

Please note: the substantive content of the 2026 NRI Roadmap Survey begins at Question 20 (with prior questions dealing with administrative and other information).

As such all submissions that are published include the responses submitted from Question 20 onwards only.

Q20.

Part 2: Research themes

2.1 NRI comprises the assets, facilities and associated expertise to support leading-edge research and innovation in Australia and is accessible to publicly and privately funded users across Australia and internationally. We are seeking your input on possible directions for future national-level investment - i.e., where the requirements are of such scale and importance that national-level collaboration and coordination are essential.

The [2021 Roadmap](#) used a challenge framework to support NRI planning and investment. With this in mind, consider likely future research trends in the next 5 - 10 years, and with respect to one or more of the 8 challenge areas identified in the 2021 Roadmap as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or not at sufficient scale and
- describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities.

Q21.

Resources Technology and Critical Minerals Processing

Q22.

Food and Beverage

Q23.
Medical Products

Q24.
Defence

Q25.
Recycling and Clean Energy

Q26.
Space

Q27.
Environment and Climate

Q28.
Frontier Technologies and Modern Manufacturing

Q29.

2.2 The 2024 statement of National Science and Research Priorities (NSRPs) includes outcomes linked to each priority to assist in identifying critical research needed in the next 5 to 10 years.

Consider the priority statements and, with respect to one or more of the 5 priority areas as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or
- not at sufficient scale and describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities, and where relevant, refer to the underpinning outcomes and research identified in the NSRPs document.

Q30.

Transitioning to a net zero future

N/A

Q31.

Supporting healthy and thriving communities

There is a large body of evidence which establishes the critical role played by the arts in improving mental and physical wellbeing, combatting anxiety and depression, decreasing loneliness and promoting social inclusion (Creative Australia 2023; Boydell et al 2012; Fancourt & Steptoe 2019). Opportunities identified in National Science Research Priority 2 include the need to develop the ‘technologies, tools and techniques’ and new ‘treatments, medicines and therapies’ to support Australians to enjoy healthier lives across the lifespan, yet could be more effectively served by a strategic focus on data capabilities that demonstrate the efficacy of the arts in improving social and community health and wellbeing. NSW Health’s Health and the Arts Framework 2024-2032 recognises two pillars of a healthy community: the role of the arts in clinical settings and their associated impacts on the ‘health’ of the workforce, the creative sector and communities more broadly. International studies evidence the role of the arts in enhancing quality of life, reducing pain, delivering cognitive benefits and connectedness for the elderly (Mak et al 2023). National arts programs for young people boost civic engagement, protect against mental illness, improve academic achievement and enhance school attendance. NSW Health notes that by integrating the ‘humanising’ aspects of arts programs within clinical settings, the needs of patients, carers and community are better met. Such in-hospital programs have shown that the arts can provide inestimable benefits to the most vulnerable (Balfour et al 2022). By improving the health of individuals, the arts contribute to the vitality and resilience of communities. They do this by bringing people together, advancing economic prosperity, developing skills, narrating stories of self and culture and imagining the future. This is evidenced in arts-led responses to crises incurred by climate change, the COVID-19 pandemic and national rates of mental ill-health. Regional Arts Australia identifies themes of connectiveness, thriveability and innovation in case studies that demonstrate agile responses to such crises, finding that arts-based approaches support ‘grassroots community participation and offer more culturally appropriate methods.’ Likewise, Diversity Arts Australia identifies models for advancing cultural diversity and racial equity and inclusion across art forms, noting the role of the arts in lifting the representation of CALD leaders nationally. While the impact of the arts on wellbeing is clear, there is need for strategic investment in infrastructure that supports these insights. The future need for arts-related data capabilities that deliver insights in ‘healthcare literacy’, in social care solutions for ‘people with disability and people living in regional and remote communities, and to support an ‘integrated preventive health system in Australia’ is critical.

