Issues Paper Consultation Survey – public and attributed responses
Topic 5 – Translation and Industry

This document includes public and attributed responses to the following questions of the Issues Paper Consultation Survey
- Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
- Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
- Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
- Q12. How should research translation be planned for in the development of new NRI?

Please note
- Where necessary, text answers to the above questions have been redacted to remove contact details and third-party personal information
- blank submissions have been removed
- respondents who wished to remain anonymous are contained in the document "Anonymous responses to Issues Paper Consultation Survey"

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Fri, Dec 19, 2025, 12:40 PM Australian Eastern Daylight Time
[ID: sbm39ca5c82480a48d32ad6d]

Title
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Northern Australia Indigenous Reference Group

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
For translation and industry, three principles are proposed:

• NRI should be regarded as a real-economy enabler anchored to the northern investment spine (Action Plan, Net Zero, Future Made in Australia, critical minerals, First Nations Clean Energy Strategy, NAIF), lowering the cost and risk of entry for Indigenous and regional enterprises.
• Translation metrics should be aligned with the production–income–asset frame and its companion indicators (capability, resilience, institutional strength, ownership, substitution), especially where NRI is expected to catalyse new industries.
• NRI should support learning systems by reporting not only outputs, but also how quickly and coherently institutions respond to data signals, and how many regions show simultaneous improvements in capability, reduced reliance and increased ownership.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
For translation and industry, three principles are proposed:

• NRI should be regarded as a real-economy enabler anchored to the northern investment spine (Action Plan, Net Zero, Future Made in Australia, critical minerals, First Nations Clean Energy Strategy, NAIF), lowering the cost and risk of entry for Indigenous and regional enterprises.
• Translation metrics should be aligned with the production–income–asset frame and its companion indicators (capability, resilience, institutional strength, ownership, substitution), especially where NRI is expected to catalyse new industries.

• NRI should support learning systems by reporting not only outputs, but also how quickly and coherently institutions respond to data signals, and how many regions show simultaneous improvements in capability, reduced reliance and increased ownership.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
For translation and industry, three principles are proposed:

• NRI should be regarded as a real-economy enabler anchored to the northern investment spine (Action Plan, Net Zero, Future Made in Australia, critical minerals, First Nations Clean Energy Strategy, NAIF), lowering the cost and risk of entry for Indigenous and regional enterprises.
• Translation metrics should be aligned with the production–income–asset frame and its companion indicators (capability, resilience, institutional strength, ownership, substitution), especially where NRI is expected to catalyse new industries.
• NRI should support learning systems by reporting not only outputs, but also how quickly and coherently institutions respond to data signals, and how many regions show simultaneous improvements in capability, reduced reliance and increased ownership.

Q12. How should research translation be planned for in the development of new NRI?
For translation and industry, three principles are proposed:

• NRI should be regarded as a real-economy enabler anchored to the northern investment spine (Action Plan, Net Zero, Future Made in Australia, critical minerals, First Nations Clean Energy Strategy, NAIF), lowering the cost and risk of entry for Indigenous and regional enterprises.
• Translation metrics should be aligned with the production–income–asset frame and its companion indicators (capability, resilience, institutional strength, ownership, substitution), especially where NRI is expected to catalyse new industries.
• NRI should support learning systems by reporting not only outputs, but also how quickly and coherently institutions respond to data signals, and how many regions show simultaneous improvements in capability, reduced reliance and increased ownership.

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Thu, Dec 18, 2025, 10:19 AM Australian Eastern Daylight Time
[ID: sbm39c4b57be092eff95521e]

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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Research Infrastructure facilities can improve visibility and accessibility by adopting structured, industry-oriented engagement approaches. This includes implementing consistent communication tools, such as customer service charters, to set clear expectations around access, responsiveness and delivery, helping researchers and technical staff better understand industry needs.

Dedicated industry-facing staff are able to provide timely support, particularly for SMEs that lack capacity to navigate complex access pathways. Facilities should strengthen active outreach through targeted briefings, regional roadshows, industry advisory boards, and simplified information portals that articulate capabilities, costs and use-cases.

Mechanisms such as voucher programs and low-cost entry points can make access feasible for startups and smaller regional firms.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Facilities/organisations can strengthen collaboration capability by investing in staff skills, governance structures and enabling frameworks that make industry engagement efficient. This includes training teams in industry engagement, contracting processes and customer service, as well as sharing skills across research infrastructure networks to build consistent standards.

Addressing legal and contractual barriers, through standardised agreements, enabling streamlined frameworks, supports faster, lower-risk partnerships, especially in sensitive areas such as data linkage.

Advisory boards with industry representation, together with clearer institutional responsibility for supporting industry access, provide strategic guidance.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

New NRIs are needed to resolve the gap from research to product translation. There is a clear need for rapid (and continuous), cost effective translation of transformative technologies into integrated operational systems.

For example, robotics, autonomous systems and artificial intelligence (RAS-AI) systems require substantial testing and iterative development to mature into an operationally trusted state. The technology development process must be cost effective and timely to be viable for industry. However, this requires investment in supporting national infrastructure and skills.

The Australian Institute of Marine Science partnered with the Qld Government to establish ReefWorks, Australia's tropical marine technology test range to assist industry address barriers in technology translation in the tropical marine domain. ReefWorks leverages AIMS' existing infrastructure and is establishing a digital twin to support developers conduct cost-effective testing in the real-world tropical marine environment by reducing regulatory hurdles, environment access costs, and testing overheads.

However, ReefWorks is not sustainable without base funding and costs cannot be fully recovered from range users. NRI investment is required for facilities such as ReefWorks to continue to exist. Investments into technology translation facilities assist the private, defence and public sector to quickly and cost effectively mature marine technologies designed for their operating environment (in ReefWorks' case warm tropical waters) in a coordinated, safe manner and expedite familiarity with emerging technology, and approval from, regulators. The link to regulators also enables the acceleration of policy change needed to support the integration of new technologies.

Furthermore, the translation of novel and emerging technologies into real world application requires highly trained skills beyond the research domain, particularly in the fields of advanced manufacturing, operations support and software engineering.

The current national and international context places a premium on supporting development and translation of sovereign technologies. This requires sustained investment in the Australian technology translation process from organisations such as NCRIS to offset these costs.

Importantly, these efforts are more effective when supported by integrated infrastructure systems that allow research, engineering and deployment to occur seamlessly. The combination of the National Sea Simulator, AIMS' research vessels, ReefWorks regulatory sandboxes and specialised workshops provides a uniquely comprehensive capability, from controlled experimental environments to field deployment and precision engineering, that is unmatched nationally/internationally. This integrated infrastructure accelerates translation by enabling technologies to be conceptualised, tested, refined and validated within a single, interconnected ecosystem.

Q12. How should research translation be planned for in the development of new NRI?

Research translation can be planned for in the development of new NRI by investing in industry support through the translation process. The business model can address barriers such by providing cost offsets for facility usage by industry to mature prototypes and engineering development, integrate with translational architecture such as test range and simulation centres, and incorporate metrics relating to translatable outcomes.

Research translation is best when set up at the outset of research infrastructure planning by "starting with the end in mind," designing facilities, governance models and funding structures that proactively support pathways to translation. This includes allocating space for industry users and spinouts, integrating quality and compliance requirements from the beginning, and ensuring funding extends beyond pilot users to sustain long-term translation activity.

Standardised contracting frameworks, early engagement with regulatory agencies, and clear policy guidance on the boundary between public research infrastructure and commercial services. Strategic planning should incorporate provisions for co-investment models, data exchange arrangements, and international partnerships

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Tue, Dec 16, 2025, 04:41 PM Australian Eastern Daylight Time
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To address visibility and accessibility of NRI capabilities throughout Australia, a single, national 'front door' that clearly describes NCRIS capabilities, access pathways and cost, etc., should be sustainability funded (e.g. RIC) with a clear user-centred design focus and engagement strategy targeting, e.g. industry peak bodies, government and/or community groups, as dictated by user testing.
Full engagement with the National PID strategy is expected to increase visibility and awareness of NRI capabilities.
See AuScope's Translation and Research Data Strategies,
https://www.auscope.org.au/translation ; https://zenodo.org/records/16809341 ; https://zenodo.org/records/15825498

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
We need to build capability in, pathways to, and incentivise research-industry (/end-user) collaboration. These can be achieved through various means which are largely industry and research domain specific, but examples would include:
i) industry-facing roles and advisory panels embedded within capabilities or clusters, with specialists who understand sector needs;
ii) supported partnership pathways that include IP, contracting and costing e.g. CRC-Ps, pilot projects, SMEs;
iii) co-design with industry(/end-users) through workshops and/or joint roadmapping with industry-defined problems embedded throughout project and capability lifecycles.
iv) product and service design support to ensure research infrastructure can be implemented by industry(/end-users)
See AuScope's Translation Strategy 2025-2030, https://zenodo.org/records/16809341

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Full implementation of the National PID strategy across the NRI sector will provide discovery and access catalogues for instruments, datasets, software, publications, and other resources AND evaluation metrics. The underlying infrastructure for PIDs exists; however, funding for its operationalisation across NCRIS projects and institutions is lacking.

Q12. How should research translation be planned for in the development of new NRI?

Translation should be planned from the commencement of new NRIs, co-designed with the end-users as a user-centred design piece, with standardise (where possible) access and discovery pathways.

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Fri, Dec 12, 2025, 04:55 PM Australian Eastern Daylight Time
[ID: sbm39a6ef424bcc5a3c2e4ab]

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Raising the profile of NRI within industry necessitates a strategic, multi-year effort. Key initiatives include strengthening engagement with industry sectors through peak bodies, enhancing the Research Infrastructure Connected (RIC) program for consistent outreach, and boosting national visibility via coordinated communications by the Department of Education and other sectors. This includes promoting NRI capabilities and success stories while lowering access barriers through initiatives such as bundled NRI access with grants and establishing an independent innovation readiness assessment framework. Additional recommendations involve creating a national portal with service details, ensuring clear access settings for sensitive work, and regular briefings with local industry partners.

Leveraging existing industry networks also accelerates visibility more effectively than standalone marketing. Membership in sector-relevant CRCs and peak bodies provides access to established industry partner bases as natural referral channels.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NCRIS capabilities that are provided in partnership with, or hosted by, universities need more agile hiring processes to attract industry-experienced candidates, as current university HR systems are slow and often uncompetitive. Universities must improve support systems and grant more autonomy to adapt to NCRIS needs. Additionally, establishing short-term secondments for NRI staff within industry could enhance collaboration and understanding, taking inspiration from successful government programs.

Dedicated industry engagement staff embedded within NRI would also create sustained relationship capacity beyond project-based interactions.

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Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Phenomics Australia's demonstrated capability, expertise and operational structure is strongly positioned to responsibly build and deliver a major portion of Australia's biomedical NRI. The rapidly increasing demand for preclinical New Approach Methodology (NAM) capabilities – also known as Non-Animal Models or Non-Animal Technologies (NATs) – requires sovereign investment in Australia's capability in NAM development, validation, and deployment. This can be partially achieved by supporting and incorporating successful elements of the NSW NAT-Net* research pillar and grant program to enable collaborative NAM development at the cutting edge of development. The establishment of an advisory group to oversee NAM validation will render the technology market-ready for clinical trial use.

The NCRIS program can support the integration of existing bioengineering capabilities with national fabrication facilities to accelerate organ-on-chip and other NAM developments, prototype testing, validation and upscaling. Rapid method evaluation program for NAMs. We recommend the establishment of a rapid evaluation program for NAMs to test design tools, provide guidance, and maintain a certified catalogue of model systems. Existing biobanking data should be centralised for integrated analysis to support drug target identification. The creation of shared platforms for development and delivery of preclinical assays for discovery of drug targets and molecules with standardized reporting protocols will accelerate discovery and translation. This will be further boosted by establishing national data services for machine learning references in drug and protein design, with accessible test sets for method comparison.

Furthermore, workforce capability must parallel infrastructure investment. Training programs delivering validation and regulatory skills, fellowship exchanges with industry partners, and international partnerships for protocol standardisation will build translational expertise and ensure Australian NAM outputs achieve recognition in global regulatory submissions.

* Reference: https://medicalresearch.nsw.gov.au/research/networks/non-animal-technologies

Q12. How should research translation be planned for in the development of new NRI?
The investment in NRI requires confidence in its demand and the scientific aspirations it enables. Priorities for new NRI can be identified through empirical studies such as mapping research quality by Fields of Research (FoR) code, industry research needs, and national strategies like CSIRO programs, ARC Centres of Excellence, and Cooperative Research Centres. Evaluating existing infrastructure, cooperation needs, and possible de-investment is crucial. Agility in supporting unforeseen NRI developments, especially in areas like preclinical modelling, biobanking, and AI, is also needed. Implementation may involve establishing new capabilities independent of existing partners, integrating into current delivery frameworks, or enhancing collaboration among partners to address gaps. Engaging relevant industries for input on standards during the development process is essential to ensure NRI aligns with sector needs.

Translation readiness should also be embedded within the design, rather than retrofitted. This includes meeting industry standards, industry engagement roles within governance structures, and commercial outcome metrics alongside research KPIs. Advisory groups with

external pharma/biotech and regulatory expertise can ensure infrastructure specifications align with downstream commercial and clinical requirements.

Translation outcomes and impacts include not only commercial products but also improved policies, clinical practice, and decision-making processes.

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Fri, Dec 12, 2025, 04:29 PM Australian Eastern Daylight Time
[ID: sbm39a721e970b78419e5cc4]

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
It is important industry is aware of, can access, and derive benefit from the services provided through Australia's NRI system. Many NRI facilities are already delivering extensive services to industry entities and supporting translational research at various TRLs.
However, it must be remembered that NRI should first and foremost support research, which is traditionally in the TRLs 1 through 4, rather than commercial development or large-scale manufacturing. These commence at TRL 5 with demonstrations that become commercially relevant, e.g. testing new batteries or sensors for autonomous vehicles in realistic or live environments or implementing a new diagnostic technique on actual patient samples or in a real clinical workflow. Industry must be able to access NRI to carry out industry relevant research.
NRI must never be seen as a service to industry that could become 'self-sufficient' through cost-recovery mechanisms. NRI is primarily accessed by start-ups or industry conducting early-stage development work – which is not yet at a commercially viable stage. In Australia, even if these businesses are a mature entity, they need to be able access the infrastructure at low or no cost to for this development work to be viable and progress along the TRL pathway. If costs are too high, they will conduct this development work overseas and the long-term opportunity – and benefits – will be lost to Australia.
NRI must be sustainably supported by Government as an essential enabler for public good research. Similarly, the government's own operations, supported through NRI, underpin essential societal needs and services. NRI use by industry is an important evolution for Australia's future and will enable scaling, but underlying support through Government funding is critical to de-risking assets for all users.
NRI capabilities, and the institutions that host them, are only as good as the awareness and use of them are identified and celebrated. Consideration should be given to:
• the adequacy of resourcing to NRI institution hosts to develop impact stories from users

• enhancing the use of persistent identifiers (PIDs) to better acknowledge and track funding, researchers, facilities and research impact, ideally through government-wide support for implementation of the Australian National PIDs Strategy
• establishment of a national audit and register of nationally significant and accessible research infrastructure.

The NCRIS-funded Research Infrastructure Connected (RIC) is an important 'single front door' for industry or other entities to access NCRIS projects, and should be extended to non-NCRIS nationally significant and accessible capabilities. This would improve capabilities' visibility and accessibility from instrumentation to datasets and capabilities to maximise usage, amplify visibility and multiply impact.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

While NRI facilities can and do help enable translational activities and facilitate productive environments for research-industry collaborations to flourish, it is important to not hold research infrastructure accountable for the effectiveness and impact of researchers and university research commercialisation officers to develop industry collaborations.

NRI should also actively participate in industry PhD programs and serve as an effective conduit for connecting industry and academic groups.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

It's important to remember that 'translational research' services and supports industry needs and the creation of new products, through to supporting and informing clinical practice and policy.

For translational research in the industry space, a major challenge for early-stage start-ups seeking to translate innovative research into new products that could then underpin new industries, is the ability to develop prototypes, translate test product viability, trial designs and optimise manufacturing procedures. To do this, businesses need access to a national-scale prototyping and manufacturing capability.

This should be delivered through a collaborative network of prototyping facilities, distributed across the country. These would deliver support for early-stage development and manufacturing scale-up across a broad spectrum of disciplines and industries, including engineering, agriculture, and health and medical drug and therapy development. Adopting the proven collaborative NCRIS funding model, the Commonwealth Government would deliver funding for such facilities through a non-competitive grant process that would also leverage funding contributions from state and/or territory government and potentially business. In some cases, these could be co-located and managed by institutions hosting NCRIS-funded NRI or the NRF-supported Advanced Manufacturing Readiness Facility in Western Sydney to maximise existing Government investment in specialised buildings and workforce. Businesses would be able to access the facilities at low to no-cost, potentially though a voucher system or through another means of merit-based allocations. Spanning the 'valley of death' stages of TRLs 4-7, the network would deliver crucial government support essential to de-risking the proof-of-concept and early scale-up stage of product development. This would enable development of products in which industry can invest with greater confidence. The facilities would need to have ISO accreditation and could become advanced manufacturing hubs that serve both Australia and the broader Indo-Pacific region. This would position Australia as a key leader and partner in value-added manufacturing technologies.

Delivering this essential early-stage support to start-ups and other businesses would help address Australia's challenge of 'the missing middle' and support the nation's advanced manufacturing capability. It would help keep more Australian ideas onshore and provide valuable fodder for National Reconstruction Fund (NRF) investment and support the Future Made in Australia (FMiA) agenda.

While a broad range of NRI facilities funded by NCRIS could benefit from expansion to underpin emerging science and research there is no doubt that high performance compute (HPC) and associated data storage will drive ongoing Australian-led impact in most modern computationally heavy science and AI developments. This ranges from materials and drug development to climate modelling to better address and plan for extreme events.

This must be considered separate – yet foundational – to digital research infrastructure. It will be critical that the Roadmap articulates the projected scale of Tier 1 and 2 HPC Australia requires to deliver on critical research needs (modelled based on research funding levels and research priorities) and government policy needs. Further details are provided under Q14.

Past Roadmaps have taken a mixed approached to considering Australia's needs for access to global research infrastructure, including but not limited to particle physics and optical and radio astronomy. This Roadmap should be agnostic of facilities' geographical location, and purely identify the research infrastructure capabilities and functionalities Australian research needs at a national level. This must be done noting that at times it is not efficient nor even possible to construct or deliver these in Australia as a sovereign capability, and in the context of other funding considerations such as association to Horizon Europe and Australia's involvement with the European Southern Observatory.

Q12. How should research translation be planned for in the development of new NRI?

Translation should be explored and informed through both a 'discipline push' and 'industry pull'.

Disciplines should be encouraged – and resourced appropriately – to develop regular decadal plans that identify their discipline's research priorities and potential outcomes and impacts for society, industry and. These plans should identify gaps in research infrastructure and ecosystem capabilities that are critical to underpinning and enabling research.

To complement this, industry and the wider non-industry based research sector should identify translational research infrastructure critical to underpin work at higher TRLs, similar to the approach deployed by the European Commission. For this to be successful a specific industry focus would be needed through a dedicated industry stream, i.e. a 'technology infrastructure' funding scheme. However, it would be imperative that this funding stream does not cannibalise existing NRI funding – there is no merit in supporting a new technology and industry focussed initiative at the expense of discovery research support.

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Thu, Dec 11, 2025, 10:21 AM Australian Eastern Daylight Time
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
CRA supports the growth of industry engagement with NRI facilities where relevant, noting that alignment between the research capability of a facility and industry need will vary depending on where the facility sits on the fundamental to applied research continuum. CRA commends the development of Research Infrastructure Connected providing a 'one stop shop' for NRI facilities and case studies to ensure they are understood by industry and recommends supporting the RIC further to continue their work and scale.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To deepen collaboration, CRA argues that NRI facilities need dedicated resourcing that provides translation capability, supported by researchers embedded in industry and consistent measures of industry use and impact. We particularly encourage shared training programs with CRCs for practice of industry-research collaboration, and on commercialisation, IP, regulatory pathways and applied research.

It may be valuable to integrate Industry co-investment and risk-sharing mechanisms and funding, enabling businesses (particularly early-stage ventures and SMEs) to partner with NRI facilities through shared-cost models, matched investments or structured risk-sharing arrangements. This could help reduce barriers for industry participation and improve the sustainability and adoption of NRI capabilities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Access can be supported with funding for advisory support and 'translation' capability to help support industry navigating translation pathways, along with industry training and information sessions that are industry-to-industry.

Q12. How should research translation be planned for in the development of new NRI?
CRA emphasises that new NRI, where appropriate, should be designed with translation in mind from the outset: involving industry early, providing pathways for prototyping and pilot-scale testing, enabling flexible access for SMEs, and aligning collaboration structures to national missions. Strong partnerships with CRCs and other industry-research entities support making this translation system work in practice.

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Tue, Dec 9, 2025, 04:06 PM Australian Eastern Daylight Time
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Organisation
WA coastal RD&I survey respondents - this response is an aggregation and summary of the relevant responses from a coastal RD&I survey we conducted which received 42 responses from WA-based coastal researchers, innovators and managers.

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
From the 42 survey responses, recommendations include:
- More public leadership and communication by key stakeholders, including through social media,
- Make all data open data and providing interfaces and shared analytics facilities to enable its use,
- Better use of and integration with existing industry networks e.g. PIANC, SICA, SUT, ODIS, SEA, RecFishWest, Blue Assembly,
- Better facilitation, including a 'research concierge services' for industry and community to engage with university researchers,
- Stronger coordination and alignment of large-scale projects and datasets,
- Adequate funding for research assistants, data wranglers to enable organisations to share their data and for others to access it.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
From the 42 survey responses, recommendations include:
- Resourcing the coordination of what data are available with what are required to better align and meet needs,
- Shifting the culture, incentives and addressing barriers to more open data sharing,
- Identify opportunities to incentivise industry to invest in coastal data beyond current, critical operational requirements.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
A shift in scope and emphasis to accommodate:
- more 'Development' and 'Innovation' infrastructure in the 'RD&I' mix
- inclusion of cultural, social and economic research, development and innovation infrastructure and capability where that's necessary to address significant state or national challenges e.g. social and economic values feed into prioritisation of certain locations and activities for investments in coastal climate change adaptation or mitigation

Q12. How should research translation be planned for in the development of new NRI?
Specify, incentivise and evaluate translation activities. The 42 survey responses repeatedly referred to
a) poor translation by researchers, from the perspective of industry, government and community users, and
b) researchers, data collectors and analysts saying lack of funding and support was a barrier to doing better translation.

