

SCIENCE & TECHNOLOGY AUSTRALIA

POLICY SUBMISSION

24 JUNE 2024

JOINT STANDING COMMITTEE ON ABORIGINAL AND TORRES STRAIT ISLANDER AFFAIRS INQUIRY: ECONOMIC SELF-DETERMINATION AND OPPORTUNITIES FOR FIRST NATIONS AUSTRALIANS

Science & Technology Australia thanks the [Joint Standing Committee on Aboriginal and Torres Strait Islander Affairs](#) for the opportunity to respond to this inquiry.

Science & Technology Australia is the peak body for the nation's science and technology sectors, representing 140 member organisations and more than 225,000 scientists and technologists. We connect science and technology with governments, business and the community to advance science's role in solving some of humanity's greatest challenges.

Supporting First Nations people's STEM skills maximises economic opportunities – in careers for individuals and in progressing research and innovation to develop new products and services. As such, our submission primarily focuses on point 1 and 3 of the inquiry's terms of reference.

Advancing STEM-related economic self-determination opportunities for First Nations people and communities requires actions at several levels. Approaches must span foundational educational knowledge and skills (in primary and secondary schooling), university qualifications, enabling First Nations-led research, engaging in genuine First Nations partnerships, supporting First Nations STEM knowledge through to meaningful careers for First Nations people. Individually and collectively, these can deliver exciting opportunities for Australia's First Nations people.

Boosting STEM skills and presenting STEM pathways as viable future careers – or business opportunities – offer tangible options to develop First Nations people's economic self-determination through owning, running and working in Indigenous STEM programs.

While the path ahead can seem difficult and 'solutions' complicated and expensive to implement, this does not need to be the case. Several Science & Technology Australia members demonstrate First Nations-led solutions can lead to amazing results. Drawing on our policy experience and member insights, we are pleased to present 20 recommendations that span seven themes for consideration.

In keeping with the language used in the inquiry title and terms of reference, Science & Technology Australia has used First Nations in this submission when talking about people, and the term Indigenous when referring to knowledge and knowledge systems. We mean no disrespect to people who may use alternate language, such as Aboriginal and Torres Strait Islander people.

Science & Technology Australia Recommendations

1. The Australian Government should commission the First Nations-led review of the higher education system recommended in the Australian Universities Accord, with broad terms of reference and a panel of First Nations higher education experts across various career stages.
2. The Australian Government should develop needs-based funding for First Nations students that covers the extra costs involved in supporting these students to completion, as informed by the strong evidence base.
3. The Australian Government should – in consultation with First Nations researchers – examine First Nations representation in governance and leadership positions in the university sector.
4. Implementation of the University Accord should include legislating a dedicated funding minimum for the Indigenous Student Support Program to enable universities to deliver strong support services for First Nations students.
5. Ensure programs to support First Nations learners that are First Nations-led and designed are prioritised for funding and support.
6. Ensure First Nations youth can see a future in STEM: invest in teacher professional training that connects the teaching and learning of STEM with Indigenous knowledges.
7. Ensure national education initiatives like NAPLAN can cater for First Nations students and that cultural context is not a disadvantage in testing.
8. State and territory governments and universities should work together to develop – and fund – locally tailored programs to support all First Nations students’ engagement in STEM, as well as pathways to university, regardless of where they live.
9. The Australian Government should provide ongoing operational funding for the National Indigenous STEM Professionals Network.
10. The Australian Research Council (ARC) should establish a Designated Committee for engagement and consultation with First Nations academics.
11. The Australian Government should provide additional funding to the ARC to expand the Discovery Indigenous scheme, with a dedicated focus to boost Discovery Indigenous grants in STEM fields.
12. In addition to its funding and research targets, the National Health and Medical Research Council (NHMRC) should consider developing a targeted funding streams or fellowships for First Nations health and medical researchers.
13. Universities and research institutes should review their current training in culturally safe research practices, if they have any at all, and require all staff to undertake this on a regular basis.
14. The ARC, NHMRC and Medica, Research Future Fund (MRFF) should develop dedicated funding to support genuine engagement with First Nations communities that supports:
 - remunerating communities for involvement in research, and
 - work to protect Indigenous intellectual property (IP).
15. The ARC, NHMRC and MRFF should consider developing a dedicated grant process that would better support proper engagement and community-driven and co-designed research with First Nations communities that includes:
 - greater flexibility allowed for proposed methods and project outlines to enable engagement with First Nations communities to take the most appropriate form
 - longer grant periods, and simpler processes for applying for no-cost extensions
 - direct funding streams to support long-term engagement with First Nations communities, and
 - a section in grant applications asking applicants to address how their research may affect First Nations people and communities, as well as outlining the researchers’ relevant training to ensure cultural safety.



