus of student retention has been put on the students and their families, with absenteeism from school a constant measure built into Indigenous education targets. Very little attention has been placed on the colonised classroom spaces these children are forced to endure. The focus in Australian schools on the contributions of European colonisers and not on members of our rich, diverse and long-lasting First Nations leaders and heroes can have a profound cultural impact on all children in this country. A way forward to support the outcomes of First Nations students and their engagement with school, is to begin the process of decolonising the classroom. There are five ways this can be done:

1. Policy

State, territory, and federal jurisdictions all have Indigenous education policies which cover things like, attendance rates, community engagement, and content and teaching methods used in the classroom. However, few of these policies are implemented effectively in classrooms. Implementing these policies which already exist is a good place to start.

2. Content

For generations of teachers and students, the content in the curriculum has been dominated by a Euro-centric focus on Australia’s recent history and “western traditions” of liberal democracy and Judeo-Christian values. This has come at the cost of including knowledge about First Nations cultures, and this phenomenon is known as the “Great Australian Silence”. This refers to the active erasure of First Nations histories, and although there has been some improvement, it still dominates classrooms today.

3. Education

Our children are part of the oldest continuous cultures in the world, and they are also taught these cultures from infancy from their families, Communities, and Countries. It stands to reason then, that we have the oldest teaching methods in the world that are perfectly suited to our kids and that can support all learners as well. First Nations ways of teaching should be incorporated into all classrooms.

4. Place and space

Our children need to see themselves reflected in their schools. This includes flags, acknowledgement plaques, art works, library books and other ways of making First Nations contexts more visible. They also need to be in spaces that are fit for purpose, especially when engaging with First Nations teaching approaches including yarning and on-Country learning. This might mean having movable furniture in classrooms, and access to outdoor spaces to engage directly with Country.

5. Community engagement

As much as we wish every First Nations student was taught by a First Nations teacher, this isn’t always possible. Much of our learning and knowledge is held by our Elders. They need to be present and visible in our schools, and our students need to be able to access Country and Community as part of their learning. This is how it has always been.

When these aspects are reformed, the classroom no longer becomes a reason not to attend school, and as students remain at school longer, they are less likely to engage with the judicial system.

Students study Indigenous Science

Central Queensland Today: 3 Nov 2022 Link

More than 200 Year 8 Rockhampton State High School students learnt about Indigenous Science at a whole-day workshop with the team from Rocky Instincts recently. The focus of the workshop was to study and practice some of the fire-starting techniques used by Aboriginal and Torres Strait islander people. This term in their science classes, students have been investigating the efficiency of traditional fire-starting techniques such as the hand drill, bow drill and fire saw and different tinder materials. The goal of their investigations was to determine the best combination of wood and tinder types to use with each fire-starting technique.

Rockhampton State High School
2d ·

{ Stacey visits the Science class }
Mrs Edwards and her Year 8 Science class explored, with the help of our CEC Stacey Chamberlain, how First Nations and Islander people use the properties of leaf and fruit fibres to weave baskets and make string. Students learned about elasticity in fibres and how, when blended through weaving or spinning, this can make a material stronger. What a fantastic activity designed to explore the concept hands-on and gain deeper understandings through doing.

Torres Webb joins our First Nations Board

Editor ISN: 13 Mar 2022 Link

Torres is a proud Far North Queenslander and Indigenous man from the Torres Strait (Erub, Darnley Island). Torres has a long history of working with a range of educational institutions and communities to promote and showcase the depth of Indigenous scientific knowledge: Ways of being, knowing and doing. He has significant experience of developing science curriculum for all Australian educational sectors. Additionally, Torres has led over 150 different professional learning opportunities for teachers. Utilising inquiry- and strength-based approaches to learning and teaching he focusses on building teacher capability to authentically and respectfully embed Indigenous science knowledges in their practice.

Torres is a passionate parent and community engagement advocate in improving the achievement, wellbeing and life chances of all children and youth by focusing on "what's strong rather than what's wrong". He is recognised nationally and internationally for his community engagement and leadership skills. Having worked with Youth Challenge Australia in Vanuatu, Asia Pacific Indigenous Youth Network in Philippines, Queensland Youth Parliament and with Oxfam International Youth Partnerships in India, Torres has also held a Deputy Chair position on the Erubam Traditional Land and Sea Owners Native Title Body, where he worked closely with the local rangers and elders around caring for country and sustainability initiatives. Known for his work in promoting the power of positive relationships in educating future generations regardless of economic and social circumstance. Torres is passionate about securing equity, inclusion and social justice for Indigenous first Australians particularly our next generation (children & youth) through working with schools.

Centre for Applied Water Science @UC_CAWS · Dec 2, 2022

Congratulations to @UC_CAWS Indigenous water scientist @bradmoggo who is the new President of @AusFreshwater ... I THINK Brad may be the first Indigenous President of a major Australian scientific society.... @UCSciTech @UniCanberra @paddynixon @AusAcademy #STEMoriginals

You Retweeted

AssocProf Bradley Moggridge @bradmoggo · Dec 9, 2022

Big few weeks for me-after becoming Pres. @AusFreshwater last week then attending the @Biodivcouncil launch in Melb while being appointed as a board member then next day attending my 1st NSW EPA board meeting in Sydney then heard I got attacked by Bolt on Sky #deadly @UniCanberra

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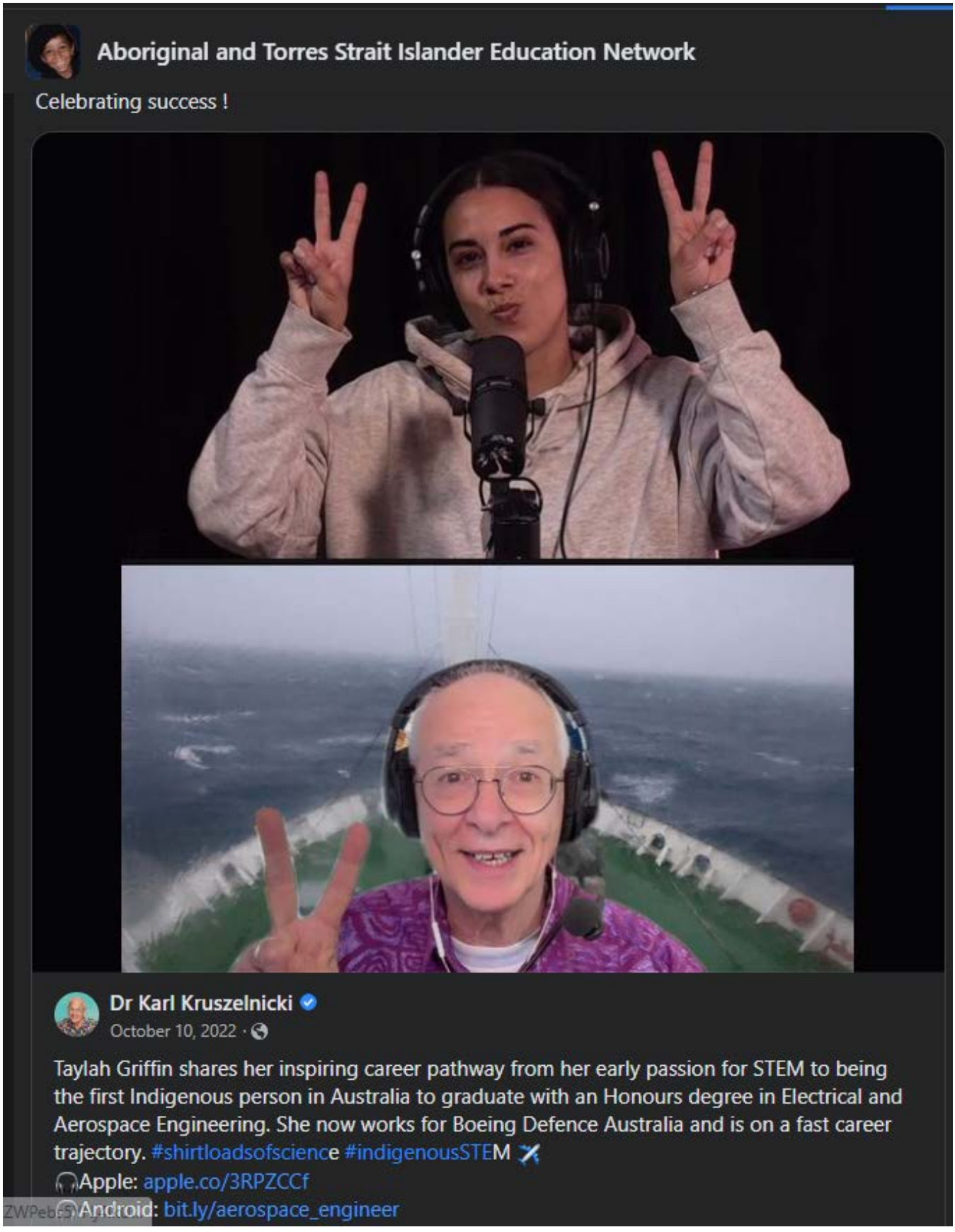


Image above from Aboriginal and Torres Strait Islander Education Network Facebook: accessed 13 Feb 2023

Historical fish collection sheds light on Aboriginal fishing methods

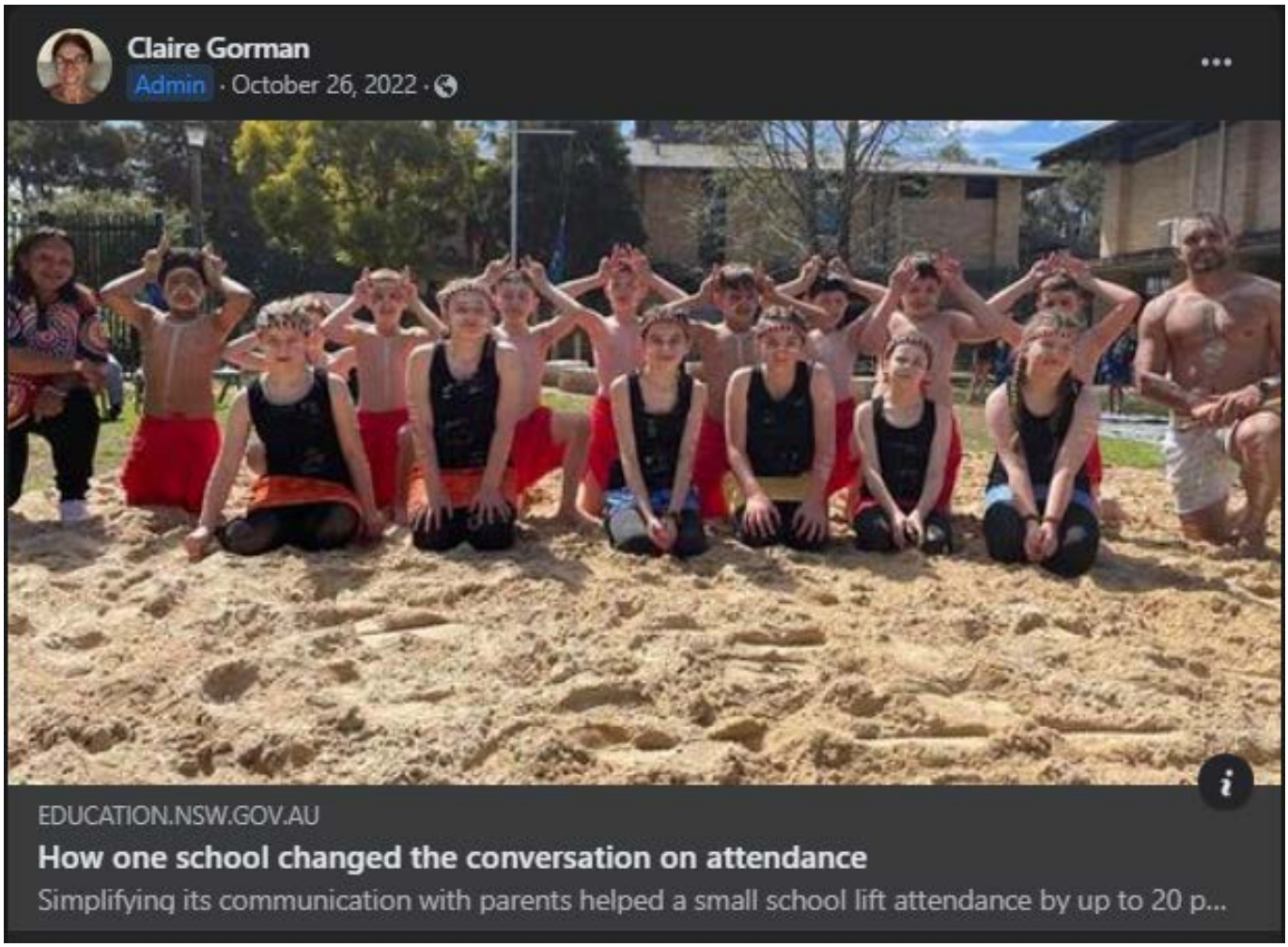
ABC Great Southern / Lauren Smith: 30 Nov 2022 Link

Experts hope a new project will recognise the contribution of traditional owners to fish science dating back thousands of years on Western Australia's south coast. In 1839, European explorer Robert Neill ventured into the area and curated a collection of fish specimens. The 180-year-old dried fish have since been displayed at both the Natural History Museum in London and the National Museum of Scotland. Shona Coyne, a Menang woman, senior curator and manager of repatriation and community engagement at the National Museum of Australia, said many locals were familiar with Robert Neill's paintings of the traps. "I think a project like this will help reveal some of the Menang knowledge that's encapsulated in these paintings," she said.

One of the preserved fish — Chironemus maculosus — caught in the fish traps at Oyster Harbour 130 years ago. *(Supplied: National Museums Scotland)*

How one school changed the conversation on attendance

Simplifying its communication with parents helped a small school lift attendance by up to 20 per cent.



https://education.nsw.gov.au/news/latest-news/how-one-school-changed-the-conversation-on-attendance

Aboriginal people have spent centuries building in the Baaka. Now there's plans to demolish these structures

Michael Westaway, Badger Bates & Sue Jackson; The Conversation: 16 Dec 2022 Link

Apart from managing the land, Indigenous people have also managed waterways, including the Murray River and the Darling/Baaka River, for thousands of years. Like many Indigenous peoples of Australia, the Barkandji people of the Baaka manipulated and enhanced the river and floodplain ecosystems of their country. Now, our research on stone, wood and earthen fish traps and fish weirs on the Baaka and its floodplains reveals how these aquatic resources were managed, grown and stored by the Barkandji. These structures, and the cultural practices that sustain them, are still significant to the Barkandji people – but they've been severely affected by colonisation, and remain at risk from government commitments to irrigation.

A photo published in 1926 of the 'P.S. Colonel' and barges drifting downstream at Christmas Rocks. PRG 1258/2/2260 Godson Collection, State Library South Australia

Indigenous scientists honoured for outstanding research

Emma Ruben, National Indigenous Times: 9 Feb 2023 Link

Scientists Michelle Hobbs and Stephanie Beaupark have been recognised for their outstanding research by the Australian Academy of Science through the Aboriginal and Torres Strait Islander Scientist Award for 2023. The award recognised their research in physical and biological sciences, allowing interdisciplinary and sociocultural research straddling the social sciences and humanities. Ms Hobbs is a Bidjara descendent, lecturer and PhD student at Griffith University. She will use the award to look into the management of Australian freshwater ecosystems and freshwater mussels.

Ms Beaupark, a Ngugi woman from Quandamooka Country, will study eucalyptus dye to make artworks and how the compound interacts with dye mixture on fabric and wool. Ms Beaupark said she was always drawn to science and art, and this was just one way of marrying the two together. "Thinking about my own art making practice with natural dyes, I noticed there was a difference in colour for each species that I worked with particularly eucalyptus," she said.

Photo: Michelle Hobbs (L) and Stephanie Beaupark (R). Photo credit: L - Michelle Hobbs, R - Anna Kucera.

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

Ecological Society of Australia, Winner of the 2022 Next Generation Award announced *Ecological Society of Australia: 3 Nov 2022 Link*

The Ecological Society of Australia awarded the 2022 Next Generation Ecologist Award to Dr Holly Bradley, in the School of Molecular and Life Sciences at Curtin University. Her work with Badimia elder Darryl Fogarty focused on conservation of on the endangered Western Spiny-tailed Skink, called meelyu in Badimia, is an example of Right-way Science, blending traditional knowledge and European models of science to attain conservation goals and focus on the cultural meaning of conservation. She and elder Darryl Fogarty will create a conservation picture book series for youth bringing out Right-way Science.

Dr Holly Bradley

Karlie Alinta Noon @karlie_moon_ · Dec 1, 2022

I graduate from the Superstars of STEM program today, after 2 years of listening, learning, and putting it all into practice. It's been an incredible journey and a privilege to learn from women in STEM all around the country.

11 14 201

Atlantic Fellows for Social Equity (... @AFSocialE... · Dec 6, 2022

Meet 2023 #AtlanticFellow for #SocialEquity Kerri Clarke (Boon Wurrung, Wemba Wemba).

Her social change project will investigate the traditional practice of possum skin cloak making and how it can benefit the health and well-being of Aboriginal Elders in residential aged care.

1 8

Native grass farming puts Indigenous food on Australia's fine dining map

Tim Piccione, The Islander, 2 Nov 2022 Link

Black Duck Foods, founded by Uncle Bruce Pascoe, author of Dark Emu, and Uncle Noel Butler, are producing flour made from Australian native grains for high-end bakeries and restaurants around Australia. Native grasses are flavourful, nutritious and sustainable, with deep root systems requiring no irrigation, compared to millions of megalitres required for non-native grains such as wheat. Award-winning chef Ben Shewry, of Attica Restaurant in Melbourne, said, "[Native grain flours] are delicious, they have heaps of character and bucket loads of flavour."

Indigenous high school students experience science at Melbourne

Newsroom, University of Melbourne: 6 Dec 2022 Link

Budding Indigenous scientists from around Australia are visiting the University of Melbourne this week to immerse themselves in science, technology, engineering and maths (STEM) and participate in a range of immersive activities. For the past decade, the Residential Indigenous Science Experience (RISE) has been running for Indigenous students in years 9 and 10, ensuring they can learn about the latest science technology advancements in a culturally safe and supportive environment. This year RISE returns to the Parkville campus for the first time since 2019, after the pandemic caused the experience to go virtual for two years. The 2022 program will be the first time the in-person event has had all Aboriginal staff and mentors, along with 70 per cent of workshop facilitators.

RISE students at Bolin Bolin billabong listening to Narrap Rangers, Joe and Maddie. Image: supplied

The image and text above appear with permission of Alexa Viani, Communications Manager, Faculty of Science, University of Melbourne: via email received 20 Feb 2023

The hot, sweaty science that ensures ticking the carbon neutral box really reduces greenhouse gas emissions *Ben Collins, ABC Kimberley: 12 Dec 2022*

Link

It is hard to believe that ticking a box and paying an extra fee when you buy an airline ticket can make your flight carbon neutral. But some airlines are using that money to buy carbon credits from Indigenous ranger groups who then fund bushfire management in northern Australia. Researchers and rangers are producing peer-reviewed science that shows Indigenous fire management practices can prevent greenhouse gas emissions as well as protect native plants and animals.

New $89M national research centre at JCU

JCU Media staff, James Cook University: 4 Nov, 2022 Link

James Cook University will host a new Australian Research Council (ARC) Centre of Excellence for Indigenous and Environmental Histories and Futures (CIEHF) – aiming to bring Indigenous and environmental histories to the forefront of land and sea management. The new Centre will be led by JCU's Distinguished Professor Sean Ulm. He said the Minister for Education and Youth of Australia, the Hon. Jason Clare, approved funding today for a new 7-year $89 million dollar research program headquartered at JCU to investigate Australia's iconic Indigenous and environmental heritage. "Australia's future depends on learning lessons from the past and applying them to problems that confront our modern world. Yet we know surprisingly little about how tens of thousands of years of Indigenous engagement and management have shaped Australia's lands and seas," said Professor Ulm.