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Tue, Dec 9, 2025, 12:35 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Active presence and visibility in regional areas, and build in access to other programs, for example, Trailblazer and ARENA-funded programs.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Industry engagement, potentially through industry advisory boards.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
This should be obtained in consultation with industry and end users. In our observation there is not high awareness of NRI capability amongst regionally based industry sectors.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be integrated from the very beginning in the design and development of new National Research Infrastructure (NRI) facilities. This ensures that research outputs are not only produced but also effectively mobilised for industry, government, and community benefit. Key elements include:
• Early Co-Design with Industry and End Users: Translation pathways must be identified during initial planning, with structured mechanisms for industry and stakeholder input.
• Dedicated Translation Strategies: Frameworks should be established to scale research outputs into practical applications, encompassing pathways for commercialisation, policy influence, and community impact.

• Capacity Building: Investment in workforce skills—such as project management, stakeholder engagement, and data stewardship—is essential to support translation activities.
• Infrastructure Integration: New NRI capabilities should be aligned with existing national platforms to maximise accessibility, interoperability, and uptake.
• Evaluation and Milestones: Measurable outcomes for translation (e.g., partnerships formed, products developed, societal impacts) must be set and reviewed at key stages.
By embedding translation planning into governance, funding, and operational models, NRI facilities can ensure that research outcomes are not only generated but also transformed into tangible benefits across sectors.

265

Tue, Dec 9, 2025, 09:06 AM Australian Eastern Daylight Time
[ID: sbm399619162787ecd113cff]

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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Maximising the visibility and utilisation of NRI facilities requires a coordinated, national approach to industry engagement that recognises the diversity of Australia's research landscape, including highly specialised fields such as childhood cancer, where traditional commercial pathways and incentives are limited.
A National NRI Engagement and Visibility Strategy should be developed to promote infrastructure capabilities and expertise across sectors. This should include a centralised, user-friendly digital platform mapping NRI facilities, services, and technical expertise, complemented by case studies that highlight the societal, including health, and productivity benefits of NRI-enabled research, particularly where outcomes extend beyond commercial return.
In specialised areas such as paediatric oncology, NRI facilities could play a crucial bridging role, facilitating partnerships between research organisations and industry.
By lowering barriers to access, supporting collaborative translational programs, and showcasing impact, NRI facilities can broaden engagement, strengthen cross-sector connections, and ensure national infrastructure is leveraged to deliver health, social, and economic benefit across Australia.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Building productive research–industry collaborations requires NRI facilities to strengthen both the capability and culture of translation across the research system. For fields such as childhood cancer, where commercial pathways are complex and the focus is on societal rather than market-driven outcomes, NRI facilities can play a critical role in connecting researchers, clinicians, and mission-aligned industry partners.

This can be achieved by embedding dedicated translation and partnership specialists within NRI facilities who understand both research and industry environments and can identify shared value propositions early in the research cycle.

In addition, targeted grant programs that support early-stage, high-potential research would help de-risk innovation and attract industry participation at earlier stages of development.

The introduction of industry incentive mechanisms in areas of high unmet need, including childhood cancer, would encourage sustained industry engagement and help bridge the gap between discovery and commercialisation.

Finally, co-funded secondments, exchange programs, and training for researchers in commercial literacy, regulatory pathways, and clinical implementation would help bridge capability gaps and foster mutual understanding.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

To strengthen Australia's translational research capability, the NRI system should prioritise the integration of health, genomic, and clinical data infrastructure to enable large-scale, cross-institutional collaboration and accelerate the translation of discoveries into clinical care.

While current capabilities provide important foundational support, a significant gap remains in coordinated translational infrastructure that effectively links discovery research with health service implementation.

Further investment in translational support infrastructure would help bridge the divide between research outputs and clinical or commercial adoption.

For highly specialised fields, new or expanded NRI capabilities could focus on linking and harmonising datasets from existing national initiatives to create connected, interoperable systems that improve patient outcomes.

Q12. How should research translation be planned for in the development of new NRI?

Research translation should be embedded as a core design principle in the planning, governance, and funding of all new NRI capabilities. This means involving end-users, clinicians, patients, and industry partners, at the earliest stages of infrastructure design to ensure that facilities are fit for purpose and aligned with real-world needs.

New NRI should include dedicated translational pathways and performance metrics, capturing indicators such as clinical implementation, regulatory progression, and societal benefit.

To sustain translation beyond discovery, co-investment models that align public research goals with areas of high unmet health need, rather than purely commercial interests, should be prioritised. As mentioned earlier, this is particularly important in fields such as childhood cancer, where industry involvement is limited and impact is measured through health and societal benefit rather than market return.

By planning for translation from the outset, the NRI Roadmap can ensure new infrastructure delivers long-term value to both the research and health systems.

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Tue, Dec 9, 2025, 08:17 AM Australian Eastern Daylight Time
[ID: sbm399160d29fcce63c4a102]

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Networks such as NAT-Net are essential to maximise visibility and access to all stakeholders. The work lead by the network to map Australian Facilities enable cohesiveness amongst technologies and easy to find access to NATs technologies.
NAT-Net encourages facilities to implement the following streams to engagement of users:
1. Access & Onboarding
o National single entry portal
A central directory for capabilities (organoids, analytical platforms, fabrication), transparent pricing, service timeframes, and direct contacts to enable rapid onboarding.
o First project access vouchers
Light touch, fast turnaround support for SMEs/startups to trial NRI/NAT Net services and de risk initial engagement.
o Standardised access & IP frameworks
Common templates for MSAs/SLAs, IP options, and data sharing to reduce administrative burden and speed collaboration and commercialisation.
Outcome focus: Shorten time to first engagement; increase SME participation; reduce negotiation cycles.
2. Capability Building & Market Adoption
o Active regional outreach
Proactive engagement via innovation precincts, incubators, industry associations, chambers of commerce, and regional development bodies—ensuring capabilities aren't perceived as capital city exclusive.
o Short, practical training modules
Online/on site primers that demystify organoids and microphysiological systems (MPS), giving companies confidence to scope and start projects.
o Showcase case studies

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Transparent examples of research to product translation (timelines, cost ranges, pitfalls/best practices) to build trust and signal feasibility.
Outcome focus: Grow demand and literacy for NAMs/MPS; expand regional uptake; convert training into projects.

How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
For emerging technologies like advanced organoid and microphysiological systems, further research and development, expert guidance and standardised translation tools are essential to convert cutting-edge science into sovereign industry growth.
NAT-Net believes NRI facilities can accelerate Australia's translation pipeline by promoting knowledge of Australia's capabilities.
1. Engagement & Pathway to Adoption
o Co design projects with end users
Early involvement of biotech, pharma, SMEs, clinicians, and regulators so the work answers real decision needs (clinical, regulatory, commercial).
o Dedicated discovery and scoping services
A rapid intake/consultation (e.g., one week turnaround) to align a company's problem with the most suitable national capability.
o National coordination and referral system
NRI/NAT Net nodes direct industry to the right expertise, not just the closest location—ensuring access to the best models and platforms.
Outcomes: Faster onboarding, clearer problem-solution fit, higher conversion from interest → funded projects, and stronger trust through lived examples.
2. Standards, Quality & Enabling Frameworks
o Standardised, validated methods
Common workflows, QA frameworks, and reporting formats that support regulatory submission and investment decisions—critical for organoid/MPS and broader NAMs adoption.
o Supportive IP and contracting frameworks
Template confidentiality terms, data ownership models, and commercial clauses that minimise delays and make collaboration predictable.
Outcomes: Reduced administrative friction, consistent quality and reproducibility, smoother regulatory pathways, and investor confidence.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
In the area of NATs Australia needs both upgrades to existing NRIs and a new coordinated capability for human-relevant model systems.
1. Enhancements to existing NRIs
• Phenomics Australia – explicit NAMs and organoid focus- Expand scope to include systematic development, validation and benchmarking of non-animal methodologies (NAMs), including organoids, microphysiological systems and advanced in vitro assays, with clear regulatory and industry engagement pathways.
• Bioplatforms, Microscopy Australia, and National Fabrication Facilities- integrated pipelinesStrengthen links between genomics/proteomics platforms, advanced imaging and microfabrication so companies can move from target discovery → model design → organoid or organ-on-chip testing → data readout within a single coordinated pipeline.
• National data infrastructure- translation-ready data and metadataProvide secure, onshore environments where clinical, biobanking and experimental data can be linked,

with standardised metadata and provenance to support regulatory submissions and long-term follow-up.
2. New or substantially expanded NRIs
• National Organoid, Microphysiological Systems, and Biobanking Network (NAT-Net aligned)A distributed but coordinated infrastructure that:
o Establishes hospital-to-research pipelines for ethically consented tissue collection and processing.
o Maintains living biobanks of well-characterised organoids and other advanced models.
o Offers standardised, validated assays for efficacy, safety and mechanism studies.
o Provides regulatory-grade documentation and QC, enabling use of data in decision-making by regulators, payers and industry.
• National Advanced Therapeutics Manufacturing and Screening Infrastructure
A new infrastructure arm focused on non-animal models manufacturing for preclinical screening of cell and gene therapy, integrated with and translational readiness:
o Builds GMP-like manufacturing platforms for advanced therapeutics (cell and gene therapies) with harmonised quality systems.
o Integrates organoid and microphysiological systems for predictive screening of efficacy, safety, and dosing prior to clinical trials.
o Provides scalable production and validation pipelines to support early-phase trials and commercial readiness.
o Delivers regulatory-compliant documentation and risk frameworks to enable faster approvals and investor confidence.
o Facilitates industry-academic partnerships for co-development and rapid translation of therapies using human-relevant models.
Sustainability of networks such as NAT-net is also crucial as this network sits alongside and interconnect existing NRIs, providing the human-relevant biological layer necessary to translate discoveries into safe, effective products more efficiently and with reduced reliance on animal models.

Q12. How should research translation be planned for in the development of new NRI?
Research translation needs to be built into NRI design from the outset, not retrofitted later. For new infrastructure, we recommend:
• Start with clearly defined use-cases and end-usersCo-design infrastructure around specific decisions it will support (e.g. target validation, preclinical efficacy, toxicology, patient stratification) with input from clinicians, regulators, industry and consumers.
• Embed regulatory and quality frameworks earlyDevelop standard operating procedures, validation plans, reference materials and reporting formats that meet regulatory expectations, particularly for NAMs such as organoids and microphysiological systems.
• Plan data, ethics and governance from Day 1Ensure consent, data linkage, privacy, Indigenous data governance and long-term storage are designed alongside the scientific workflows, with secure onshore compute for sensitive data.
• Provide simple translational access pathwaysOffer rapid scoping consultations, transparent pricing, standard contracts and clear IP frameworks so industry and clinical partners can engage easily.
• Track translation-focused metricsMeasure not just publications, but time to first result, number of external and repeat users, number of projects progressing to clinical trials or regulatory submission, and adoption of NAMs in place of animal models.
• Support method builders, not just usersAllocate protected resources to develop, benchmark and harden new assays (e.g. organoid-based platforms), with open guidance on when and how they should be used.

By designing new NRI around real-world decision points and regulatory pathways, Australia can ensure that infrastructure like NAT-Net's advanced organoid and biobanking capabilities directly drive health, economic and societal outcomes.

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Tue, Dec 9, 2025, 01:00 AM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To maximise national benefit, NRI facilities must operate as an integrated, visible and inclusive system supported by a discoverable digital presence, proactive engagement mechanisms, and equitable access pathways that connect users across both metropolitan and regional Australia.
UWA recommends three complementary approaches:
1. Build a nationally coordinated, discoverable infrastructure ecosystem.
A unified national web architecture should provide a single, searchable entry point for all NRI facilities, using persistent identifiers (PIDs) and standard metadata to connect people, projects, outputs and equipment. Integration of AI-enabled discovery tools and chat interfaces could help potential users navigate facilities, services and expertise across the network, reducing duplication and improving accessibility for non-specialist and industry users.
2. Implement robust persistent identifier (PID) systems to track and link impact.
Widespread adoption of PIDs for instruments, facilities, datasets and researchers would allow the national system to clearly demonstrate utilisation, collaboration, and outcomes. This would also enhance visibility of research infrastructure contributions to innovation and policy and support transparent reporting of national return on investment.
3. Strengthen outreach and engagement mechanisms.
Targeted industry engagement functions including funded roles for engagement staff, national and regional showcase events, capability roadshows, and collaborative demonstration projects are essential to building awareness and trust. Mechanisms that support regional access (e.g. virtual access tools, satellite nodes, and mobile platforms) will ensure that benefits of NRI investment are equitably distributed across Australia.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

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UWA considers that strengthening research–industry collaboration requires a combination of communication, workforce capability, and structural support that enables NRI facilities to translate academic expertise into industry-relevant solutions while maintaining research integrity and collaborative principles.

Key actions include:
• Enhance communication and translation capability.
NRI facilities should develop communication materials and online presences that speak directly to industry audiences clearly articulating the value proposition, available capabilities, and pathways for engagement. AI-enabled tools could further assist potential partners in identifying relevant expertise and understanding how research infrastructure can help address specific industry challenges.
• Invest in workforce skills uplift.
Building industry-facing know-how within the NRI workforce is essential. Targeted professional development in areas such as business development, partnership management, project scoping, IP and contract literacy, and applied problem-solving will enable staff to better connect with industry needs. This aligns with the Australian Research Infrastructure (ACRI) Strategy, which calls for coordinated upskilling across facilities and supports mobility between academic, technical and commercial roles. Models such as the UK Government–funded Institute for Technical Skills and Strategy (ITSS) demonstrate the value of system-level investment in technical workforce capability and career progression.
• Promote the value and distinct role of university-based national research infrastructure.
Industry awareness must be strengthened around the benefits of engaging with research infrastructure including access to advanced instrumentation, expertise, and innovation networks, digital biobanks/cohort studies and collections, and the collaborative nature of these engagements.
• Foster consistency and knowledge sharing across the system.
National coordination of engagement approaches and good practice guidance will reduce administrative burden, increase confidence among industry partners, and ensure equitable access. Communities of practice focused on research–industry engagement can support ongoing learning and exchange between facilities and sectors.
• Support greater transparency of infrastructure capabilities to research-industry collaborators.
National coordination of searchable databases of both infrastructure and associated capabilities will facilitate use of national resources.

By combining strong communication, skilled and confident staff, and nationally coordinated engagement frameworks, NRI facilities can build the know-how, relationships, and trust needed to translate research capability into productive, long-term collaborations with industry and government.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To enhance Australia's research translation capability, UWA advocates for targeted enhancements to existing NRIs that strengthen the interfaces between discovery research and application, and enable collaboration, validation and scale-up with industry, government and clinical partners.

• Accreditation and Reproducibility

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Embedding regulatory-grade quality assurance and quality control (QA/QC) frameworks across NRI facilities, where relevant, would ensure research outputs are reproducible, traceable, and credible to industry, regulators, and international partners. Support for facilities to achieve and maintain relevant accreditations (e.g. ISO, NATA, GLP, GMP) would elevate national research standards, build confidence among collaborators, and open new opportunities for participation in global, regulated research environments.

• Workforce for translation. Enhancing research translation requires targeted workforce development across scientific, regulatory, and commercial domains. Funding should support the inclusion of dedicated translational specialists, such as study directors, quality assurance officers, and data stewards embedded within NRI facilities where appropriate. These roles bridge research and application by ensuring compliance, reproducibility, and alignment with industry and regulatory expectations.

In parallel, investment should enable the upskilling of existing NRI staff to strengthen understanding of translational pathways, accreditation processes, and research governance. Building this capability across the workforce will create a consistent culture of quality, reproducibility, and impact throughout the national research infrastructure system.

• Demonstration and Validation Environments
Targeted investment could strengthen translational interfaces within selected infrastructures by establishing fit-for-purpose demonstration and validation environments that operate to regulatory standards and enable the testing, validation, or certification of new processes, technologies, and prototypes. These environments where appropriate and where alignment with existing facility purpose allows would accelerate validation and de-risk innovation in sectors such as health, energy, agriculture, and advanced manufacturing.

UWA recognises, however, that such functions may require new or complementary capabilities, as discovery-based NRIs are not always suited to regulatory-grade or pre-commercial activities. In these cases, investment in adjacent or partnered facilities, designed specifically for validation, accreditation, or scale-up would ensure that translation can occur efficiently without compromising the fundamental research mission of discovery infrastructures.

Q12. How should research translation be planned for in the development of new NRI?
UWA considers that research translation must be designed into new NRIs from inception, rather than added retrospectively. Translation capability should be embedded through dedicated workforce roles, interoperable data, and governance structures that connect research excellence with practical application.
Key Considerations include:
• Alignment across government investments in research translation. Fragmentation repaired and mission-based investments, ensuring that NRI is supportive of national research priorities, and reflexively that NRI is sustainable with funding opportunities for potential research uses.
• Embed a dedicated translational workforce.
New NRIs should include positions focused on translation and quality assurance such as QA/QC specialists, regulatory and reproducibility officers, and business development or partnership managers. These roles bridge academic, technical, and industry cultures,

ensuring that research outputs are validated, compliant, and ready for uptake by end-users.

• Plan for data interoperability and digital integration from the outset.

Translational success depends on the ability to connect discovery data with applied research and real-world implementation. New NRI design should prioritise interoperable data systems, persistent identifiers, metadata standards, and secure, federated digital environments that enable collaboration, reproducibility, and traceability across disciplines and sectors.

• Co-design with end-users, research enablers and policy partners.

Early engagement with universities, industry, and government stakeholders should inform the scope, functionality, and service model of each new NRI. Co-design helps ensure that infrastructure addresses real-world needs and facilitates downstream adoption of outcomes.

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In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Better communication with peak bodies and industry regulators. Such as Council of Deans; building industry (Green building council, NABERS, AIRAH, Clean Air Society of Australia and New Zealand, Australian Meteorological and Oceanographic Society; Royal Australian Chemical Institute; Australian Mathematical Sciences Institute); Australian Council of Trade Unions, EPAs, EnHealth, Climate Council, Biodiversity Council etc.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NESPs, short term ARC environmental CoE, ITTCs and DPs build significant capacity, yet there is no effort / impetus to coordinate, capture and harness this research-industry expertise. Creation of an alumni and better communications and translation (across all NRIs), awards and recognition of industry/research community builders would help.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
New NRI: An integrated atmospheric composition observing network.
This pilot NRI will bring together EnHealth (state EPAs and environmental regulators), CSIRO, MNF, ACCESS-NRI, NCI, TERN, AURIN and Industry, Public Health and University sectors to provide an united and efficient capability of atmospheric composition observations.

Initially this effort will perform a inventory of existing long-term, calibrated atmospheric observation data collection capabilities that report essential climate variables to international data repositories or could with assistance. The Atmospheric observational

community will create data delivery protocols for QA/QC data that is useful for the wider NCRIS and international communities - i.e. ACCESS modellers, PHRN, TERN etc

Atmospheric observational highly skilled personnel span indoor air, outdoor air pollution, urban emissions, coastal, continental, oceanic and Antarctic processes, observing clouds, reactive and toxic air emissions and greenhouse gases. This will provide valuable data to track NetZero, climate, stratospheric ozone protection and human health targets required by national and international reporting (Montreal Protocol (stratospheric ozone depleting substances), Minamata Convention (mercury), Paris Climate Convention (greenhouse gases), Stockholm convention (PFAS), UNEP (plastics), WHO (outdoor and indoor air).

Q12. How should research translation be planned for in the development of new NRI?
Clear mapping of existing NRI communication and knowledge translation structures to provide new NRI best practice exemplars.

Reporting best practice and citation protocols to capture and track usage and uptake within the community, with consistency across research infrastructures.

Better coordination across the NRIs, including an all community showcase and annual prize event.

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In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Through universities and institutes that support research students. Students exploit them during their studies, then they move on to other institutes and roles across Australia. For example, its been years since i studied in Melbourne, but I can list all the relevant research infrastructure to anyone that asks.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Build it first, and concentrate it in regions that are enticing for industry, so that spin-off companies can be established within 5km of the infrastructure. That is how tech hubs and high tech industry is established. Build it, and they will come.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Microscopy. It is crucial that our microscopy infrastructure isn't just "bleeding-edge" advanced, we need to support the existing workhorses. Funding is constantly being thrown around the "sexiest new instrument" or latest technology, but microscopy has existed for literal centuries. If we lose the basic research capabilities, there wont be anyone left to use the advanced capabilities.

Q12. How should research translation be planned for in the development of new NRI?

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Mon, Dec 8, 2025, 06:44 PM Australian Eastern Daylight Time
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In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Perhaps an NRI Expo in some of our cities and regions, with representatives from each of the NRI entities?

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Directly funding some people with expertise in this area would be useful. E.g. "research translation officers".

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
See above suggestion. Also, existing NRI need to develop a more fullsome view of community priorities such that their resources can be used to maximum effect. This means integrating personnell who have the knowledge to liaise with the relevant communities (usually meaning that they have a background in that field).

Q12. How should research translation be planned for in the development of new NRI?
There should be an industry engagement plan at the outset. Perhaps NRI could have a central research translation infrastructure which supports all the various NRI entitities/communities.

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HILT CRC

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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
HILT CRC proposes that the fastest, least cost and least risk way to develop NRI facilities, and ensure their capabilities are widely known and available, is through national (and international) coordination, with industry, research and government working collaboratively.