16. The Australian Government should undertake an audit of all research grant programs beyond the ARC, NHMRC and MRFF (across government departments there are ~176 programs supporting R&D, spanning 14 different portfolios) to examine their approaches to genuine support for First Nations research and ensure a whole-of-Government uplift, even for these smaller programs.
17. The Australian Government should work with the university sector – including First Nations research leaders – to develop and implement the research framework recommended by the Australian Universities Accord to strengthen First Nations research and research leadership.
18. Elevate and invest in Indigenous knowledge, including First Nations peoples' perspectives on science, technology and innovation through:
 - supporting best-practice programs and initiatives to build meaningful connections with Indigenous knowledge in school and university curricula so that First Nations people and their histories and knowledges are valued by all Australians
 - embracing Indigenous knowledge in policy development, in proper partnership with First Nations people, and
 - adjusting grant procedures and approaches to First Nations engagement in research to ensure genuine and mutually beneficial engagement.
19. The Australian Government should support policy and programs to create STEM careers that support the values of First Nations Communities.
20. Invest in First Nations-led STEM organisations to improve STEM education and experiences for First Nations people to both support aspirations and present STEM pathways as future careers that support identity, culture and cultural obligations to care for country.

Access to and support throughout university studies

We must ensure First Nations people can see a clear pathway to university – and are properly supported throughout their studies.

Amidst a concerning lack of progress in many Closing the Gap targets, there is one statistic that is overwhelmingly positive – **for First Nations people with degrees, there is practically no employment gap**. The 2021 Census shows that 85.3% of all First Nations people with university degrees are employed – an almost identical figure to non-First Nations people with degrees (85.9%). The contrast with the overall figures for all levels of education is stark: just over half (52.2%) of all First Nations people are employed, compared to nearly three-quarters (73.9%) of non-First Nations people.

First Nations women with degrees are [more likely to be employed](#) (85.6%) than non-First Nations women with degrees (83.8%). Among recent university graduates, **First Nations people have [higher employment rates](#) than non-First Nations graduates (82.8% compared to 78.9%)**, and higher median graduate salaries (\$75,000 compared to \$71,000).

This is testament to the benefits of a university education. A clear way to improve economic self-determination is to increase First Nations peoples' university participation and completion. This is a twofold challenge of both improving access, and ensuring culturally appropriate support for students.

First Nations **higher education participation and completions are still well below that of non-First Nations students**. First Nations people comprise [2.1% of enrolments](#) – yet make up 3.2% of Australia's total population. Compounding this, there is also a **significant gap in completion rates** between First Nations and non-First Nations students.

Looking at the metric of [completion within a 9-year period](#) for the latest cohort of students who commenced in 2014, only 48.7% of First Nations students had completed by 2022. For non-First Nations students, the figure was 70.6%. **This is a 22 percentage point gap**. Compared to the 2005 cohort, which had a difference of 27 percentage points, the gap has only closed marginally, and it is



much bigger than any completions gap comparing other socio-demographic variables. For example, the gap between low- and high-SES students was 12 points (63.4% compared to 75.4%), and the gap between metropolitan and regional/remote students was 13 points (71.4%, compared to 64.3%).

While universities have various programs to support First Nations students, as noted in Universities Australia's submission to this inquiry, it is critical that universities engage more fully with the broader education system – the school years and vocational education and training (VET) – to ensure First Nations students are supported throughout the education system. There needs to be appropriate support and preparation to aspire to, get to and then to succeed in completing university.