Professor Sean Ulm undertaking ARC-funded partnership research on Kaiadilt country with senior traditional owners. Image and text above are from a Media Release issued by JCU on 4 Nov 2022

Robinson River School
February 9 at 7:20 AM ·

What better way to learn than out in the bush? As part of our collaboration with DeadlyScience, Robinson River School are exploring making bush soap🧼, and yesterday Mr Herbert's class and Patsy Anne went out looking for one of the key ingredients, Dumbuyumu leaves🌿. We hopped in the minibus🚐 and headed out past Skull Creek, where Patsy Anne showed us a great place to find them👀. We collected a little, which students took home to families. Today Miss Charlotte and Miss Stella's students will head out and collect a few of their own. Soon we will begin making our own bush soap to send home to families, and we can't wait to share the process with you all. Well done Warraguna class. You did great ✌#robinsonriverschool #deadlysciencetd #oncountry #bushsoap #dumbuyumbu

Noel Pearson warns of schooling system failing disadvantaged and Indigenous kids *Jarred Cross, National Indigenous Times: 30 Jan 2023 Link*

Activist, lawyer and Bagaarrmugu-Guggu Yalanji leader Noel Pearson said a failure to rethink the education system threatens to "fail children" and "destroy lives", particularly for those coming from disadvantaged backgrounds. Mr Pearson issued the warning in the keynote address at the Archdiocese of Canberra & Goulburn Catholic Education system day on Ngunnawal country on Monday. As co-chair of non-profit Good to Great Schools Australia, Mr Pearson helps deliver co-designed learning and explicit instruction; a direct, structured, teacher-led and achievement-oriented method of education, through 20 primary schools across the country. The program focuses on improving literacy, numeracy and science outcomes of students, as well as developing teaching skills in staff. Mr Pearson said explicit instruction can benefit disadvantaged students, whether they be from low-socioeconomic backgrounds, regional and remote Australia, and many of the country's Aboriginal and Torres Strait Islander kids. "It's about the teacher leading the learner. Teaching first, learning second," he said

Image of Noel Pearson from Cape York Partnership Facebook, accessed 13 Feb 2023.
https://www.facebook.com/capeyorkpartnership/photos/a.169156013277778/2026122487581112

***EDITOR:** On the following page are descriptions of an academic paper written three years ago in response to the continuing contentious publicity surrounding Noel Pearson and his views on the role of Direct Instruction as a means to improve Indigenous literacy and overall school performance. Following the take-back of Aurukun community school by the Qld government from Pearson's Cape York Partnerships in July 2016, there was much commentary surrounding the efficacy or otherwise of Pearson's chosen pedagogy. In the intervening years, Pearson has continued to promote Explicit Teaching and Direct Instruction. Although in the article above it is labelled as Explicit Instruction - it seems the terms are interchangeable! The 2019 research below shows no effect of DI on the results of remote Indigenous primary school learners. You be the judge.*

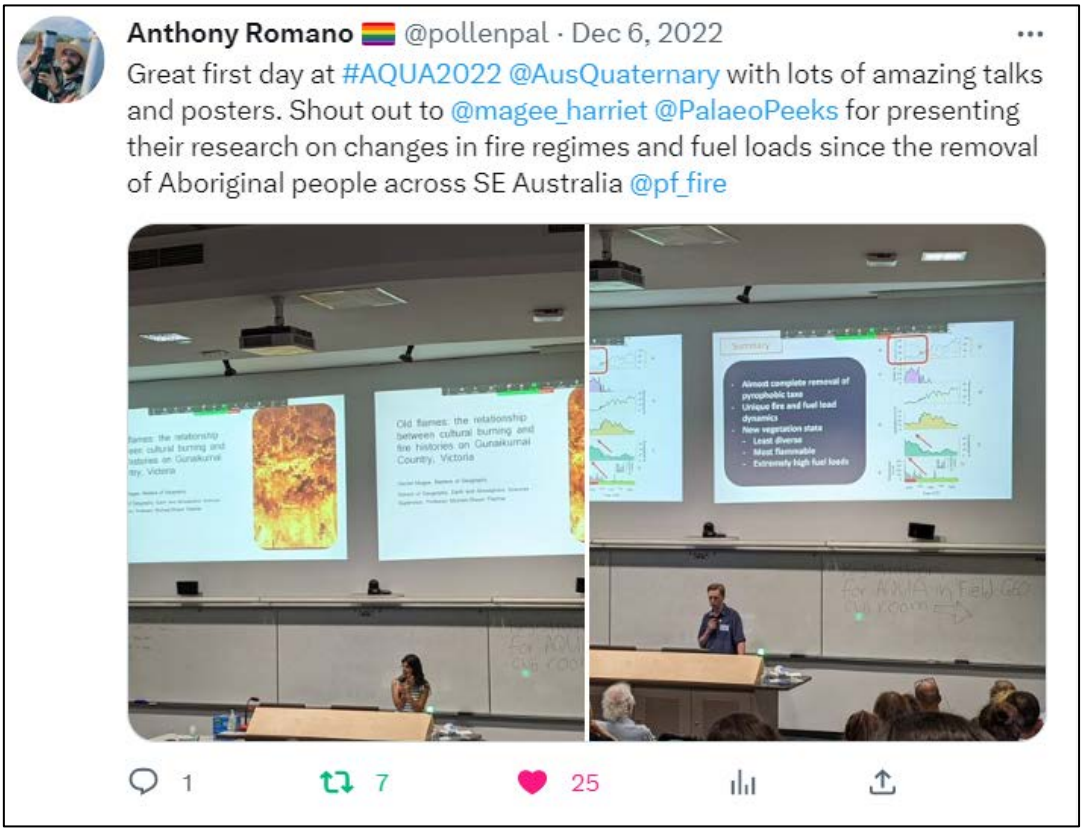
Did DI do it? The impact of a programme designed to improve literacy for Aboriginal and Torres Strait Islander students in remote schools

John Guenther & Samuel Osborne, Australian Journal of Indigenous Education: 15 Jan 2020 Link

Abstract

Over the 10 years of 'Closing the Gap', several interventions designed to improve outcomes for Aboriginal and Torres Strait Islander students have been trialled. In 2014 the Australian Government announced the 'Flexible Literacy for Remote Primary Schools Programme' (FLFRPSP) which was designed primarily to improve the literacy outcomes of students in remote schools with mostly Aboriginal and Torres Strait Islander students. The programme, using Direct Instruction (DI) or Explicit Direct Instruction, was extended to 2019 with more than $30 million invested. By 2017, 34 remote schools were participating in the Northern Territory, Queensland and Western Australia. This paper analyses My School data for 25 'very remote' FLFRPSP schools with more than 80% Aboriginal or Torres Strait Islander students. It considers Year 3 and 5 NAPLAN reading results and attendance rates for participating and non-participating primary schools in the 3 years before the programme's implementation and compares them with results since. Findings show that, compared to very remote schools without FLFRPSP, the programme has not improved students' literacy abilities and results. Attendance rates for intervention schools have declined faster than for non-intervention schools. The paper questions the ethics of policy implementation and the role of evidence as a tool for accountability.

DOI: https://doi.org/10.1017/jie.2019.28



a) PASIFIKA

To Create Safer Spaces for Students, Teachers of Color Must Reckon with Our Settler Identity

Whitney Aragaki, EdSurge: 11 Jan 2023 Link

Often, I see educators across the US continent claiming an identity through proximity to land without any regard for its connection to Indigenous and Native communities. The off-handed remark - such as a person referring to themselves as “native Californian” - is jarring if that individual cannot trace ancestral land back to time immemorial. For Indigenous and Native peoples, who have a deep sense of place that is woven into their cultures, practices and genealogy, this can be seen as disrespectful. For a long time, I pondered whether I would ever feel a sense of belonging as a settler in Hawai‘i, even in my own family's ancestral homelands. Physically, it is apparent to my students that I am a settler in Hawai‘i. Students often express curiosity about my use of the Hawaiian language, philosophies, and insistent utility of Indigenous practices in a seemingly western science space. Conversely, I also have settler students who push back and say “it is not their culture.” However, through my years of teaching, I've learned how important it is to remind my students that we are occupying spaces that actively displace Indigenous people, not only as a matter of fact but as a means of building a community where we can thoughtfully and respectfully honor the Indigenous and Native peoples of this land.

Rena Schild / Shutterstock

Blending ancestral gifts, Indigenous roots and science to protect the oceans

Kristin Toussaint, Arizona State University: 10 Jan 2023 Link

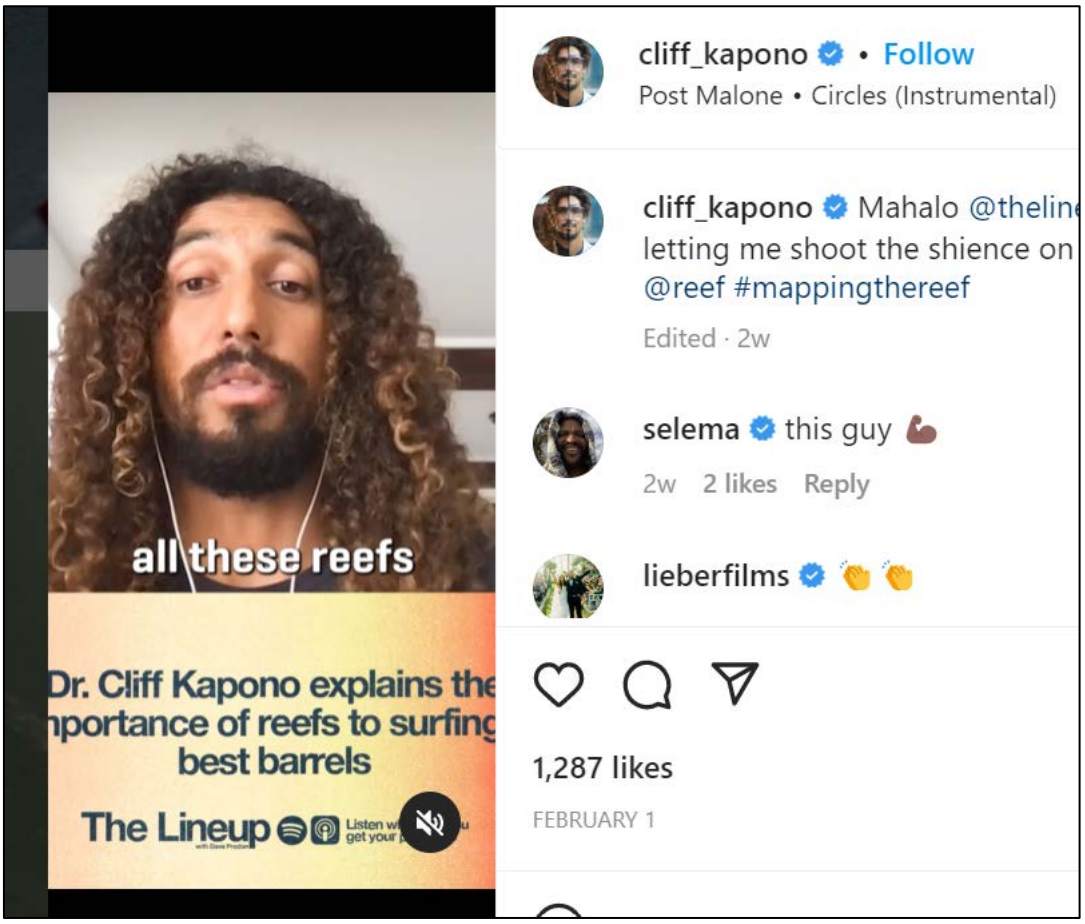


Image from Cliff Kapono Instagram 15 Feb 2023 https://www.instagram.com/p/CoGJxkQDiyd

Cliff Kapono is looking out onto Honoli'i Beach on the east side of Hawaii's Big Island, and the water is brown. That's not unusual — brown water has occurred on this coastline for thousands of years. But it can be a threat to coral reefs. When sediment, often due to runoff from heavy rain, gets into the water, it blocks sunlight from reaching reefs. It can even smother coral, leading to coral bleaching and potentially coral death. Centuries of brown water, you might think, would have smothered any coral here long ago. Yet somehow, a reef exists — an anomaly Kapono noticed while surfing.

Kapono, an analytical chemist and an assistant professor in Arizona State University's School of Social Transformation and School of Life Sciences, and a faculty member at the Center for Global Discovery and Conservation Science, isn't the kind of researcher who spends all his time in the lab. He is also a professional surfer and a Hilo native of Hawai'i, as his people spell and refer to their homeland. Those experiences, combined with his scientific education, give him a unique perspective on the places he's trying to protect.

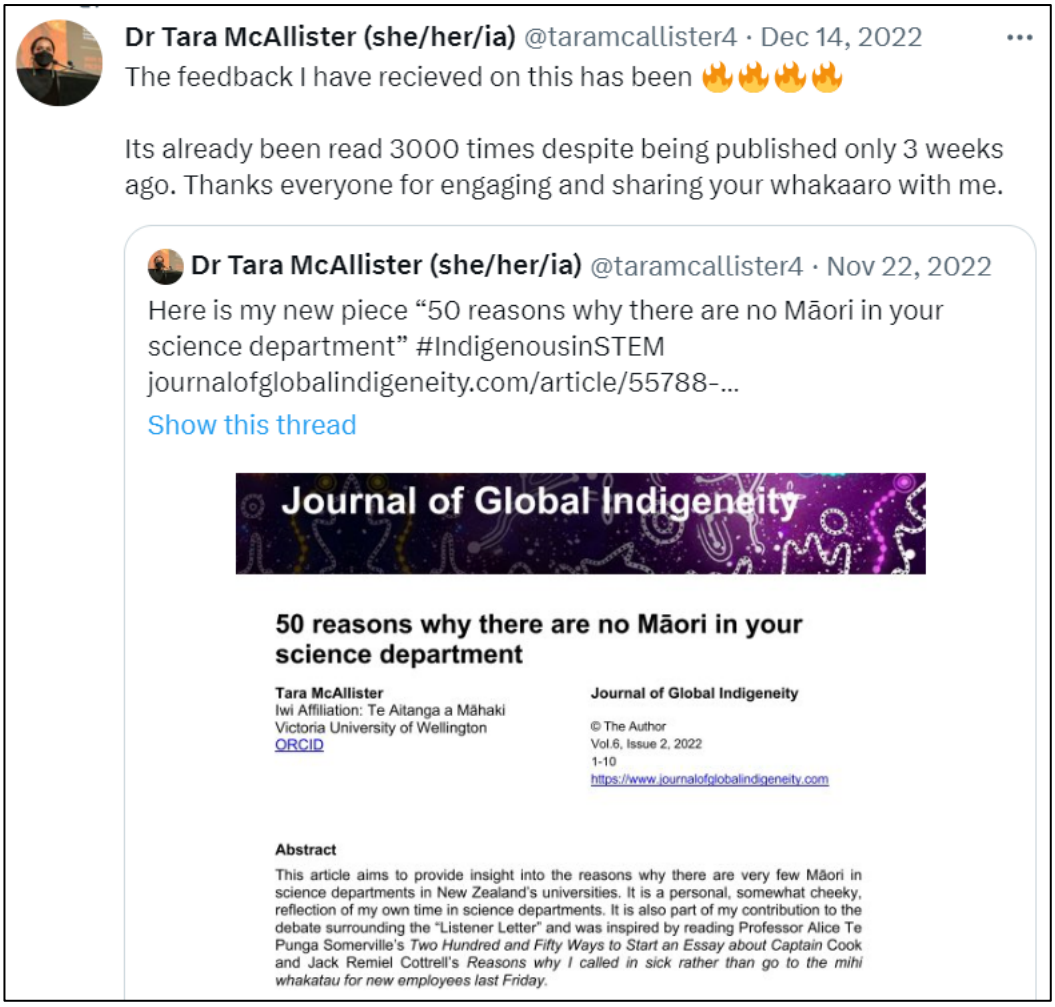
Decades of racial disparities revealed in National Science Foundation funding patterns *UH News: 29 Dec 2022* *Link*

An investigation into National Science Foundation (NSF) data on funding rates, award types and proposal ratings from 1996 to 2019 found pervasive racial disparities. The study, recently published in eLife by a team of researchers including University of Hawai'i at Mānoa Associate Professor Rosie Alegado, revealed that white principal investigators (PIs) are consistently funded at higher rates than most non-white PIs. Further, the gap between funding rates for white PIs and other groups has widened during the period studied. "The prevalence and persistence of these racial funding disparities have cascading impacts that perpetuate a cumulative advantage to white PIs across all of science, technology, engineering, and mathematics," the authors wrote in the study.

Hawaiian traditional navigation experts stop at VIMS before worldwide canoe voyage *Katherine Hafner, WHRO News: 21 November 2022* *Link*

Native Hawaiians Nainoa Thompson and Lehua Kamalu grew up on Oahu, decades apart. Kamalu, who's 36, said she heard early on about the story of Hōkūle'a, a canoe built and launched in the 1970s by the Polynesian Voyaging Society to revive the art and practice of traditional navigation. "We certainly learned about the heroes and the people who were actually doing the work to bring it back to life," she said. But Thompson, who described himself as "really old," said he didn't learn much of anything in school about that heritage. "When I graduated high school, I knew nothing about, where are my ancestors? Where did they come from?" he said. "How did they get to the single most isolated island archipelago in the world, crossing essentially 2,200 miles of open ocean?" Eventually both became experts in Polynesian navigation and part of the growing effort to teach it. The practice honors the way people traveled thousands of miles across the Pacific Ocean to Hawaii as early as 400 AD, before modern technology and materials.

Hōkūle`a, a modern Hawaiian wa'a kaulua or voyaging canoe, sailing off Honolulu, photo taken from onboard the Chinese junk Princess Taiping, January 22, 2009. Wikipedia. *Creative Commons Attribution 2.0*


Dr Tara McAllister (she/her/ia) @taramcallister4 · Dec 14, 2022
The feedback I have recieved on this has been 🔥🔥🔥🔥
Its already been read 3000 times despite being published only 3 weeks ago. Thanks everyone for engaging and sharing your whakaaro with me.
Dr Tara McAllister (she/her/ia) @taramcallister4 · Nov 22, 2022
Here is my new piece "50 reasons why there are no Māori in your science department" #IndigenousinSTEM journalofglobalindigeneity.com/article/55788-...
Show this thread
Journal of Global Indigeneity
50 reasons why there are no Māori in your science department
Tara McAllister
Iwi Affiliation: Te Aitanga a Māhaki
Victoria University of Wellington
ORCID
Journal of Global Indigeneity
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Vol.6, Issue 2, 2022
1-10
https://www.journalofglobalindigeneity.com
Abstract
This article aims to provide insight into the reasons why there are very few Māori in science departments in New Zealand's universities. It is a personal, somewhat cheeky, reflection of my own time in science departments. It is also part of my contribution to the debate surrounding the "Listener Letter" and was inspired by reading Professor Alice Te Punga Somerville's Two Hundred and Fifty Ways to Start an Essay about Captain Cook and Jack Remiel Cottrell's Reasons why I called in sick rather than go to the mihi whakatau for new employees last Friday.


Indigenous Science Network
November 23, 2022 ·
UNDARK.ORG
In New Zealand, Conservation Is Buoyed by Indigenous Knowledge
Blending Māori knowledge into federally-funded crayfish research, supporters say, simply mak...

b) ASIA

Indigenous understanding of Salween River key for biodiversity

Saw John Bright, The Third Pole: 11 October 2021 Link

As the first part of COP15 of the Convention on Biological Diversity convenes, decision makers must recognise that free-flowing rivers are essential to Indigenous understanding of reality and the preservation of biodiversity. Increased attention is being paid to how Indigenous peoples have for centuries realised this aspiration of harmony. Indigenous peoples manage or have rights to 22% of the world's land, yet this land supports 80% of the world's biodiversity, even as they struggle to regain ancestral lands that were taken from them in many places. What is less recognised is how Indigenous understanding and perception of reality upholds this harmony.