Specific suggestions are:
Funding to establish a co-ordinating entity: to oversee knowledge sharing, facilities and international linkages. For Australia to truly capitalise on the green metals opportunity afforded by the net zero transition will require more substantial investment, coordinated nationally, in order to establish a globally leading research and development ecosystem. A more comprehensive approach to investing in the research eco-system will accelerate the rate at which new technologies are adapted to the bespoke conditions in Australia, drive understanding of how to lower cost and increase performance in the new processing pathways, and position Australia at the forefront of the supply of value-added materials for the net-zero economy. HILT CRC has a significant industry partner network (see Figure 1 in emailed submission) which can be engaged where/if relevant to explore opportunities to raise awareness and consider beneficial use cases of NRI facilities.

Foster knowledge sharing: The more information is shared and co-ordinated across Australia, the more rapidly industry, government and researchers will be able to learn, innovate and de-risk deployment of new emerging technologies and approaches. However, this should also have strategic global links.

Support is needed to foster knowledge sharing suited for the heavy industrial sector, which may include both formal structures and agreements, informal arrangements and opportunities to build trusting relationships. HILT is investing in all of the above.

Importantly mechanisms to foster collaboration and knowledge sharing should not be confined to Australian companies and research institutions. Heavy industry is truly global in terms of technology, markets and impact. Hence collaboration and knowledge sharing should also have strategic global links.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

By focussing on national areas of significance, NRI facilities can support research and industry engagement, leading to increased productive research-industry collaborations. Education and training are other important considerations, as NRI facilities can play a role in building the capabilities of the workforce of the future. This can potentially be enhanced through the involvement of HILT CRC and other collaborative research organisations. HILT CRC stewards capability development through its higher degree research program of 30 students and additional outreach activities.

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Mon, Dec 8, 2025, 05:28 PM Australian Eastern Daylight Time
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Animals Australia

In what capacity are you responding?
A representative of an organisation or group

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities can build the know-how and facilitate an increase in productive research-industry collaborations by:

• Prioritising methods and technologies that provide directly translatable outcomes for human health using NAMs – it is now internationally recognised (e.g. in the US, the UK and the EU) that deferring to animal models with extremely poor predictive value stunts innovation and opportunities for increased research and industry collaborations. Prioritisation and support for the development of NAMs in core commercial areas of research such as drug development and toxicology would facilitate opportunities for a more integrated and collaborative NRI ecosystem in Australia.

• Supporting workforce training and skills development – NRI facilities have the opportunity to provide structured training in core NAMs technologies (such as AI-enabled modelling, micro-physiological systems, in silico toxicology modelling) which would foster workforce readiness, innovation and scale. NRI facilities can also participate in international exchange programs and fellowships to enhance workforce capabilities, research-industry collaboration, and uptake and adoption of NAMs.

• Co-design a National Centre for Human-Relevant Research Methods alongside the Commonwealth Government - to coordinate Australia's capabilities in developing, validating and scaling NAMs. A national centre would ideally provide a hub to centralise knowledge; generate joint training opportunities; attract, develop and retain workforce talent; and draw research-industry collaboration from across the globe.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

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Enhancements needed to existing and/or new NRIs to improve research translation capability include:

• National commitment to proactively transition away from animal models - the high failure rate of animal testing is well-known with more than 90% of drugs that succeed in animal models failing human trials (Marshell et al, 2023).

• Dedicated infrastructure to facilitate the development, validation, standardisation, scale and regulatory uptake of NAMs to increase research translatability and mitigate duplication and waste.

• Long-term funding assurance for NAMs development including in vitro, AI and computational infrastructure - Australia risks lagging further behind global progress and foregoing a share of the burgeoning market of human-relevant science. The US, UK and the EU are all heavily investing in NAMs infrastructure, regulation and training. The US recently launched a National Organoid Centre, the EU has embedded NAMs in its regulatory roadmap, and the UK is developing AI-informed regulatory guidance in tandem with new infrastructure.

The European Commission's Joint Research Centre (JRC) provides a strong precedent for Australia on provision of transparent and collaborative research infrastructure. The JRC recently launched BimmoH – the Biomedical Models Hub, which consolidates evidence on organ-on-a-chip systems, 3D cultures and computational models among others. It is the largest public database of scientific articles using human biology-based models in biomedical research. It provides researchers with a powerful tool to design more predictive and translationally relevant experiments and it supports regulators, policymakers, funders, and industry in informed decision-making (BimmoH, 2025).

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https://joint-research-centre.ec.europa.eu/jrc-news-and-updates/human-centric-research-largest-dataset-human-biology-based-models-launched-2025-12-01_en

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Mon, Dec 8, 2025, 05:26 PM Australian Eastern Daylight Time
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Research Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
National reforms and coordinated leadership: From a health and medical research and innovation perspective, key reforms currently in finalisation – notably the National Health and Medical Research Strategy (including the Australian Health and Medical Research Infrastructure Roadmap) and SERD – will provide a unique platform to strategically align health-related NRIs and reduce current siloes. NRI investments underpin both reforms and therefore should be considered within, not adjacent, to their development. This will require national coordinated leadership to prevent further fragmentation and persistent gaps and initiate whole-of-systems reforms.

Development of a virtual NRI hub: Creation of a virtual 'one stop shop' for potential users in relevant industry sectors could be explored which showcases NRI facilities, case studies, news, events and communications. This could take example from the recently launched Health Research Hub for community and consumer involvement in health and medical research.

Strengthen engagement with peak bodies: Scale partnerships with national peak bodies, such as Research Australia, to deliver workshops and information sessions on NRI facilities and their capabilities to members, including industry.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Whilst research-industry collaborations are critical, Research Australia questions the sole focus on research-industry collaborations alone, as well as the current consideration of industry itself Section 6.3 of the 2021 NRI Roadmap considers infrastructure to support 'industry' engagement to drive the translation process for product delivery, with the opportunity to further emphasise this engagement highlighted in the 2026 NRI Issues

Paper. While the existing 2021 and 2026 Roadmap documentation seems to tilt towards commercial partnerships as indicative of industry engagement, it remains unclear exactly what is understood as industry. Health and medical research and innovation sits within a broad ecosystem made up of universities, medical research institutes, patient and consumer advocacy groups, as well as MedTech, pharmaceutical and biotech companies, and philanthropic organisations. A limited definition of industry undermines the role of these different actors in innovation, translation and commercialisation. Research Australia therefore recommends a clear definition of industry within the next Roadmap iteration, which also considers aspects such as health service systems as major partners in research translation and drivers of demand for innovation.

Furthermore, the concept of research translation should not be narrowed to industry engagement for health innovation, translation and product delivery when community engagement also provides a critical mechanism for translation, particularly across priority populations, including in regional, rural, remote and very remote locations where the unique connection of research entities with community produces different translation pathways and place-based models. As such, the 2026 NRI Roadmap should elevate the role of both research-community collaborations as a critical enabler of research translation across Australia.

The following insights relate to the scope of the question focussed on research-industry collaborations, however, could also apply to an expanded definition including community (and other types of) collaboration.

System coordination: Collaboration should be strengthened across policy, funding and research systems. For example, the current disparate funding streams and limited visibility of investment prevent industry from engaging in collaboration, co-investment and translation across the system.

Monitoring and evaluation: Research-industry collaborations with NRI facilities can be strengthened by making it an explicit, measurable expectation. The next Roadmap should define a pathway to embed collaboration activities as a funding requirement and require facilities to report annually on engagement and outcomes with industry partnerships as a core KPI.

Genuine partnerships: Ensuring that research collaborations are supported by principles of genuine partnership (similar to how genuine partnerships are set out under Closing the Gap Priority Reform 1) can ensure different collaborators contribute to leveraging the different strengths across the ecosystem and increase research capacity building throughout the research lifecycle.

Workforce mobility and skills development: Australia must utilise the current focus on circular mobility and entrepreneurial skills development as an enabler for research translation and commercialisation within the SERD and National Strategy to scale translational fellowships, industry PhDs, postdocs, and internships and identify ambitious numerical targets for doing so based on previous programs, such as the REDI program. This should be underpinned by a collaborative cultural shift which promotes cross-disciplinary working. Provision of robust staff training in engagement and translation should be a further priority, for example focussing on building skills in IP management and the articulation of value propositions. A whole-of-systems approach is essential, which also addresses regulatory and systemic barriers that delay research translation and commercialisation.

Showcasing success: Where existing examples of successful research-industry collaborations exist, they should be celebrated and showcased – including through the development of an NRI virtual hub (outlined in Q9). An example in this space is the MRFF Researcher Exchange and Development within Industry (REDI) program, which delivered training, mentoring and industry placements to more than 8,400 participants across Australia to build industry experience and exposure to entrepreneurism.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

To improve the translation of health and medical research and avoid the 'valley of death' between discovery and implementation and/or commercialisation, both new and existing health-related NRIs must be aligned to national priorities emerging from the National Health and Medical Research Strategy and SERD. This will enable end-to-end pathways aligned to national health needs, thereby accelerating translation. Consideration could also be given to the need for specialised translation staff in NRI facilities and dedicated resources allocated to the professional development of existing staff in areas such as IP management and value propositions. Furthermore, while significant NRI funding is allocated to infrastructure assets, it is important to make them accessible to the whole research pipeline. This could be enabled by showcases, publications and development of a virtual hub relating to NRI facilities, as well as embedding a requirement for collaboration throughout the system.

Q12. How should research translation be planned for in the development of new NRI?

Please refer to response to Q10, which outlined 5 key enablers for research translation and should be prioritised in the development of new NRI. These are:
• System coordination
• Monitoring and evaluation
• Genuine partnerships
• Workforce mobility and skills development
• Showcasing success

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[ID: sbm3992ba627d878d0ff938a]

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Organisation
Australian Publishers Association

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
For the book and publishing sector, the main barriers are awareness, clarity and access. APA recommends:

**AustLit-style models – visible, stable platforms with stakeholder advisory groups including industry.

**Partnerships with peak bodies – APA, Books Create Australia, ALIA, ASA and state literary organisations to broker engagement, particularly for SMEs and regional organisations.

**A unified national portal – describing capabilities, access conditions, costs and IP arrangements in plain language.

Digital-first and regional outreach – remote access, online training and regional partnerships to ensure equity of access beyond capital cities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities should Standardise rights and data frameworks – clear, rights-respecting templates for copyright, licensing, ICIP and data sharing to lower transaction costs and build trust.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Strengthening existing humanities data platforms (e.g. AustLit, HASS & Indigenous Research Data Commons) as national hubs for literary and cultural data linking research, policy, and industry.

Developing digital observability tools for cultural and reading data (across libraries, platforms, education and the book trade) to support innovation and policy.

Creating rights-aware AI and data environments where industry can safely collaborate with researchers on AI models, attribution, and provenance using copyright-protected book content under appropriate licences.

Q12. How should research translation be planned for in the development of new NRI?
Translation should be built in from the start via:

Co-design with industry and communities – including the book and library sectors, not added later as an afterthought.

Clear translation pathways and metrics – e.g. measures of impact on literacy, discoverability, cultural participation, exports and AI safety.

Dedicated engagement roles and funding – for liaison, brokerage and communication with SMEs and creative industries.

Rights, ethics and governance frameworks – designed to enable, not block, responsible collaboration, including copyright, ICIP and data governance.

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Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Coordinate with government programs so researchers can bundle NRI access with grants, vouchers and tax incentives, reducing out-of-pocket costs for first trials.
Create on-ramp vouchers or credits for first projects, with a simple application and fast turnaround.
Establish a transparent, independent framework to assess innovation readiness—covering development, validation, and implementation. Funded via public-private partnership.
Publish a single national portal with a simple service list, example use cases, prices, expected timeframes and a contact number. Include short videos and case studies from small and large users.
Provide clear access settings for sensitive work, including options for onshore secure computing.
Publish template agreements for confidentiality, data use and intellectual property.
Run regular briefings in every state and territory with local partners such as industry associations, precincts, chambers of commerce and regional development bodies.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Conduct a national capability audit—modelled on the DST's Medical Countermeasures Initiative—to map current strengths, identify gaps, and accelerate the adoption of New Approach Methodologies (NAMs) in Australia
Fund starter projects. Offer small vouchers or credits for first trials, with a light application and fast turnaround.
Build an expert panel. Maintain a roster of methods specialists who can be brought in to advise on study design, measurement, analysis and validation.
Recognise collaboration work. Include industry training, method transfer and successful hand-offs as recognised outputs in staff performance and promotion.

Partner with and incentivise universities to design future-focused degrees that equip scientists, engineers, technicians, data scientists, and software specialists with the skills Australia needs to lead globally. This aligns with state and federal priorities for sovereign medicines discovery, development, and manufacturing

Enable placements. Support short secondments where facility staff spend time inside companies, and company staff spend time in facilities to learn processes.

Share examples. Keep a public library of de-identified case studies that show what worked, what it cost and how long it took.

Coordinate nationally. List services in a single portal and refer projects between nodes so companies reach the best capability, not just the nearest one.

Co-design the work. Write a brief workplan with milestones and go or stop points so cost and scope stay under control.

Provide a simple intake service. Offer a short discovery call within one week to scope the problem and point the company to the right lab, instrument, data service or computing resource.

Teach the basics. Deliver short online modules and in-person sessions on using facilities, preparing samples and data, and interpreting results. Record sessions for regional users.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Enhance existing NRIs

Phenomics Australia should be the centrepiece of biomedical NRI. New approach methodology (non-animal methodology, NAMs) expansion to include investment in Australia's sovereign capability in NAM development, validation, and deployment. Incorporate successful elements of NSW NAT-Net's research pillar and grant program to enable collaborative NAM development at the cutting edge of development. Establish an advisory group to oversee NAM validation that makes it market-ready for clinical trial use.

Integrate national fabrication facilities with bioplatforms to accelerate organ-on-chip and other new approach methodology (NAM) development, prototype testing, validation and upscaling.

Rapid method evaluation program for new approach methodologies (NAMs). A small national program that quickly tests new design and docking tools, writes plain-language guidance on when to use them and when not to, and updates the certified catalogue.

Expanded and integrated biobanking platforms. Centralise data from existing biobanks (tissue, genomic, phenomic, animal model) to enable integrated computational analysis and modelling of existing information from multiple sources. This will support early drug target identification and go/no-go decisions.

Bioplatforms and analytical facilities. Offer shared assays to test preclinical drug targets and developed molecules/designer proteins for expression, folding, binding, stability and activity, with standard formats for reporting results.

Supercomputing centres. Reserve predictable GPU access for pharmacokinetics, pharmacodynamics, population health and toxicology modelling. Provide a national registry of models and ready-to-run workflows for pharmacokinetics, population-based models, imaging, structure prediction, complex modelling, docking and protein design. Include tools that check developability and manufacturability, not just accuracy.

National data services. Host reference sets for machine learning approaches, including drug and protein design and docking, with clear licences and identifiers, including negative controls and real-world edge cases. Publish checked test sets so different design methods can be compared fairly.

Australian Synchrotron. Link macromolecular crystallography and small-angle scattering to standard pipelines that validate drug or designed proteins and complexes.

Microscopy Australia. Focus on analysis pipelines for existing microscopy instruments. Provide national workflows to validate imaging results.
Secure options for health data. Provide onshore, private computing so clinical and imaging data can be used safely.
New NRI to fill critical gaps
National protein design and modelling service. A staffed expert team with a curated catalogue of fit-for-purpose workflows, a helpdesk, short consults and open training materials. The service guides non-specialists to the right tools, sets up jobs correctly and certifies outputs through benchmarks and simple provenance reports.
Rapid method evaluation program for protein design. A small national program that quickly tests new design and docking tools, writes plain-language guidance on when to use them and when not to, and updates the certified catalogue.

Q12. How should research translation be planned for in the development of new NRI?
Start with co-designed priority cases. Clearly specify the regulatory needs (AU and internationally) and the specific context in which new approach methodology (NAM) data will be used (e.g., screening, target validation, toxicity, quantitative risk assessment).
Identify the End-Users and Foster Collaboration for New Approach Methodologies (NAMs): Engage early and continuously with essential partners, including regulators, policymakers, industry, and clinicians. This ensures the research aligns with practical needs and builds confidence in the method.
Plan data and privacy from day one. Set consent, storage, retention and sharing rules. Provide on-shore secure options for clinical or commercial work. Respect Indigenous data protocols where relevant.
Make methods reproducible i.e. follow a structured, development, validation and implementation pathways. Deliver containerised workflows, model registries, reference datasets and validation reports so results can be checked and reused.
Lower the first barrier for companies and researchers. Offer small vouchers or credits for first trials, with a fast application and rapid feedback.
Test for "fit for use," not just "fit to data" for in silico drug and protein binder development. Include early screens for solubility, stability, expression, immunogenicity risk and cost of goods so poor drugs and protein designs are dropped early.
Set simple measures. Track time to first result, cost per result, number of designs that pass lab tests, projects moving to pilot manufacture, external users onboarded and repeat usage. Report these each quarter.
Connect the chain. Link computing, data services, the synchrotron, microscopy, proteomics and pilot biomanufacturing so projects can move from design to evidence to material without friction.
Support method builders. Reserve funding and protected time for developing and hardening in-chemico, in-silico and in-vitro methods, with public benchmarks and plain-language guidance.
Govern well. Seat an independent user council with clinicians and companies to review priorities and progress.

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Mon, Dec 8, 2025, 05:03 PM Australian Eastern Daylight Time
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Our stakeholders emphasised that strong collaborative engagement across the sector (ensuring that there are benefits to the participants in working together on external engagement) could be a solution. Such collaboration could include visiting positions, joint appointments, internships and joint undergraduate or postgraduate projects hosted within an NRI facility to ensure a bridge of communication between the facilities and either Universities or Industry. These joint appointments between facilities and "user" organisations would allow either companies or Universities to employ staff who are familiar with the facilities' capabilities, and who could therefore provide a vital communication channel between organisations, institutions or industry partners.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Ultimately, use of NRI by industry both directly or in partnership with universities and research institutions requires a level of knowledge and skills (with the mix varying depending on the nature of industry involvement and use). These capabilities may be built by embedding emerging knowledge into existing qualifications, to support new graduates. However, it is important to also consider how to provide opportunities for existing industry workers to upskill appropriately. There is a role for NRI in directly delivering or facilitating access to upskilling opportunities that will allow existing industry workers to:

- Safely and productively make use of NRI facilities, and/or
- Understand how NRI-based research could be applied in / be relevant to their organisation's context.

The nature of upskilling needed may differ for different types of workers, but it will be important to ensure that university staff capability be developed as a collaboration between academia and industry.

We should also consider the role of NRI in supporting capability of the broader industry workforces needing to adapt in order to make use of new knowledge/technologies developed through the NRI. We suggest that innovation-driven productivity improvements can only be realised when our industry workforces have the right skills to make use of new technologies or innovations. NRIs establish a network which could also be leveraged to support broader industry upskilling opportunities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

In general, our stakeholders identified a need to ensure that the NRIs are related to particular industry sectors. This is only partially the case at present, with the existing NRIs much more focused on basic infrastructure. One example is in the Manufacturing and Materials space. There is considerable capability in academia, but universities are not well co-ordinated in their facilities, leading to duplications in some areas and gaps in the others.

More specifically, three examples were raised for existing and new NRIs.

The first was the strong need for a Quantum Measurement and Testbed Facility, which would cover a similar niche to the NQCC facility in the UK. At the moment, we are commercialising fundamental research discoveries from the late 90s to the early 2010s. In addition, there has been a recent pivot away from fundamental quantum technology research in Australia, which endangers the next generation of research commercialisation opportunities. A national testbed facility would allow a new generation of researchers to use state of the art equipment to make those fundamental discoveries needed for the next 20 years.

The added benefit is that this facility will also support existing start-ups as they scale from lab to product.
Provided such a dual use facility (research and commercialisation) will also help address the brain-drain of advanced technology breakthroughs to other countries.

To improve research translation and adoption of NRI facilities across the wider research sector, the second example concerns strategic investment in new NCRIS capabilities for HASS and Indigenous researchers and communities through an integrated, collaborative approach. This investment will provide:

• A coordinating hub offering strategic leadership and overall visibility of the strategy, and supporting cross disciplinary, institution and sector coordination and collaboration
• Support cross-disciplinary and cross-sector collaborations focused on national research priorities
• A public-facing citizen-centred communication, engagement, and participation program
• Capacity to prototype new data sources, methods and applied technologies
• Large scale integrated data and analytical capabilities to ensure there is community value derived from combined administrative, research and commercial data
• Federated data services offering curated access to data for priority research areas, progressively developed to integrate key data infrastructures

• Digital public infrastructure, standards and open protocols for national sovereignty and interoperability
• A data ethics and governance program to support safe, responsible and inclusive research systems and FAIR and CARE practices
• A research capacity-building program to work with new forms of data, pilot access to and use of new data sources, and support cross-disciplinary and cross-sector collaborations addressing national research priorities
• A national research and training program for data access and analytics in the humanities and social sciences and beyond.

The third example is the Advanced Manufacturing and Materials Australia (AMMA) facility, which is already generating some momentum. University partners across the country are a part of the discussions with the key partners already listed on the website. Many Australian universities have capability in advanced manufacturing, including additive manufacturing, digital manufacturing, advanced automation and cyber-physical systems. Currently, this is not co-ordinated across the country, meaning there are areas of duplication and other parts of the value chain that are missing altogether. Hence a co-ordinated approach is badly needed, but we need to understand how this might work for universities. Given all of the practical and logistical difficulties that would exist should we opt for the kind of model that encourages shared infrastructure alone (we cannot, for instance, make a mid-project jump from one manufacturing platform to another in a different institution because of differences in parameter specifications, etc), we should instead develop a "flagship" model network that allows each institution to specialise in particular processes. For example, most universities will have some basic polymer printers and a laser powder bed platform, but for more specialised technologies we should collaboratively decide which university takes the lead in one area to support national research in that field.

Furthermore, the lack of a coordinated national approach to research infrastructure means much of the translation potential in this area remains untapped or is translated through foreign states. This represents not only a major economic opportunity for Australia, but also a significant sovereign capability risk.

To address this, AMMA's first stage would be to devise a means to link up the current facilities which are held by many of the universities in a collaborative arrangement. That could be done in 12-24 months. Investment into new targeted translation facilities could occur after that. This would support industry sectors such as aerospace and space, mining equipment supply chains, biomedical devices, and modular construction.