Universities themselves must foster not only inclusion, but a sense of true belonging for all students to feel at home at university and be supported to succeed. Critical to this are the First Nations student support centres established in many universities. These centres provide invaluable support, creating a space and facilities on campus, building a community, and providing tailored support based on student needs. Many centres also offer appropriate academic skills and learning support.

These centres often receive some of their funding from the Indigenous Student Success Program (ISSP) funding paid to universities. It is important to acknowledge that this program is intended to *supplement* university funding and support from other sources – both Government and other funders. That said, it is a critical source of funding that is specifically dedicated (and therefore can not be redirected) to supporting First Nations students.

In 2020, the Job-Ready Graduates (JRG) package combined several existing funding streams that provide additional support for equity group students above the standard Commonwealth-supported place (CSP) funding for students into the Indigenous, Regional and Low-SES Attainment Fund (IRLSAF). Other than some immediate changes to the Higher Education Participation and Partnerships Program (HEPPP) allocation formula, no work has been done to design IRLSAF.

The [Australian Universities Accord](#) focussed on expanding access to university and made important recommendations on First Nations people's participation in higher education and research. The Accord's interim report recommended demand-driven CSP funding for First Nations students – already provided for students from regional and remote areas under JRG – be extended to all First Nations students. The Government accepted this recommendation immediately. This straight-forward action has the dual benefit of closing both the First Nation peoples' employment and the education gaps.

The Accord final report made several other recommendations, including:

- A participation target for First Nations students of 3.3% (i.e. population parity) 2035.
- Deliver the current Closing the Gap Target 6, which aims for 70% of First Nations people aged between 25 and 34 years to have completed a tertiary qualification by 2031.
- Needs-based funding that recognises the cost of providing appropriate support students need to succeed, as well as completion bonuses for universities that meet agreed completion targets for under-represented students.
- A First Nations-led review of higher education.
- A Government review of First Nations people's representation in university governance and leadership positions.

While the new funding system (including needs-based funding and 'effectively demand-driven funding' for students from equity groups) was announced in the 2024–25 Budget, the actual policy development is yet to be finalised. The new funding system will come into effect on 1 January 2026. Science & Technology Australia assumes current arrangements for First Nations students demand-driven places will continue unchanged under the new funding system.



Science & Technology Australia Recommendations:

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2. The Australian Government should develop needs-based funding for First Nations students that covers the extra costs involved in supporting these students to completion, as informed by the strong evidence base.
3. The Australian Government should – in consultation with First Nations researchers – examine First Nations representation in governance and leadership positions in the university sector.
4. Implementation of the University Accord should include legislating a dedicated funding minimum for the Indigenous Student Support Program to enable universities to deliver strong support services for First Nations students.

Ensuring pathways to university – support through the school system

First Nations learners should be taught and supported in culturally appropriate ways

Supporting First Nations students to engage with STEM programs from a young age can pave a pathway towards participation in higher education and future opportunity. Supporting and elevating STEM programs that incorporate First Nations culture and understanding can better support access and opportunities for students to succeed at school and build a future career.

It is important to note that programs are delivered in many organisational structures and delivery methods, from Indigenous-led and designed, through to co-design and delivery in mainstream education organisations. Regardless, these initiatives must be designed and delivered **with, not to**, First Nations people, and be reflective of local needs and desires.

Genuine community input, transparency and appropriate design and delivery is critical for programs to be trusted, culturally safe and genuinely support the economic development of participants and the community, as owners and employees of these programs.

We note concerns exist within the First Nations community about First Nations initiatives and programs that are run by non-Indigenous individuals, or funding for First Nations programs being delivered by organisations not owned by First Nations communities or individuals. The strong desire is for First Nations-led organisations to be prioritised for funding. This ensures strong, culturally safe programs for participants as well as boosting economic opportunities for the First Nations organisations and individuals running the programs.

There are several organisations that are delivering culturally appropriate – and transformative – STEM programs targeted to First Nations school-aged children. Some examples from the Science & Technology Australia membership are outlined below.

The [Aboriginal and Torres Strait Islander Mathematics Alliance](#) (ATSIMA) is a First Nations-led organisation with a vision that all Indigenous students will be successful in mathematics. ATSIMA builds this success through teaching mathematics in connection to the students' culture.