Indigenous Karen women play and sing traditional a Karen harp and music *(Image: Saw Hsa Doe Doh Moo / Karen Environmental and Social Action Network)*

Indigenous Farming Knowledge Is Science, Not Superstition

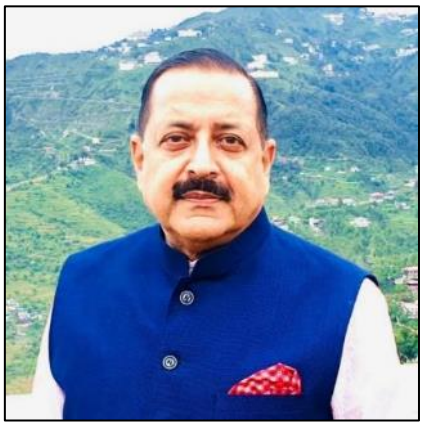
Su-Hie Ting, Gabriel Tonga Noweg and Yvonne Michelle Campbell, Universiti Malaysia Sarawak, CodeBlue: 9 January 2023 Link

KUCHING, Jan 9 – What does it mean when you encounter snakes slithering along paths or find a bird nest with eggs? For indigenous peoples in Malaysia, these are tell-tale signs passed down by their ancestors discouraging them from using the land. Instead, they must protect the area from unscrupulous developments. The indigenous peoples in Malaysia have great respect for the land. The Bidayuh's folktales or dondan teach the people that the land they inhabit does not belong to them, but to the spirits of the land. Their folk wisdom on agricultural practices is based on that respect for the land. They don't act as masters or owners of the land. To them, the land is a shared treasure, passed down from generation to generation.

Farmers planting trees at Jagoi Heritage Forest in Bau, Kuching, Sarawak. The Indigenous peoples' traditional response to improve the condition of the forest in their catchment area is by planting more trees such as timber trees, bamboo, rattan, and wild fruit trees. (Prof Gabriel Tonga Noweg)

Need to blend ancient knowledge with modern science: Jitendra Singh

Press Trust of India, Business Standard, 5 November 2022 Link



Science and Technology Minister Jitendra Singh Saturday stressed on the modernisation of indigenous texts of ancient knowledge as India seeks to assert its scientific prowess in the world. Inaugurating the national conference on 'Akash Tattva Akash for Life' here, Singh said India's indigenous knowledge and ancient texts were ignored as students of science pursued their studies based on texts written by authors of other countries.

Image of Jitendra Singh from his Facebook 15 Feb 2023

c) AFRICA

Indigenous peoples urge UN to save nature

Adelyn Wangusi, African Science News: 8 Dec 2022 Link

The global biodiversity framework to save nature must respect, promote and support the rights of Indigenous Peoples and Local Communities if it stands any chance of succeeding. “As global citizens, we are all part of, and not separate from, nature,” said Lakpa Nuri Sherpa, one of the Co-Chairs of the IIFB, and programme lead at AIPP (Asia), speaking at the opening of UN Biodiversity’s COP15. “As Indigenous Peoples, we have been custodians of our lands, territories and waters for millennia and have deep interaction with the ecosystems where we live. Evidence shows our lands are among the most biodiverse on the planet,” he said.

For example, a recent IPBES sustainability report released in 2022, found that policies supporting secure tenure rights for indigenous peoples, and equitable access to land, fisheries and forests, as well as poverty alleviation, create enabling conditions for sustainable use of wild species. “Only by recognizing the rights, knowledge, innovations, and values of Indigenous Peoples and Local Communities will we be able to push forward the global agenda to sustainably use and conserve biodiversity,” said Nuri.

William Warby, Maasai villagers in traditional clothing and jewellery in the Serengeti National Park, Tanzania. Flickr Attribution 2.0 Generic (CC BY 2.0)

Traditional African wisdom: A modern answer to protect coastal marine life?

Mduduzi Mbiza, Mail & Guardian: 28 Nov 2022 Link

Ecological engineering merges ecological principles with engineering practices, looking for solutions to mitigate the negative effects of urbanisation and general anthropogenic impacts – the effect of humans on nature. These solutions can rehabilitate and enhance the natural biological diversity and functions of coastal habitats, including rocky shores. There is growing interest in implementing innovative eco-engineering solutions in coastal systems to achieve sustainability goals – but the skills required for this are largely lacking in South Africa. The researchers are partnering with the rural coastal community of Hamburg, in Eastern Cape, the second-poorest town in the province. Scientists and ecomusicology specialists will work with members of the Keiskamma Trust to co-create nature-based structures, as well as traditional cultural expressions, with agreements in place recognising the intellectual property rights of the knowledge-bearers and protecting their work. This step is the baseline that aims to help preserve the indigenous knowledge, the practice, and the links to scientific knowledge, merging all approaches for the production of innovative co-science for generations to come.

Crystal clear ocean waters visible on the scenic Chapman's Peak drive in the Western Cape in South Africa.

South African Tourism: Chapman's Peak - Cape Town, South Africa. Flickr: Attribution 2.0 Generic (CC BY 2.0)

China-aided science museum wins hearts of science-enthusiast Ethiopians

Source: Xinhua, Editor: huaxia, 2022-11-19 ***Link***

ADDIS ABABA, Nov. 19 (Xinhua) -- Tewodros Eshetu was one of the first science and tech-enthusiast Ethiopians eagerly queued for hours to explore the country's recently inaugurated state-of-the-art science museum. "In a country where science and technology-related facilities are virtually nonexistent, it's no surprise to be one of those Ethiopians, largely the youth, who were eagerly waiting in queue to see firsthand the science museum," Eshetu said, as he underscored the huge significance of the museum in promoting science and technology in Ethiopia. The China-aided facility in Addis Ababa, the Ethiopian capital is said to be Africa's first-ever museum solely dedicated to science. In addition to exhibiting the latest technologies, the facility is also expected to curate Ethiopia's rich indigenous knowledge, science, and art in tandem with the latest modern technological advancements. The science museum, which is a major part of the China-aided Addis Ababa Riverside Green Development Project Phase II, also embraces green development equipped with a solar system that will generate the electricity required to operate the facility.

Image from video on Xinhua News Agency Facebook, accessed 18 Feb 2023

https://www.facebook.com/XinhuaNewsAgency/videos/1026375525424879

d) AMERICAS

Integrating Indigenous Perspectives in Forest Policy through Traditional Ecological Knowledge *Trinity A. Minahan, American Bar Association: 12 Jan 2023* Link

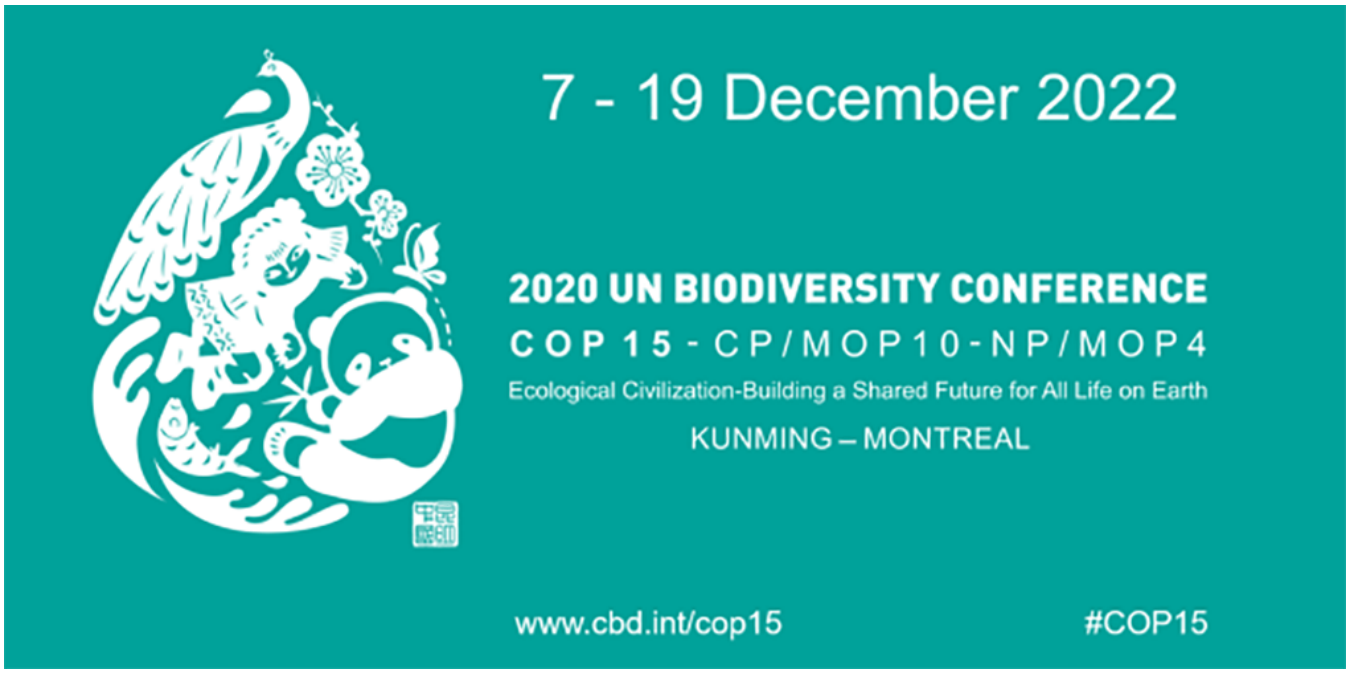
As society undergoes decades of recycled forest policy and climate change, one foundational perspective to managing forests still seems to be missing. That perspective centers around looking to those that have been here since time immemorial. Integrating Indigenous perspectives can serve as a lens in developing effective forest policy. In working toward advancing forest policy for the future, remembering those that were here first is important. Despite colonial views and impact, "Nothing was discovered, everything was already loved." Indigenous peoples' culture developed in this place we call the United States.

McGill scholars respond to COP15 Biodiversity Conference

Daniel Lukes, Communications Officer, Bieler School of Environment Link

Biodiversity and Indigeneity

"Most interesting and compelling was the emphasis on recognizing Indigenous sovereignty and land rights as being a critical component of just biodiversity conservation," says Professor Anna Hargreaves (Department of Biology). "The best session I went to was on Indigenous perspectives on biodiversity conservation in Quebec. It was an important call to action to all of us who live in southern Canada to pressure governments to live up to treaty obligations: Indigenous communities must have the right to say no to resource developments in their traditional territories."



Manitoulin Island woman speaks up for Indigenous conservation at COP15

Lori Thompson, Local Journalism Initiative Reporter, The Manitoulin Expositor: Jan 11, 2023 Link

The MNAI is currently undertaking a full natural asset inventory for all of Treaty One territory in collaboration with the Winnipeg metropolitan region, which includes 18 municipalities within Treaty One Territory. “It’s the first natural asset inventory that’s being done where the municipal and watershed colonial governance is also at the table with the Indigenous nations that hold land rights,” said Ms. Neale. “How do we make all of our development decisions moving forward in a good way that doesn’t speed up biodiversity loss and that does protect us from the impacts of climate change?”

It’s not easy because they’re “smashing together” two very different value systems, to come up with a nature valuation that reflects what the community thinks. “When you include Indigenous voices and leadership at the table you get a very different nature valuation,” she said. “I believe you get one that is more appropriate for the marketplace.” That’s mostly what she talked about at COP15, “the importance of integrating Indigenous knowledge and Indigenous approaches to nature and using bio-cultural indicators in all nature valuations, because when we just value nature as carbon, we’re undervaluing nature.”

Climate scientist says traditional Inuit knowledge can advance Arctic research

CBC Radio · 11 Jan 2023 ***Link***

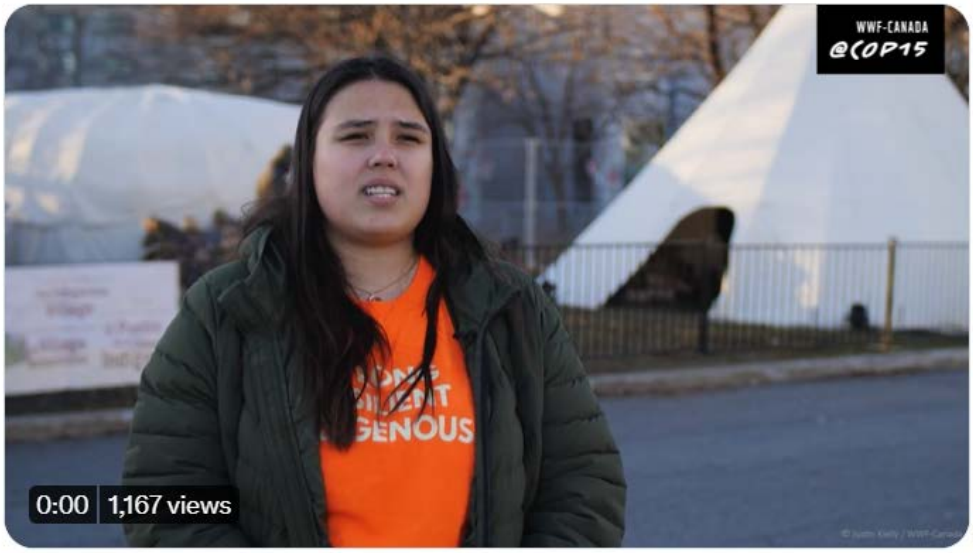
For decades Inuit — who of course live in a close relationship with the land, water, ice and wildlife — have been watching climate change unfold in real time. Yet the majority of climate researchers studying the Arctic have been non-Indigenous and not from the Arctic. It's something that Arctic researcher Shari Fox points to as vital expertise that is missing from the way scientific research has typically been conducted. She argues scientists from the south have too often ignored or discounted the scientific value of the lived experience and traditional knowledge of the Inuit.

Image of Inuit in Greenland by Bernd Hildebrandt from Pixabay, under a Pixabay licence
https://pixabay.com/photos/greenlanders-inuit-boat-glacier-908841

You Retweeted

WWF-Canada @WWFCanada · Dec 19, 2022

Indigenous-led conservation has been a key conversation piece at this year's @unbiodiversity summit. For Morgan Tsetta — an Indigenous photographer and filmmaker — this is a step in the right direction. #COP15



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Valerie Courtois @valeriecourtois · Dec 8, 2022

My Ted talk is now live. Thank you for everyone that helped me prepare, and most importantly all of the amazing work being done by Indigenous Peoples across what is now known as Canada to protect and care for the land and waters and ways of life.

ted.com

How Indigenous guardians protect the planet and humanity

"If we take care of the land, the land takes care of us," says Indigenous leader Valérie Courtois. As climate change continues to devastate th...

2 66 167

CNY college professor awarded MacArthur 'genius grant' for Indigenous ecological studies

Jules Struck, Native American News, Syracuse.com: 11 Oct 2022 Link

Syracuse area professor Robin Wall Kimmerer is one of this year's MacArthur "genius grant" recipients. The ecologist and author of "Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge, and the Teachings of Plants," was named one of the 25 MacArthur fellows on Wednesday. She will receive $800,000 in grant money over the next five years. Kimmerer is currently a distinguished teaching professor at State University of New York College of Environmental Science and Forestry (SUNY-ESF), and director of the Center for Native Peoples and the Environment. "Traditional ecological knowledge is both a way of knowing and a whole body of knowledge of understanding the relationships in the living world," she said in a video from the MacArthur Foundation. "I feel a deep responsibility to the restoration, revitalization and carrying-forward of our knowledge."

Image from Robin Wall Kimmerer Facebook accessed 20 Feb 2023 https://www.facebook.com/braidingsweetgrass

How Indigenous Knowledge Is Transforming the March for Science

Terri Hansen, Yes Magazine: 13 Apr 2018 Link

NOTE: This article was published in 2018 and appears now due to the significance of the material to the aims of this network.

The March for Science this year is set for April 14. Last year's march drew tens of thousands who marched to protest the Trump administration's war on science. Since then, a corresponding March for Indigenous Science has grown into a burgeoning movement of its own, one aimed at increasing the visibility of indigenous science and traditional ecological knowledge as valid and valuable forms of scientific knowledge.

"Indigenous science holds a wealth of knowledge and is a powerful paradigm by which we understand our place in the living world. It is essential to the problems we face today and yet has been historically marginalized by the scientific community," plant ecologist Robin Kimmerer (Potawatomi) said in a statement about last year's march.

Following the success of the March for Science, indigenous organizers began "working to transform the march to a movement," ethnobotanist Rosalyn LaPier (Blackfeet/Métis), and chairperson of the National March for Science, said. LaPier, Kimmerer, scholar-activist Kyle Powys Whyte (Potawatomi), and ecologist Melissa Nelson (Anishinaabe) co-authored a declaration to endorse the March for Science while at the same time celebrating indigenous science as crucial to answering scientific questions.

EDITORIAL NOTES: Mark Linkson, Coordinator ISN

It is with surprise that the above item (discovered while seeking an image of the author Robin Wall Kimmerer) and in particular, the **Declaration in Support of the March for Science** has until now not come to my attention. This declaration was created in 2017 by a group of Indigenous scientists to promote Indigenous Science as a part of Science. It was signed by over 1200 Indigenous scientists, academics, tribal specialists and community members.

> *A large group of Native intellectuals and culture bearers have come together to show their support for the March for Science to be held on Earth Day, April 22. Circulating a declaration titled "Let Our Indigenous Voices Be Heard," the statement has been signed by more than 1,200 Native scholars, scientists and allies from around the world.*
>
> *The three page statement is a reminder to Western, mainstream scientists that before Europeans arrived on the shores of Turtle Island, Indigenous Peoples had their own scientists who deeply understood the world around them.*

From **Indigenous Scholars Endorse D.C. March for Science** by DINA GILIO-WHITAKER, 18 September 2018 in ICT News https://ictnews.org/archive/indigenous-scholars-endorse-march-for-science

The Declaration can be viewed over the next three pages. From https://cnpe.home.blog/2017/04/18/indigenous-science-statement-for-the-march-for-science

The following images of the Declaration appear with permission of Dr. Robin Kimmerer via email 21 Feb 2023.

TO THE MARCH FOR SCIENCE, DC AND SATELLITE MARCHES ACROSS THE NATION AND THE WORLD:

As Indigenous Scientists, agency professionals, tribal professionals, educators, traditional practitioners, family, youth, elders and allies from Indigenous communities and homelands all over the living Earth

WE ENDORSE AND SUPPORT THE MARCH FOR SCIENCE

As original peoples, we have long memories, centuries old wisdom and deep knowledge of this land and the importance of empirical, scientific inquiry as fundamental to the well-being of people and planet.

Let us remember that long before Western science came to these shores, there were Indigenous scientists here. Native astronomers, agronomists, geneticists, ecologists, engineers, botanists, zoologists, watershed hydrologists, pharmacologists, physicians and more—all engaged in the creation and application of knowledge which promoted the flourishing of both human societies and the beings with whom we share the planet. We give gratitude for all their contributions to knowledge. Native science supported indigenous culture, governance and decision making for a sustainable future –the same needs which bring us together today.

WESTERN SCIENCE IS A POWERFUL APPROACH, BUT IT IS NOT THE ONLY ONE

As we endorse and support the March for Science, let us acknowledge that there are multiple ways of knowing that play an essential role in advancing knowledge for the health of all life. Science, as concept and process, is translatable into over 500 different Indigenous languages in the U.S. and thousands world-wide. Western science is a powerful approach, but it is not the only one.

Indigenous science provides a wealth of knowledge and a powerful alternative paradigm by which we understand the natural world and our relation to it. Embedded in cultural frameworks of respect, reciprocity, responsibility and reverence for the earth, Indigenous science lies within a worldview where knowledge is coupled to responsibility and human activity is aligned with ecological principles and natural law, rather than against them. We need both ways of knowing if we are to advance knowledge and sustainability.

LET US MARCH NOT JUST FOR SCIENCE

- BUT FOR SCIENCES!

We acknowledge and honor our ancestors and draw attention to the ways in which Indigenous communities have been negatively impacted by the misguided use of Western scientific research and institutional power. Our communities have been used as research subjects, experienced environmental racism, extractive industries that harm our homelands and have witnessed Indigenous science and the rights of Indigenous peoples dismissed by institutions of Western science.