Q12. How should research translation be planned for in the development of new NRI?
We would recommend, consistent with some of the sentiments of the paper, the consideration of factors such as:
- the balance between basic and applied research (both are ultimately needed);
- support for collaborative, interdisciplinary research; and
- the role for industry-led and industry-partnered research and how the proposed NRI can/should support or incentivise partnerships that will improve the level and rate of research translation activity.

For example: we could consider embedding NRI within existing or new precincts to support greater visibility to and engagement with key industry partners and to build networks that

can more effectively address skill, knowledge and research gaps in our key industries. The wrap around services and events that help promote these connections are important.

As noted in Q10, translation of new innovations to industry workforces at scale requires an uplift of the broader workforce in order to use new technologies that may be developed through RNI supported research. Consideration should be given to how NRIs may provide early insight into emerging skill needs. Where NRIs are embedded in a precinct with strong industry ties, a mechanism to support codesign of upskilling opportunities for industry partners to support early adoption of new technologies may emerge.

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Organisation
ATN Universities

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
ATN Universities recommends using precincts and regional nodes to increase engagement with industry, including SMEs, both within and beyond metropolitan centres. A national NRI portal that clearly maps facilities, capabilities and access pathways would help increase visibility and transparency. We also support cross-promotion and alignment with other national initiatives such as Trailblazers, CRCs, AEA programs and precinct strategies, which can help reduce duplication and strengthen awareness. Shared branding, coordinated communication materials and participation in industry events can help present a coherent national NRI system. These measures support an accessible, user-focused approach to infrastructure. Dedicated and appropriately resourced engagement staff and activities will be needed to deliver this visibility in practice.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
ATN Universities recommends embedding industry liaison and business-development staff within major NRI nodes to help convert one-off access into longer-term partnerships. Co-locating research infrastructure within innovation precincts anchored by universities and surrounded by industry and community partners can strengthen collaboration and streamline engagement.

This also presents an opportunity for NRI facilities to identify emerging skill needs and provide a mechanism to support upskilling opportunities for industry partners. In many cases, productive collaboration will depend not only on research capability but also on the capacity of industry workforces to understand and adopt NRI-enabled technologies, and NRI can play a role in supporting this skills uplift. Better alignment between NRI capabilities and national programs such as Trailblazers, CRCs and AEA programs would also

support an integrated translation pathway and create clearer opportunities for industry participation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Many facilities have limited planning and investment in translational or commercialisation capabilities. While larger, more sophisticated partners may be able to navigate this complex landscape, this creates a structural barrier for engagement with SMEs, who may not have the resources and experience to engage effectively.

ATN Universities supports developing staff capability in research translation, and strengthening cross-cutting digital and translational infrastructure, including AI, compute and data integration capabilities. Investment in pilot-scale and testbed facilities in areas of national priority would help accelerate translation outcomes.

Expanding open access and improving interoperability across NCRIS capabilities would support a more connected and user-focused system. We also recommend that translation impact be incorporated as a core outcome metric for NRI planning and investment. Planning for these enhancements should take into account the resourcing required for engagement, translation support and ongoing operations, not only capital investment.

Q12. How should research translation be planned for in the development of new NRI?
ATN Universities recommends that all new NRI proposals include clear translation pathways, governance arrangements involving industry partners and measurable indicators for collaboration and IP generation. Proposals should prioritise co-location within existing or new precincts or digital ecosystems that link research, industry and community partners. Early planning for business-development capability, including staffing and engagement processes, should be funded as a core part of capital establishment.

A national framework that tracks outcomes (commercial outcomes as well as public impact) will enable performance benchmarking. These elements support a more connected and translation-focused national infrastructure system. New NRI should also consider how they can provide early insight into emerging industry skill needs and, where appropriate, support the codesign of upskilling opportunities with partners to enable earlier adoption of NRI-enabled innovations.

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
For NRI capabilities to be genuinely accessible to industry across Australia, facilities need to adopt an approach that extends beyond simply advertising services to potential users. NRI should act as active partners in national capability-building, helping industry, government and regional communities understand and utilise the advanced tools and expertise available within the national system. This is particularly important in areas such as defence, medical technologies, clean energy, critical minerals and advanced manufacturing, where industry capability is directly linked to Australia's sovereign security and innovation capacity.

NRI providers can strengthen engagement with industry through clear, targeted communication about their capabilities, including accessible industry-focused capability catalogues, demonstration activities, and outreach programs tailored to sectors that may not have strong academic connections. Many regional and emerging industries remain unaware of the powerful analytical, imaging, modelling and training resources available through national facilities, and better communication is essential to broaden participation.

NRI facilities should also be enabled to take a more active role in developing skills and capability within industry itself. This includes offering short courses, technical training, and collaborative R&D activities that help companies build internal expertise while gaining exposure to advanced national infrastructure. Such engagement supports workforce development and aligns with ANREN's mission of integrating education, research and capability-building across sectors.

To encourage deeper participation, the Roadmap could introduce incentives such as industry-linked grants, vouchers or co-investment mechanisms that support projects

making strategic use of NRI. These would lower the barrier for industry partners—particularly SMEs and regional companies—to undertake high-impact research and innovation. With appropriate governance, these programs can foster collaboration while maintaining research integrity and avoiding conflicts of interest.

There is also significant value in more coordinated, system-wide approaches to engagement. Collaborative outreach efforts between multiple NRI providers—such as joint roadshows, shared capability portals, or thematic clusters targeting specific industries—would offer a clearer and more coherent entry point for users nationally. Such collaboration mirrors the distributed, networked model of ANREN and reinforces the idea that research infrastructure should operate as a unified national system rather than as isolated facilities.

Ensuring broad access also requires lowering practical barriers to use. Streamlined onboarding, transparent access processes, remote-use options, and accessible pricing models will make facilities more attractive to industry partners who may be unfamiliar with research environments. When processes are simple and transparent, industry engagement becomes easier, especially for organisations without established research teams.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

NRI facilities can strengthen research-industry collaborations by building not only technical capability but the organisational know-how, networks and support structures that allow partnerships to form naturally and operate effectively. This involves creating an environment in which collaboration is routine, well-supported, and aligned with the broader national objective of building sovereign capability across multiple domains. Importantly, productive collaboration should not be limited to traditional research-industry partnerships, but should also encompass cross-domain engagement with government, health services, and other public-sector users where NRI capabilities can deliver significant social and economic value.

A strong foundation for collaboration is clear communication of the capabilities, expertise and opportunities available at each facility. Many industries—particularly those outside major metropolitan centres—do not have detailed awareness of the advanced tools, scientific knowledge and training potential housed within NRI. Proactive outreach, sector-specific engagement programs, and jointly managed capability catalogues can help bridge this gap, ensuring that potential collaborators understand the relevance of NRI to their needs and challenges.

NRI providers can also build collaboration capacity by adopting structured co-design processes with industry, government and research partners. Co-design helps align infrastructure development with real-world requirements and ensures that new capabilities are both scientifically robust and practically relevant. This approach is already reflected in ANREN's model, where academic, industry and government partners work together to define training pathways, research priorities and problem-focused innovation. Extending this co-design approach across NRI systems—by involving partners early in scoping, capability planning and pilot projects—will support collaboration that is mutually beneficial and responsive to emerging strategic needs.

A further opportunity lies in co-developing microcredentials and short courses with industry and government users. Many emerging industries require rapid upskilling in areas such as advanced materials analysis, radiation measurement, accelerator applications, digital modelling, and regulatory literacy. Developing microcredentials through multi-party consortia would create shared educational infrastructure, diversify training pathways, and strengthen the connection between industry needs and NRI capabilities. This also reinforces the role of NRI staff as educators and mentors—an essential part of building broad national capability.

Creating formal mechanisms that allow staff mobility, secondments, and shared placements between NRI facilities, industry partners and government agencies will further strengthen collaboration know-how. When staff understand each other's environments and constraints, collaboration becomes more efficient and innovation accelerates. These exchanges also help NRI personnel maintain current knowledge of industry practices and global standards, enhancing Australia's sovereign capabilities in specialised domains.

To support collaboration at scale, NRI providers should develop dedicated collaboration support units or partnership managers who can guide partners through access requirements, contracting, IP and governance processes. Simplifying the administrative side of collaboration reduces friction and encourages participation, especially for smaller companies or regional organisations unfamiliar with research environments.

Collaboration must be embedded into national funding settings. Incentives or co-investment mechanisms that encourage collaborative research projects using NRI will reduce barriers to entry and ensure that industry participation is supported, not incidental. These schemes can be carefully governed to preserve research integrity while facilitating shared innovation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To strengthen Australia's research translation capability, ANREN recommends targeted enhancements to existing radiation, accelerator and nuclear science infrastructures—such as the Australian Synchrotron and the Heavy Ion Accelerator Facility—to expand beamline capacity, modernise analytical systems and support prototype development for industry-facing applications in defence, medical technologies, advanced materials and environmental monitoring. Translation would also be improved by establishing a coordinated national training and demonstration capability for nuclear and radiation sciences, enabling microcredentials, regulatory literacy and hands-on skills development across sectors. Creating cross-domain testbeds that link modelling, materials characterisation and manufacturing would help researchers and industry move more efficiently from experimentation to deployment. Greater coordination across relevant NRI facilities, along with streamlined digital access, data pathways and collaborative funding mechanisms, would further accelerate translation, especially for SMEs and regional users. These improvements align with ANREN's mission to build sovereign capability, strengthen workforce pipelines and ensure national infrastructure can support emerging strategic and safety-critical technologies.

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Mon, Dec 8, 2025, 04:38 PM Australian Eastern Daylight Time
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Australian Research Data Commons

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities can make their capabilities more visible and accessible by giving industry a clear line of sight to where research organisations and infrastructure have already delivered impact. One effective approach, demonstrated by ARDC, is to surface real examples of successful collaborations in a way that industry can quickly understand and act on. Research Link Australia (RLA) is a national digital platform that maps and showcases where industry has partnered with research organisations and research infrastructure across the country. By presenting a clear overview of past collaborations, RLA helps industry see where capabilities already exist, how they have been applied, and which partners have a proven record of delivering impact. This visibility not only makes research strengths accessible to businesses across Australia's cities and regions, but also lowers the barrier to forming new partnerships by signalling credible pathways for future collaboration.

To support industry to better understand NRI capabilities, targeted investment in cross-NRI translational infrastructure and activities is necessary, including:

EMBED INDUSTRY SPECIALISTS: Place dedicated engagement staff within NRI facilities to connect researchers with industry, coordinate collaborative projects and share practical knowledge. This includes providing tailored industry-engagement training that empowers NRI personnel to confidently highlight relevant capabilities to industry partners.

NATIONAL NETWORK OF RESEARCH–INDUSTRY ADVISORY GROUPS: Composed of specialised Advisory Groups representing key areas such as health, biosecurity, manufacturing, this cross-NRI national network would link infrastructure, government and industry. It would enable industry to provide feedback on emerging needs, skill gaps and access barriers and assist NRI to promote available capabilities, technologies and collaboration pathways.

Together, industry and researchers could jointly identify opportunities, workforce needs and practical steps to improve engagement.

CENTRAL INFORMATION PLATFORM: Leveraging existing indexing infrastructure such as RI Connected, a dedicated industry-focused central information platform could present collaboration use cases for each NRI, where businesses can discover NRI facilities, services and expertise, view case studies, and contact relevant facility representatives.

STRENGTHEN REGIONAL ACCESS: Establish regional research infrastructure engagement officers through universities and innovation hubs to connect local industries and researchers with NRI facilities, ensuring equitable access across cities and regional areas.

Visibility is also strengthened through active participation in industry conferences, events and forums, where facilities can surface relevant capabilities in response to sector needs. Together, these approaches ensure that NRI capabilities are visible, accessible and aligned with real industry demand.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Building the know-how and confidence needed for productive industry–research collaborations requires NRI facilities to work directly with industry on real problems, not hypothetical ones. Co-designing solutions with industry users deepens understanding on both sides and builds trust, practical insights and a shared sense of what 'good' looks like.

Through ARDC's Translational Research Data Challenges, this approach has already generated multiple partnerships that deliver infrastructure genuinely useful to industry. Traceability is a clear example: Australia's food producers face growing expectations to demonstrate provenance, and governments require reliable data for compliance. The mud crab sector alone brings in around $50 million each year, yet has long struggled with fragmented information across its live supply chain. In partnership with government and industry, ARDC supported the design and trial of a secure, purpose-built data infrastructure that enables end-to-end traceability tailored to the realities of live mud crab production and transport.

Further targeted initiatives to support research translation and strengthen productive collaboration include:

COLLABORATION SKILLS TRAINING: Provide short, targeted training to help researchers and staff understand industry priorities, commercial timelines, and collaboration and decision-making processes.

SUPPORT FIRST-TIME COLLABORATIONS: Provide pilot or seed funding programs that allow industry to trial NRI with low risk and minimal administrative load. This helps new partners test feasibility, build confidence and establish the foundations for longer-term collaboration.

STAFF EXCHANGES: Facilitate and encourage short-term placements, joint roles or secondments between NRI facilities and industry. These exchanges increase cross-sector understanding, build relationships and trust, and expose both sides to each other's constraints, workflows and drivers.

SHARE LESSONS NATIONALLY: Establish a national community of practice across facilities and sectors to exchange insights, compare approaches, capture lessons learned and continuously improve collaboration models over time.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Effective research translation depends on the ability of industry, government and researchers to share and use data in secure, trusted ways. This is a recognised gap in Australia, and without addressing it, cross-sector innovation stalls. Dataspaces can provide the solution. Dataspaces are digital environments that enable controlled, interoperable and transparent data sharing, supported by common technical, legal and governance standards. By offering trusted mechanisms for data exchange, dataspaces make collaboration easier, reduce risk and support innovation across sectors. ARDC is a member of the International Data Spaces Association (IDSA).

Phase 1 of ARDC's dataspaces program examined how decentralised data governance can operate in the Australian legal and institutional context and delivered a proof-of-concept. The next phase moves from exploration to building operational dataspaces. This includes creating a "dataspaces-as-a-service" capability and establishing the legal, technical and governance foundations needed for multiple dataspaces to operate reliably and consistently across Australia. It means turning pilot insights into national infrastructure, providing a repeatable framework for new dataspaces, and ensuring alignment across governments, NCRIS capabilities, industry and research partners.

In addition to dataspaces, national-level improvements that would strengthen research translation include:

CROSS-SECTOR TESTBEDS: NRIs can develop shared national testbed initiatives that provide researchers and industry with a neutral, well-supported environment to trial new technologies and approaches. These testbeds could focus on priority domains such as health, energy or manufacturing, enabling proof-of-concept work, validation, testing and early-stage integration with existing systems. By lowering the cost and risk of experimentation, testbeds help accelerate translation and build confidence in emerging solutions.

FLEXIBLE ACCESS MODELS: NRIs have traditionally focused on serving research users. To improve research translation, facilities should introduce more flexible access schemes, including clear mechanisms for industry – especially SMEs and regional users – and government to access NRI capabilities. For digital NRIs, this means enabling access to compute, storage, data vocabularies, catalogues and related services supported by appropriate authentication pathways for non-academic research users.

Q12. How should research translation be planned for in the development of new NRI?

It is essential that new NRI investments are guided by where Australia conducts its research and R&D. A review of Field of Research (FoR) codes and national funding patterns shows a consistent picture: Engineering accounts for a large share of the country's research effort yet remains under-supported by digital and cross-NRI infrastructure. Nearly 20% of ARC research grant funding from 2001–2025 (around $17 billion) has gone to Engineering fields. Engineering also represents about 30% of CRC investment from 1991–2025 (around $5.5 billion), and 39% of R&D investment between 2010-2014 (around $150 million). Furthermore, the National Reconstruction Fund identifies Engineering-intensive

domains as priority areas for Australia's future prosperity, with particular focus on renewables and low-emissions technologies, resources, transport and agriculture. These figures collectively highlight the scale and national importance of Engineering.

Despite this, Engineering lacks the corresponding digital, data and computational infrastructure support seen in other domains. To plan future NRI effectively, investment must be aligned with the actual distribution of research activity, national R&D demand and NRF priorities. Strengthening digital and cross-NRI capability for Engineering is necessary to ensure that Australia's most active and strategically important research areas have the infrastructure they need to translate outcomes into industry impact.

Complementing this, effective research translation must be designed into NRI from the outset. This means ensuring industry is a genuine partner throughout planning and development, not an end-user added later. Priorities and services should be co-designed, and practical access mechanisms strengthened, so industry and regional users can engage easily. Translation also relies on people, so new NRIs should embed industry specialists and include structured collaboration-skills training, staff-exchange programs and clear support for first-time industry collaborations. These elements build the confidence, relationships and shared understanding researchers and industry need to work effectively together.

National testbeds should also be planned as part of the architecture, giving researchers and industry neutral, well-supported environments to trial solutions. Together, these measures ensure new NRIs are built from day one to support collaboration, lower barriers to participation and accelerate the path from research to real-world impact.

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Mon, Dec 8, 2025, 04:36 PM Australian Eastern Daylight Time
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In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Increased exposure and participation in industry events, sponsorship, training and research outputs. scholarships and grants

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Reduce barriers to industry participation - technical, admin and financial

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Longer term funding enables continuity of participation, reduce admin overheads for grant and other renewal processes. Improves efficiency of the workforce

Q12. How should research translation be planned for in the development of new NRI?
Incorporation into circular frameworks such as Learning Health Systems - embedding short and long term evaluations into all program interventions

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
CAA has observed that the cost of utilising existing NRI is a key barrier limiting the accessibility of NRI to the Australian cellular agriculture ecosystem (which is encompassed by the broader food biomanufacturing industry, and includes both precision fermentation and cell cultivation technologies). Shared-use facilities must accommodate diverse processes and associated expertise, and often require retrofitting of existing facilities to accommodate new projects. This often makes these facilities inherently more complex and expensive to operate relative to industry-specialised facilities.

This challenge is amplified in food production because the gap between R&D and commercial scale is much larger, and the required production costs are much lower, compared to other biomanufacturing verticals (e.g., pharmaceuticals). This necessitates more complex, iterative and expensive R&D and scale-up processes. Companies consistently describe the substantial upfront R&D required to establish optimised processing and develop products, followed by highly iterative programs of work to troubleshoot technical challenges, refine production methods and explore new applications with prospective customers. Thus, R&D should not be seen as merely a foundational enabler, but a continuous imperative throughout an industry's scale-up trajectory. As a result, significant ongoing R&D demands may make current NRI fee-for-service access costs a limiting factor for food biomanufacturing startups.

CAA welcomes the recent launch of the NCRIS Synthetic Biology Voucher Scheme, administered by Bioplatforms Australia, to provide matched funding to increase the accessibility of existing NRI facilities. CAA recommends that this Scheme be continued and expanded into 2026-27, and that the eligibility of commercial entities be maintained to support industry research translation.

Recommendation 1: The current NCRIS Synthetic Biology Voucher Scheme should be continued and expanded to:
- Remove the cap on the maximum voucher value on a case-by-case basis. -To allow access to the same provider multiple times to support multiple iterations of a project, when appropriate.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Cellular agriculture and food biomanufacturing companies require a clear articulation of how relevant existing NRI (e.g. The Australian Genome Foundry (AGF), IDEA Bio) relate to and complement one another. Greater transparency around their respective roles and points of interface would help ensure that companies can effectively progress through the NRI pipeline, thereby improving research translation and commercial outcomes. This is particularly important and valuable for start-ups using high-pressure funding mechanisms such as venture capital, as it helps ensure they set realistic expectations for the scale-up process and timelines.

Recommendation 1: Develop a more accurate articulation of the stages and processes required to develop foundational research and how this can be translated into commercial outcomes. For example, public-facing resources that map the roles (based on capability and capacity), responsibilities, and transition points between key NRI facilities (e.g., when/how to transition from AGF to IDEA Bio). This should include outlining the potential magnitude and structure of iterative processes based on representative case studies.

For precision fermentation, strain development needs to be forward-looking and designed not just for near-term productivity in small-scale bioreactors, but for cost reduction and production performance in large-scale commercial facilities. CAA has observed that the precision fermentation industry lacks access to institutional experience and knowledge in preparing strains for commercial-scale production, and that current NRI expertise is often constrained by the operational scale of existing facilities (i.e. 250 mL–25 L). Without bridging this gap, there is a risk of progressing strains that perform well at a small scale but fail to scale effectively in food-grade, commercial-scale manufacturing environments.

Recommendation 2: Invest in the development of the skills and expertise needed to assist users of existing NRI facilities to support the translation of research and bridge the critical gap between early-stage research and development, and commercial scale (e.g. bioprocess engineering expertise).

Stakeholder feedback to CAA indicates that the current NCRIS funding model does not consistently meet industry needs (particularly in translating R&D through to pilot and on to commercial scale), thereby limiting productive research–industry collaborations.

Feedback suggests that existing funding streams tend to prioritise incumbent platform managers and host universities, leading to investment decisions that do not always align with evolving bottlenecks and gaps experienced by both academia and industry. In some cases, industry feedback has indicated that NRI funding has reportedly been allocated to capabilities that are already readily available through academic and commercial providers - sometimes at lower cost and with faster turnaround times (for example, offshore DNA sequencing services).

Whilst CAA recognises the value in building on existing investments, funding to upgrade existing NRI facilities should thus be subject to a rigorous, transparent value-for-money assessment that would be required for a new NRI capability. This would ensure that funding decisions are transparently aligned with evolving research and industry capability gaps, and that investments actively support the holistic growth of Australia's biomanufacturing and synthetic biology ecosystems.

Another notable example is the $18 million upgrade to the QUT Pioneer BioPilot in Mackay, funded by University, State and Commonwealth sources outside of NCRIS. Despite this facility being nationally significant and critical for translating Australian research strength into new industry and commercial opportunities, NCRIS is absent in supporting the establishment, operations, or access to this facility by Australian industry. This illustrates an opportunity for NCRIS to invest in well-targeted initiatives that could provide substantial research uplift for academia and industry through nationally significant research infrastructure, thereby strengthening research-industry collaborations and enabling research translation outcomes to be directly attributed to NCRIS.