ATSIMA's programs work directly with mathematics teachers and Indigenous Communities across urban, rural and remote locations. ATSIMA works with schools (and clusters of schools) to train principals, teachers and Indigenous Education workers on culturally responsive pedagogies and mathematics programs. This is always done in partnership with the local Indigenous Community. ATSIMA works directly with Indigenous students through schools but mostly through Indigenous STEM Camps. ATSIMA also supports teachers more broadly through the creation of culturally responsive mathematics resources, a series of webinars and hold a biennial conference.



[DeadlyScience](#), another First Nations-led organisation, is committed to disrupting cycles of disadvantage in First Nations communities. Working on the principle that ‘if you can see it, you can be it’, DeadlyScience’s driving goal is to put STEM professionals in front of First Nations learners to demonstrate that STEM is a possible career option. Through its various programs, DeadlyScience has engaged more than 34,000 learners in more than 800 schools nationwide.

The DeadlyScience approach uses a series of programs to support First Nations learners throughout their education journey. The DeadlyScience Club programs ignite engagement and interest in STEM with students from Foundation through to Year 10. One of these programs is [DeadlyLabs](#), which engages with local communities and Elders to identify a local problem, then work collaboratively with community to deliver STEM-based solutions – giving cultural context to STEM as well as elevating and revitalising Indigenous Knowledge.

Building on the suite of activities and programs delivered by in the DeadlyScience Club, the [DeadlyScience Pathways](#) program, delivered in partnership with WEHI, encourages students to enrol in STEM subjects in their later school years and delivers rich STEM career experiences. DeadlyScience also works to ensure regional and remote schools have the resources they need to support STEM education. To date, DeadlyScience partnerships have delivered 25,000 STEM related books, 700 telescopes, and other STEM resources to more than 180 communities around the country.

Another organisation, [Deadly Coders](#), delivers digital and robotics education programs to engage First Nations students. Its programs introduce First Nations students to coding, robotics, electronics and engineering, with the goal to demonstrate pathways to meaningful employment in a range of tech industries. A strong focus on network building and connecting students to community and industry role models also gives students confidence to pursue STEM pathways and careers.

While not currently a member of Science & Technology Australia, the [Young Indigenous Women’s STEM Academy](#), funded by the National Indigenous Australians Agency [and delivered by CSIRO](#), supports First Nations women to study and access STEM opportunities tailored to each student. It provides a platform to support STEM engagement from year 8 until pre-employment with the aim of empowering the next generation of role models and STEM leaders. Importantly, activities are tailored to individual student’s interests and support is given as they transition between school and university.

Alongside these programs, First Nations students’ STEM engagement can also be fostered through the mainstream education system – when teachers are given the time, capacity, resources and imprimatur to develop locally relevant and engaging programs. A notable example of this is the work of George Pantazis, the STEM Coordinator from the Marble Bar Primary School, in remote Western Australia. Mr Pantazis worked with local Elders, organisations and industry leaders to combine local First Nations language and knowledge of the East Pilbara region with virtual and augmented reality technologies. He also uses two-way learning to empower students to become teachers. Mr Pantazis received the 2022 Prime Minister’s Prize for Excellence in Science Teaching in Primary Schools.

Reforming the national curriculum to place First Nations histories and culture at its centre will have a major impact delivering a foundation for generational change. This would include revision of STEM subjects including science and maths. By facilitating recognition, inclusion and engagement, it can become a key factor in reconciliation with First Nations Australians. Increased awareness of Indigenous knowledge systems and scientific knowledge that date back millennia, e.g. astronomy and farming practices would improve cultural understandings and reconciliation.

Ensuring First Nations students are not disadvantaged by the structural aspects of standardised testing is another important consideration. Research has found that students – particularly First Nations students – [perform better in some aspects of standardised testing](#) when the test itself is tailored to the local context. NAPLAN scores for Year 6 and Year 8 students from the town of Dubbo, New South Wales, found that when tests that mimicked the standard NAPLAN test but tailored to the local Dubbo context, scores in the reading test significantly improved – by margins that could potentially close the



gap for First Nations students by as much as 50%. While this improvement was only seen in reading results, it indicates the significant impact of potential bias, which can be addressed by providing relevant context in assessment regimes. This can dramatically improve students' performance and educational outcomes.