While Indigenous science is an ancient and dynamic body of knowledge, embedded in sophisticated cultural epistemologies, it has long been marginalized by the institutions of contemporary Western science. However, traditional knowledge is increasingly recognized as a source of concepts, models, philosophies and practices which can inform the design of new sustainability solutions. It is both ancient and urgent.

INDIGENOUS SCIENCE SUPPORTS FLOURISHING OF PEOPLE AND PLANET

Indigenous science offers both key insights and philosophical frameworks for problem solving that includes human values, which are much needed as we face challenges such as climate change, sustainable resource management, health disparities and the need for healing the ecological damage we have done.

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.

Indigenous communities have partnered with Western science to address environmental justice, health disparities, and intergenerational trauma in our communities. We have championed innovation and technology in science from agriculture to medicine. New ecological insights have been generated through sharing of Indigenous science. Indigenous communities and Western science continue to promote diversity within STEM fields. Each year Indigenous people graduate with Ph.D.'s, M.D.'s, M.S.'s and related degrees that benefit our collective societies. We also recognize and promote the advancement of culture-bearers, Elders, hunters and gatherers who strengthen our communities through traditional practices.

Our tribal communities need more culturally embedded scientists and at the same time, institutions of Western science need more Indigenous perspectives. The next generation of scientists needs to be well- positioned for growing collaboration with Indigenous science. Thus we call for enhanced support for inclusion of Indigenous science in mainstream education, for the benefit of all. We envision a productive symbiosis between Indigenous and Western knowledges that serve our shared goals of sustainability for land and culture. This symbiosis requires mutual respect for the intellectual sovereignty of both Indigenous and Western sciences.

As members of the Indigenous science community, we endorse and support the March for Science – and we encourage Indigenous people and allies to participate in the national march in DC or a satellite march. Let us engage the power of both Indigenous and Western science on behalf of the living Earth. Let our Indigenous voices be heard.

IN SOLIDARITY

DR. ROBIN WALL KIMMERER (Citizen Potawatomi Nation). Professor of Environmental and Forest Biology, Director Center for Native Peoples and the Environment, SUNY College of Environmental Science and Forestry, Syracuse, NY

DR. ROSALYN LAPIER (Blackfeet/Metis). PhD. Research Associate, Women's Studies, Environmental Studies, and Native American Religion. Harvard Divinity School

DR. MELISSA K. NELSON (Anishinaabe [Turtle Mountain Chippewa]). Associate Professor of American Indian Studies, San Francisco State University, President of the Cultural Conservancy, San Francisco, CA

DR. KYLE P. WHYTE (Citizen Potawatomi Nation). Timnick Chair in the Humanities, Associate Professor of Philosophy and Community Sustainability, Michigan State University, East Lansing, MI

NEIL PATTERSON, JR. (Tuscarora). Assistant Director, Center for Native Peoples and the Environment, SUNY College of Environmental Science and Forestry, Syracuse, NY and EPA Tribal Science Council.

DR. PATTY LOEW, Ph.D. Professor. Department of Life Sciences Communication. University of Wisconsin-Madison

PATRICIA COCHRAN (Inupiat). Executive Director, Alaska Native Science Commission, Anchorage, AK

DR. GREGORY A. CAJETE (Tewa-Santa Clara Pueblo). Director of Native American Studies-University College, Professor of Language, Literacy and Sociocultural Studies-College of Education, University of New Mexico

DR. DEBORAH MCGREGOR (Anishinaabe). Associate Professor, Canada Research Chair, Indigenous Environmental Justice, Osgoode Hall Law School and Faculty of Environmental Studies, York University

DR. LEROY LITTLE BEAR,JD. (Blackfoot). Professor Emeritus, University of Lethbridge, Alberta, Canada

DR. KARLETTA CHIEF, (Navajo). Assistant Professor and Extension Specialist, Department of Soil, Water and Environmental Science. University of Arizona

LESLIE HARPER (Leech Lake Ojibwe), President, National Coalition of Native American Language Schools and Programs

NAMAKA RAWLINS (Hawaiian), Aha Punana Leo, Hilo, Hawaii

ABAKI BECK (Blackfeet/Metis), Founder, POC On-Line Classroom and Daughters of Violence Zine

LET US ENGAGE THE POWER OF BOTH INDIGENOUS AND WESTERN SCIENCE ON BEHALF OF THE LIVING EARTH

Indigenous Knowledge Guides the Conservation of Culturally Important Plants

Roxanne Hoorn, Mongabay: 3 Jan 2023 ***Link***

In this long-term collaborative study, Indigenous Knowledge expands on western science methods, assessing the ecological health of plants and their cultural usefulness. The Karuk Tribe in northern California has traditionally managed plants for food, fiber, and medicine, but decades of fire suppression and climate change are threatening culturally important species. Researchers partnered with Karuk Tribe land stewards to understand how fire suppression and drought have affected the quality of four plants central to their food security and culture.

Ripe berries on an Elder bush, Edal Anton Lefterov, 19 Aug 2007.

https://commons.wikimedia.org/wiki/File:Sambucus-berries.jpg. Creative Commons Attribution-Share Alike 3.0 Unported license

Science North launches expanded focus on Indigenous knowledge

TBnewsWatch.com Staff: Nov 21, 2022 ***Link***

THUNDER BAY — Science North has launched a project it says will dramatically expand its Indigenous outreach efforts and incorporate Indigenous knowledge and perspectives more broadly throughout its programming. The agency announced it would undertake the new project, dubbed Indigenous Ways of Knowing, at a press conference in Thunder Bay on Monday, backed by a $200,000 donation from TD Bank. Science North says the "sector-leading initiative" will help the agency meet its commitments to reconciliation, providing capacity to boost outreach to Indigenous communities and incorporate Indigenous knowledge widely across its programming. "It's important for us to include all different perspectives, and that will be the first time that's done in a science centre in our country," said Science North CEO Ashley Larose. The project will see Science North "invest time engaging with elders and youth, learning about Northern Ontario Indigenous communities' needs and wants as they relate to Science North's operations and programming, with the ultimate goal of creating an organization where Indigenous people feel a strong sense of belonging."

Osage Nation students talk with first Indigenous woman in space on NASA downlink from ISS *Olivia McCourry, Tulsa World: 23 Nov 2022* *Link*

Students from the Osage Nation were given the opportunity to ask questions of NASA astronaut Nicole Mann about all things space on Wednesday. Through a remote video link from the International Space Station to Pawhuska, Mann, a member of the Wailacki of the Round Valley Indian Tribes and the first Native American woman to go to space, answered questions that ranged from how the space station is powered to whether astronauts grow tomatoes. Mann has been on her ISS mission since Oct. 5. She also discussed how meteors can be monitored from space and announced an upcoming cargo ship that will deliver science materials for an experiment called Veggie 5. The program will allow astronauts to determine the best way to grow dwarf tomatoes in different growth environments in space. At the end, astronauts will taste the tomatoes to decide the best one, she said in the video.

Screen Shot 14 Feb 2023 from YouTube NASA Live: *https://www.youtube.com/watch?v=CwUUJzZCkd4&t=5s*

The first indigenous woman in space tells of her experience on the ISS

Lisa Jennings, Bolly Inside: 22 Dec 2022 **Link**

Nicole Mann recently made history when she embarked on a mission to the International Space Station (ISS) in October. More than 600 people can boast that they are on track, but Mann has a special difference. She is the first indigenous woman to fly into space. In Mann's most recent mission, she is aboard the SpaceX shuttle as her commander of the Dragon spacecraft mission. This Marine Corps pilot and her NASA astronaut also happens to be a member of the Wailaki tribe of Roundher Valley Indian tribes. To her credit, she will be 20 years after the first Indian flew into space, and she will spend six months on the ISS to begin a series of experiments.

Astronauts Eric Boe, Nicole Mann and Chris Ferguson, 2 Aug 2018, NASA Johnson on Flickr. Attribution-NonCommercial-No Derivatives 2.0 Generic (CC BY-NC-ND 2.0)

First Nations University of Canada using Indigenous knowledge for new high school science lessons

CBC News: 2 Jan 2023 [Link]

A new science teaching resource developed by the First Nations University of Canada (FNUniv) is bringing together Indigenous knowledge and modern science. It's called the National Science Laboratory Video Lessons for Indigenous Youth. The material includes interviews with elders and knowledge keepers, laboratory manuals and videos for high school biology, chemistry and physics classes. Arzu Sardarli, a physics and mathematics professor at FNUniv and leader of the project, said Indigenous knowledge on topics like the efficiency of dog sleds and retaining heat in teepees is rooted in science. "People of course didn't know about Newton's laws," Sardarli said. "But now we use those examples and try to explain to students that Indigenous people knew how to decrease the friction between the sled and snow.

Screen shot of the homepage above appears thanks to permission of Professor Arzu Sardali, First Nations University of Canada, via email 29 Jan 2023.

arcticyouthambassadors MEET THE 2023-2024 ARCTIC YOUTH AMBASSADORS!

Charitie Ropati (Yup'ik & Samoan) is a 21 year old education and environmental activist who worked to implement an accurate and inclusive sub-curriculum of Indigenous peoples in Western pedagogy in Alaska. She also was an integral part in passing policy at the Anchorage School District that allowed students to wear their cultural regalia during graduation. This is policy that is still in place.

She is a researcher who studies the intersections of plant ecology, permafrost, and cultural resilience in coastal Native communities at Columbia University in the Griffin Lab. She also works on the Co-Production of knowledge and is a member of the Earth Network at the Columbia Climate School.

She was awarded Champion for Change by the Center for Native American Youth for her work in education and she has been been featured and nationally recognized for her advocacy in Teen Vogue, The Malala Fund, The Guardian and elsewhere. She has been recognized as a 2022 "In the Know" Change maker.

To learn more about the Arctic Youth Ambassadors Program and to follow their accomplishments visit us at www.arcticyouthambassadors.org

Osoyoos water forum starts with Salmon People

Don Urquhart, Times Chronicle, 3 Nov 2022 ***Link***

In the Okanagan Valley of British Columbia, the Nk'mip (Osoyoos Lake) Water Science Forum centered teachings about Syilx Okanagan law, values, principles, and governance. Facilitator Kelly Terbasket from the Syilx nation explained, "Decolonizing is learning how to decentre ourselves and put ourselves in the circle as one part of the circle, not the centre of the circle". Chief Clarence Louie, Osoyoos Indian Band Chief, at the opening ceremony highlighted the importance of relationships to the salmon people of the lake and river. He pointed out, "When humans do something that may impact nature the questions an Indigenous person will ask are: Are the salmon people going to be okay? Is the land going to be okay? Are the four-legged relatives going to be okay? Are the humans going to be okay? That question – are the humans going to be okay – should always come after the other questions and that is the way our people look at things."

Sanikiluaq man earns national honours for his environmental work

Meral Jamal, Nunatsiaq News: 16 Dec 2022 ***Link***

For more than 30 years, Lucassie Arragutainaq has been working to make sure Inuit voices were heard when it came to addressing climate change. “The Inuit were talking about climate change when it wasn’t even being mentioned in the scientific community,” he said in an interview with Nunatsiaq News this week. Arragutainaq, from Sanikiluaq, was honoured for his work recently when he was presented the 2022 Northern Science Award at the ArcticNet annual scientific meeting on Dec. 8. The award from Polar Knowledge Canada, a federal agency, recognizes a person who has made a significant contribution and furthered the public’s understanding of the Canadian north.

Sanikiluaq resident Lucassie Arragutainaq is a recipient of the 2022 Northern Science Award from Polar Knowledge Canada. He was honoured for his work in Inuit research and climate stewardship, especially around Hudson Bay. (Photo courtesy of Polar Knowledge Canada)

New exhibition Indigenous Ingenuity: An Interactive Adventure now open at the Ontario Science Centre *Ontario Science Centre, CISION: Nov 03, 2022* *Link* *Link*

Created by the Montreal Science Centre, this unique exhibition explores how innovations of First Peoples from North America shape our world. TORONTO, Nov. 3, 2022 /CNW/ - The ingenuity of First Peoples from North America is all around us. Created by the Montreal Science Centre and designed in collaboration with knowledge bearers from First Nations, Inuit and Métis communities, Indigenous Ingenuity: An Interactive Adventure celebrates the knowledge, culture and history of Indigenous peoples.

"The Ontario Science Centre is excited to host Indigenous Ingenuity," said CEO Paul Kortenaar. "By exploring Indigenous inventions through the lens of science and hands-on activities, this visiting exhibition showcases how Indigenous science is timeless and continues to influence our society today. We welcome everyone to enjoy this exhibition and learn, play and discover together." Indigenous Ingenuity, which runs until April 16, 2023, invites visitors to experience the innovative processes that give rise to Indigenous knowledge by observing nature, listening to knowledge bearers, experimenting with scientific principles and sharing experiences with others. With a bear and trickster as guides, visitors can take part in a virtual canoe race, build an igloo, test a kayak's centre of gravity and more.

Build an igloo at Indigenous Ingenuity: An Interactive Adventure on now at the Ontario Science Centre! Celebrate the knowledge, culture and history of Indigenous peoples by exploring Indigenous inventions through hands-on activities. *(CNW Group/Ontario Science Centre).*

Image with permission Ontario Science Centre via email 6 Feb 2023.

Indigenous lore and the fire knowledge we ignore

DEVDISCOURSE: 19 Dec 2022 ***Link***

At the core of Indigenous approaches to fire is Traditional law and lore. Indigenous law is coded in the lore, the stories that define culture. Both lore and law are rooted in the landscape. According to lore, the landscape will convey its need for burning based on factors such as the accumulation of dead plant material or the decline in resource conditions. These stories may also convey the penalties for not following the laws of the land, as the Buttes do, or as depicted in Aboriginal fire paintings.

Representative image Image Credit: Flickr


Fig @figoreilly · Dec 6, 2022
As a black woman on a national science show, I intentionally wear braids and my curly Afro to normalize black hair in stem. In this pic, I'm wearing cornrows to study plants being sent to space at NASA.
Mission Unstoppable and 2 others
1,090
10.5K
105K

Indigenous lands hold the world's healthiest forests – but only when their rights are protected

Latoya Abulu, Laurel Sutherland, Mongabay: 7 Nov 2022 ***Link***

The world's healthiest tropical forests are located in protected Indigenous areas (PIAs), according to a new study. However, research shows that forests with minimal human modification exist only on protected Indigenous lands. Indigenous lands that are unprotected lower forest integrity. Researchers believe the lower integrity of forests on Indigenous lands is due to mineral, oil, and gas deposits that are located on their lands and financial incentives for people to deforest in unprotected areas. According to the researchers, strengthening Indigenous peoples' land rights is critical to reaching global conservation and climate goals.

Aerial shot of deforestation in the Karipuna Indigenous Territory in the state of Rondônia, in November 2021. Photo by Alexandre Cruz Noronha/Amazônia Real (CC BY-NC-ND 2.0).

How Miss Native UA Nadira Mitchell is using her Diné culture to shift the framework in conservation and tribal rights

Sohi Kang, The Daily Wildcat: 17 Dec 2022 ***Link***

Though Nadira Mitchell, 21, is now a senior at the University of Arizona, she still remembers what one professor said in a natural resources class during her freshman year. “What the Native Americans were doing back then was not science,” Mitchell recalled them saying. She felt shocked by the words and wondered if they were joking. Looking around the classroom, Mitchell hoped that she might catch the look of another student who shared her same thoughts. Instead, she was left feeling alone, with no one else seeming fazed by the instructor’s statement. As a Diné Navajo student, she instinctively felt what the professor said was wrong. From an early age, she was taught the importance of being outdoors, learning and exploring her environment. She would be encouraged to learn what plants and animals were beneficial or could cause harm. During monsoon season, she would collect as many snails as she could find and tally the number on a cardboard box.

Nadira Mitchell stands next to her presentation on the effects of trash on javelina abundance and wildlife species richness for the University of Arizona’s School of Natural Resources & the Environment.
https://www.instagram.com/p/Ckj0CDIJZQR

‘We Need to Understand — We are Nature:’ Indigenous Leaders Speak Out at COP15

Tina Knezevic, World Wildlife Fund: December 16, 2022, Link

On the eve of the world’s environment ministers arriving in Montreal for COP15’s endgame negotiations, WWF-Canada hosted a press conference in the media room featuring speakers from three Indigenous nations. It was an opportunity to promote one of WWF-Canada’s goals for a Global Biodiversity Framework: ensure future protected areas advance Indigenous people’s rights and priorities while providing maximum benefit for both biodiversity and carbon storage. This is especially crucial because past approaches have focused on setting aside protected areas on a map without prioritizing Indigenous people. That time is over.

WWF-Canada’s president and CEO Megan Leslie opened the press conference by introducing the three speakers — Steven Nitah of Łutsël K’é Dene First Nation, Nadina Gardiner of Cumberland House Cree Nation and Stephanie Thorassie of Sayisi Dene First Nation. James Snider, WWF-Canada’s VP of science, knowledge and innovation, offered closing thoughts. “What can the majority, dominant societies learn from Indigenous Peoples and the way we view our relationship with nature?” asked Nitah, adding that “getting to 30 per cent is not going to cut it. We need to change our worldviews, we need to have a better relationship with nature, we need to understand that we are nature”

WWF-Canada press conference on Indigenous-led conservation in Canada © Holly Chapman WWF

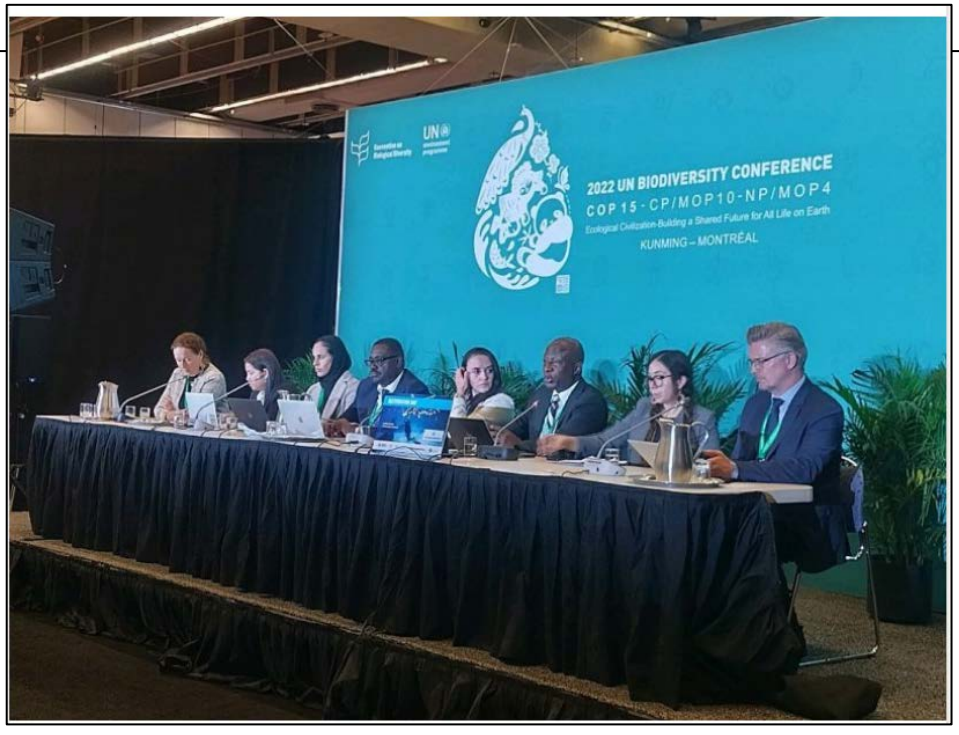
Image and text with permission of Joshua Ostroff, WWF Canada via email 24 Feb 2023

EDITOR: *Yolanda Lopez-Maldonado recently joined our network as one of our First Nations Board members. Below is a LinkedIn article describing her presentation to COP15 in Montreal, Dec 2022.*

SCIENCE AND TRADITIONAL KNOWLEDGE

Yolanda López • 1st
Science specialist
1w •

It took millions of years to have the #life that now inhabits the #earth - millions of years in which that the diversifying life reached its balance. Time is thus the essential ingredient for having a beautiful planet as the one we have nowadays. But in our modern & rapid world there is no time at all. In addition, we all tend to forget the fact that we are dealing with life - living #organisms and populations, including our own human life.
#Ecosystems support human and non-human life on Earth. Thus, there is an urgent need to revive damaged ecosystems since this is one of the remaining chances we have to reach a destination that assures the preservation of our Earth. The healthier our ecosystems are, the healthier the planet - and its people. However, it is also important to restore our relationship with nature in order to not destroy us along with other creatures in this Earth. This particular issue, is something that we can learn from #indigenouspeoples
Last December, I had the honour to speak about this at the session "Science and traditional knowledge"; at #cop15 in Montreal last December. Coordinated by the #UN Decade on Ecosystem Restoration (co-led by the Food and Agricultural Organization of the United Nations and the United Nations Environmental Program) this full day event gathered a broad range of partners, actors, and organizations to present progress and success stories 🌎
FAO #food #event #people #science #environmental #restoration #biodiversité #biodiversity #biodiversiteit #biodiversidade



Government of Canada invests in Indigenous-led Natural Climate Solutions across the country

Environment and Climate Change Canada, CISION: Dec 09, 2022 Link

MONTRÉAL, Dec. 9, 2022 /CNW/ - Indigenous peoples have been stewards of our natural environment since time immemorial. Conserving and restoring nature through Traditional Knowledge and Indigenous Science is fundamental to addressing the twin crises of climate change and biodiversity loss. Climate change is altering the water cycle, resulting in flooding, droughts, and wildfires. It is also one of the key drivers of biodiversity loss. Conserving and restoring nature are important ways for mitigating and adapting to climate change. Canada is committed to implementing nature-based solutions to build resilience and help meet the country's 2030 and 2050 greenhouse gas emissions reduction targets. Today, the Honourable Steven Guilbeault, Minister of Environment and Climate Change, announced $5.8 million in funding for 14 Indigenous-led initiatives, as part of the Indigenous-led Natural Climate Solutions initiative. These initiatives are taking place across the country, focusing on building capacity and reducing greenhouse gas emissions, while providing important benefits to support increased well-being and resilience in Indigenous Nations and communities.