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

The Australian Creative History and Futures project recognises the integral role of cultural and creative practices within Aboriginal and Torres Strait Islander knowledge systems. Dr Terri Janke, a Wuthathi, Yadhaigana and Meriam woman and expert on Indigenous Cultural and Intellectual Property emphasises that Indigenous culture encompasses a holistic worldview, connecting people to all aspects of their environment and each other (2021, 7). This perspective extends beyond Western notions of culture and arts, and acknowledges that Indigenous ways of knowing, being and doing are embedded in all aspects of creative arts. The ACHF aims to recognise Indigenous cultural and creative practices as “both” knowledge systems “and” as data. This dual function potentially distinguishes the creative and cultural arts from other research sectors handling Indigenous data. The data sets within the ACHF project have the potential to map knowledge as it is communicated “by” the artforms of theatre and performance, music, television, film and screen media, as well as the potential to generate data “about” those cultural histories and their social and political contexts. The ACHF strongly supports investment in an Aboriginal and Torres Strait Islander Research Data Commons as a dedicated NCRIS capability, and would hope to collaborate with it. In the meantime, the ACHF will prioritise First Nations objectives and co-develop best practice models for Indigenous data governance and sovereignty in the arts. We have a work package dedicated to developing Indigenous Data Governance guidelines for the arts sector. Working with an Indigenous Advisory Group and key industry partners, the project aims to create guidelines that will help data custodians better understand and care for Indigenous data in line with FAIR and CARE principles. This may involve: applying Traditional Knowledge labels to cultural datasets (metadata), i.e. language groups, Country – sacred or informative performance; facilitating culturally appropriate access to sensitive materials; and allowing individual custodianship over records that pertain to individual or family records of any nature. Lastly, the ACHF will centre the notion of Creative Wellbeing (Creative Australia 2023, 6). Creative Wellbeing, just like Indigenous creative practice, impacts every aspect of an individual's life and each part of the data lifecycle (NSW CAPO 2024, pp. 24-25). The project will foreground the needs and aspirations of First Nations artists, as it recognises that materials have often been historically mistreated and cared for in a culturally inappropriate manner. ACHF aims to highlight best practices that are already happening, whether they are documented policy or the ad hoc practices of individuals in the field. The project is working within the HASS & Indigenous Research Data Commons and the ARDC to bring these practices into greater focus.

Q33.

Protecting and restoring Australia’s environment

N/A

Q34.

Building a secure and resilient nation

The arts are vital in building a resilient nation and supporting Australia’s response to climate change and natural disasters. Australian Creative Histories and Futures (ACHF) has observed that the arts function in three ways. First, the arts function to document and archive historical experiences of, and responses to, extreme weather events. Per the NDI Roadmap 2021: “[o]ral histories and testimonies form invaluable research collections to prepare for many different types of natural disasters. Research infrastructure that enables researchers and community members to document, archive and access this human experience allows us to learn from the past to help manage the future” (p.68). While oral histories can be archived, they can also be performed, e.g. Campion Decent’s plays *Embers* (2006) and *Unprecedented* (2023) were crafted from oral history interviews and performed for the communities who had survived the bushfires. This is arguably a more accessible, affective, and effective way for communities retain their own histories and knowledges. Within the ACHF, we refer to this as the Creative Use of Creative Data, and we have work package dedicated to this. Second, the arts function to model and rehearse responses to future events. Two examples will suffice here. From 2016 to 2021, Arts House’s *Refuge* program brought together “local residents, artists, scientists, Elders and experts from ... emergency services” to “respon[d] to catastrophe through a creative approach” (Arts House). Together they rehearsed for a flood (2016), heatwave (2017), pandemic (2018), climate-induced displacement (2019), and what happens when these crises coincide (2021). Similarly, UNSW’s *iCinema’s iFire* is a networked visualisation system that models and enacts extreme fire scenarios across a range of immersive platforms (see <https://www.unsw.edu.au/research/icinema/our-research/projects/ifire>). Such projects employ the arts to engage and prepare communities and first responders. Third, the arts augment the research response to any given current crisis. The NDI Roadmap 2021 acknowledged that the role that HASS researchers had played in “making sense of the pandemic’s social, economic and cultural consequences and advising government how best to proceed and mend” (69). The arts have also proven key to communicating the climate crisis. Researchers in the arts and humanities work hard to record these artistic responses. However, without dedicated national research infrastructure to support the documentation, digitisation, and datafication of these artistic practices, our history is scattered and our future unnecessarily compromised. The NDI Roadmap 2021 wrote admiringly of New Zealand’s “collaborative, open access archive for researchers and community [which] provides federated access to a broad range of material gathered by leading ... cultural and educational institutions” (68). The NDI Roadmap 2026 should invest in such a capability.

Q35.

2.3 The case for a new NRI capability, or enhancements to existing capabilities, typically emerges through advocacy from research communities clustering around rigorously identified needs and goals. Such a concept could respond to a requirement for novel or expanded capacity within a domain, or across domains, and must be such that it could only be made available with national-level investment. If you have identified such a requirement, briefly describe the need, the proposed infrastructure capability, the medium-term goals, impacted research communities, and the timeframe over which you advocate its establishment. Your response can include links to relevant existing reports.