Science & Technology Australia Recommendations:

5. Ensure programs to support First Nations learners that are First Nations-led and designed are prioritised for funding and support.
6. Ensure First Nations youth can see a future in STEM: invest in teacher professional training that connects the teaching and learning of STEM with Indigenous Knowledges.
7. Ensure national education initiatives like NAPLAN can cater for First Nations students and that cultural context is not a disadvantage in testing.
8. State and territory governments and universities should work together to develop – and fund – locally tailored programs to support all First Nations students' engagement in STEM, as well as pathways to university, regardless of where they live.

Supporting First Nations researchers in STEM

Drawing on First Nations people's expertise and supporting First Nations researchers is critical to deepen Australia's research capabilities

There is deep STEM expertise in Indigenous Knowledge systems developed over thousands of generations. Australia hasn't yet widely understood, valued and accepted, let alone drawn on this expertise deeply. This is Australia's loss. There are clear opportunities to deepen our national and state policy approaches and methodologies in fire, land and water management; novel native plant properties; ecology, and many other areas.

The past years have seen concerted efforts across the sector, including direct support from Science & Technology Australia, to establish the [National Indigenous STEM Professionals Network](#). This First Nations-led and First Nations-run network provides invaluable support and peer mentorship to First Nations STEM researchers. However, it is currently volunteer run. To fulfill its goals and aspirations, the Network needs ongoing funding for administration and executive support.

One of the major Commonwealth research granting agencies, the Australian Research Council (ARC) has a dedicated funding scheme to support First Nations researchers – the Discovery Indigenous scheme. The success rates for this scheme – [37% in 2023, and 26.5 % in 2024](#) – indicate a high level of unmet demand from First Nations researchers.

Furthermore, First Nations researchers are under-represented in STEM fields, and successful applications for Discovery Indigenous grants tend to favour First Nations researchers who nominate 'Indigenous Studies' – rather than a STEM field – as their field of research. In 2023, only three of the ten successful grants were in STEM fields; in 2024, only one out of nine. Additionally, the latest [STEM workforce report](#) from the Office of the Australian Chief Scientist indicated only one in 200 First Nations people had a STEM degree (compared to one in 20 for non-First Nations people).

A top priority must be to improve the pipeline, retention, and success of First Nations researchers STEM fields – and this must be reflected in ARC funding success rates if we are to see meaningful progress. The current low numbers of First Nations researchers being funded in STEM may also steer researchers away from STEM fields, as the chances of funding are lower, perpetuating the low number of First Nations people conducting STEM research and reducing their visibility for younger generations.

A recommendation from the review of the *Australian Research Council Act 2001*, [Trusting Australia's Ability](#), was that the ARC should establish a Designated Committee for engagement and consultation with First Nations academics and research partners. This recommendation was agreed to in the [Australian Government response](#).



While the National Health and Medical Research Council (NHMRC) does not have specific funding streams for First Nations researchers, through their Corporate Plan, NHMRC seeks a 3.4% target for annual awards of NHMRC grants led by a Chief Investigator A (CIA) of First Nations descent, in addition to continuing to invest more than 5% of their annual budget on research that provides better health outcomes for First Nations people.

It also supports the [National First Nations Research Network](#) for First Nations health researchers and has a [Principal Committee Indigenous Caucus](#) to provide advice on the work of the NHMRC. This recognises the importance of First Nations leadership in setting priorities that ensure current and proposed research structures work to support Australia's First Nations health researchers; and that programs are working to improve health and wellbeing needs of First Nations people.

Science & Technology Australia Recommendations:

9. The Australian Government should provide ongoing operational funding for the National Indigenous STEM Professionals Network.
10. The ARC should establish a Designated Committee for engagement and consultation with First Nations academics.
11. The Australian Government should provide additional funding to the ARC to expand the Discovery Indigenous scheme, with a dedicated focus to boost Discovery Indigenous grants in STEM fields.
12. In addition to its funding and research targets, the NHMRC should consider developing a targeted funding streams or fellowships for First Nations health and medical researchers.