Ancient Indigenous practice could curtail today's wildfires

Ayurella Horn-Muller, AXIOS: Dec 08, 2022, Link

Flashback: Between 1500 and 1900, Indigenous tribes in the southwestern U.S. regularly burned grasses, small trees and vegetation to clear out debris, invite plant growth and utilize more land for farming, Toya tells Axios. That practice removed much of the fuel that could burn in wildfires, researchers say. What they found: In past periods of intensive cultural burning, most of the stands of trees researchers looked at lacked any significant fire-climate patterns. They view that as evidence of the Indigenous fire management itself diminishing the relationship between climate and fire.

Jeff Head
https://www.flickr.com/photos/jeff_head/20799665403.
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https://creativecommons.org/publicdomain/mark/1.0

"Our ancestors really knew the landscape. They were confident in burning the areas that they wanted to burn, because they saw in the future that it will benefit, not only themselves, but everything in the environment," said Toya. Yes, but: The impacts were localized — meaning these strategies were found to lessen climate conditions that drive wildfires on smaller geographic scales and landscapes, but not broader, regional ones.

Inspired by her First Nations heritage and love of nature, PhD student researches salmon conservation ***Chris Sasaki, U of T News: 20 Dec 2022*** ***Link***

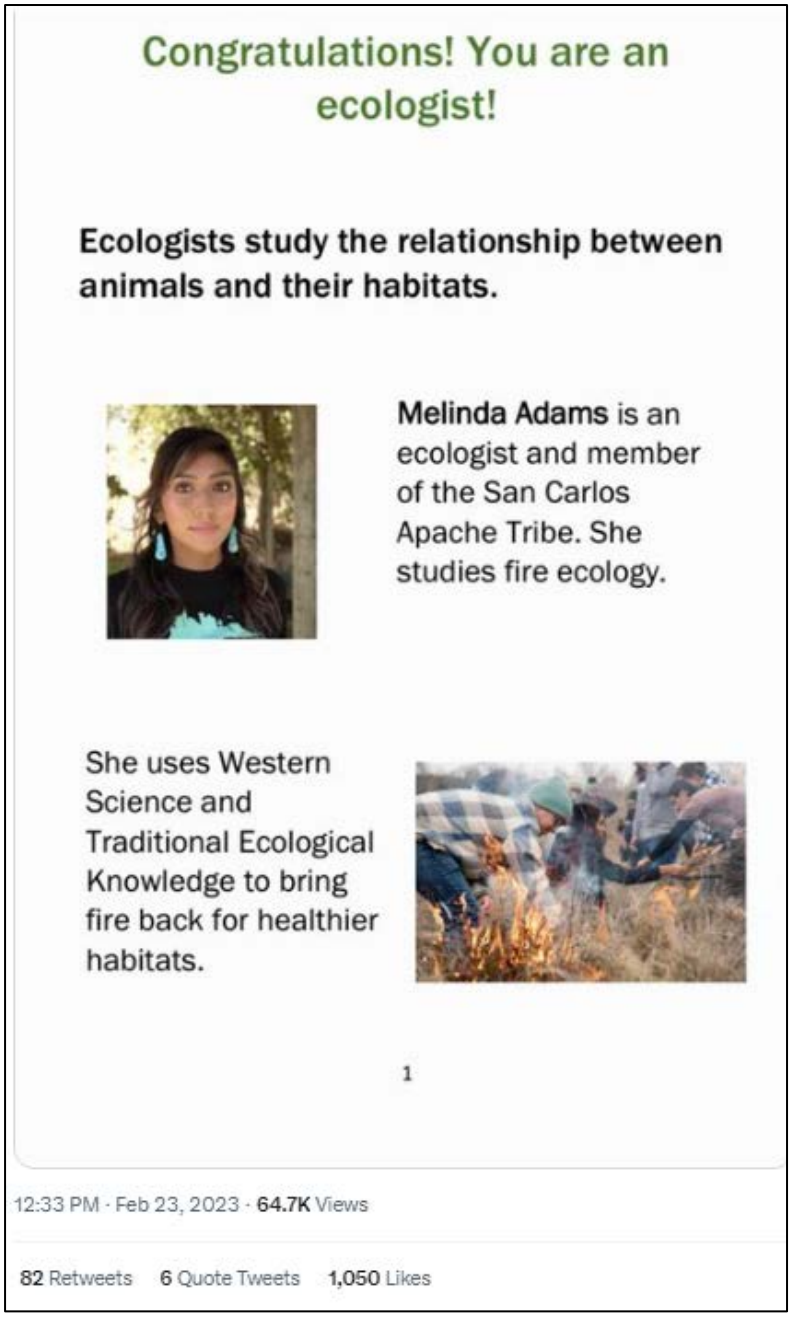
PhD student Jaime Grimm's research into fish pathogens and salmon conservation – and how she conducts that research – is the culmination of growing up amidst the rich ecosystems of Canada's West Coast, parents who nurtured a love of nature in her, and her Salteaux First Nations heritage. "Growing up in British Columbia, I spent a lot of time in nature," she says, "which was a hugely privileged position to be in. We went camping every summer and my mother and I would spend all day looking for frogs and toads and salamanders – it was like a treasure hunt. She inspired that interest in me." In high school, Grimm started taking biology courses. "I was like wow, this is so interesting, so fun. We did a section on marine invertebrates – sea slugs, clams, crabs. I was completely enamored and decided then that I wanted to pursue a science degree and be a biologist."

https://www.instagram.com/jaimegrimm

Dr. Kat Milligan-McClellan ❄️ Retweeted

Melinda Adams
@Scholar_Melinda

This is lovely. I was asked if I wouldn't mind being a featured scientist in a Sierra Nevada outdoor education 3rd grade curriculum 🥹
To More Indigenous scientists 👩‍🔬🔥🌿🙌🏽
#Natives instem #WOC #WomenInSTEM #Indigenous #NativeAmerican #NativeTwitter



Ada Ricci ▸ **Cultivating Indigenous Permaculture Knowledge**
January 31 at 10:14 AM ·

Indigenous peoples worldwide honor plants, not only as our sustainers, but as our oldest teachers who share teachings of generosity, creativity, sustainability and joy. By their living examples, plants spur our imaginations of how we might live. By braiding indigenous Traditional Ecological Knowledge (TEK) with modern tools of botanical science, Robin Kimmerer, professor of Environmental Science and Forestry, of Potawatomi ancestry, explores the question: "If plants are our teachers, what are their lessons, and how might we become better students"?

Story—Teachings—Protocol

YOUTUBE.COM

Robin Kimmerer - Mishkos Kenomagwen: The Teachings of Grass | Bioneers

Indigenous peoples worldwide honor plants, not only as our sustainers, but as our oldest t...

e) EUROPE

Biopiracy: The fight for fairness in the scientific exploitation of natural resources

Lara BULLENS, France24: Dec 09, 2022 Link

Countries from the Global South are demanding that wealthy nations share the benefits of the biological resources extracted from their lands that are then used for medical, agricultural or industrial purposes. Known as “biopiracy”, the issue is a major roadblock at the UN’s COP15 talks on biodiversity. In 2016, Indian environmental activist Vandana Shiva spoke at Arizona State University’s Global Institute of Sustainability and Innovation, explaining the problematic practice of seed patenting in layman’s terms. “A patent is a right of an inventor to exclude anyone else from making, using, selling, distributing what is invented. The problem is that, when it comes to seed, seed is not an invention,” she said, going on to explain that seeds had been exchanged long before the arrival of patents. “But then you come to me and you take the seed. And then you patent it and say, ‘I created it and now you pay me royalties.’ That’s biopiracy.”

VIDEO: Yuin traditional owners form all-Indigenous scientific dive team to care for sea country

Fatima Olumee, Vanessa Milton and Wayne Carberry, ABC News: 19 Dec 2022 Link

As 'sea people', the people of the Yuin nation have a cultural obligation to care for their traditional waters on the NSW far south coast. Now, a crew of 7 traditional owners have just completed a scientific diver course, with the aim to undertake scientific research and remediation work to care for their sea country. The men have all spent their lives free diving but began their training with little or no SCUBA experience, completing the rigorous scientific diver course in just a couple of weeks. The course is one of a number of training initiatives delivered through a NSW Department of Primary Industries program to build capacity amongst traditional owners.

As 'sea people', the people of the Yuin nation have a cultural obligation to care for their traditional waters on the NSW far south coast. Now, a crew of 7 traditional owners have just completed a scientific diver course, with the aim to undertake scientific research and remediation work to care for their sea country. The men have all spent their lives free diving but began their training with little or no SCUBA experience, completing the rigorous scientific diver course in just a couple of weeks. The course is one of a number of training initiatives delivered through a NSW Department of Primary Industries program to build capacity amongst traditional owners. *(Fatima Olumee, Vanessa Milton and Wayne Carberry)*

https://www.facebook.com/IndigenousScie1/posts/pfbid0Dz1a6Ciy58bDvCY3HVUz3Cep3Joyenkmn1UJSHTeXfvUeuKXtGcfgyaNaKAuwiEQl

You Retweeted

Karlie Alinta Noon @karlie_moon_ · Dec 14, 2022

It is with extreme gratitude to announce that our book, Astronomy: Sky Country co-written with @KrystalDeNapoli has been shortlisted for the Victorian Premier's Literary Awards 🥹✨💖

Victorian Premier's Literary Awards 2023

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The 2023 Victorian Premier's Literary Awards

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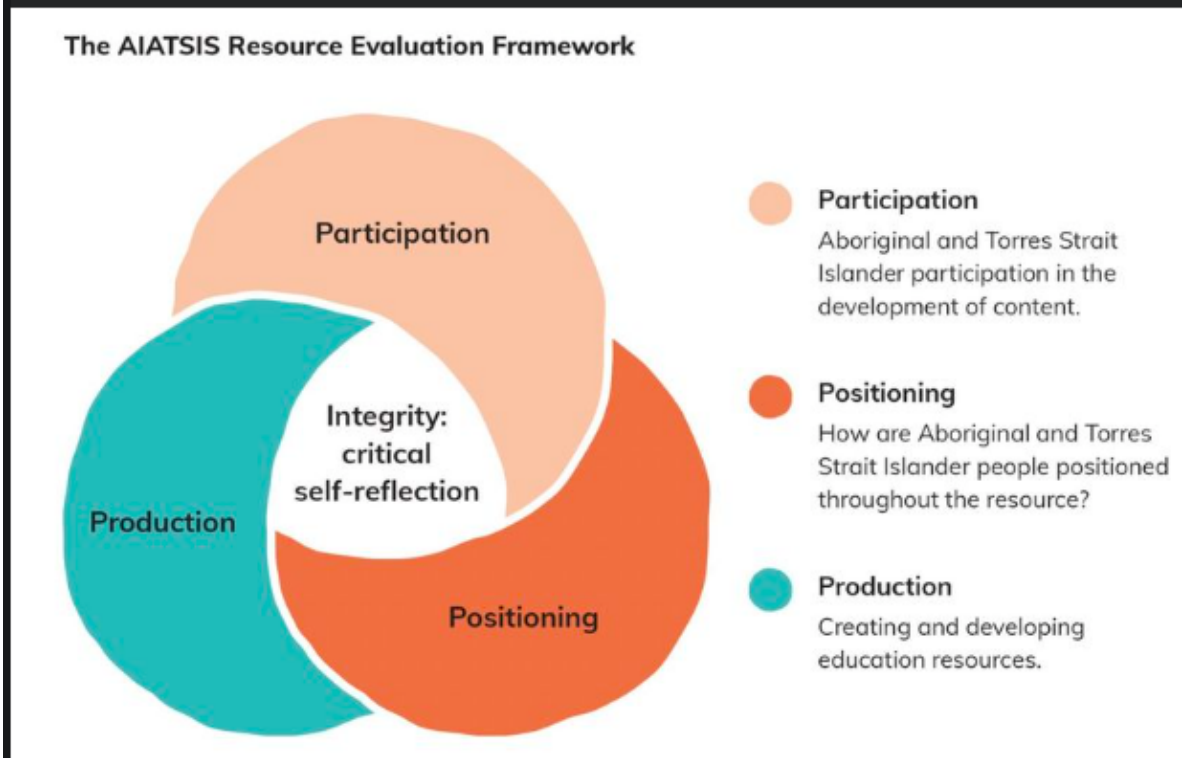
11 36 236

Shaz Leah

October 6, 2022 ·

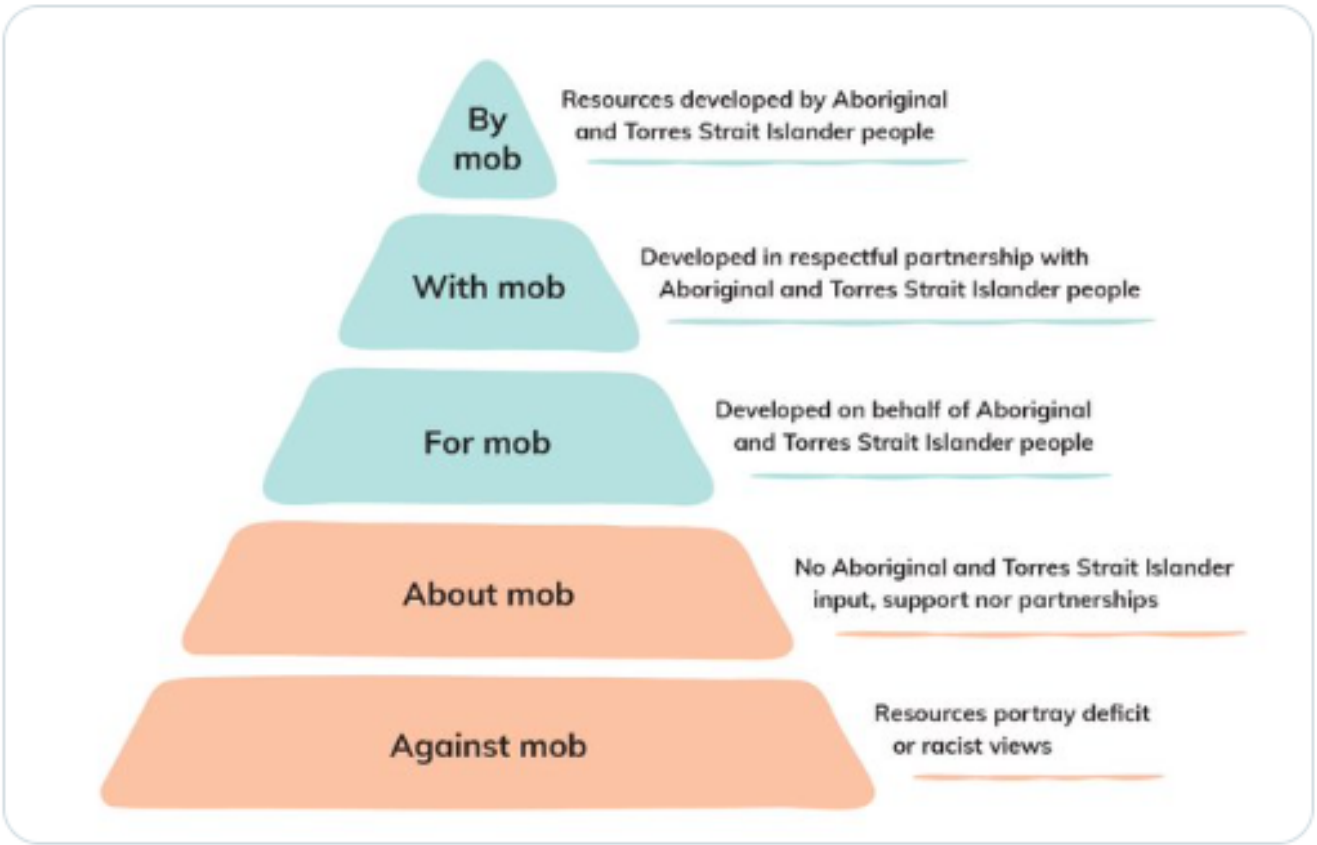
The AIATSIS Guide to evaluating and selecting education resources assists non-Indigenous educators, and others to critically self-reflect on history and the effects that this has on pedagogical practises today. You can download a copy here: https://aiatsis.gov.au/.../guide-evaluating-and-selecting...



11 1 comment 4 shares

Indigenous Science Network
@IndigenousScie1

The AIATSIS guide to evaluating and selecting education resources. Check it out teachers!! It assists non-Indigenous educators, and others to critically self-reflect on history and the effects that this has on pedagogical practises today. Very useful.
aiatsis.gov.au/education/guid...



Indigenous Literacy Foundation and 6 others

10:47 AM · Mar 14, 2023

Songlines Art, Culture, Education
November 3, 2022 ·

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Songlines Art, Culture, Education
October 31, 2022 ·

Designed with Teachers and Educators in mind.

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Exhibition offer scientific glimpse into Indigenous culture and traditions

APTN News, 29 Jan 2023 [Link]

#aptnontario

Exhibition offer scientific glimpse into Indigenous culture and traditions | APTN News

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276 views 3 weeks ago
A fun, educational and hands-on exhibition at the Ontario Science Centre in Toronto has become a popular attraction.

Indigenous Ingenuity offers a glimpse into First Nation, Métis and Inuit culture and traditions. Show more

1 Comment
Sort by

Add a comment...

Wave Length 3 weeks ago
What a wonderful idea,and such an innovative way to teach about the natural ways of the first Nations, and humans in general. And how the sciences join. But I would think the natural sciences have not devastated the planet like the science of technology.