Recommendation 3: Reform NCRIS investment processes to establish a fully open, competitive, and peer-reviewed framework that applies equally to re-investment in existing capabilities and the establishment of new capabilities. This could include a pivot towards 'Request for Procurement' style funding programs, where industry and academic partners are invited to submit proposals for funding through an open process.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
CAA welcomes the explicit recognition in the NRI Issues Paper of "cellular agriculture research translation hubs" as an opportunity to leverage nationally funded infrastructure to support industry growth. We are also encouraged that biomanufacturing facilities are highlighted under two priority areas outlined in the Issues Paper: achieving net-zero emissions (Priority 1) and bolstering national food supply chains (Priority 5)

NCRIS investment in cellular agriculture research translation hubs (as a part of a new NRI capability focused on biomanufacturing, with a priority on food) would alleviate current infrastructure bottlenecks and accelerate commercial translation outcomes for Australia's emerging food biomanufacturing sector. This sector represents one of Australia's most strategic, though currently underleveraged, opportunities to: strengthen food security; enhance national resilience; build a high-value bioeconomy; and add value to Australia's agricultural industries and associated onshore.

Below, we identify and describe investment opportunities that could enhance and complement existing NCRIS investments in The Australian Genome Foundry (AGF), IDEA Bio, and UTS Biologics Innovation Facility (BIF).

1. New NRI required:

As outlined in CAA's submission to the initial NRI consultation, existing facilities are not adequately servicing the burgeoning cellular agriculture industry in Australia. As acknowledged in the Issues Paper, the industry requires "fit-for-purpose bioreactors (accommodating increasing volumes) that facilitate the optimisation of upstream and downstream processing at scale." Critically, these must be:

- Food-grade facilities designed specifically for the scale-up of technologies used to produce food ingredients, enabling companies to transition to large-scale commercial facilities.
- At a volume/capacity larger than what currently exists.
- Able to be used for pre-commercial production batches to support regulatory approval processes.

These criteria are not being met by the current NRI facilities, which have been established to service a wide range of synthetic biology applications beyond food. NRI facilities like AGF and IDEA Bio currently only provide bioreactor capacities suitable for precision fermentation up to 250 mL and 25 L, respectively.

For cell cultivation, the UTS BIF is the largest shared facility that exists, based on a 200L manufacturing process, and critically, is not a food-grade facility designed specifically for food applications. As such, cell cultivation companies must either build their own facility (unlikely to be economically viable in the current funding environment), or scale offshore.

The current NRI network cannot bridge the gap between research and commercialisation. Stakeholders report that the limited availability of pilot and scale-up facilities is now impeding the use of existing NRI infrastructure, as companies cannot access larger facilities to graduate to.

For precision fermentation, non-NRI scale-up facilities do exist, including:
-The recently launched (at the time of writing, not yet operational) upgrade to the QUT Pioneer BioPilot (offering food-grade capacity of 100-2400L),
-CDMO Cauldron Ferm's demonstration-scale PC2 facility (2L-10,000L)
-CSIRO's planned upgrade of the Food Innovation Centre at its Werribee site (100 & 400L capacity).
However, CAA has been advised that Cauldron Ferm is largely at capacity through 2026, and we anticipate that once the Pioneer BioPilot quickly reaches capacity, additional facilities will be required.

Moreover, food biomanufacturing companies have also reported difficulty accessing appropriate fee-for-service facilities for early-stage R&D. Again, the lack of research infrastructure may necessitate companies to undertake unfavourable or unviable alternatives, such as outsourcing R&D or building their own facility.

A further, often overlooked, constraint is the lack of food-processing and product-development facilities to support the transformation of biomanufactured ingredients into final food products. Effective commercialisation depends not only on producing ingredients at scale but also on ensuring they can be formulated into appealing, safe, and functional foods. Product formulation capability is especially important given that traditional food science and product development have been historically underfunded, combined with the growing need to integrate new biomanufactured ingredients into an increasingly wide range of final food products (which we detail in this article). Without dedicated or expanded access to food-processing infrastructure, biomanufactured ingredients risk remaining confined to scale-scale and unable to reach their full potential. CSIRO's Food Innovation Centre provides a potential replicable example of such a facility, which includes advanced food-processing technologies, food safety and quality testing and sensory testing.

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Recommendation 4: NCRIS funds cellular agriculture research hubs as a part of a new NRI capability in biomanufacturing (with food as a priority bioindustry). These hubs should consist of:
-Early-stage R&D facilities (e.g. similar to CoLabs, AGF, IDEA Bio)
-Food-grade pilot facilities from 25-2500L designed specifically for the needs of the cellular agriculture sector (both precision fermentation and cell cultivation). The QUT Pioneer Biopilot could provide a strong evidence base to inform the design and optimisation of future facilities and equipment (e.g. bioreactor and bio-process design).
-Integrated food-processing and product-development capacity, either through: newly established NRI capability or, NCRIS investment in expanding access to existing food-processing facilities (expanded upon in Recommendation 5 below).

However, universities and other research-focused institutions are not always best placed to support research translation through to commercialisation. To address this gap, we propose the following:

Recommendation 5: NCRIS funding should also be directed towards enhancing access to existing non-NRI facilities. We recommend that this should consist of:
- Subsidising the operating costs of existing facilities (e.g. QUT Pioneer BioPilot, CSIRO Food Innovation Centre (Werribee)), enabling them to prioritise the research translation needs of Australian start-ups rather than high-value multinational clients.
- Expanding the NCRIS Synthetic Biology Voucher Scheme to broaden eligibility beyond the current list of Lead Providers, allowing industry access to a wider range of non-NRI facilities.

Implementing Recommendation #5 would maximise research translation outcomes by ensuring widespread access across Australia's full biomanufacturing pipeline - thereby helping meet NCRIS objectives. It would also serve as an effective interim measure to optimise the use of existing infrastructure while new NRI capabilities are established.

For the ecosystem to become commercially self-sustaining in the long term, Australia needs to stimulate both the creation of and demand for privately-operated food biomanufacturing facilities. Supporting pre-commercial scale-up is central to this. By improving access to available, fit-for-purpose infrastructure, Recommendation #5 would build the customer base and demand for commercial facilities, thereby derisking investment for prospective operators. This could be further strengthened through targeted NCRIS investment in infrastructure co-located with, or directly operated by, commercial operators.

2. Enhancements of existing NRI:
As part of developing cellular agriculture research translation hubs, existing NRI facilities could be expanded in scope. For example, IDEA Bio - which is currently focused on microbial fermentation - could expand its scope to include dedicated infrastructure and personnel for cell-culture capabilities. However, as previously mentioned, any such reinvestment in existing NRI should first be subject to a rigorous, transparent value-for-money assessment.

Q12. How should research translation be planned for in the development of new NRI?
As referenced in Q10 above, research translation should be planned with a future-oriented focus, by:

- Developing a more precise articulation of the stages and processes required to develop foundational research and how this can be translated into commercial outcomes.
- Investing in the development of the skills and expertise needed to assist users of existing NRI facilities to bridge research and industrial scale.
- Ensuring that funding decisions are transparently aligned with genuine research and industry capability gaps.

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Mon, Dec 8, 2025, 04:31 PM Australian Eastern Daylight Time
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Universities Australia

In what capacity are you responding?
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Q12. How should research translation be planned for in the development of new NRI?
In our recent publication From fragmented to future-ready: partnering for innovation (https://universitiesaustralia.edu.au/wp-content/uploads/2025/09/SERD3-2025-Partnering-for-innovation.pdf), Universities Australia highlights the innovation "valley of death" and the particular role that infrastructure can plan in bridging the translation gap.

When researchers and industry share spaces, ideas move faster, talent pipelines grow and commercialisation speeds up. Innovation clusters foster the co-design of research projects, strengthen talent pipelines, and accelerate the commercialisation of research.

A national approach to incentivising innovation clusters could coordinate intergovernmental efforts while targeting program funding towards proven models (such as Trailblazer) but it could also provide a mechanism for the promotion and advancement of both new and existing NRI facilities.

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Mon, Dec 8, 2025, 04:31 PM Australian Eastern Daylight Time
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Title
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Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Governments around the world are grappling with the need to understand and respond to digital transformations and the result is a raft of policies and strategies attempting to ensure online environments are safe and inclusive for all. The scale and impact of digital platforms and services goes far beyond any one sector or discipline, and requires a nationally coordinated response across research, policy, community and industry sectors to support research translation capabilities.
To improve research translation and adoption of digital tools and social data across industry, government and civil society we recommend enhancing NRI capabilities through an integrated, collaborative program delivered through a new Digital Cultures and Society Research Infrastructure Network (see Q14 for details).

This would support research translation capability for existing and new NRI by providing:
*A coordinating hub, providing strategic leadership and overall visibility of the strategy, and supporting cross disciplinary, institution and sector coordination and collaboration
*Support cross-disciplinary and cross-sector collaborations focused on national research priorities.
*A public-facing citizen-centred communication, engagement, and participation program
*Capacity to prototype new data sources, methods and applied technologies
*Large scale integrated data and analytical capabilities to ensure there is community value derived from combined administrative, research and commercial data
*Federated data services offering curated access to data for priority research areas, progressively developed to integrate key data infrastructures.
*Digital public infrastructure, standards and open protocols for national sovereignty and interoperability.
*A data ethics and governance program to support safe, responsible and inclusive digital platform research

*A national research and training program for data access and analytics in the humanities and social sciences and beyond

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Mon, Dec 8, 2025, 04:22 PM Australian Eastern Daylight Time
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRIs need both national visibility and local engagement. A maintained, user oriented national directory of NRI capabilities, framed around "problems we can help solve," should be complemented by sector specific outreach via peak bodies and by regional demonstration activities. For example, UNE ASPIRE, as a proposed NCRIS capability, can conduct regional airborne campaigns and field days with agricultural producers, carbon market providers and Indigenous land councils, demonstrating hyperspectral and LiDAR products for crop stress, methane/CO_2 super emitters and water quality. Clear product catalogues and straightforward access pathways will help industry users understand and utilise NRI services.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRIs should invest in dedicated industry liaison roles, co funded pilots and simple "on ramp" mechanisms. Industry liaison staff who understand both NRI capabilities and sector needs can help co design practical projects. Co funded pilots, such as UNE's proposed ASPIRE can demonstrate value, create standard products and de risk adoption. National allocation schemes for easy access can lower barriers for SMEs. National standards and QA frameworks (for example, ASPIRE led standards for airborne and UAV hyperspectral data) will increase industry confidence in integrating NRI outputs into their own decision systems.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Targeted enhancements and a new NCRIS capability would significantly strengthen translation, particularily involving more regional Universities, like UNE. TERN could host

an Airborne–Satellite Bridging Node, using UNE ASPIRE's airborne hyperspectral and LiDAR data to systematically connect ground plots, UAVs and satellites. APPN and phenomics platforms should be extended with in situ and greenhouse hyperspectral capability (via the New England Greenhouse Hub and industry partners) to link lab/glasshouse traits to field and satellite scales. IMOS could incorporate coastal and inland aquatic hyperspectral and LiDAR campaigns to generate operational water quality and ecosystem products. In addition, UNE ASPIRE – National Airborne Hyperspectral and LiDAR Research Facility is proposed as a new NCRIS capability to provide the NASA grade high signal to noise quality, airborne link needed to translate research on carbon, agriculture, water and ecosystems into decision ready, validated EO products for government, industry and communities. A broader scope Earth Observation facility, into which UNE ASPIRE could fit is also an option, perhaps the most strategic approach. A consortium of Universities with Earth observation Expertise, such as Curtin, RMIT, UQ, UNE and GA, BoM and CSIRO is a logical starting point. National allocation schemes help other Universities "access and translate" in their own way. Summer schools are, since COVID, fading away in Australia. A national Earth Observation summer school would ensure all postgraduate candidates (and their supervisors) have a lasting mechanism to engage. International partners are also willing to be involved, we could strengthen national expertise through links to CEOS (https://ceos.org/ of which CSIRO currently leads), NASA, ESA, JAXA, ISRO and other space agencies. We could shift the dynamic from Earth Observation being fragmented across many facilities to focussed. UNE (Professor Evans) would lead this capability and has previously led an NCRIS facility in TERN.

Q12. How should research translation be planned for in the development of new NRI?
Translation should be built into new NRI proposals from the outset through co-design, staged translation plans and dedicated budgets. Proposals should specify priority end-user use-cases, involve government, industry and Indigenous partners in governance, and include clear pathways from research outputs to operational products, including validation, standardisation and, where relevant, regulatory acceptance (e.g. for carbon and biodiversity MRV). UNE ASPIRE, proposed as a new NCRIS capability, is structured in phases: an initial NASA-led and CSIRO-partnered campaign phase, a 2–3 year phase turning methods into standardised national products (e.g. crop traits, super-emitter maps, water quality), and a mature phase offering routine operational services. New NRI capabilities should be expected to articulate similarly explicit translation pathways.

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Mon, Dec 8, 2025, 04:20 PM Australian Eastern Daylight Time
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Some health-related NRIs have shared Business Development Manager (BDM) positions and these have proved valuable for industry engagement related to use of health NRI. There would be benefit in support for all health-related NRIs to have a BDM. BDMs use their networks to grow industry awareness and use of health NRI. Industry users who access one health NRI may well benefit from access to another/others and can be cross-referred though this process.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Research projects using NRI should have a translation component. In publicly funded health research, many projects already do have a translation component and this should continue to be supported.
NCRIS funded health NRI supports different stages of the research translation pathway (T0 to T4). While these NRIs already work collaboratively to support research translation, further enhancements to the health NRIs would enable greater progress of discoveries from the bench to the real-world bedside. The collaboration between the NCRIS health NRIs is a defining feature of the Australian health research landscape and should be actively supported. Few if any other OECD countries have this type of collaboration.

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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Embed NRI capability into industry associations, CRCs, precincts, regional innovation hubs, accelerators, and state programs.
Partner with state governments and RDAs to reach regional SMEs, not just capital cities.
Leverage national coordination: present NRI as a connected national system, not fragmented facilities.
Speak in commercial outcomes (time saved, risk reduced, cost avoided), not instruments or platforms.
Advisory boards should include active industry users, not just representatives.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Treat industry collaboration as infrastructure. Be intentional in co-creating knowledge hubs with industry. Create dedicated roles (industry translation leads, partnership managers) with authority to negotiate scope, timelines, IP, and risk.
Create low-risk entry points for industry. Offer proof-of-concept, pilot, or sandbox programs with clear scope and capped cost. These de-risk engagement converts first-time users into long-term partners through funding these pathways deliberately.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To accelerate the translation of research into tangible health, industrial, and societal outcomes, Australia's National Research Infrastructures (NRIs) require targeted enhancements alongside strategic new investments. Existing NRIs would benefit from integrated, interoperable data platforms linking genomic, clinical, and population datasets; embedded translational nodes connecting researchers with hospitals, industry, and regulators; advanced AI-driven analytics; workforce development in regulatory, commercialization, and implementation science; and centralized regulatory and ethics support to streamline approvals.

New NRIs could focus on bridging remaining gaps: a National Translational Innovation Hub to facilitate rapid clinical validation and product development; a Real-World Data and Longitudinal Cohort Infrastructure to enable precision medicine and population-level studies; Digital Twin and simulation platforms to model diseases, treatments, and healthcare delivery; and embedded commercialisation accelerator nodes to transform discoveries into scalable innovations. Together, these enhancements and new infrastructures would position Australia to convert its research excellence into measurable health, economic, and societal impact more efficiently and predictably.

Q12. How should research translation be planned for in the development of new NRI?
Clarify what "impact" means for the infrastructure: clinical, industrial, policy, or societal outcomes.
Map potential end-users (clinicians, industry partners, policymakers) and anticipate how research outputs will be applied.
Engage clinicians, regulators, industry, and patient groups in governance and advisory roles.
Design workflows and data pipelines to meet both research and real-world application requirements.
Plan for regulatory compliance, ethics review, and intellectual property management as core NRI functions.
Ensure data generated are FAIR (findable, accessible, interoperable, reusable).
Define KPIs for translation (e.g., clinical trials initiated, patents filed, policy adoption).
Incorporate feedback loops to refine infrastructure and workflows based on real-world performance.

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Mon, Dec 8, 2025, 04:14 PM Australian Eastern Daylight Time
[ID: sbm39927a2c339fdf12aa016]

Title
Dr

First Name
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Herderich

Organisation
The Australian Wine Research Institute (AWRI)

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Many NRI facilities are often encapsulated within traditional research precincts or educational institutions. These facilities are often only visible to and readily accessible by co-located existing users and potential clients who are already part of those institutional frameworks.

In addition, various NRI capabilities (ie, microscopy, imaging and phenotyping; DNA analytics, data and bioinformatics; ALA, TERN) appear fragmented, duplicated or not sufficiently differentiated; struggle to communicate their unique or distinct service offerings, and/or are not necessarily easily accessible for those outside of the academic environment or host institution.

These structural shortcomings cannot easily be overcome by generic communication and marketing strategies, and require i.a.
> targeted investments into communication skills and service culture at NRI facilities;
> incentives for industry to access NRI infrastructure including targeted programs dedicated to raising awareness and facilitate access to NRI capabilities in specific spaces where commercial services cannot meet industry requirements;
> active involvement with industry events and showcases of industry projects enabled by NRI facilities;
> establishment of community-of-practices across [NRI facilities-government-industry-universities]; and
> incentives which foster two-way staff mobility between NRI facilities and industry, such as placements and research hotel arrangements.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Critical for productive research-industry collaborations are the combination of service culture and communication skills with readily deployable fundamental technical and scientific skills. Agile deployment of deep domain expertise at NRI facilities is required to meet the often challenging timelines required by industry clients for their problem solving, new product development, and translation and commercialisation projects.

Establishing cross-disciplinary teams at individual NRI's or across a community of NRIs would facilitate engagement with potential industry clients who are lacking domain expertise.

Developing a dedicated NRI workforce could be supported through approaches which support industry collaboration and mobility through industry placements by NRI staff and research hotel arrangements at NRI facilities by industry collaborators.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Improving research translation capability requires investments in people and culture as described above, together with targeted investments in NRI capabilities for upscaling, prototyping, and down-stream processing.

For example, for all industries requiring fermentation systems (food, beverage, biotechnology)
pilot-scale fermentation capability is fundamental (but lacking on-shore, with the exemption of IDEA Bio) for demonstrating the transferability of research concepts to industrial practice. There are limited services available that provide large scale PC-2 capability (with large scale being >25L) and are enabled to work with GMOs.

Rather than forming new NRI facilities, building on existing ecosystems, partnerships and NRI facilities would create synergies and spill-over effects across traditional contract research services for beer, wine and spirits; open up entry into solid state fermentation systems; utilisation of novel feedstocks and energy sources; and advanced biomass, protein production and cellular agriculture research services. Building a more complex and diversified ecosystem of research translation capability for emerging fermentation industries would also support ongoing research and translation by traditional biomanufacturing sectors, and the broader end-user base would significantly de-risk such investment.

Q12. How should research translation be planned for in the development of new NRI?
Investment in research translation can only be realistically achieved through a clear understanding of the existing industry needs and through policy directions (such as tax incentives) aimed at supporting emerging or underdeveloped industries of strategic national importance.

In addition, co-location of NRI capabilities and facilities with industry partners, CROs, start-ups and public research institutions would facilitate diffusion and translation of technical know-how and contribute to mobility of staff between sectors.

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Mon, Dec 8, 2025, 04:07 PM Australian Eastern Daylight Time
[ID: sbm39927460d3cc363a0a2ad]

Title
Dr

First Name
Michael

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Banazis

Organisation
Western Australian Department of Energy and Economic Diversification

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Australian Government and NRI staff need to take an active role in promoting the facilities and capabilities to relevant industries. This may include working with peak bodies, direct approach of relevant businesses, and engagement through university partners. This may also include utilisation of events and open days relevant for physical infrastructure, and roadshows (including regional roadshows).
The above suggestion aligns with Actions 4.4 (Leadership, collaboration and communication Priority Action Area), 5.2 and 5.4 (Translation, commercialisation and procurement Strategic Action Area) of the Action Plan for WA's 10-year Science and Technology Plan.
Promotion and availability of NRI capabilities should include collected datasets and resultant data products in addition to physical infrastructure.
The location of NRI is important. Opportunities should be pursued to consolidate infrastructure into 'hubs' or 'precincts' that allow colocation with industry, government and academia.
The above suggestion aligns with Actions 4.4 (Leadership, collaboration and communication Priority Action Area), 5.2, 5.4 and 5.8 (Translation, commercialisation and procurement Strategic Action Area) of the Action Plan for WA's 10-year Science and Technology Plan.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Employing dedicated business development managers, including those with industry experience, could assist. Often NRI directors will come from an academic background and are not best equipped to promote and drive broader use of the infrastructure.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

NCRIS investment for pilot scale studies and/or prototyping by facilities in collaboration with industry would improve research translation capability.

The above suggestion aligns with Action 3.3 (Physical and digital infrastructure Priority Action Area) of the Action Plan for WA's 10-year Science and Technology Plan.

Q12. How should research translation be planned for in the development of new NRI?

Planning for the development of NRI should always consider translation. Engaging with industry during planning is helpful to ensure new infrastructure addresses translation needs. Ensuring future NRI workforce has appropriate skills and know how to support industry partnerships and translation would also be worthwhile.

The above suggestion aligns with Actions 4.4 (Leadership, collaboration and communication Priority Action Area), 5.2 and 5.4 (Translation, commercialisation and procurement Strategic Action Area) of the Action Plan for WA's 10-year Science and Technology Plan.

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Mon, Dec 8, 2025, 04:06 PM Australian Eastern Daylight Time
[ID: sbm399272e09ee1968fa05e4]

Title
Prof

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Organisation
Astronomical Society of Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Astronomy has a special place in the hearts and imaginations of the Australian public. It is an inspirational science that expands humanity's horizons to the edges of the Universe, and is a showcase for our highest technical accomplishments applied to universal questions that bind humanity through our curiosity. NRI facilities lie at the heart of astronomical discoveries, and are a key part of the fascination and wonder that astronomy, through its cosmic images and tangible evidence of abstract concepts, can inspire. This inspiration captures the interest and imagination of both the public and of the commercial and industrial sectors. Astronomy is synonymous with high-tech, futuristic science; with complex information and data; and with the exploration of space – all areas of interest to future-facing technology development for industry.