Cultural Data and Digitisation Need There is now broad agreement from researchers in the arts – whether they are located in industry, universities, government agencies, or not-for-profit organisations – that Australia needs to increase its investment in cultural data and digitisation. On arts, creative and cultural data, the sector has been described as “nascent and emerging,” “dispersed,” “uneven,” “fragile” and “ad hoc” (AAH 2022, 1-3) as well as “broad yet fragmented” (Fensham et al 2024, 15), and suffering from significant “gaps” (Brook et al 2022, 4). In an important joint submission to the Office of the Arts about its cultural policy Revive, Creative Australia (then the Australia Council for the Arts), A New Approach, Macquarie University, QUT, and RMIT observed several needs, including the “need for core cultural and creative industries data” as well as the “need for a centralised hub for coordinating, drawing together and providing access to and guidance on ... [cultural] data sets from the ABS and other sources ... [I]n addition to custodianship of core data sets, this body should also help to guide the development and the conduct of data collections” (Brook et al, pp.3-6). Similarly, in their submission, colleagues from the Australian Cultural Data Engine – an ARC LIEF funded project – recommended a national cultural data research laboratory (Fensham et al 2022, p.3). On digitisation, the NRI Roadmap 2021 already identified the need for a national capability that would provide standards and guidelines for digitisation, give advice on preservation, risk, copyright and licensing, and connect researchers, organisations and digitisation vendors (pp. 70-71). Substantial efforts are underway on both fronts. The Australian Creative Histories and Futures (ACHF) was established in 2024 with investment from the Australian Research Data Commons, as part of the HASS & Indigenous Research Data Commons and funded under the National Collaborative Research Infrastructure Strategy. Led by UNSW Sydney, Phase 1 involves Flinders University, Creative Australia, and ACMI (formerly the Australian Centre for the Moving Image). Several industry partners and universities have signalled their interest in joining the project at its midpoint in 2026. There are also digitisation efforts underway across the country, including for example the Digitisation Centre of Western Australia and the Australian Emulation Network, both of which were also enabled under the ARC LIEF scheme. Individually these projects are impressive, but were they supported by significant national research infrastructure they could become so much more. The cultural data and digitisation need is not Australia’s alone. Terras et al describe a global “patchwork of small to large scale content, held in different locations, formats and under different reuse licenses, with different institutional approaches to risk, public engagement and entrepreneurship” (2021, 11). Given et al note that “while cultural data initiatives are growing in number, globally, they lack a cohesive, sustainable, and healthy ecosystem to enable collaboration and sharing cross related contexts” (2024, 2). Internationally, there are several relevant projects underway. In the UK, the Centre for Cultural Value has embarked on a new project on cultural data, which they envisage as a step towards a National Cultural Data Observatory. In the US, the Equitable Arts Infrastructure project is deploying data as part of its efforts to address “cultural, economic, and racial equity in the performing arts sector.” In Canada, The Arts Impact Project: Understanding the Arts’ Civic Impact in the Data-Driven Economy is also just starting. Once again, it is possible for individual researchers in Australia to collaborate with these international projects, but substantial national research infrastructure could anchor, augment and accelerate these efforts. Infrastructure Capability: Australian Centre for Cultural Data and Digitisation In line with international efforts, and in response to Australia’s own needs, the NRI Roadmap should consider a capability in Cultural Data and Digitisation. This could be done either as a standalone capability or as part of a broader HASS NCRIS Capability. Goals In Phase 1 (2024-28), the Australian Creative Histories aims to: • Secure existing data assets by strengthening their technical, financial and social architectures; • Facilitate interoperability between these data assets as well as knowledge exchange between their associated research and industry communities; • Develop Indigenous data governance, reparative description, and accessibility principles for the cultural data sector, in line with FAIR and CARE principles; • Upskill sector stakeholders in cultural data management and analysis. These, in addition to the tasks outlined in NDI Roadmap 2021 for a digitisation capability, could form the foundational goals for an NCRIS capability. Research Communities The research community associated with arts, creative and cultural data is broader than most. It includes: researchers in universities; researchers, analysts and policy makers in government agencies; arts organisations manage their own archival and data holdings; and artists themselves. Timeframe The ACHF is in Phase 1. However, it builds on the seven previous LIEF grants that have enabled AusStage: The Australian Live Performance Database, and the four LIEF grants that enabled the Design & Art Australia Online database as well as the 50 years of data held by Creative Australia. There are also, as mentioned, multiple digitisation efforts underway. In 2021, the NDI roadmap already identified the emerging importance on the creative arts and humanities; in 2023, the Revive cultural policy’s articulated Pillar 4 Strong Cultural Infrastructure. In 2026, we should acknowledge that the sector is ready for a significant investment in dedicated infrastructure for cultural data and digitisation.