Reply

Image and text from [APTN YouTube], 29 Jan 2023

Kindred's Worldview Poster by Four Arrows Link

Kindred World was founded on the values and beliefs of stewarding and protecting all life as interconnected, interdependent, and therefore, Kindred. Over the past quarter century, we have focused on creating sustainable, peace-loving humans through the integrated and interdisciplinary fields of science that support a life-affirming worldview, identified below in the Indigenous Worldview column. You can read more about our non-profit's history here, and discover how our many initiatives help ourselves and our culture make the shift from a Dominator Worldview to an Indigenous Worldview.

DOMINANT AND INDIGENOUS WORLDVIEW MANIFESTATIONS

This chart is not intended as a rigid binary, but a true dichotomy best viewed as a continuum. It is meant to encourage seeking complementarity and dialogue. Absolutism is discouraged with the realization we are participating in DW precepts to some degree. The chart assumes that all diverse cultures, religions, and philosophies c be grouped under one of the two worldviews. "Indigenous Worldview" does not belong to a race or group of people, b Indigenous cultures who still hold on to their traditional place-based knowledge are the wisdom keepers of this origin Nature-based worldview. All people are indigenous to Earth and have the right and the responsibility to practice and teach the IW precepts. All have the responsibility to support Indigenous sovereignty, dignity, and use of traditional lan

Common Dominant Worldview Manifestations

1. Rigid hierarchy
2. Fear-based thoughts and behaviors
3. Living without strong social purpose
4. Focus on self and personal gain
5. Rigid and discriminatory gender stereotypes
6. Materialistic
7. Earth as an an unloving "it"
8. More head than heart
9. Competition to feel superior
10. Lacking empathy
11. Anthropocentric
12. Words used to deceive self or others
13. Truth claims as absolute
14. Rigid boundaries and fragmented systems
15. Unfamiliarity with alternative consciousness
16. Disbelief in spiritual energies
17. Disregard for holistic interconnectedness
18. Minimal contact with others
19. Emphasis on theory and rhetoric
20. Acceptance of authoritarianism
21. Time as linear
22. Dualistic thinking
23. Acceptance of injustice
24. Emphasis on rights
25. Fighting as highest expression of courage
26. Ceremony as rote formality
27. Learning as didactic
28. Trance as dangerous or stemming from evil
29. Human nature as corrupt or evil
30. Humor as entertainment
31. Conflict mitigated via revenge, punishment
32. Learning is fragmented and theoretical
33. Personal vitality minimalized
34. Social laws of society are primary
35. Self-knowledge not prioritized
36. Autonomy for self
37. Nature as dangerous
38. Other-than-human beings are not sentient
39. Low respect for women
40. Linear thinking

Common Indigenous Worldview Manifestations

1. Non-hierarchical
2. Courage and fearless trust in the universe
3. Socially purposeful life
4. Emphasis on community welfare
5. Respect for various gender roles and fluidity
6. Non-materialistic
7. Earth and all systems as living and loving
8. Inseparability of head and heart
9. Competition to develop positive potential
10. Empathetic
11. Animistic and biocentric
12. Words as sacred, truthfulness as essential
13. Truth seen as multifaceted, accepting mysterious
14. Flexible boundaries and interconnected systems
15. Regular use of alternative consciousness
16. Recognition of spiritual energies
17. Emphasis on holistic interconnectedness
18. High interpersonal engagement,touching
19. Inseparability of knowledge and action
20. Resistance to authoritarianism
21. Time as cyclical
22. Complementary duality
23. Intolerance of injustice
24. Emphasis on responsibility
25. Generosity as highest expression of courage
26. Ceremony as life-sustaining
27. Learning as experiential and collaborative
28. Trance-based learning as natural and essential
29. Human nature as good but malleable
30. Humor as essential tool for coping
31. Conflict resolution as return to community
32. Learning is holistic and place based
33. Personal vitality is essential
34. Laws of Nature are primary
35. Holistic Self-knowledge is most important
36. Autonomy for group and future generations
37. Nature as benevolent
38. All lifeforms are sentient
39. High respect for women
40. Non-linear thinking

For non-Indigenous who are concerned about misappropriation, see the peer reviewed article

Indigenous Land & Data Stewards Lab: Indigenous Science Resource Hub

Dr. Dominique M. David-Chavez et.al. accessed 15 Feb 2023 ***Link***

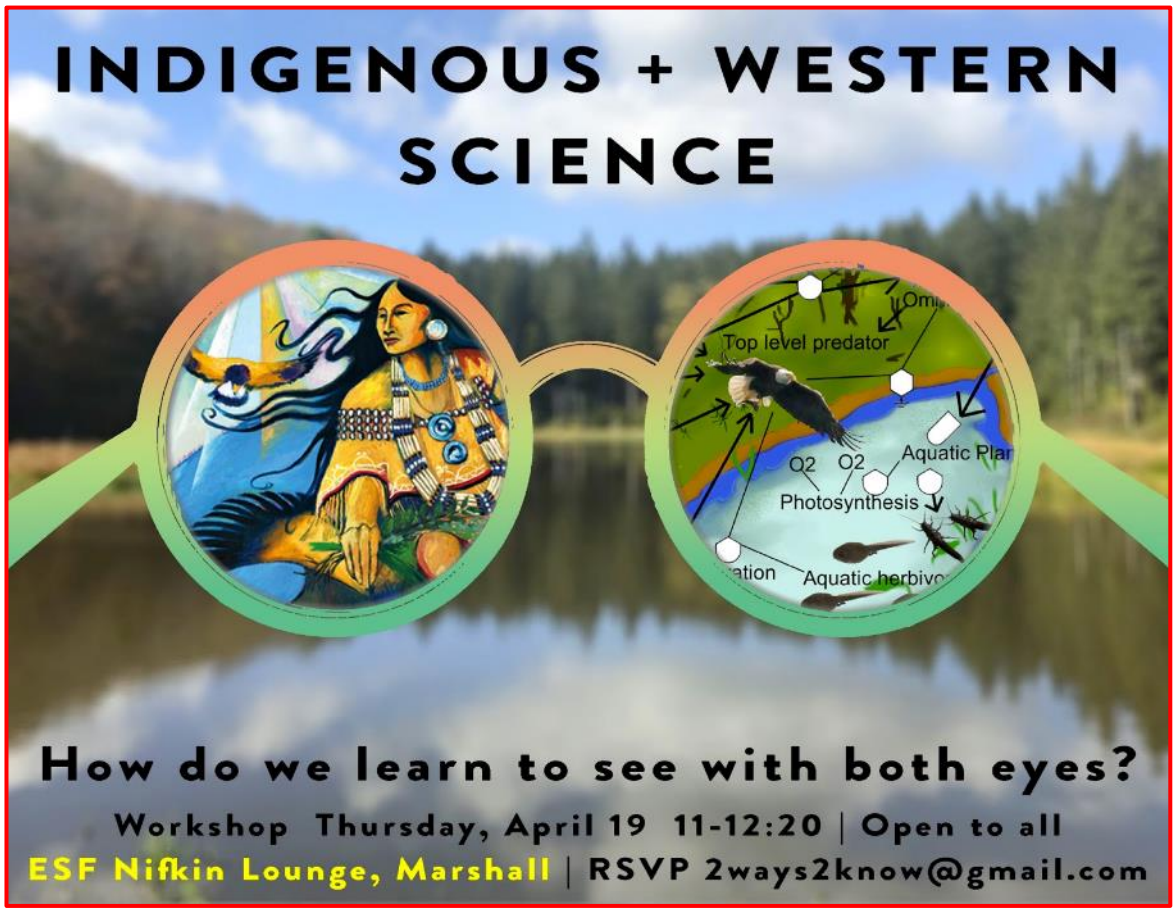
Engaging diverse ways of knowing for our shared futures, we are building a living resource hub for scholars and community members who are interested in Indigenous science research and education. This page is designed for self-guided learning to connect you with a variety of helpful resources and sources 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.

2,778 Tweets

Strong Nations @strong_nations · Dec 7, 2022

Find the perfect read for tweens/teens at strongnations.com In Sisters of the Never Sea Native American Lily & English Wendy embark on a journey to Neverland. Braiding Sweetgrass for YAs brings Indigenous wisdom & scientific knowledge to a new generation.

INDIGENOUS AND WESTERN SCIENCE – DECOLONISE, COLLABORATE, CELEBRATE



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 six bulletins from Aug '21 to Nov '22), the debate continues. We have also included a series of commentaries on issues around decolonisation and racism. WARNING: Richard Dawkins ahead.

New Zealand says indigenous 'ways of knowing' are equal to modern science *The College Fix: 7 Dec 2021* *Link*

Oxford University Professor Emeritus Richard Dawkins wrote a letter to the Royal Society of New Zealand regarding its "appalling failure" to defend science in the face of modern wokeism. The issue at hand is an article by the University of Chicago's Jerry Coyne, professor emeritus in the ecology department, who related a message from a Kiwi colleague:

Now in NZ the Government is trying to insert something called 'Matauranga' into science courses. Matauranga means the knowledge system of the Māori. It includes reference to various gods e.g., Tane the god of the forest is said to be the creator of humans, and of all plants and creatures of the forest. Rain happens when the goddess Papatuanuku sheds tears. Māori try to claim that they have always been scientists. Their political demand is that Matauranga must be acknowledged as the equal of western (pakeha) science; that without this, Māori children will continue to fail in science at school

Myths Do Not Belong in Science Classes: Letter to the Royal Society of New Zealand

Richard Dawkins; Richard Dawkins Foundation: 4 Dec 2021 Link

Dr Roger Ridley

Royal Society of New Zealand

Dear Dr Ridley

I have read Jerry Coyne's long, detailed and fair-minded critique of the ludicrous move to incorporate Māori "ways of knowing" into science curricula in New Zealand, and the frankly appalling failure of the Royal Society of New Zealand to stand up for science – which is, after all, what your Society exists to do.

The world is full of thousands of creation myths and other colourful legends, any of which might be taught alongside Māori myths. Why choose Māori myths? For no better reason than that Amoris arrived in New Zealand a few centuries before Europeans. That would be a good reason to teach Māori mythology in anthropology classes. Arguably there's even better reason for Australian schools to teach the myths of their indigenous peoples, who arrived tens of thousands of years before Europeans.

The Royal Society of New Zealand, like the Royal Society of which I have the honour to be a Fellow, is supposed to stand for science. Not "Western" science, not "European" science, not "White" science, not "Colonialist" science. Just science. Science is science is science, and it doesn't matter who does it, or where, or what "tradition" they may have been brought up in.

Image of Richard Dawkins by David Shankbone from Wikipedia, https://creativecommons.org/licenses/by/3.0

Despite 'not real science' jibe, mātauranga conference at Auckland Uni

Will Trafford, Te Ao Māori News: 24 November 2022 ***Link***

The University of Auckland has held its first mātauranga Māori symposium, just a year after some of its academics came under fire for saying indigenous knowledge shouldn't be directly classified as science. The symposium took place at Waipapa Marae at the university's city campus today, and showcased multiple aspects of mātauranga Māori. Architecture, moko signatures, iwi histories and traditions through to whakairo (carving), weaving, multimedia installations, visual arts, photography and the revival of Māori aute were all featured.

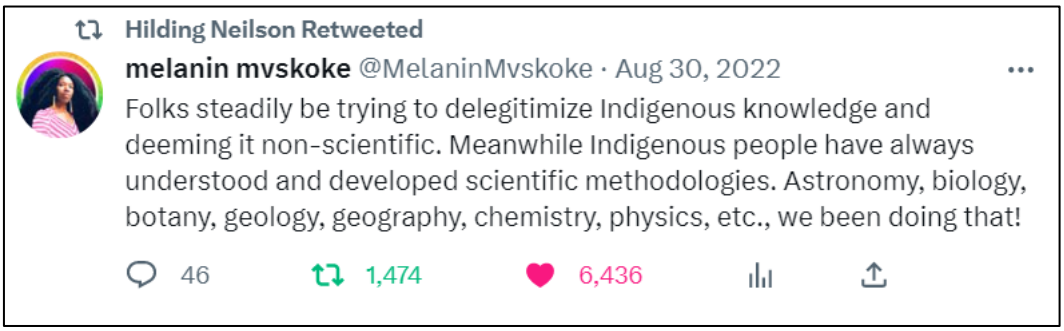
Image of University of Auckland clock tower by Colin Rose, from Wikimedia Commons, Licensed CC-BY 2.0

We Need Indigenous Science

Jeanine Pfeiffer, Open Mind: No date [Link]

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.

Indigenous knowledge is exceptionally nuanced and deep. It is cumulative, place-based, and acquired largely through observation and experimentation on both large and small scales. Indigenous science—including contributions highlighted in the U.N. Framework Convention on Climate Change and the Indigenous Climate Hub—is crowd-sourced citizen science taken to the next level, constructed over multiple generations in close relationship with the species, habitats, bodies of water, weather patterns, and other natural phenomena surrounding the observers. It is not superstition or isolated observation or pseudoscience, all misinterpretations stemming from the racist and classist assumptions of Western explorers and ethnographers starting in the 17th century and persisting to the present day.



The scientific significance of traditional knowledge

ROBERT MOSHE THOMPSON, The Manitoban: 29 Nov 2022 ***Link***

Traditional and non-western ways of knowing are often othered in the sciences. Oftentimes, people refer to western medicine as “conventional” and traditional medicine as “alternative.” For example, Indigenous communities in Canada used controlled burning to prevent forest fires, but many scientists ignored this practice until recently. Some traditional Indigenous practices were even outlawed. The Canadian government placed a ban on traditional medicine and ceremonies that lasted several decades. Today, researchers are beginning to realize the value of non-western science. After scientific analysis, certain folk medicines have been shown to have valuable properties. Camel urine has been used in traditional healing in parts of Asia, and scientists have found that it contains compounds that are toxic to cancer cells and protect the liver. The process of using folk medicine to create lab-tested medications is known as bioprospecting. Although this type of research has been occurring in one form or another for hundreds of years, it has become much more advanced in recent times.

Indigenous Science

Discussion in 'Science and Religion' started by Quintessence: Nov 19, 2022, ***Link***

EDITOR: An online forum on ***Science and Religion*** *that considers Indigenous Science contains many examples of the typical western v Indigenous tropes usually seen when empiricists and generalist commentators give their uninformed opinions on why there is only one true science. Check the link above to view pages of this stuff!*

I recently had the privilege of listening to a speaker who introduced the concept of indigenous science to me. For those who aren't aware, my own formal education is in life science, with an emphasis on ecosystem-scale questions and applications like conservation. Ecological approaches tend to be less reductionistic and more holistic in how they understand the subject, but indigenous science takes this to a whole different level, apparently! Dr. Pfeiffer has written a good (though a bit lengthy) article about indigenous science and why it is important. Indigenous science is, in many respects, intermarried with indigenous religion rather than compartmentalized like how things are often viewed in Western culture. Here's a little snippet from the article to kick things off:

> "Indigenous peoples continuously occupying specific ecosystems for centuries or millennia maintain intimate familiarity with how those ecologies function. From the Yanomami in the Amazon to the Inupiat in the Arctic, Native communities successfully shepherded resources through a combination of deeply held belief systems and sophisticated adaptive management technologies, augmented by the pervasive accumulation, intergenerational transfer, and application of scientific knowledge. This is why Native peoples developed scientific terminology to categorize and characterize species and interspecies relationships—such as birds associated with specific fruiting trees, or the migration patterns of walrus and caribou—long before Western science invented academic fields like agronomy, animal behavior, ecology, climate science, restoration ecology, soil science, and zoology.

During my career as a university lecturer, whenever scientists in my field alluded to place-based or experiential knowledge, they described it as “anecdotal” or derived from an “informant,” downgrading local expertise as non-scientific or ancillary to “real” science. In every natural resource management agency meeting I attend as a consultant; decisions are ostensibly based on the “best available science.” Translation? Anything written by someone with degrees accompanying their name, even if it was published decades ago or is the sole article on the topic, will take precedence over the unpublished expertise of a Native or local practitioner." –

Dr. Pfeiffer in **We Need Indigenous Science** | OpenMind Magazine

Scholars Work at 'Decolonizing Light' to Combat 'Colonialism in Contemporary Physics'

Daniel Nuccio, The Ohio Star: 19 Dec 2022 Link

A group of scholars at Concordia University in Montreal have dedicated themselves to "Decolonizing Light." The effort is not about banning flashlights, but rather advancing other ways of knowing about light, science and physics. The group's tagline is "Tracing and countering colonialism in contemporary physics." The effort, funded by the Canadian government, seeks both to explore "ways and approaches to decolonize science, such as revitalizing and restoring Indigenous knowledges" and to develop "a culture of critical reflection and investigation of the relation of science and colonialism," according to the project's website. Led by Tanja Tajmel, a special equity, diversity and inclusion advisor to Concordia's dean, core members of the group also include physicist Ingo Salzmann and Associate Professor of First Peoples Studies Louellyn White.

Decolonizing Light: A Project Exploring Ways to Decolonize Physics

Ingo Salzmann, Louellyn White, Donna Kahérakwas Goodleaf, and Tanja Tajmel: Physics in Canada / Vol. 77, No. 1 (2021) *Link*

Decolonization — Why physics, why light?

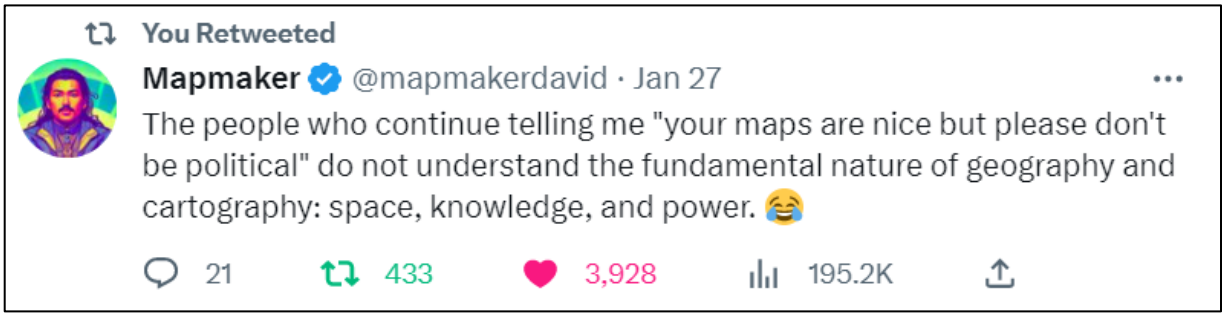
The aim of our project is exploring approaches to decolonize physics, of both its narratives and contemporary research. We decided to focus on physics, as this discipline plays a special role in the field of science due to its unique scientific authority. Physics is commonly regarded as the "most objective" and the "hardest" science [2], it fundamentally defines scientific key concepts such as energy, matter, force, light, space and time, for all the other sciences. It is the narrative of physics as objective and as socially independent [3] that constitutes and stabilizes its knowledge authority in relation to all other knowledge systems.

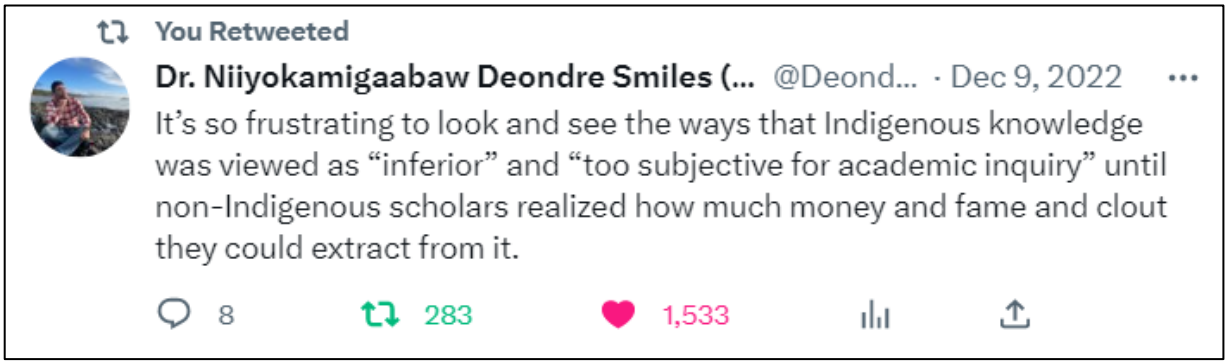
Science and decolonization: Keeping the debate on track

Jeff Kochan, Canadian Dimension: 4 Jan 2023 ***Link***

Recently, a well-known conservative pundit, Rex Murphy, ridiculed a federally funded project at Concordia University that bears the name Decolonizing Light. “What could that mean?” wonders Murphy. “How could a person decolonize penicillin? Or anaesthesia? Or open-heart surgery?” These are all fair, and even fun, questions, as far as they go. As the Concordia project’s full name makes clear, the focus of their research is not on light, as such, but on the science of light, or, still more specifically, on the community of physicists who study light. The word ‘light’ in Decolonizing Light is just a short and snappy way of referring to this expert community, in the same way that “Ottawa” can be a short and snappy way of referring to the politicians and public servants who govern Canada. In the description given on Ottawa’s funding website, the Concordia researchers promise to focus on “the professional culture of physics, the decolonization of which is aspired [to] in the proposed project.”