Telling these stories, however, largely falls on individual researchers, and the key roles played by NRI investments is not necessarily guaranteed. NRI investments rarely come with investment in communications, or incentives to publicly connect research discoveries to the NRI facilities used. Moreover, not all researchers are equipped or resourced with training and time to build effective public communication strategies. Effective and sustained engagement with industry is also often beyond the scope of University researchers' roles, not generally being accounted for in academic workloads.

To boost awareness of NRI capabilities, both to build social license with the public, and to build connection to potential industry collaborations, explicit investments in this area should be considered as part of the NRI investment strategy. This is best done within the specific NRI project, as it requires some level of detailed technical/discipline knowledge, and would therefore be an additional asset to discipline researchers and potential industry partners alike. There needs to be a 'front door' for NRI access and awareness, resourced with people dedicated to forging industry connections to specific NRI as their primary

purpose. The "front door" could double up as a story-telling facility, clearly and regularly communicating the benefits NRI (and by extension, science) brings to society.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

As described in Q9, addressing this requires dedicated resourcing as part of the NRI investment plan, and should be incorporated at the level of specific NRI programs in order to maintain adequate connect to the technical and research capabilities involved. Research-industry collaboration requires a multi-level approach, and is most effective with an appropriate combination of providing incentives, and having dedicated resources with appropriate skills. Incentives could include subsidised access to NRI facilities for research-industry joint projects. Resources and skills could include dedicated administrative roles that provide industry-relevant information and processes (e.g. streamlined costings, contracting, etc.), and dedicated business development managers to market and build potential user bases.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Astronomy has a significant history of research translation within Australia, from the well-known development of Wi-Fi technology, to more recent examples of upskilling domestic precision manufacturing for astronomy instrumentation, and contributing to the sovereign space industry through lunar landers and earth-observing satellites.

Based on these successful experiences, astronomy research translation capabilities through NRI can be enhanced by intentional resourcing of partnerships with industry, as described in Q10, via dedicated business development resourcing. By actively enabling industry engagement with a business mindset, NRI can provide connection and joint focus between industry and publicly funded research, which is the seed activity of translating innovation into industry or commercial applications. Enabling effective translation has multiple benefits beyond direct application outcomes and economic benefit. It can provide a powerful training vehicle to upskill researchers with industry-applicable skills, and open employment opportunities beyond traditional academic research career pathways.

As a highly digital and data-rich physical science, astronomy has a demonstrated track record of channelling PhD graduates and early-career researchers into a variety of data-driven industry and commercial fields, often building on training experience with NRI facilities in this domain. There is further potential for utilising astronomy NRI facilities as training grounds for broader areas, including precision engineering, remote sensing, geo-spatial information systems, and more. Currently, these cross-overs are somewhat ad hoc, but establishing NRI-related training opportunities, driven by NRI-led industry engagement, would provide structure and scale, providing greater exposure of researchers to industry practices and needs, as well as providing access to research skill capabilities for industry partners.

In addition to the human capital development, incentivising exploration of translation activities for both industry partners and academic researchers would prove a more intentional approach. NRI facilities are high-value investments that host capabilities beyond the financial means of most small-to-medium enterprises, and even of larger-scale industries. Strategically incentivising (e.g. lowering cost of access) the collaborative use of NRI facilities by private enterprise in partnership with public sector researchers to explore

low technical-readiness level R&D projects could provide an 'incubator-style' approach based around NRI capabilities. Balancing the use of NRI facilities for this purpose, however, should be carefully done, ensuring that fundamental and novel research is the focus of this operational model, and that publicly-funded researchers are not disadvantaged.

In terms of any new NRI required to facilitate improved translation, it is important to note that the vast majority of universities host dedicated offices for research translation and commercialisation. Before establishing any new dedicated NRI capability in this area, the uplift within relevant existing NRI should first be explored, as a way of building a robust distributed ecosystem that leverages existing institutional resources, both from universities, and within the NRI facilities themselves.

Q12. How should research translation be planned for in the development of new NRI?
Firstly, it should be recognised that the primary function of national research infrastructure is for driving fundamental discovery and the generation of new knowledge. NRI exists to sow the first seeds of understanding that, in time, can lead to translation and broader impact. In addition, the quest for knowledge driven by fundamental research can itself drive translation, by challenging industries to push the boundaries of technology into unexplored areas, often as part of establishing NRI facilities. Astronomy has examples of translation in both these directions. Studying the properties of stars yielded fundamental insights into the early understanding of atomic physics. The pursuit of imaging the cosmos at radio wavelengths drove the development of Wi-Fi, and signal processing techniques at the heart of all MRI and CT medical imaging. These world-changing 'translations' were not planned for, nor were they the primary pursuit of the astronomers involved. They were, however, powered by the availability of cutting-edge facilities, and the questions that demanded their development.

With this in mind, planning for translation in the development of NRI can best be accomplished by enabling the most ambitious fundamental research, with enough breadth to support a significant community of researchers pursuing that research at the highest, globally-competitive, level. Impactful translation comes from providing the environment for exploring the best ideas tackling the hardest questions. NRI plays a crucial role in building this environment by supporting research excellence in areas that are globally competitive, and powering collaboration (both national and international) that maximises impact.

Astronomy is such an area where Australia excels on the world stage. NRI investments in telescopes, data and computing, and instrumentation are a key part of the 'supply chain' that drives this global impact, not only through academic research, but through development of innovative technology and techniques that have demonstrated translation. Astronomy is an example of successful NRI planning and translation, driven primarily by the pursuit of fundamental research excellence.

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Mon, Dec 8, 2025, 04:02 PM Australian Eastern Daylight Time
[ID: sbm39926f9294cc1e4748597]

Title
Dr

First Name
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Ng

Organisation
Victorian Cancer Biobank Consortium

In what capacity are you responding?
A representative of an organisation or group

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Biobanking is a new NRI that is critical for research translation. In general, research translation rely significant on biospecimen for product development, validation and clinical trials, which will lead to products or treatments that will improve patient outcomes and growth in biotechnology sector. While biobanks are established, they are very underfunded and fragmented in governance and scale, making access of the samples very difficult. Longer term investment to biobanking and it's coordination are needed to enable such research infrastructure continue to make an impact to research translation.

Q12. How should research translation be planned for in the development of new NRI?
Responses in 202 Victorian Cancer Biobank, 51 Phenomics Australia and 184 Australian Biospecimen Network Association provide proposal on biobanking that will enhance research translation.

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Mon, Dec 8, 2025, 04:00 PM Australian Eastern Daylight Time
[ID: sbm399137434dccd866a3d5c]

Title
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Organisation
Australian Bureau of Statistics

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
ABS integrated data infrastructure is advertised on its website, in grant guidelines and through participation in academic conferences. ABS integrated data could be made more accessible to Australian community organisations. Investment is required to ensure that the private sector, local government and community groups can access customisable information from integrated data infrastructure. By enabling safe community access to its data, community engagement and commissioning of academic research and development will be strengthened by existing research translation mechanisms.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
ABS integrated data infrastructure includes the safe and secure ABS DataLab. Approved users of the ABS DataLab are required to demonstrate at least three years' analytical research experience to be able to carry out quantitative data research or analysis in the DataLab. This includes the ability to use at least one of the statistical analytical languages supported in the DataLab. Evidence from ABS auditing of DataLab outputs shows that many academic researchers struggle to pull the data together, carry out analytical work and extract it efficiently from the DataLab.

On top of mandatory training already delivered on how to get aggregated data safely out of the DataLab, a range of micro-credentials are needed for a new cohort of researchers in how to use PLIDA and BLADE. These micro-credentials will focus on efficient big data wrangling and pre-processing, as well as how to build and deploy common methods employed by all researchers, such as estimating educational attainment or mortality rates (statistics, network and geospatial analysis, quasi-experimental evaluation techniques, machine learning and agent-based modelling).

Q12. How should research translation be planned for in the development of new NRI?
ABS TableBuilder is an infrastructure access service. TableBuilder is a flexible way to access detailed data where users can build their own aggregated tables based on underlying data and select the data items of their choice for cross-tabulation. Tables are automatically treated to protect privacy and confidentiality before the output is provided.

Research translation is strengthened when communities have open access to the same data that researchers do. Investment in the expansion of TableBuilder to include integrated data such as PLIDA and BLADE will help communities engage with and better commission research using integrated data. Researchers themselves can use it to better plan and seek funding for their research using the most recent data from Australian households and communities.

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Mon, Dec 8, 2025, 03:11 PM Australian Eastern Daylight Time
[ID: sbm399240c2b2e106923210d]

Title
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First Name
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Last Name
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Organisation
University of New England

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
1. Speak the Language of Industry (Standardisation)
Industry can be risk-averse. To attract industry funds, NRI facilities could market themselves not just on "scientific novelty" but on operational reliability. Demonstrating industrial-grade standards (e.g., ISO, GLP-readiness) gives partners confidence that our data will hold up in regulatory filings. Certification, validation protocols, and maintenance records help build this robustness.
2. Show our Facilities (Active Engagement)
A strong approach is active industry engagement rather than relying on passive website listings. Hosting industry-specific workshops and capability showcases where industry professionals perform studies or procedures in our facilities can be very effective. When they experience the infrastructure firsthand, the collaboration often follows. NRIs need both national visibility and local engagement. A maintained, user oriented national directory of NRI capabilities, framed around "problems we can help solve," should be complemented by sector specific outreach via peak bodies and by regional demonstration activities. For example, UNE ASPIRE, as a proposed NCRIS capability, can conduct regional airborne campaigns and field days with agricultural producers, carbon market providers and Indigenous land councils, demonstrating hyperspectral and LiDAR products for crop stress, methane/CO_2 super emitters and water quality. Clear product catalogues and straightforward access pathways will help industry users understand and utilise NRI services.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
1. Bridge the Data Integrity Gap (Software & Systems)
To support industry, adoption of purpose-built Laboratory Information Management Systems and electronic data capture tools is recommended. Moving beyond "good enough

for a paper" to "good enough for a product registration" ensures better traceability for commercial partners.

2. Certification Goals

Aiming for facilities to operate at (or near) Good Laboratory Practice (GLP) levels would be a significant advantage. Industry partners look for assurance that data generated in NRI facilities will be accepted by regulators. Examining options to offer both R&D and GLP-level services could help cover the costs of training and infrastructure needed to reach these standards.

3. Industry liaison

NRIs should invest in dedicated industry liaison roles, co funded pilots and simple "on ramp" mechanisms. Industry liaison staff who understand both NRI capabilities and sector needs can help co design practical projects. Voucher schemes and template agreements can lower barriers for SMEs. National standards and QA frameworks (for example, ASPIRE led standards for airborne and UAV hyperspectral data) will increase industry confidence in integrating NRI outputs into their own decision systems.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

1. The "In Vivo" Biologicals & Biosecurity Hub

There is a strong case for a new, dedicated facility for testing biologicals such as the new generation mRNA vaccine and bioengineered therapeutics in livestock. Even considering existing NRIs, national redundancy is desirable. A new facility would provide a critical backup for national biosecurity and emergency animal disease response. With a facility of this calibre located regionally, it would serve as an ideal training hub for rural students—the future veterinarians and agriculture officers who will be the "boots on the ground" detecting biosecurity breaches. It would help fill the gap between benchtop discovery and commercial vaccine/product registration. The future Research Facilities should aim to be a "one-stop shop" with key partners that will guide the path to commercialization.

2. Hyperspectral and LiDAR sensor facility

Targeted enhancements and a new NCRIS capability would significantly strengthen translation. TERN could host an Airborne–Satellite Bridging Node, using ASPIRE's airborne hyperspectral and LiDAR data to systematically connect ground plots, UAVs and satellites. APPN and phenomics platforms should be extended with in situ and greenhouse hyperspectral capability to link lab/glasshouse traits to field and satellite scales. IMOS could incorporate coastal and inland aquatic hyperspectral and LiDAR campaigns to generate operational water quality and ecosystem products. In addition, UNE ASPIRE – National Airborne Hyperspectral and LiDAR Research Facility is proposed as a new NCRIS capability to provide the NASA grade high signal to noise quality, airborne link needed to translate research on carbon, agriculture, water and ecosystems into decision ready, validated EO products for government, industry and communities.

Q12. How should research translation be planned for in the development of new NRI?

1. Sustainability Beyond Grants

Ideally, translation should be embedded into the financial model, not added as an afterthought. Relying solely on research grants to fund operations can be unsustainable. Translation should be built into new NRI proposals from the outset through co-design, staged translation plans and dedicated budgets. Proposals should specify priority end-user use-cases, involve government, industry and Indigenous partners in governance, and include clear pathways from research outputs to operational products, including

validation, standardisation and, where relevant, regulatory acceptance (e.g. for carbon and biodiversity MRV). New NRIs would benefit from being designed with a commercial arm that generates revenue through R&D services, creating a "sink fund" for maintenance and growth. This could also include branching out into spin-off companies.

2. KPI Alignment for Researchers
Shifting the academic culture by integrating translation into researcher KPIs would be beneficial. Incentivising researchers not just to publish, but to pursue projects with tangible "real-world" applications, aligns their goals with the facility's sustainability. If there are rewards for translation, the researchers will plan for it from day one, with the NRI ready to support them.
3. Access to IP & Commercialisation Expertise
Excellent science often fails to translate simply because the commercial impact or Intellectual Property (IP) was not assessed early enough. Providing researchers with access to IP lawyers or technology transfer officers, who can perform early checks and track the commercial viability of an idea would be a major asset. This ensures that viable ideas are identified and protected early, and that resources are focused on projects with a clear path to market.

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Mon, Dec 8, 2025, 02:54 PM Australian Eastern Daylight Time
[ID: sbm3991171cf5e581238031a]

Title
A/Prof

First Name
Christopher

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Marquis

Organisation
University of NSW

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Marketing, inclusive, comprehensive web sites, work productively with commercialisation offices, staff to present and attend national conferences; eg. Bioprocessing Network, Ausbiotech

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
This could be achieved by having a better knowledge of industry needs by NRI capabilities across the various sectors. Again, conference and workshop attendance can help with this.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
There a number of NRI nodes that do not receive direct financial support from NCRIS. An option for the addition of new NCRIS-supported NRI nodes should be considered, through a bid or other competitive system. This would enhance the overall infrastructure capability and offerings available in Australia and create a more competitive and level playing field amongst NRI providers.

Q12. How should research translation be planned for in the development of new NRI?
New NRI should be considered based on capabilities, demonstrated capacity to develop services (access, results, training) and be undertaken with a long-term focus. Where possible, facilities that have developed accredited quality management systems in their operations should be looked upon favourably. If possible, some financial support for maintaining/improving these systems would be beneficial to both the NRI node and the customer.

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Mon, Dec 8, 2025, 02:51 PM Australian Eastern Daylight Time
[ID: sbm3991de5a00e58eeea07ea]

Title
Prof

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Swalwell

Organisation
The Australian Emulation Network

In what capacity are you responding?
A representative of an organisation or group

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
It's pleasing to see that the submission from the Australian Creative Histories and Futures highlighted the Australian Emulation Network (which they regard as "impressive"), noting that if it were supported by significant national research infrastructure it could become so much more [211_Roadmap Survey_Australian Creative Histories and Futures]. The AusEAASI network will need to transition from LIEF grant funding in 2027. With appropriate support, it could scale up to service all universities, research organisations, and the GLAM sector.

215

Mon, Dec 8, 2025, 02:48 PM Australian Eastern Daylight Time
[ID: sbm398fca2558f052661b15a]

Title
Prof

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Langton

Organisation
The University of Melbourne

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To ensure National Research Infrastructure facilities make their capabilities widely known and available to potential users across Australia, several strategies could be considered:

Digital presence and outreach:

Develop comprehensive, user-friendly websites
Utilise social media platforms for regular updates
Create online catalogues of equipment and services
Collaboration with universities and research institutions:

Establish partnerships with major universities
Offer guest lectures and seminars at academic institutions
Provide internship or placement opportunities for students
Industry engagement:

Participate in industry conferences and trade shows
Organise facility open days for industry representatives
Develop targeted marketing materials for specific sectors
Regional outreach:

Establish satellite offices or mobile demonstration units
Partner with regional development agencies
Offer virtual tours and remote access capabilities
Government and policy engagement:

Work with relevant government departments to promote capabilities

Participate in policy discussions and submissions
Engage with state and federal politicians to raise awareness
Networking and partnerships:

Join industry associations and networks
Collaborate with other NRI facilities for joint promotions
Develop partnerships with international facilities for knowledge exchange
Education and training programmes:

Offer workshops and training sessions on facility use
Develop online learning resources and tutorials
Create user guides and best practice documents
Case studies and success stories:

Publish case studies highlighting successful collaborations
Showcase research outcomes and commercial applications
Utilise testimonials from satisfied users
Media engagement:

Develop relationships with science and technology journalists
Issue regular press releases on significant achievements
Contribute articles to industry publications
Accessibility initiatives:

Implement user-friendly booking systems
Offer flexible access models (e.g., remote access, time-sharing)
Provide support services for new users
By implementing a combination of these strategies, NRI facilities can significantly improve their visibility and accessibility to potential users across Australia's diverse industry sectors and geographical regions.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To increase productive research-industry collaborations, NRI (National Research Infrastructure) facilities can implement several strategies to build know-how and support:

Establish dedicated liaison offices:

Create teams focused on fostering connections between researchers and industry partners
Act as intermediaries to facilitate communication and understanding between academia and industry
Develop industry-focused training programmes:

Offer workshops and courses on:
Intellectual property management
Commercialisation processes
Industry project management
Provide researchers with skills to effectively engage with industry partners
Create networking opportunities:

Organise regular industry-academia networking events

Host conferences and symposia focused on applied research and industry challenges
Facilitate site visits and exchange programmes between NRI facilities and industry partners
Implement collaborative research programmes:

Design joint research initiatives that align academic interests with industry needs
Establish co-funded PhD programmes or postdoctoral positions with industry partners
Develop a comprehensive database:

Maintain an up-to-date repository of:
Research capabilities and expertise within NRI facilities
Industry partners and their specific needs or challenges
Use this database to match researchers with potential industry collaborators
Streamline administrative processes:

Simplify contract negotiations and intellectual property agreements
Develop standardised templates for research collaboration agreements
Provide dedicated administrative support for industry-partnered projects
Establish industry advisory boards:

Create panels of industry experts to guide research priorities and strategies
Ensure NRI facilities remain aligned with industry needs and trends
Incentivise industry engagement:

Develop reward systems for researchers who successfully engage in industry collaborations
Include industry engagement metrics in performance evaluations and promotion criteria
Provide access to specialised facilities and equipment:

Offer industry partners access to cutting-edge research infrastructure
Create shared spaces or innovation hubs where researchers and industry professionals can work side-by-side
Foster a culture of entrepreneurship:

Encourage researchers to consider the commercial potential of their work
Provide support for spin-off companies and start-ups emerging from research projects
Develop case studies and success stories:

Document and publicise successful research-industry collaborations
Use these examples to inspire and guide future partnerships
Implement feedback mechanisms:

Regularly collect feedback from both researchers and industry partners
Use this information to continuously improve collaboration processes and outcomes
By implementing these strategies, NRI facilities can create an environment that fosters productive research-industry collaborations, leading to increased innovation, knowledge transfer, and economic impact.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
A. Specifically in relation to the humanities and research in the GLAM sector, we recommend the following measures to improve research translation capability and several

enhancements to new or existing National Research Infrastructure (NRI) are identified. The use of artificial intelligence (AI) across catalogues can significantly increase research capacity and speed.

Enhancements to NRI for GLM Sector

1. Digital Infrastructure Upgrades

High-speed Networks: Implement or upgrade to high-speed, high-capacity networks to facilitate rapid data transfer and remote access to digital collections.
Cloud Storage Solutions: Invest in scalable cloud storage to accommodate growing digital archives and enable easier data sharing among institutions.

2. Advanced Digitisation Equipment

High-resolution Scanners: Acquire state-of-the-art scanners capable of digitising various materials (books, artworks, artefacts) at high resolutions.
3D Scanning Technology: Implement 3D scanning capabilities for capturing and preserving three-dimensional objects in digital form.

3. Data Management Systems

Unified Cataloguing Systems: Develop or adopt standardised cataloguing systems that can integrate diverse collections across institutions.
Metadata Enhancement Tools: Implement tools for creating rich, standardised metadata to improve searchability and interoperability of digital assets.

4. Collaborative Platforms

Virtual Research Environments: Create secure, collaborative online spaces where researchers can access, analyse, and share data from multiple institutions.
API Development: Develop robust APIs to allow programmatic access to digital collections, facilitating integration with external research tools.
Using AI Across Catalogues

Artificial Intelligence can significantly enhance research capacity and speed in the GLM sector. Here are some applications:

1. Automated Cataloguing and Metadata Generation

Image Recognition: Use AI to automatically tag and categorise images in digital collections.
Text Analysis: Employ natural language processing to extract key information from textual documents for metadata creation.

2. Advanced Search Capabilities

Semantic Search: Implement AI-powered semantic search to understand context and intent, providing more relevant results.
Multi-modal Search: Enable searches across different media types (text, images, audio) simultaneously.
3. Pattern Recognition and Discovery

Cross-collection Analysis: Use machine learning algorithms to identify patterns and connections across diverse collections and institutions.
Anomaly Detection: Employ AI to identify unique or rare items within large datasets.

4. Language Translation

Multilingual Access: Implement AI-driven translation services to make collections accessible in multiple languages.
Historical Language Processing: Develop specialised AI models for understanding and translating historical texts and languages.

5. Predictive Conservation

Condition Monitoring: Use AI to analyse digital images and predict conservation needs for physical artefacts.
Environmental Modelling: Employ machine learning to optimise storage conditions based on environmental data.

6. User Behaviour Analysis

Personalised Recommendations: Implement AI algorithms to suggest relevant resources based on user behaviour and research interests.
Usage Pattern Analysis: Use AI to analyse how researchers interact with digital collections, informing future development and resource allocation.