Support for genuine engagement with First Nations communities

Research done with First Nations communities and people must be properly resourced and funded appropriately to ensure co-design with communities

All STEM research can be done with a goal to show all First Nations people and communities can be part of Australia's STEM future – and this work must be done in ways that ensure cultural safety for all Australians. While there is a strong – and rightly so – focus on health and medical research being done with deep involvement and engagement from First Nations researchers, practitioners and communities, this can and should extend to all other areas of STEM as well.

It is also critical to support skills development for non-First Nations researchers to ensure their research is culturally safe. The [AIATSIS Code of Ethics](#) provides guidance for researchers working with First Nations people, but to truly support all researchers, universities and research institutes should make cultural safety and First Nations research capability training available to all staff.

Engaging effectively and respectfully with First Nations communities takes time, often time that extends beyond the bounds of a typical research grant. Rushing this work to make it fit the artificial time constraints imposed by research grant systems simply leads to ineffective – or deleterious – engagement and ultimately, the project's failure, and/or the exploitation of Indigenous Knowledge and First Nations contributors.

To ensure that research involving First Nations people's engagement is conducted with deep and genuine engagement, Government research granting agencies (the ARC, NHMRC and the Medical Research Future Fund) should examine their processes and develop adjustments – or a dedicated system – that would support crucial work with First Nations communities. This would include:

- providing dedicated funding to support engagement, and including remuneration to communities for their involvement in research projects and to support work to protect Indigenous IP
- changing grant guidelines to allow flexibility in project plans and methodologies that would enable community engagement as the first important step in all First Nations research, and



- designing longer-term grant opportunities that would allow for meaningful and effective engagement with First Nations communities, as well as lowering the burden for no-cost extensions for projects involving First Nations people to allow community engagement to process at a culturally appropriate pace.
- adding a section in all grant applications asking applicants to describe how the research has the potential to affect First Nations people or communities, as well as indicating what training they have that will ensure the research is conducted in a culturally safe way.

It is noted that other Government agencies also fund research programs, related to their policy responsibilities, and should also consider these within their grant processes.

In addition, the [Australian Universities Accord](#) included a recommendation that the Australian Government elevate First Nations knowledge, knowledge systems and Closing the Gap through First Nations Leadership to the National Science and Research Priorities. This would include implementing a First Nations research framework that supports First Nations-led research, First Nations leadership and capacity building, self-determination, and transformative outcomes.

Science & Technology Australia Recommendations:

13. Universities and research institutes should review their current training in culturally safe research practices, if they have any at all, and require all staff to undertake this on a regular basis.
14. The ARC, NHMRC and Medica, Research Future Fund (MRFF) should develop dedicated funding to support genuine engagement with First Nations communities that supports:
 - remunerating communities for involvement in research, and
 - work to protect Indigenous intellectual property (IP).
15. The ARC, NHMRC and MRFF should consider developing a dedicated grant process that would better support proper engagement and community-driven and co-designed research with First Nations communities that includes:
 - greater flexibility allowed for proposed methods and project outlines to enable engagement with First Nations communities to take the most appropriate form
 - longer grant periods, and simpler processes for applying for no-cost extensions
 - direct funding streams to support long-term engagement with First Nations communities, and
 - a section in grant applications asking applicants to address how their research may affect First Nations people and communities, as well as outlining the researchers' relevant training to ensure cultural safety.
16. The Australian Government undertake an audit of all research grant programs beyond the ARC, NHMRC and MRFF (across government departments there are ~176 programs supporting R&D, spanning 14 different portfolios) to examine their approaches to genuine support for First Nations research and ensure a whole-of-Government uplift, even for these smaller programs.
17. The Australian Government should work with the university sector – including First Nations research leaders – to develop and implement the research framework recommended by the Australian Universities Accord to strengthen First Nations research and research leadership.