I think Murphy is probably right that science is “the very closest attempt in all of history to remove all prejudice, of any kind, from the attempt to answer any question.” But one might still question his apparent judgment that the Decolonizing Light project contradicts, rather than contributes, to this attempt. Sure, an abstraction like science has no skin colour, but scientists most certainly do. Murphy may be right that “the colour of the skin of a discoverer has no bearing on the discovery,” but the more pertinent issue is whether skin colour, statistically speaking, affects one’s chances of working in a STEM field. Based on recent data, the answer appears to be yes. Decolonizing Light might thus be seen as an example of science’s ongoing effort to self-correct in the interests of its own objectivity.

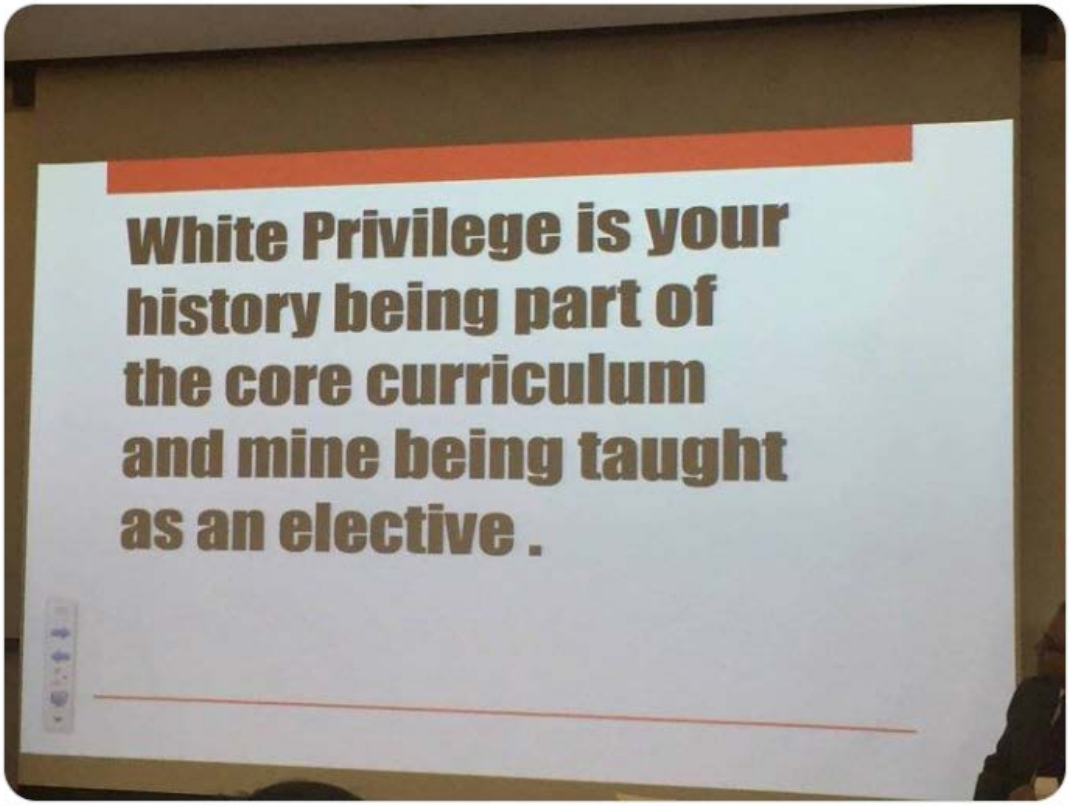




You Retweeted

Indigenous @AmericanIndian8 · Feb 13

#INDIGENOUS #TAIRP



12 183 787 12.8K

You Retweeted

Jairo I. Fúnez, PhD @Jairo_I_Funez · Feb 2

A reactionary curriculum movement is upon us. It's banning books, ethnic studies, African American studies. It's silencing the past & ongoing struggles. It's a re-Westernization project seeking to eliminate discourses against colonialism, capitalism, racism, & heteropatriarchy.

10 421 1,042 53.2K

Dr.D @Indiginerd · Feb 23

As an Indigenous scholar (especially being Afro-Indigenous), researching the archival history of your own people is extremely traumatic. Nothing can prepare you. Once you see the ways in which colonial violence persist in our contemporary scholarship you cannot un-see it either.

3 54 255 11.5K

You Retweeted

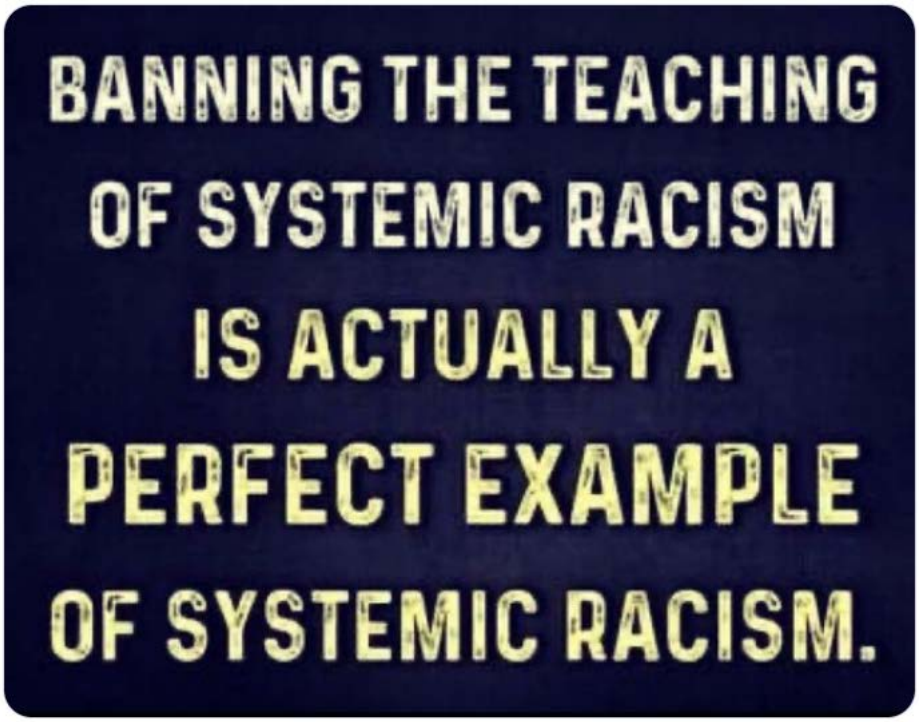
Dr. BlackDeer @DrBlackDeer · Feb 17

One of the big issues I have with being labeled "junior" faculty is that it reinforces the western knowledge hierarchy that only degrees and written word count as expertise. A lot of us have years of cultural knowledge from growing up in community that some PhDs never will.

5 80 721 23.3K

Indigenous @AmericanIndian8 · Feb 15

#INDIGENOUS #TAIRP



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Indigenous @AmericanIndian8 · Feb 18
#INDIGENOUS #TAIRP
@notcapnamerica
chris evans
@chris_notcapn
The people who threw rocks at Ruby Bridges for trying to go to school are now upset their grandchildren might learn about them throwing rocks at Ruby Bridges for trying to go to school.
6
143
577
8,124

Community Development for Bote in Chitwan National Park, Nepal: A Political Ecology of Development Logic of Erasure

Indra Mani Rai, Gavin Melles and Suresh Gautam: 3 Feb 2023 ***Link***

Abstract

The conflict between development and conservation concerns is a perennial topic in sustainable development, and especially significant for marginalized social groups. In Nepal, fortress conservation in protected areas (PA) gave way to a community-based development and natural resource management (CBNRM) narrative of inclusion and participation in so-called buffer zone (BZ) initiatives around national parks. Studies to date show mixed outcomes of the community-based model for marginalized communities, especially for traditional indigenous river and forest dwellers. Academic and government reports of successes and failures of community-based projects in Nepal assume progress is based on traditional indigenous livelihood practices being abandoned and participation in state modernization initiatives in parks and reserves. Thus, despite promises of participation, evidence to date shows a de facto continuation of fortress conservation thinking and erasure of customary knowledge and livelihoods.

Rai, I.M.; Melles, G.; Gautam, S. Community Development for Bote in Chitwan National Park, Nepal: A Political Ecology of Development Logic of Erasure. Sustainability 2023, 15, 2834. https://doi.org/10.3390/su15032834

COP27: On Country, health and Indigenous knowledges

Nina Lansbury, Veronica Matthews, Amba-Rose Atkinson, Janine Mohamed and colleagues; Croaky Health Media: 7 Nov 2022 ***Link***

Abstract

Scientific knowledge is important, but not more important than what our Elders and ancestors have taught us. We need the two ways of knowing to work together. To adapt to climate change, there needs to be both ways of knowing: using the Torres Strait Knowledges in conjunction with western ways. There needs to be mutual respect on both sides." This quote is from Francis Nona, a public health lecturer, registered nurse and Badulaig man from the Torres Strait Islands whose climate change research describes the value of combining western scientific and Indigenous Knowledges. As the sea level rises, the tide might also be turning. Physical environmental changes are occurring as the impacts of climate change manifest. But, more necessary, the tide might be turning to respectfully consider the Knowledges of First Nations Peoples and their experience and resilience to respond to a changing climate.

Meta-Research: Systemic racial disparities in funding rates at the National Science Foundation

Christine Yifeng Chen, Sara S Kahanamoku, Aradhna Tripati, Rosanna A Alegado, Vernon R Morris, Karen Andrade, Justin Hosbey; eLife Sciences: 29 Nov 2022 ***Link***

Abstract

Concerns about systemic racism at academic and research institutions have increased over the past decade. Here, we investigate data from the National Science Foundation (NSF), a major funder of research in the United States, and find evidence for pervasive racial disparities. In particular, white principal investigators (PIs) are consistently funded at higher rates than most non-white PIs. Funding rates for white PIs have also been increasing relative to annual overall rates with time. Moreover, disparities occur across all disciplinary directorates within the NSF and are greater for research proposals. The distributions of average external review scores also exhibit systematic offsets based on PI race. Similar patterns have been described in other research funding bodies, suggesting that racial disparities are widespread. The prevalence and persistence of these racial disparities in funding have cascading impacts that perpetuate a cumulative advantage to white PIs across all of science, technology, engineering, and mathematics.

https://doi.org/10.7554/eLife.83071

Five culturally protected water body practices in Fiji: Current status and contemporary displacement challenges

Ron Vave, Ambio 51: 8 Sept 2021 ***Link***

Abstract

Community-based natural resource management in Oceania has its roots in culturally protected water body (CPWB) practices. However, CPWBs in Fiji have been under-researched regarding what practices exist, and the extent to which they are currently practiced. Archival research and interviews with 201 individuals across Fiji's 189 districts revealed five CPWB types. Conception, Meconium, and Circumcision CPWBs are at risk of practice cessation, while Chiefly investiture and Funerary, have 15% and 42% actively practicing districts, respectively. Primarily serving a ceremonial and food provisioning service, the view that CPWBs do not contribute to biodiversity conservation can be counterproductive to conservation efforts. CPWBs as a place-based practice are eroding due to low awareness by conservation practitioners, and exclusion from community management plans. Knowledge of CPWBs and the practical challenges of implementing them can help conservation practitioners and Indigenous peoples maintain cultural practices, while ensuring food security and conservation into the future.

https://doi.org/10.1007/s13280-021-01620-z

The Sophisticated Maya Astronomy and the Alignment of Their Pyramids

Ecoo sfera, Cultural Colectiva: 14 Jan 2023

The Maya pyramids not only hold the deepest essence of their culture but are proof of sophisticated astronomy and knowledge of the Universe. The great astronomical knowledge of ancient civilizations such as the Sumerians and the perfect alignment of the Egyptian pyramids with the stars is often talked about, but little is said about the sophisticated Maya astronomy. In fact, it has taken Western societies more than five centuries to understand that Maya knowledge is more than just meaningless codices, but has a deep connection to the cosmos and that the ancient peoples already possessed information that modern man has only recently discovered thanks to his technology.

The famous Maya pyramid known as Temple of Kukulcán (as featured on our ISN header). Sourced from Wikipedia: Alastair Rae, London, 18 February 2009. This file is licensed under the Creative Commons Attribution-Share Alike 2.0 Generic license.

Astrophysics and Aboriginal astronomy on TikTok

Alice Motion; Chemistry World: 15 Dec 2022 ***Link***

At the start of 2020, astrophysics PhD student and science communicator Kirsten Banks was looking for a new way to share science with the public. 'I was finishing up my job at Sydney Observatory as a tour guide and around the same time … the pandemic was really starting to take hold, and we were not allowed to go into schools, you weren't allowed to have public events anymore. So I had to change the way that I did science communication very, very drastically.'

Banks has become particularly skilled at sharing science in the short video format supported by the TikTok platform, a big change from the longer in-person sessions she was used to leading as a Sydney Observatory guide. 'I had 90 minutes, sometimes up to two hours, to explain many different things about space, astronomy and the universe,' explains Banks. 'But with TikTok you have 60 seconds … at least when I started it was only up to 60 seconds. That is a very short amount of time.'

As a Wiradjuri scientist, Banks also interweaves Aboriginal astronomy into her videos, particularly when First Nations science represents a 'very useful and relevant example of something that's already been explained in a video'.

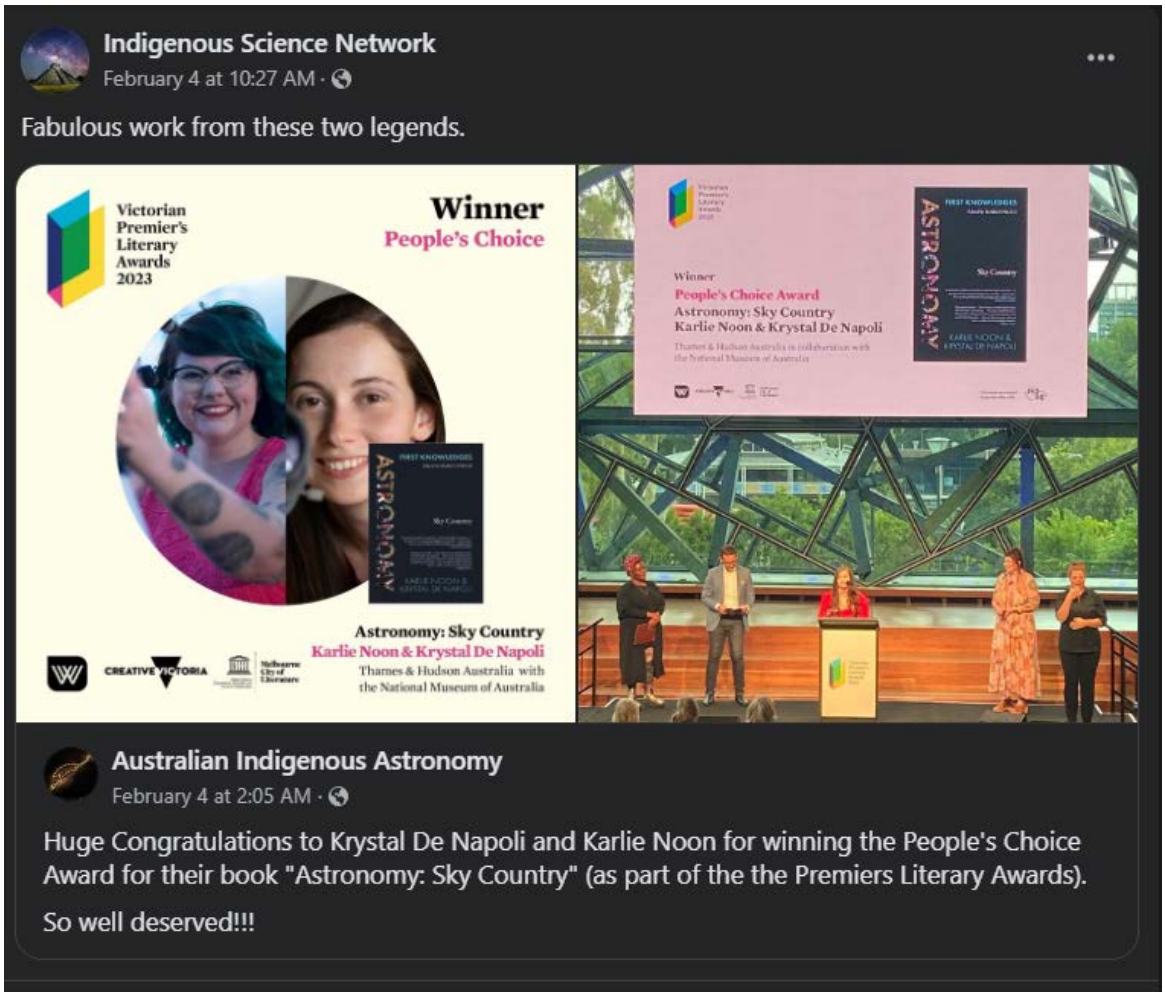
The night sky over Mi'kmaki: A Q&A with astronomer Hilding Neilson

CBC News · Posted: Dec 11, 2022 ***Link***

When Hilding Neilson isn't studying distant objects like exoplanets, he's considering the night sky from a much closer, cultural perspective. "The Mi'kmaq and other Indigenous peoples from around the world have great astronomy stories, stories of the night sky. And those stories contain so much knowledge in science and stretching over millennia," said Neilson, an astronomer and a member of the Qalipu Mi'kmaq First Nation Band. Neilson, who grew up in Pasadena in western Newfoundland, recently moved back to his home province from Toronto to work at Memorial University.

Image from Twitter, accessed 15 Feb 2023

Neilson has always devoted a chunk of his career toward Indigenizing astronomy, and he sees returning to traditional Mi'kmaw territory as an opportunity to continue that work. "We want to look out, and deeper and further, at dimmer objects. But we never really think about looking back, and looking towards the stories of the people that have lived on these lands for millennia," he told CBC Radio's Atlantic Voice in an interview. Hilding Nielson is an astronomer and Professor at Memorial University in St Johns.

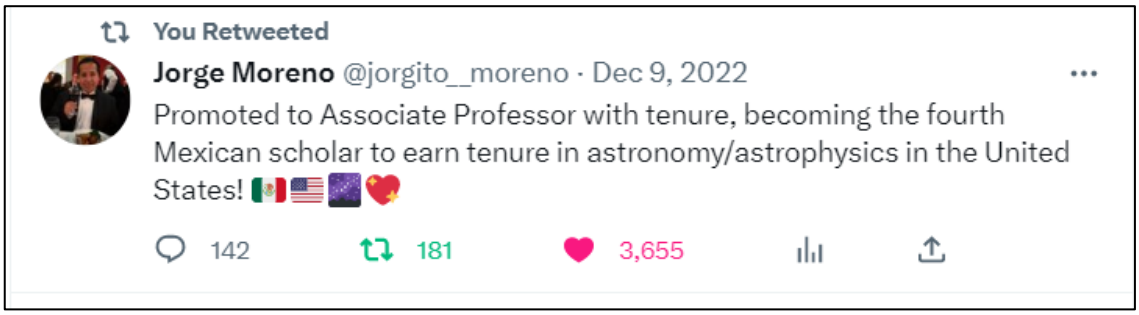


How Indigenous astronomers used the Super Blood Moon to teach cultural lessons

Dan Butler, NITV News: 8 Nov 2022 ***Link***

The pre-colonial skills of Aboriginal and Torres Strait Islander astronomers were astounding, so what did these scientists think of the nocturnal phenomenon? It goes without saying that pre-invasion Indigenous communities took note of lunar eclipses: very little about the natural environment escaped their attention, and that included the movement of the heavens. "These eclipses are quite shocking events if you're not expecting the moon to completely change colour!" says Kirsten Banks, an astrophysicist and science communicator. TikTok-famous as 'AstroKirsten', the Wiradjuri woman is continuing an ancient tradition. "Aboriginal astronomers were the first astronomers of this land," she told NITV.