Implementation Considerations

Data Privacy and Ethics: Ensure AI implementations adhere to data protection regulations and ethical guidelines.
Training and Skill Development: Invest in training programmes for staff to effectively use and maintain AI-enhanced systems.

Interoperability: Ensure AI solutions can work across different platforms and integrate with existing systems.
Quality Control: Implement human oversight and validation processes to maintain the accuracy of AI-generated data.
Scalability: Design AI solutions that can grow with increasing data volumes and evolving research needs.

By implementing these enhancements and leveraging AI technologies, the GLM sector can significantly improve its research translation capabilities, offering faster, more comprehensive, and more insightful access to cultural and historical resources.To improve research translation capability, several enhancements to existing National Research Infrastructure (NRI) and potential new NRI could be considered:

B. In relation to the national research infrastructure, across all areas of research, we recommend the following. These enhancements and new NRI would aim to provide researchers with cutting-edge tools and resources, facilitating more efficient and effective research translation across various scientific disciplines.

Enhanced Data Integration Platforms

Brief description: Upgrade existing data management systems to better integrate diverse datasets across disciplines, enabling more comprehensive and interdisciplinary research.
Advanced Simulation and Modelling Facilities

Brief description: Enhance computational infrastructure to support more complex simulations and modelling, particularly for climate, health, and materials science research.
Expanded Biobanking Facilities

Brief description: Increase capacity and improve storage conditions for biological samples, supporting medical research and biotechnology development.
Upgraded Research Vessel Fleet

Brief description: Modernise and expand the fleet of research vessels to support marine and climate research, including autonomous underwater vehicles.

Next-Generation Synchrotron

Brief description: Develop a more powerful synchrotron facility to enable advanced materials research and structural biology studies.

Quantum Computing Infrastructure

Brief description: Establish dedicated quantum computing facilities to support research in cryptography, drug discovery, and optimisation problems.

Advanced Imaging Centres

Brief description: Create centralised facilities with state-of-the-art imaging technologies for medical, materials, and biological research.

Artificial Intelligence and Machine Learning Hub

Brief description: Develop a specialised centre for AI and ML research, providing computational resources and expertise to various scientific domains.

Collaborative Research Platforms

Brief description: Implement advanced virtual collaboration tools and platforms to facilitate national and international research partnerships.

Technology Transfer Centres

Brief description: Establish dedicated facilities to bridge the gap between academic research and industry application, supporting commercialisation efforts.

Q12. How should research translation be planned for in the development of new NRI?
Planning for research translation in the development of new National Research Infrastructure (NRI) is crucial to ensure that scientific discoveries and innovations and

research in the humanities, social sciences and Indigenous research can be effectively applied to real-world problems and societal needs. We recommend:

1. Stakeholder Engagement

Identify Key Stakeholders:

Researchers
Industry partners
Government agencies
Community research partners and representatives (especially important in relation to the national research priority on Aboriginal and Torres Strait Islander knowledge systems)
End-users of research outcomes (especially important in relation to the national research priority on Aboriginal and Torres Strait Islander knowledge systems and the national Closing the Gap Strategy)

Establish Consultation Mechanisms:

Regular stakeholder meetings
Advisory boards
Online feedback platforms

2. Needs Assessment

Conduct Surveys and Interviews: Gather input on translation needs and opportunities from various sectors.
Gap Analysis: Identify areas where current infrastructure falls short in supporting translation activities.

3. Translation-Focused Design

Flexible Infrastructure: Design NRI to be adaptable for both fundamental research and applied outcomes.
Scalability: Ensure infrastructure can support projects from small-scale pilots to large-scale implementations.

4. Collaborative Spaces

Physical Co-location: Create spaces where researchers, industry partners, and end-users can work together.
Virtual Collaboration Tools: Implement secure platforms for remote collaboration and data sharing.

5. Data Management and Sharing

FAIR Principles: Ensure data is Findable, Accessible, Interoperable, and Reusable.
Open Access Policies: Develop clear guidelines for sharing research outputs.

In relation to Indigenous research, the following should be noted:

Key Principles & Practices

Self-Determination: Data management must support Indigenous autonomy and community goals.
Community Involvement: Co-designing data collection, metadata, and sharing agreements with communities is crucial.
Cultural Protocols: Respecting cultural practices, worldviews, and intellectual property (ICIP).
Data Sharing Agreements (DSAs): Formalising consent, ownership, and usage terms for sharing knowledge.
Metadata: Including Indigenous terminology and context to support data discovery and reuse.
Benefit Sharing: Ensuring equitable returns and advantages for communities from data projects.

Why It Matters
Corrects historical imbalance: Addresses past exploitation of Indigenous data.
Empowers communities: Enables data to inform policy, track progress (such as Closing the Gap), and drive community-led solutions.
Ethical research: Ensures research is respectful, relevant, and beneficial to Indigenous peoples.

Frameworks & Resources
NIAA Framework for the Governance of Indigenous Data: A whole-of-government approach for working with Indigenous data.
Community Data Projects (Indigenous Data Network): Initiatives to provide local data portals for First Nations organisations.

In Practice
It involves embedding these principles from the start (planning) through collection, storage, analysis, and sharing (the entire data lifecycle), ensuring data is used for collective benefit and respects relationships

6. Skills Development

Training Programmes:

Research commercialisation
Industry engagement
Communication skills
Mentorship Schemes: Pair early-career researchers with experienced translators.

7. Industry Partnerships

Co-design Opportunities: Involve industry in the early stages of infrastructure planning.
Secondment Programmes: Facilitate researcher placements in industry and vice versa.

8. Funding Mechanisms

Dedicated Translation Funding: Allocate specific funds for translation activities within NRI budgets.
Incentive Structures: Reward researchers for engagement in translation activities.

9. Intellectual Property (IP) Framework

Clear IP Policies: Develop guidelines for IP ownership and licensing.
Support Services: Provide access to IP experts and commercialisation support.

In relation to the national research priority on Aboriginal and Torres Strait Islander knowledge systems, self-determination, cultural protocols and benefit-sharing, we recommend that the NRI adopt Indigenous Cultural and Intellectual Property guidelines as a policy setting for all researchers and NRI entities. The Australian Government has committed to introducing new laws to protect Aboriginal and Torres Strait Islander traditional knowledge and cultural expressions, including to address the harm caused by fake art, merchandise and souvenirs. Aboriginal and Torres Strait Islander traditional knowledge and cultural expressions can also be referred to as 'Indigenous Cultural and Intellectual Property' or 'ICIP'. Eventually, if these proposed reforms are implemented by the Australian government and ICIP is regulated by legislation, the research community will be obliged to comply.

What is ICIP?

Indigenous Cultural and Intellectual Property is a broad term which is used to refer to the rights Aboriginal and Torres Strait Islander people have to their heritage and culture. ICIP includes knowledge, songlines, language, dance, symbols and art as well as medicines, language, bush foods, sacred sites and ecological knowledge.

Indigenous Cultural and Intellectual Property (ICIP) refers to the rights Aboriginal and Torres Strait Islander peoples have over their unique heritage, encompassing tangible things like art and sacred sites, and intangible elements like stories, languages, traditional knowledge (bush foods, medicines, ecology) passed down orally, which are collectively owned and managed according to cultural protocols, extending beyond standard copyright laws and often requiring community consultation for respectful use.

Key aspects of Indigenous Cultural and Intellectual Property (ICIP)

Tangible & Intangible: Includes physical items (art, artifacts) and non-physical elements (ceremonies, songs, stories, ecological knowledge, language).
Collective Ownership: Often owned by groups, families, or communities, not just individuals, and maintained across generations.
Living Heritage: A dynamic system of knowledge and practices that evolve, including future creations based on tradition.
Cultural Protocols: Governed by customary laws and traditions, differing from Western legal frameworks like copyright.

What ICIP covers

Literary & Artistic Works: Paintings, carvings, crafts, books, films, music, performances.
Documentation: Archives, sound recordings, photographs, reports, and digital data about Indigenous culture.
Traditional Knowledge: Uses of plants, ecological knowledge, spiritual beliefs, songlines, and ceremonies.
Cultural Property: Sacred sites, burial grounds, ancestral remains, and cultural expressions.

How ICIP differs from copyright

Duration: Copyright is temporary (e.g., 70 years post-death); ICIP rights are perpetual.
Scope: Copyright protects material forms; ICIP protects the underlying knowledge and cultural significance.
Control: Copyright can be sold; ICIP custodians have ongoing responsibilities to manage it according to cultural protocols.
Importance and protection
ICIP ensures the integrity, continuity, and cultural appropriateness of First Nations heritage.
Respecting ICIP involves consulting Elders, seeking permission, and following cultural protocols, often requiring engagement with bodies like the Arts Law Centre.

While Australia lacks specific ICIP laws, international declarations (like UNDRIP) support these rights, and institutions work to incorporate cultural protocols into their management of collections.

10. Translation Metrics and Evaluation

Key Performance Indicators (KPIs):
Number of industry partnerships

Patents filed
Spin-off companies created
Policy impacts
Impact Assessment: Implement tools to measure the broader societal impact of research.

11. Communication and Outreach

Knowledge Brokers: Employ specialists to facilitate communication between researchers and end-users.
Public Engagement: Develop programmes to communicate research outcomes to the general public.
12. Regulatory Compliance

Ethics Frameworks: Ensure infrastructure supports ethical research practices.
Regulatory Expertise: Provide access to experts in relevant regulations (e.g., clinical trials, data privacy).

13. Pilot Projects

Proof-of-Concept Studies: Allocate resources for small-scale translation projects to demonstrate value.
Case Studies: Document successful translation examples to guide future efforts.
14. Technology Transfer Office

Dedicated Support: Establish or link with existing technology transfer offices.
Commercialisation Pathways: Develop clear processes for moving research towards commercial outcomes.

15. International Collaboration

Global Networks: Connect NRI with international counterparts to facilitate global translation efforts.
Best Practice Sharing: Engage in knowledge exchange with successful translation initiatives worldwide.

16. Continuous Improvement

Regular Reviews: Conduct periodic assessments of translation effectiveness.
Feedback Loops: Implement mechanisms to continuously improve translation processes based on outcomes and stakeholder feedback.

By incorporating these elements into the planning and development of new NRI, research institutions can create an ecosystem that not only generates cutting-edge research but also effectively translates that research into tangible benefits for society, industry, and the economy. This approach ensures that NRI remains relevant, impactful, and aligned with broader national and global objectives.

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Mon, Dec 8, 2025, 02:38 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
1. Develop a National Branding and Visibility Strategy
• Create a unified NCRIS brand identity that clearly signals all capabilities as part of Australia's National Research Infrastructure.
• Standardise visual identity, messaging, and terminology across facilities to reduce confusion for industry users and SMEs.
2. Strengthen Digital Outreach and Storytelling – One Voice
• Use digital media campaigns to showcase real-world impact stories, case studies, and success metrics that resonate with industry priorities (e.g., productivity gains, innovation outcomes).
• Produce short videos, interactive dashboards, and infographics that demonstrate how NRI capabilities have supported commercialisation, product development, and regional growth.
• Leverage social media and professional networks (LinkedIn, industry forums) to target SMEs and regional businesses.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
1. Improved Branding and Visibility (Linked to Q9)
• Establish a unified national identity for NRI capabilities so industry clearly recognises them as part of Australia's research infrastructure ecosystem.
• Develop a centralised portal showcasing all capabilities, success stories, and pathways for engagement, reducing fragmentation and confusion for industry users.
2. Shift from Technology Push to Problem-Solving Approach
• Avoid presenting infrastructure as a set of technical features; instead, frame offerings around industry challenges and solutions.

• Use sector-specific language and case studies to demonstrate how NRI capabilities can address real-world problems such as productivity, sustainability, and innovation.
• Develop industry-facing service models that include needs assessment, co-design of research projects, and clear pathways to commercialisation.
3. Build Industry Engagement Skills and Capacity
• Provide training for NRI staff in industry engagement, partnership development, and impact measurement.
• Create dedicated industry liaison roles within NRI facilities to act as translators between research and business needs.
• Encourage secondments and joint appointments between NRI facilities and industry to build mutual understanding.
4. Showcase Impact Through Digital Media and Storytelling
• Use compelling narratives and visual content to highlight successful collaborations and tangible outcomes for industry.
• Share metrics on economic impact, job creation, and innovation outcomes to build confidence in NRI's value proposition.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
1. Translation Accelerator Pilots
• Description: Establish small-scale, co-funded pilot programmes within existing NRI facilities to test translational workflows with industry, SMEs, and NGO/not-for-profit partners.
• Purpose: Generate data and evidence to support Category 1 funding applications while reducing entry barriers for non-academic partners who often lack resources for large-scale projects.
• Benefit: Builds trust and demonstrates impact before scaling to full national infrastructure, enabling inclusive participation.

2. Flexible Engagement Models
• Description: Introduce simplified access pathways for SMEs and NGOs, including subsidised trial access or "translation vouchers" for short-term projects.
• Purpose: Encourage early engagement and allow partners to experience NRI capabilities without committing to significant upfront investment.
• Benefit: Expands the user base, fosters collaborative innovation, and supports organisations that traditionally struggle to fund research engagement.

3. Co-Investment and Partnership Grants
• Description: Develop targeted funding schemes that support joint projects between NRI facilities, universities, and industry/community organisations including NGOs.
• Purpose: Share costs and risks while accelerating research translation into practical solutions that benefit both economic and social outcomes.
• Benefit: Strengthens cross-sector collaboration and leverages existing infrastructure for broader societal impact.

4. Embedded Industry and Community Liaison Units
• Description: Create dedicated liaison personnel within NRI facilities to identify industry and community challenges and match them with relevant research capabilities.
• Purpose: Shift from a technology-push model to a problem-solving approach, ensuring solutions are co-designed with end-users.

• Benefit: Improves alignment between research outputs and real-world needs, including those of NGOs and community organisations.

Q12. How should research translation be planned for in the development of new NRI?
1. Map the Value Chain Analysis
• Before designing new NRI, undertake a comprehensive mapping of the research-to-impact value chain for the relevant domain.
• Identify critical stages—discovery, development, validation, scaling, and adoption—and the infrastructure needs at each stage.
• Use this analysis to define key translational objectives that the new NRI should enable, ensuring alignment with national priorities and industry/community needs.
2. Embed Translation Objectives from the Outset
• Make research translation a core design principle, not an afterthought.
• Incorporate clear pathways for moving from fundamental research to applied outcomes, including mechanisms for industry and NGO engagement.
3. Co-Design with End-Users
• Engage industry, SMEs, NGOs, and community organisations early in planning to identify real-world challenges and ensure infrastructure is relevant and accessible.
• Establish advisory panels and structured consultations to integrate user perspectives into design.

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Mon, Dec 8, 2025, 02:26 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Push versus pull engagement is essential. Seamless discovery of and access to NCRIS by industry can be strengthened, for example, a National Service Catalogue. A modern, user-friendly national discovery platform that aggregates NRI capabilities, surfaces services and facilities, and enables each facility to showcase milestones and advancements is valued. Attendance, as a whole NRI collaborative, at industry led conferences will raise the profile of NCRIS and its various projects. Along with strengthened engagement with CRCs for the translation and application of existing and emergent NRI, products and services to address industry challenges.
Through increased engagement by NRI projects, Government agencies could advocate for these projects to their industry sector colleagues to support raising the profile of these activities. There is also a need for significant uplift in State Government investment and partnership between NRI and industry.
Promote examples showing how engagement with NRI has de-risked industry through improved alignment to policy, e.g. climate change, and improved productivity. Investment in proximal spaces, infrastructure to incentivise and catalyse engagement and collaboration. Industry requires secure, robust environments for sharing data and information. T&I is essential for secure, protected authority to access sensitive, competitive data.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
See also response to Q7. Access barriers reduce collaboration: Without seamless authentication and secure access mechanisms, researchers and industry partners face significant friction in accessing shared resources across institutional boundaries. This particularly affects SMEs and startups who find it challenging to justify the financial or

technical investment to connect to the federation while their path to commercialisation is still uncertain.

Data and tool sharing requires Trust and Identity (T&I) infrastructure: Collaborative RD&I increasingly depends on shared access to specialised datasets, computational tools, and analytical platforms. This is possible through National research infrastructure, but only when accompanied by appropriate identity and access management systems.

Infrastructure staff enable translation: The technical expertise embedded within research infrastructure facilities acts as crucial knowledge brokers between research and application. Incentivising infrastructure engagement strengthens this translation pathway.

Efficiency and cost-effectiveness: Leveraging existing national infrastructure avoids duplication and allows smaller entities to access capabilities they couldn't develop independently, democratising innovation opportunities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Strong Trust and Identity (T&I) and cybersecurity practices are necessary across all NRI to maintain Australia's competitive advantages. Australian research infrastructure must adopt international frameworks for T&I and cyber security to ensure compatibility with international programs as research becomes increasingly global and depends on expertise from specialists around the world.

To future-proof Australia's NRI ecosystem, national investment in T&I and cybersecurity infrastructure must be prioritised in the next NRI Roadmap, particularly to address challenges from rapidly evolving AI and emerging quantum computing technologies. Further, industry requires higher assurance levels, as there is currently no national framework that bridges both research and industry identity ecosystems. By continuing to enhance the AAF infrastructure, we will integrate with both government and industry identity systems, we will leverage international best practice assurance models (REFEDS) and implement verifiable credential infrastructure (i.e. digital wallets).

A unified national T&I capability built on common standards (e.g. the AAF Policy Development Kit for Research Collaborations) and technologies will deliver far greater value than fragmented, disconnected adoption. A sovereign national T&I capability, through the adoption of core standards and technologies will generate value in excess of fragmented and disconnected adoption. Recent economic analysis of T&I (1.) shows $58 million in annual benefits versus $6.8 million in costs — a net benefit of $51 million and a benefit–cost ratio of 8.5. These benefits will only increase with greater adoption across the entire research ecosystem. There are still numerous services who are deploying their own approaches and solutions. T&I Solutions that that are fit for purpose, aligned with global standards, will help ensure that Australia's research outputs remain internationally competitive.

1. https://aaf.edu.au/project/aaf-driving-collaboration-cutting-costs-and-boosting-innovation-across-australia/

Q12. How should research translation be planned for in the development of new NRI?

The AAF is strongly supportive of any submissions (including Responses: 183, 195, 210, 255) that promote multi-institutional data sharing, data mobility, that engage researchers from across the entire ecosystem – including academia, government, industry and citizen scientists - that enable trusted and secure access to sensitive data (such as health, HASS and Indigenous data) and are underpinned by the importance of genuine collaboration and co-design.

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Mon, Dec 8, 2025, 02:19 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The capacity to deliver translation and industry engagement within NRI requires a very specific and rare set of skills and experience: the learned ability to deliver the very disparate needs of NRI providers and industry partners.

Beyond specific skill sets, the NRI community could increase industry and public awareness via: (1) national campaigns, directories, and case studies; (2) consistent use industry advisory boards/committees; (3) better storytelling of success, especially SMEs and policy impacts; and (4) standardised branding or outreach frameworks.

In addition to this, there is a need to build service delivery to industry and government directly into the business models of NRI facilities, recognising this as an equally legitimate and expected use of research infrastructure. This would make facilities easier for industry and government partners to navigate and could help increase Business Expenditure on R&D (BERD). Currently, many NRI providers only accommodate industry and government as secondary users, with minimal allocation of time and resourcing — making translational R&D a riskier undertaking. A substantive, carved-out allocation for industry and government access would meaningfully address this gap.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
A recognition of the specific value of business development skills and greater investment in those skills, within the NRI ecosystem, would vastly increase NRI capacity to deliver translation to industry. While these skills are treated as an add-on, of lesser value than engineering skills, for example, they will be necessarily constrained.

In addition, it is important to acknowledge that R&D occurs differently in industry than in academia, and that NRI settings should take deliberate steps to bridge or accommodate these differences. Incentive structures and performance measures should reflect the differing approaches to R&D across stakeholders, particularly where the goal is to better support translational research.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
As described in Q10, increased funding for these capabilities is essential.

As described in Q8, an ability to build academic/industry transferrable career pathways would enable NRI to attract a workforce with greater industry experience. This can be delivered through support for the Technician Commitment, the Academy for Collaborative Research Infrastructure, and institutional advocacy.

As described in Q8, these capabilities could be enhanced through training and development with an NRI specific focus. This can be delivered through multiple new and existing shared platforms, such as Research Data Australia, the Australasian Research Management Society, and international platforms.

In addition to these measures, incentives that encourage NRI providers to adopt more accommodating and industry-ready business models would further strengthen the sector's ability to deliver translation. Even with appropriate skills and training, translation will remain difficult if structural and business-model barriers persist.

Q12. How should research translation be planned for in the development of new NRI?
It is critical to understand that research translation is very different across the heterogenous NRI landscape. Those delivering R&D in medical devices are not on the same pathway compared with a facility driving policy and societal translation. It is imperative that NRI providers plan for translation in the manner applicable to the type/s of research they support.

There are many examples of tried and tested pathways to translation and NRI facilities have the knowledge and experience to select the optimal pathway for their needs. This can be enhanced through the provision of wider training, knowledge sharing, and value recognition.

AURIN has developed a unique product-focused business model to partner with commercial data and technology providers, alongside academic experts, through a sandbox R&D process that takes a Proof of Concept (PoC) to a Minimum Viable Product (MVP). Essential aspects of the journey include: (1) understanding of existing market failure, (2) identification of necessary public good value and (3) early identification of potential end-users/clients.

It is important to note that, often, the end-user will be a government agency or department. In this case, the benefits should be evaluated against demonstrable savings to society rather than straight profits.

Besides, it should be recognised that not all translational research will result in translated outcomes. Translation is inherently uncertain, and adequate resourcing is needed to support high-quality translational R&D even when outcomes cannot be guaranteed.

Incentives and KPIs for NRI facilities should therefore reflect this reality — aiming for fewer but higher-value breakthroughs.