Q36.

Part 3: Industry perspectives

This section is seeking input specifically from industry-based respondents. Other respondents can skip this section.

Recommendation 6 of the [2021 Roadmap](#) related to improvements in industry engagement with NRI. To complement work on this topic that has occurred since then, we are seeking additional advice on NRI requirements as perceived by current or potential industry-based users.

Q37.

3.1 Have you (or your organisation) interreacted with or used Australia's NRI?

☐ Yes

☐ No

Q38.

3.2 If so, please briefly outline the NRI capabilities you (or your organisation) have interacted with or used. Do not limit your response to NCRIS capabilities.

This question was not displayed to the respondent.

Q39.

3.3 Please indicate your (one or more) primary reasons for interacting with NRI:

This question was not displayed to the respondent.

Q40.

3.4 If you answered no, please indicate your (one or more) primary reasons:

This question was not displayed to the respondent.

Q41.

Part 4: Other comments

4.1 Please elaborate on any of your above responses or add any other comments relevant to the development of the 2026 Roadmap. Your response can include reference or links to existing reports that you recommend be considered during the 2026 Roadmap development process.

This response was drafted by Dr Bryoni Trezise, Dr Caroline Wake, Neenah Gray, Minna Muhlen-Schulte and Nicole Hurren (UNSW) and endorsed by Prof Chris Hay and A/Prof Tully Barnett (Flinders) on behalf of the Australian Creative Histories and Futures policy committee. In summary, the ACHF advocates for the following: • an Aboriginal and Torres Strait Islander Research Data Commons capability; • a Cultural Data and Digitisation capability; • a HASS capability

References

A New Approach. 2019. Transformative Impacts of Culture and Creativity. Australian Creatives Histories and Futures. 2024. Project Plan and Workshop Report. Australian Theatre for Young People and Patternmakers. 2017. Youth theatre & wellbeing: An Impact Evaluation for ATYP. Balfour, M., et al. 2022. "Future stories: co-designing virtual reality (VR) experiences with young people with a serious illness in hospital." Research in Drama Education, 27(4). Boydell, K., et al. 2012. "The Production and Dissemination of Knowledge: A Scoping Review of Arts-Based Health Research." Forum Qualitative Sozialforschung Forum: Qualitative Social Research, 13(1). Brook, S., et al. 2022. "The New National Cultural Policy: Cultural Data Needs." Submission 0768 to the Department of Infrastructure, Transport, Regional Development, Communications and the Arts – Office for the Arts. Creative Australia. 2023. Creating Wellbeing: Attitudes and Engagement with Arts, Culture and Health. Diversity Arts Australia. 2022. The Imagine Australia Project: 21 Trailblazing Case Studies for Racial Equity in the Arts. Fancourt, D., et al. 2019. "The art of life and death: 14 year follow-up analyses of associations between arts engagement and mortality in the English Longitudinal Study of Ageing." BMJ 367. Fensham, R., et al. 2022. The Importance of Cultural Data in Enabling Cultural Policy. Submission 0883 to the Department of Infrastructure, Transport, Regional Development, Communications and the Arts – Office for the Arts. Fensham, R., et al. 2024. Towards a National Data Architecture for Cultural Collections: Designing the Australian Cultural Data Engine. Digital Humanities Quarterly, 18(2). Given, L.M., et al., 2024. Structural elements and spheres of expertise: Creating a healthy ecosystem for cultural data initiatives. Journal of the Association for Information Science and Technology, 75(10) Janke, T. 2021. True Tracks: Respecting Indigenous knowledge and culture. UNSW Press. Mak, H.W., et al. 2023. "Hobby engagement and mental wellbeing among people aged 65 years and older in 16 countries." Nat Med 29. NSW CAPO. 2024. Priority Reform 4 Preliminary Report: 2nd Series of Community Engagements. NSW Health. 2024. Health and the Arts Framework 2024-2032. Regional Arts Australia. 2023. The Role of the Creative Arts in Regional Australia. Terras et al. 2021. The value of mass-digitised cultural heritage content in creative contexts. Big Data & Society, 8(1).