Jean Beaufort, "Full Moon" image under Public Domain license https://creativecommons.org/publicdomain/zero/1.0/



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 of which we were unaware. Let us know in advance please members!

UPCOMING EVENTS

Queensland Museum 2023 School Program

Looking back, moving forward: recognising Indigenous knowledges

(Australian Academy of Science: 2023) ***Link***

The Australian Academy of Science Public Speaker Series for 2023 is 'Looking back, moving forward: Indigenous knowledges informing our modern world.' Aboriginal and Torres Strait Islander Peoples are the oldest continuous cultures on Earth. The wealth of knowledges gathered over 65,000 years has growing and continued relevance to modern scientific discoveries. Hear how the intersection of Indigenous knowledges is informing our understanding of topics including climate change, agriculture and astronomy.

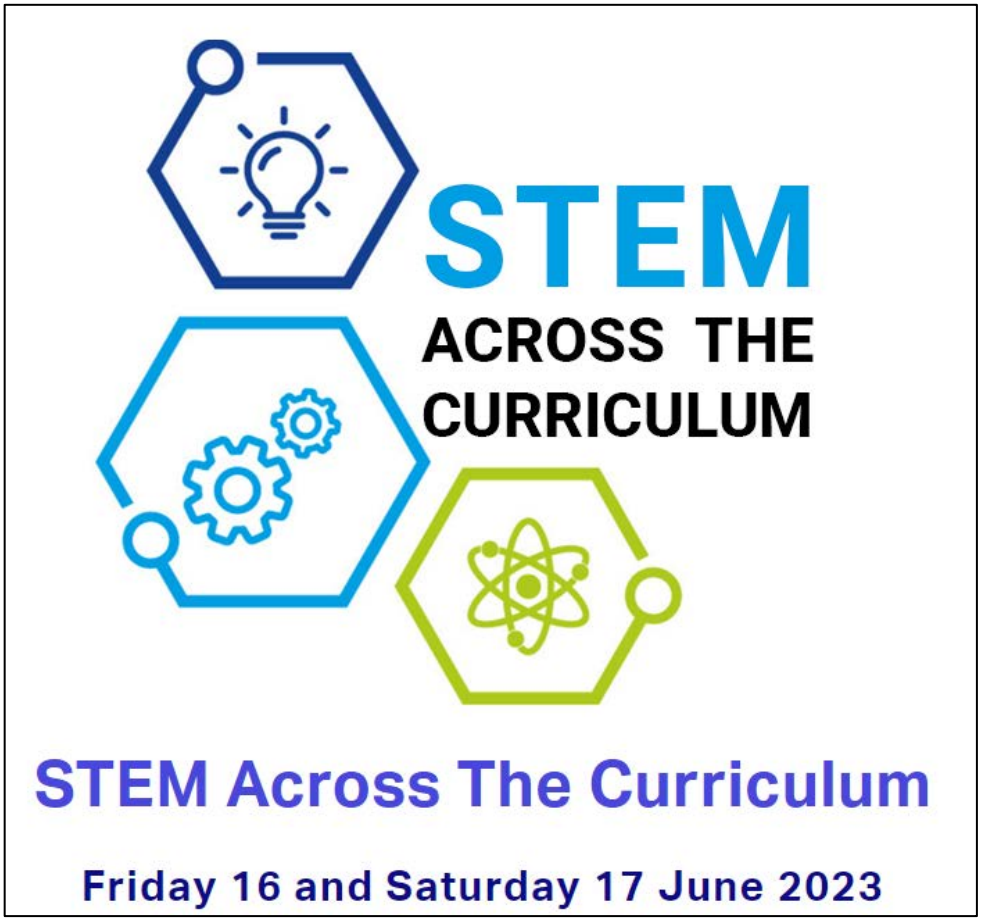
To set the scene for this year's speaker series we will look at the global movement recognising Indigenous knowledges. Fifteen years since the National Apology to the Stolen Generations a referendum is now being planned on an Indigenous Voice to Parliament. But just what are Indigenous knowledges? And how are they, or could they be, used to inform our modern world? Academy Fellow Professor Tom Calma AO FAA FASSA, an Aboriginal elder from the Kungarakan tribal group and a member of the Iwaidja tribal group, will host a discussion with other experts on this topic.

Join Indigenous knowledge holders, researchers, innovators and industry experts to explore the power of combined ideas in 2023! The dates for the six events are:

- 14 February: Recognising Indigenous knowledges
- 11 April
- 13 June
- 8 August
- 10 October
- 12 December

More information on each event will be published as it becomes available.


NATIONAL
EDUCATION
SUMMIT
MELBOURNE


STEM
ACROSS THE
CURRICULUM
STEM Across The Curriculum
Friday 16 and Saturday 17 June 2023

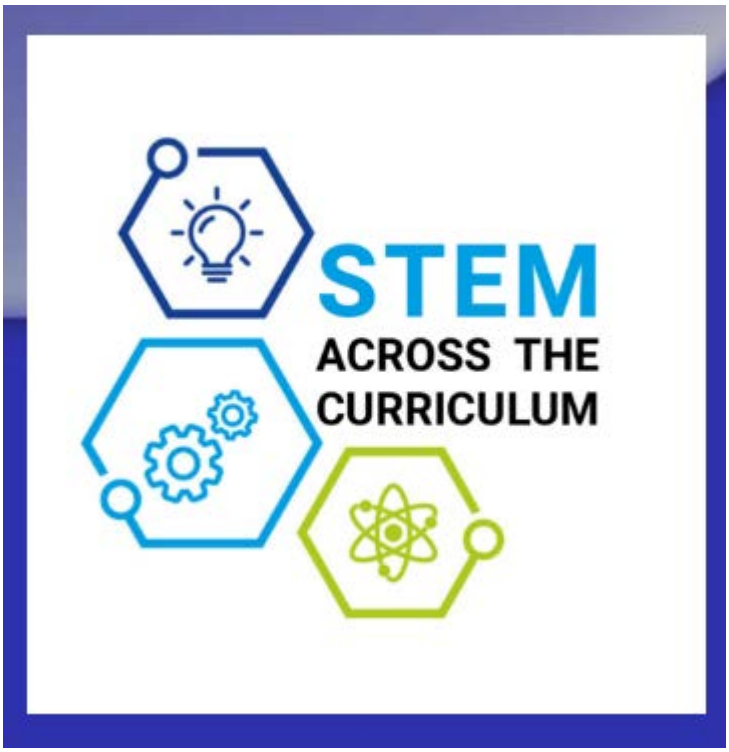

Space to Innovate
CONASTA 70
ADELAIDE
9-12 JULY 2023
UPCOMING
KEY DATES
SEP
01
Call for Workshops open
NOV
25
Call for Workshops close

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
ASERA
AUSTRALASIAN SCIENCE EDUCATION RESEARCH ASSOCIATION LTD
Australasian Science Education Research Association (ASERA) 2023 Conference
ASERA 54
Tuesday 27th to Friday 30th June 2023
Cairns Convention Centre
Sponsored by
JCU
JAMES COOK UNIVERSITY AUSTRALIA
Conference Website
Photo: Tourism Tropical North Queensland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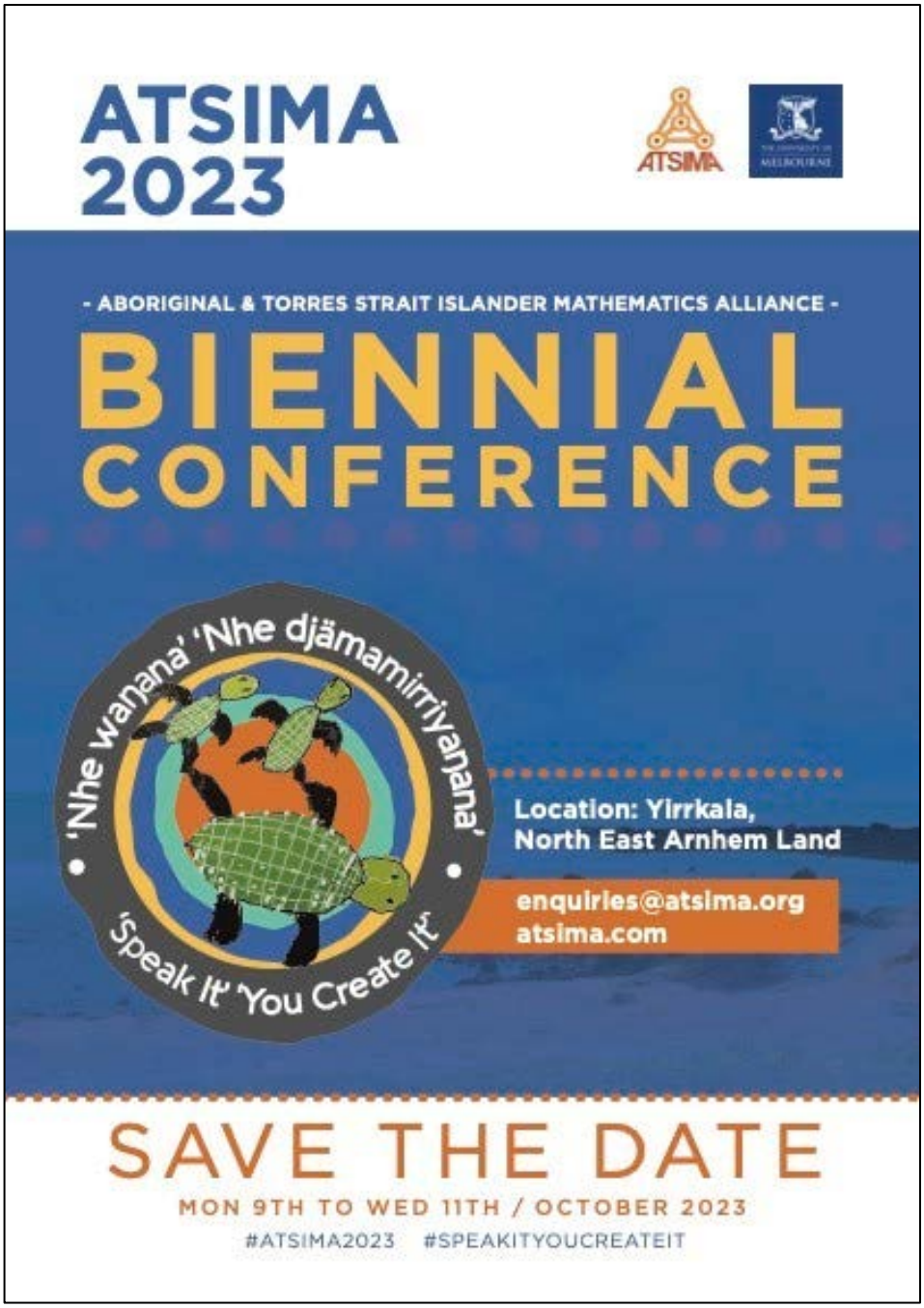
ASERA 54 - 2023 Conference
Face to Face (F2F) Conference at the Cairns Convention Centre
Tuesday 27th June to Friday 30th June 2023
Banner Image courtesy of Tourism Tropical North Queensland



Norte the change of date from August to October 2023.

Aboriginal & Torres Strait Islander Mathematics Alliance
December 20, 2022 ·

SAVE THE DATE
The ATSIMA 2023 conference will be the first mathematics education conference held in a Yolngu Community. It will provide delegates the opportunity to be immersed in a Yolngu Community, in Yolngu Language and Culture and explore the teaching and learning of mathematics that values Aboriginal and Torres Strait Islander cultures.
This is an event not to be missed!
More information coming February 2023.
Please distribute through your networks.

#education #maths #culture #aboriginaleducation #mathematics #stem #mathematicseducation #stemeducation

AUSTRALIAN EVENTS ALREADY HELD

Grand Challenges in Science (Space Exploration) (SEB104)

Indigenous Australian students only

In Grand Challenges in Science (Space Exploration) (SEB104) you will discover numerous concepts from astronomical and space sciences, including Indigenous understandings of science and applications of scientific practice.

This unit is only available to Indigenous Australian students as an affirmative action to increase Indigenous participation in STEM.

What's involved

Overview | Details | Requirements | How to apply

High-achieving Year 11 students entering Year 12 in 2023 have an opportunity to undertake a first-year STEM unit over the summer holidays. This is a two-week intensive program where you complete about 80 hours of study, including lectures, discussion, exercises, and assessment.

The intensive unit will be led by our academics and assisted by current undergraduate students. Once completed, you can receive advanced standing (credit) for your future QUT studies, putting you ahead of your peers and setting you up for future success.

Program dates	9-20 January 2023 9am-5pm each weekday
Applications open	15 July 2022
Applications close	December 2022
Delivery	On campus at QUT Gardens Point
Course contact	■ askqut@qut.edu.au ■ 3138 2000

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:

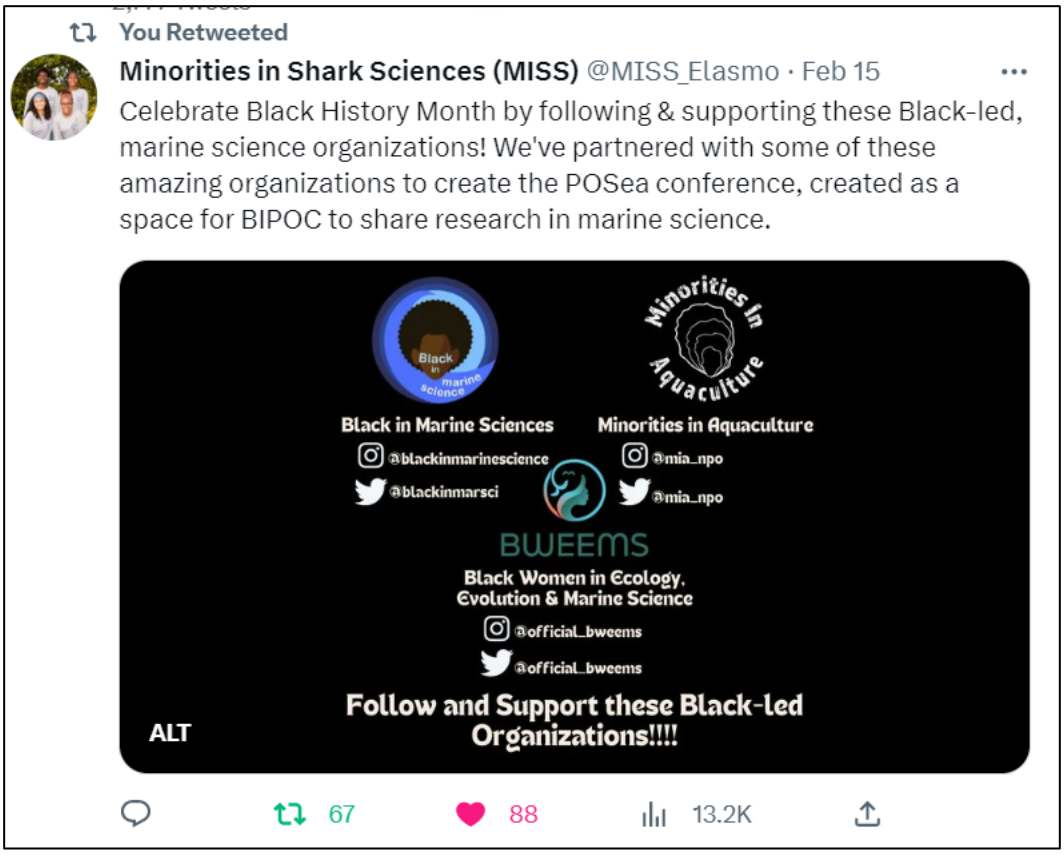
Hilton Chicago, 720 S. Michigan Ave.

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.



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 a Board made up of nine First Nations Co-Editors who view all items before publication. If you are doing something valuable in Indigenous science, teaching or education,

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!

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

About | 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

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

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**.

INTERNATIONAL EVENTS ALREADY HELD

Indigenous Box
February 4 at 9:02 AM ·

This week I had the pleasure of connecting with so many people at the Indigenous Knowledge and Wisdom Centre Education Conference. It was our first ever Indigenous Box booth and our team was fantastic!!

My highlights were many but this one in particular is having the chance to connect with Jody Wilson Raybould. Of course we gifted her a box in exchange for her signing my copy of her book. It was inspiring to attend and I'm grateful for the opportunity. Thank you to IKWC for making space for us.

#buildingprosperity #indigenousbox

Science Moab
November 5, 2022 ·

For Native American Heritage Month we are featuring podcast episodes with Indigenous scientists and knowledge holders.

This week we feature Ann Marie Chischilly, the Executive Director at the Institute for Tribal Environmental Professionals (ITEP). Chischilly works at the national and international advocacy level and is passionate about working with tribes to address climate change and Indigenizing higher education.

This episode of Science Moab was made possible by a Stem Action Grant from the Society for Science.

Today at 11:30 MST on KZMU (90.1 and 106.7 FM or kzmu.org ✅).

Listen anytime here: https://sciencemoab.org/traditional-knowledge-and-climate... ✅

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If you love learning about science from the Colorado Plateau, make sure to subscribe to the Science Moab podcast, leave a review, and donate to keep the science coming! Learn how at sciencemoab.org ✅ or wherever you get your podcasts.

See how the average temperature in your area is changing.
Explore Climate Science Info

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.moccwalk.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

AMERICAN INDIAN RESOURCE CENTER
EQUITY, DIVERSITY, & INCLUSION
THE UNIVERSITY OF UTAH

2022

DAY

Tuesday / 6 DEC

9:00 - 11:00

Side event:

RENEWED HOPE IN A SHARED FUTURE FOR THE PLANET – MAPPING WESTERN SCIENCE WITH AN INDIGENOUS KNOWLEDGE SYSTEM

Organised by: ReImagine Science

Venue: Meeting Rooms 2.41-2.43

Abstract: This interactive session emerges from a two year learning journey with individuals from the United States and Canada, exploring new ways of training scientists. This work led us to recognize a gap between paradigms of Western Scientific approaches and Indigenous Knowledge Systems. We will first share key insights from the learning journey itself. Then participants will embark with us on an experiential exploration of the systems of science and their focus on logic and 'doing,' missing fundamental principles of connection, ethics and courage.

We believe in co-creation between those within the system and the scientists that aspire to serve that system, be it health, environment, energy, agriculture or any number of things. This co-creation approach aligns with an Indigenous Knowledge system.

An Indigenous model of knowledge based on the four directions posits North as Mind, East as Spirit, South as Heart, and West as Body – embodying the Mental, Spiritual, Emotional and Physical aspects of a conscious, sentient world. The 'Four Directions' model has been used extensively by Ken Paul, who will lead the session. North, or Mind, represents Knowledge Systems; East, or Spiritual, embodies the Environment; South, or Emotional, represents Biodiversity; and West, or Physical, represents Technology. We propose that balance across these four domains (and the four quadrants created between them) leads to actions that are sustainable, equitable, and nourishing.

Western Science is firmly rooted in technology and knowledge domains (Mind and Body), which deeply affects the resulting applications for our human and natural systems. We will map the four directions of the Indigenous Knowledge model and the Western Scientific paradigm familiar to most of the participants in the room, and will collectively explore where each of us sits in the circle, in relation to others. We expect a