Indigenous Knowledge

The deep knowledge of our continent held by First Nations people should be recognised – and made key to our national identity

Australia is home to the oldest continuous living cultures on the planet. First Nations people and communities hold deep knowledge of this continent – vast scientific, technological, maths and engineering knowledge embedded in languages and cultures and the deep knowledge systems of Country. **Indigenous STEM knowledge is the long impressive first chapter of Australia's**



contemporary STEM knowledge base. It our privilege to live in a country with such a deep history and knowledge.

In the consultation process led by Australia’s Chief Scientist in 2023 to refresh Australia’s National Science and Research Priorities, Science & Technology Australia strongly advocated for including Indigenous knowledge as a dedicated priority, in addition to interweaving it through all the other priorities. At the time of our submission, Government had not released these refreshed priorities.

This will strongly signal to the research community and the nation that this is core work for Australia – and central to our national science, technology and research ambitions. It will also be a powerful signal to Australia’s research funding agencies to invest in First Nations people and perspectives in research, science, technology and innovation.

This crucial signal can help to unleash a transformative moment for Australian STEM – and start a deeper investment in supporting more First Nations people and priorities into our national science and research effort. It would be a powerful legacy for all generations of Australians to come.

Engaging in this work must be done with care and respect. An example is the [Indigenous Science website](#), launched by the Australian Council of Deans of Science, which includes resources to support tertiary science educators incorporate Indigenous Knowledges into their teaching materials. These resources cover cultural competency preparation for the teachers themselves, as well as Indigenous Knowledge content and links to additional resources.

Science & Technology Australia Recommendation:

18. Elevate and invest in Indigenous knowledge, including First Nations peoples’ perspectives on science, technology and innovation through:

- supporting best-practice programs and initiatives to build meaningful connections with Indigenous knowledge in school and university curricula so that First Nations people and their histories and knowledges are values by all Australians
- embracing Indigenous knowledge in policy development, in proper partnership with First Nations people
- adjusting grant procedures and approaches to First Nations engagement in research to ensure genuine and mutually beneficial engagement.

Meaningful careers for First Nations people

First Nations people should be supported to undertake career pathways with meaningful connections

It is important to support more First Nations people into and in STEM work and careers – including STEM-based careers that have cultural meaning and/or enable continued connections to Country.

Science & Technology Australia’s membership network includes Indigenous Climate Change, an innovative collective of First Nations environmental scientists and STEM professionals dedicated to empowering First Nations communities through climate change adaptation strategies. The mission of Indigenous Climate Change is rooted in a deep respect for both traditional Indigenous knowledge and contemporary scientific methods. By merging these perspectives, this organisation creates dynamic, culturally informed climate change adaptation strategies that are responsive to the unique needs of each community they serve.

Indigenous Climate Change is an excellent example of how combining Indigenous knowledge and expertise with STEM training can deliver careers and employment pathways that benefit not only the individuals themselves but also broader First Nations communities – as the recipients of the services provided by Indigenous Climate Change.



Existing programs to incorporate **First Nations knowledge in environmental conservation make large contributions to sustainable climate change and economic development outcomes**. [Indigenous Rangers](#) under the National Indigenous Australians Agency use traditional knowledge systems, combined with Western science, to engage with community and Traditional Owners to plan land and water management activities, fire management and biodiversity conservation.

Fire management, including cultural burning, are increasingly incorporated into conservation efforts and simultaneously create jobs for First Nations people. The [Royal Commission into National Natural Disaster Arrangements](#) heard Indigenous Rangers in the Northern Territory worked with government agencies to re-introduce cultural burning. This reduced the frequency, magnitude and severity of large bushfires. In return, they receive carbon credits which can be sold or traded in a domestic or international carbon market. To support conservation efforts, the NSW Rural Fire Service has [ten land management projects](#), which includes cultural burning, led by First Nations communities to support efforts to save critically endangered species such as the northern and southern corroboree frogs.

Science & Technology Australia Recommendations:

19. The Australian Government should support policy and programs to create STEM careers that support the values of First Nations Communities.
20. Invest in First Nations-led STEM organisations to improve STEM education and experiences for First Nations people to both support aspirations and present STEM pathways as future careers that support identity, culture and cultural obligations to care for country.

Please do not hesitate to contact Science & Technology Australia if we can help with further information or advice to Committee.

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