2026 National Research Infrastructure (NRI) Roadmap Issues Paper Consultation
Issues Paper Consultation Survey
Department of Education

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Mon, Dec 8, 2025, 12:38 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Making collections infrastructure accessible to industry requires investment in digital discoverability and dedicated liaison capacity. Greater digitisation of collections and associated data enables remote discovery and reduces access barriers for users in research, biosecurity, environmental consulting, and natural resource management. Currently, potential industry users may not know that collections like AMRI's can provide species identification services, temporal distribution data for environmental impact assessment, or reference materials for forensic applications. Dedicated industry liaison roles, clear access processes with published service standards, and case studies demonstrating practical applications could significantly increase awareness and use. Digital integration with platforms like Atlas of Living Australia significantly enhance discoverability.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Productive research-industry collaboration requires staff who can operate in both research and commercial contexts, understanding industry timelines, IP arrangements, and practical application needs alongside research excellence. Two-way secondments between NRI facilities and industry, industry advisory boards, and recruitment of staff with commercial experience would build this capacity. However, the fundamental barrier is workforce availability - collections staff already operate at capacity. Without dedicated roles and operational funding for industry engagement, it will be a challenge for facilities to build significant new collaborations regardless of demand.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

2026 National Research Infrastructure (NRI) Roadmap Issues Paper Consultation
Issues Paper Consultation Survey
Department of Education

Australia's natural science collections are critical but under-resourced translation infrastructure. Natural Science collections underpin biosecurity identification, climate change research through temporal data, environmental impact assessment, and conservation planning - but current digitisation levels limit accessibility. A coordinated national enhancement of collections infrastructure would include: large-scale digitisation enabling remote discovery and use; sustained operational funding for the specialist workforce (taxonomists, collection managers, conservators etc.) essential to maintaining and mobilising collections; digital integration across institutions; and coordination mechanisms for strategic collection development aligned to national priorities.

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Mon, Dec 8, 2025, 12:29 PM Australian Eastern Daylight Time
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities can improve industry awareness and access by investing in a coordinated, consistently updated national capability mapping system or strategy. To ensure accuracy and visibility, individual institutions should be required, as a condition of funding, to maintain outward-facing websites with current information on their infrastructure, expertise and services.
A nationally supported approach, broader in scope than existing models like Phenomics Australia, would allow industry users across both cities and regions to easily identify where relevant capabilities lie. Sustained resourcing is essential so that capability information is kept up to date and actively promoted, rather than relying on ad hoc or short-term efforts. This would provide a clear, reliable pathway for industry to engage with NRI facilities and accelerate collaboration.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities can boost research-industry collaboration by giving RI staff practical experience in how industry operates. Many staff are unsure where to start when engaging with companies, so funded placements or short-term secondments within industry would provide valuable insight into commercial priorities, timelines and expectations. This hands-on experience, supported by targeted training in areas such as contracting and communication, would equip staff with the confidence and skills needed to identify opportunities, tailor services to industry needs and build more productive partnerships.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Improving research translation capability requires the introduction of consistent quality frameworks across NRI facilities, supported by adequate resourcing to implement and maintain them. Many facilities are not currently equipped to meet the more agile, industry-specific demands that differ from academic expectations. Strengthening existing NRIs with dedicated funding, staff training and practical tools for quality management would improve reliability, responsiveness and readiness for industry engagement.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be built into new NRI from the start, with translation potential considered as a key criterion in funding assessments. Funding applications should clearly outline how proposed facilities will support industry engagement, commercialisation pathways and real-world impact, ensuring translation is planned for rather than added later.

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Mon, Dec 8, 2025, 12:26 PM Australian Eastern Daylight Time
[ID: sbm3991a9a801e5a8d6cc3dc]

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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Provide for NRI facilities that have multiple uses, and that are already strongly tied to stakeholders, users and industry. Biological collections, for example, work with industry (and government) on the one hand on priority pests, and with researchers on the other developing new technologies for detection and diagnosis.

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Mon, Dec 8, 2025, 11:58 AM Australian Eastern Daylight Time
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A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NCRIS, at least in the humanities space, could usefully look to AustLit as a model here. In Australia for example, AustLit is widely known, respected and used by multiple researchers in Australian literature and literary studies as well as cultural and historical studies, across a range of projects. It also partners with industry professionals across the literary and cultural sector. AustLit has a stakeholder group, made of key researchers and industry professionals. In addition to being a piece of national research infrastructure that supports discoverability, it is widely sought out for potential collaborations as a platform that generates, enhances, curates and stores data sustainably. It has developed a reputation for being open to collaboration, with a combination of both dynamism and stability, and being responsive to the needs of researchers. Such a reputation takes time, trust and respect to build.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Genuine co-design (as opposed to making decisions behind closed doors that are then presented as co-design – no one falls for this).
Make time and space for genuine collaboration and conversations across research and industry. This means really listening to the needs of researchers and industry. This sounds simple but it's amazing how little this happens.

198

Mon, Dec 8, 2025, 11:55 AM Australian Eastern Daylight Time
[ID: sbm39913672e3cc976b3c560]

Title
Prof

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Melodie

Last Name
McGeoch

Organisation
Monash University

In what capacity are you responding?
An individual

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
By a collaborative approach across the University, industry and NRI facility sectors.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Nationally coordinated collaboration and strategic planning across industry, university and NRI facilities - including incentivised collaboration where needed in the national interest.

Q12. How should research translation be planned for in the development of new NRI?
Nationally coordinated collaboration and strategic planning across industry, university and NRI facilities - including incentivised collaboration where needed in the national interest.

196

Mon, Dec 8, 2025, 11:53 AM Australian Eastern Daylight Time
[ID: sbm39918bfa4ae528bc83a06]

Title
Mr

First Name
Ken

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Mahon

Organisation
Campus Plus Pty Ltd

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The current NRI model serves as a reference for enabling capability, but also face the challenge recognising limitations under a specific to research, institute linked and/or federated node-based models. Ultimately using NRI for translation needs to move beyond a historical research purpose and/or institute specific resource and embed a commercial/service-oriented model as a market facing service designed to support translation and industry.

In the end it becomes a market focused exercise to start for a service capability that is packaged and available beyond the current served research community and available/able to support for translation and industry. Adopting a market/service-oriented approach should then guide the approach to the NRI for translation and industry.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
This is 'simply' a service design and workforce capability challenge. In looking at NRI for translation the thinking needs to be clear about what the role of NRI is in the translation activities – enabling proof of concept and then moving into execution with potentially pilot and low-rate initial production capability.

There are elements of talent attraction, skills development, knowledge transfer, cultural motivations, career pathways and mobility (internal and external) and incentives (financial and non-financial dimensions) that underpins building the workforce for research-industry collaboration. Essentially, it's the people dimensions and workforce design as functions of service design (specific to activity), and the purpose and objective of the NRI facility operation more broadly (the organisation as a whole).

Can we adequately satisfy the basic principles individuals look for in their roles, to deliver a service which is sustainable, and meets the needs of industry partners?

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Reference existing success (and limitations) - use current experience as the most likely example under the current NCRIS model as an enabling capability reference.

Recognise what is needed to 'add' translation capability into NRI, either as an extension to existing capabilities, or as a specific translation focused capability. Multi-use capability – research, proof of concept, pilot and low-rate production capabilities.

Lifecycle model - apply/define a capability lifecycle model to NRI. What does the effective lifecycle, and measure of effectiveness reflect on NRI capability. What happens to introduce new capability, sustain it for its useful life, and then retire the service at the end of its useful NRI life?

Identify general enabling cross-sector/cross-priority capability and sector specific priority focused, specific capability requirements. Also note other industry initiatives at federal and state government level which can be integrated.

Models and incentives for the investment in, utilisation, and extension of existing and new research capability, institute specific translation capabilities (i.e. ManuFutures at Deakin University – not consider NRI, but part of the translation capability) and other ecosystem models.

Funding models – direct and indirect will be a key driver for NRI. Are there sources of public sector and private sector asset backed capital investment models that can be leveraged. What is return is required to support a sustainable NRI capability into the research, proof of concept, pilot and low-rate production capabilities.

Q12. How should research translation be planned for in the development of new NRI?
In its simplest form – define translation as a function of NRI. Embed the need for translation as a requirement for NRI funding. Review and apply a funding and incentive model to drive utilisation for translation, but with consideration for sustaining effective research capabilities.

195

Mon, Dec 8, 2025, 11:53 AM Australian Eastern Daylight Time
[ID: sbm39918b6d7fe1988ece71e]

Title
Dr

First Name
Deborah

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Barkauskas

Organisation
Garvan Institute of Medical Research

In what capacity are you responding?
An individual

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Access to and storage of biosamples is critical for medical research as well as Australian and organizing cohorts of biosamples or patient samples is a fundamental element for medical researchers to translate basic research into solutions that can be applied nationally. I fully support the creation of Biobanking as a new NRI. Biobanks generally grow organically to address specific research questions however, biobanks continue past the original grant funding and continue as a resource that can fuel new research questions. National infrastructure for quality biospecimen storage and biobanking services with consistency in ethics governance per state, standardised annotation, and national coordination of partial or to be unfunded biobanks to ensure samples are utilized and not wasted, would be a valuable nation resource.

I strongly support the establishment of a national biobanking infrastructure primarily because their world-class genomics research is heavily dependent on the quantity, quality, and accessibility of human biological samples and associated clinical data. Garvan is a leader in areas like whole-genome sequencing (WGS), single-cell genomics, and spatial transcriptomics. These advanced techniques require massive, well-characterised sample cohorts to achieve statistical power and identify meaningful genetic variations linked to disease. Projects, such as the Centre for Population Genomics, the Breast Cancer Atlas, Charlie Teo Foundation Brain cancer sequencing, and the TenK10k project aim to study thousands of genomes to establish representative genetic resources. A national biobank could consolidate smaller, disparate collections, providing the necessary scale to study rare diseases, common complex disorders, and ensure better representation of Australia's diverse population. Translating discoveries into clinic requires high-quality biospecimens linked to comprehensive clinical outcome data (longitudinal data). A key challenge in genomics is connecting the biological sample with the rich health information about the donor. Garvan advocates for a national system that addresses this.

Genomics research generates vast amounts of "big data". A national biobank platform with accessible, usable, associated interoperable software, would help establish standardised protocols for data acquisition, management, storage, and secure sharing to effectively integrate genomic data with clinical, lifestyle, and environmental data for multi-omic analysis.

Q12. How should research translation be planned for in the development of new NRI?
Research translation in biobanking is the gateway which directly facilitates the movement of discoveries from the lab to public benefit.
• Engage potential end-users (pharmaceutical companies, diagnostics developers, clinicians) from the start. This ensures the infrastructure collects and processes samples in a way that meets industry-standard requirements (e.g. specific preservation methods for clinical trials or diagnostic assay development)
• Standardization and Quality Control (QC): Translation hinges on the reliability and comparability of biospecimens and data. The new NRI must adopt international best practices and stringent QC protocols for high-quality, standardized input. E.g. for bringing solutions to market, a pharma company may require specific, standardized Standard Operating Procedures (SOPs) for sample collection to trust the integrity of the resulting data.
• Data Integration and Interoperability: The NRI should be designed to link biospecimen data with clinical and -omics data (genomic, proteomic, etc.). This requires interoperable data platforms that can be easily accessed and integrated by external researchers and industry partners.
• Clear Access Policies: Develop transparent and fair access policies that prioritize translational research while balancing academic and commercial interests. Access hurdles can stifle innovation.
• Dedicated Translation Support: Budget and resources must be allocated for translation-focused staff, such as technology transfer officers, who actively scout for translational opportunities and broker partnerships.

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Mon, Dec 8, 2025, 11:44 AM Australian Eastern Daylight Time
[ID: sbm3991835109e1f22c2f818]

Title
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The University of Sydney

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities can improve visibility and accessibility for industry users through coordinated national approaches supported by targeted local engagement:

1. Develop a coherent national "front door" for industry.
A unified, well-branded online entry point that clearly describes NRI capabilities in sector- and problem-focused language (e.g. advanced manufacturing processes, biomedical characterisation, critical minerals analysis, agricultural productivity tools) would make it easier for businesses—particularly SMEs—to identify relevant support and understand how to access it.

2. Translate facility capabilities into application-focused language.
Industry-facing materials, roadshows, webinars, and demonstrations should present capabilities in terms of practical applications, regulatory relevance, and commercial opportunity rather than discipline-specific terminology. These activities are critical enablers for industry engagement and take time, money and expertise.

3. Strengthen regional pathways and partnerships.
Collaborations with state agencies, regional innovation hubs, precincts, and industry associations can provide "local conduits" into NRI capabilities. Remote access, satellite nodes, and SME-friendly access schemes can further broaden reach.

4. Proactively engage with peak bodies and national priority sectors.
Sustained engagement with CRCs, ARC centres, AEA initiatives, growth centres, and relevant peak bodies helps align NRI offerings with national priorities, emerging industries, and sector-specific needs.

5. Provide clear, transparent information on access, costing, and timelines.
Consistent, easy-to-navigate information on how industry can engage—including indicative costing, service models, and project pathways—lowers the barrier for first-time users and supports more efficient utilisation.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Building productive collaborations requires capability within facilities as well as supportive national frameworks:

1. Invest in specialised translation and engagement roles.
Dedicated staff who can scope industry needs, match them to facility capabilities, and steward projects from enquiry to delivery help bridge the gap between research services and commercial applications.

2. Develop nationally consistent contracting and IP frameworks.
Templates and guidance for NDAs, research services agreements, material transfer agreements, and data-sharing arrangements reduce transaction costs and create more predictable, industry-friendly pathways.

3. Build commercial literacy across technical and administrative staff.
Training in project scoping, costing, risk management, regulatory awareness, and communication with non-academic audiences enhances facilities' ability to collaborate effectively with industry.

4. Enable co-location, secondments, and two-way mobility.
Opportunities for industry staff to work within NRI facilities—and for facility staff to undertake placements in industry—help build mutual understanding, accelerate collaboration, and support skill development.

5. Support early-stage feasibility work and low-risk engagement models.
Pilot access schemes, feasibility studies, and structured "first engagement" pathways help businesses—especially SMEs—test ideas before committing to larger-scale projects.

6. Showcase success through consistent data and case studies.
Nationally aligned reporting and storytelling on translation outcomes help facilities learn from each other, demonstrate value, and attract new industry partners.

7. Introduce a national industry access voucher scheme.
A small-scale voucher program (e.g. $10k–$50k per project) would enable SMEs and new industry entrants to access NRI capabilities for feasibility assessments, prototyping, testing, and characterisation work. This reduces the administrative and financial barriers that often deter early engagement. Voucher schemes internationally have proven highly effective in stimulating new collaborations, diversifying industry users, and creating pipelines into larger research or commercial projects. A national program would complement existing NCRIS access models and deliver rapid, measurable returns.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
In addition to cross-cutting enhancements, several foundational research capabilities warrant strategic attention:

2026 National Research Infrastructure (NRI) Roadmap Issues Paper Consultation
Issues Paper Consultation Survey
Department of Education

1. Strengthen under-recognised foundational capabilities that support multiple R&D domains.
Some critical enabling platforms—such as microscopy and microanalysis—are heavily used across nearly all domains of science and engineering, including biomedicine, energy, resources, materials and the environment, yet receive a relatively small proportion of total NCRIS investment. For example, the national research facility in microscopy (Microscopy Australia—MA) supports more than 4,000 researchers each year, contributes to over 1,500 publications, and engages with more than 100 industry clients annually, yet received less than 2% of NCRIS funding in 2023. Sustaining current activity and meeting growing translational demand will require major uplift in support for remarkable new platform technologies, data solutions, and national expansion.
This is not unique to microscopy; it illustrates a broader policy challenge whereby foundational, cross-disciplinary capabilities can be structurally underfunded because their benefits are widely distributed. The Roadmap provides an opportunity to identify and now strengthen such foundational capabilities. This is of critical importance—we would argue that some of these foundational research facilities created under NCRIS (e.g. MA, NIF et al.) have become significantly more important and critical to the national R&D agenda than when they were first established. We also emphasise the point that innovation and commercial translation are not possible without fundamental breakthrough discoveries such as are enabled by the state-of-the-art research infrastructure that is so expertly delivered by our various distributed NCRIS facilities.

2. Develop translation "interfaces" between NRI and applied research programs.
Shared translation coordinators, common digital platforms for managing engagement, and better integration between NRI and CRCs, AEA initiatives, and mission-led initiatives would accelerate pathways from discovery to deployment.

3. Create pilot- and demonstration-scale testbeds linked to existing NRI.
Enhancing applied testing environments—for example, in advanced manufacturing, health technologies, or environmental monitoring—would support industry uptake and regulatory readiness.

4. Strengthen support for regulatory, standards and certification interfaces.
Many translational barriers lie at the interface with regulators and standards bodies. Investing in expertise and supporting infrastructure in these areas would reduce "last mile" friction and accelerate commercial and policy adoption.

5. Enhance integrated data platforms for tracking engagement and outcomes.
A national digital layer to track industry engagement, project outcomes, and translational impact across NRI facilities would improve coordination and provide stronger evidence for future policy decisions.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be embedded from the outset rather than added later:

1. Require clear translation objectives in initial business cases.
New NRI proposals should articulate intended industry and end-user pathways, anticipated forms of impact, and success metrics over the long term.

2. Co-design new NRI with industry, government, and community partners.

Engaging end-users early ensures that new facilities, data systems, and workflows are aligned with real-world needs and accelerate uptake.

3. Resource translation functions as core capability.
Funding for engagement, contracting, regulatory navigation, communication, and industry onboarding should be included in operational budgets, not treated as optional extras.

4. Align new NRI with national missions and priority sectors.
The Roadmap should provide guidance on how new NRI investments complement national strategies in areas such as clean energy, defence, critical minerals, health innovation, and digital technologies.

5. Integrate translation expertise into governance.
Advisory and governance structures should include appropriate representation from industry, government, standards bodies, and/or community stakeholders, ensuring translation is embedded in strategic decision-making.

6. Embed evaluation and learning cycles.
Monitoring translation outcomes—industry usage, follow-on investment, regulatory approvals, product or policy impacts—and feeding insights into iterative planning will strengthen long-term effectiveness.

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Mon, Dec 8, 2025, 11:42 AM Australian Eastern Daylight Time
[ID: sbm399181b0e6cc91d7d78f6]

Title
Prof

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Charles Sturt University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
(1) Prioritise exchange opportunities for both researchers and industry personnel at all career stages to support multidirectional growth, and
(2) Ensure that all NRI (and all government-funded research infrastructure) is covered by Research Infrastructure Connected.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Offering training to our research infrastructure workforce and researchers using NRI on building research-industry collaborations, providing guidelines on industry access and use of NRI

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The translation/industry framing largely assumes a linear pipeline (research → industry). We need explicit recognition of bidirectional learning, especially for AI implementations where failure cases and unintended consequences are as strategically important as success stories.

Q12. How should research translation be planned for in the development of new NRI?
Every new NRI proposal should be expected to answer, in concrete terms: "Does this tool help humans develop capacity, or merely rent it?", and show how it can be used to improve translation.
There should also be explicit consideration of whether AI-mediated services grow local expertise or centralise it in a small number of systems and vendors.

190

Mon, Dec 8, 2025, 11:38 AM Australian Eastern Daylight Time
[ID: sbm39917d5b57e5cbf48ec6c]

Title
Prof

First Name
Sharon

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Organisation
Murdoch Children's Research Institute

In what capacity are you responding?
A representative of an organisation or group

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
It's not possible to consider research translation for human related interventions without considering scale- ie what works at scale is almost always where human interventions fall down and prevent scale for impact. World class research cohort infrastructure like Generation Australia as a new NRI would improve research translation capability especially for human outcome benefit- an area that is still relatively modest in the current NRI capabilities.

The size of Generation Australia means research can be scaled in a way not previously possible with results more relevant to diverse populations immediately. Generation Australia can also both inform and evaluate on the range of state and federal policies that are live right now - this is a once in a generation opportunity. GenV, one of the cohorts in Generation Australia, was recently used to enable a toddler food survey to be sent to over 7,000 families from metropolitan and regional areas. This was the largest survey of its kind and meant the findings reflect the diversity of our population, making the evidence relevant to all Australians. It also filled a vital knowledge gap and will inform development of Australian and New Zealand toddler food regulation. The whole project took 12 months from the first planning meeting to delivery of the survey findings report to the government. This speed of research and research translation would be impossible without this existing cohort research infrastructure.

Advanced analytics and AI can help create national impact without national duplication. Modern cohorts do not need to exist in every jurisdiction. With advanced analytics and AI, 'digital twins' of Generation Australia can model national, state, regional and priority population impacts of research, programs and policy – without recreating the cohort everywhere at prohibitive cost and time lag.

Q12. How should research translation be planned for in the development of new NRI?
The general rule for knowledge translation is begin with the end in mind. This means having the necessary people and processes in place to ensure research translation can put the right evidence into the hands of users, regardless of whether they are industry, policymakers, practitioners, communities or families. Generation Australia has been designed to ensure it is a whole of population testing platform that can undertake research at scale and therefore efficiently and effectively cut the time and costs currently associated with research translation. The Draft National Health and Medical Research Strategy identifies research translation as a focus area to drive impact of research. Collaboration with users from the beginning is vital to ensure research findings have utility, regardless of the sector.

189

Mon, Dec 8, 2025, 11:31 AM Australian Eastern Daylight Time
[ID: sbm397d1f74f081103d31e33]

Title
A/Prof

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Organisation
Centre for Advanced Microscopy-ANU

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Facility websites should clearly highlight the instruments, services, and expertise they offer. This information should be presented in a standardised way across facilities to make it easier for potential users across cities and regional areas to understand what is available and how to access it.
Ideas to explore further:
- create a portal for capability finder which links up all NRI capabilities; keyword search should enable finding relevant specialist experts, facilities and capabilities. This could be built by extending support for Research Infrastructure Connected (RIC).
- compile a list of potential industry clients and distribute to relevant facilities: facilities to pro-actively seek out listed industry clients that would benefit from their expertise and capabilities; invite stakeholders to visit the facility and offer training courses and presentations at both ends
- provide industry sector with a catalogue of NCRIS capabilities including contacts details across disciplines and states/territories.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
By building stronger relationships with researchers, NRI facilities can position themselves as early, trusted partners in these collaborations. This will create more reliable and productive research-industry connections and ensure NRI capabilities are embedded in emerging commercial pathways.
As examples, NRI funding could facilitate interactions between NRI, Industry Growth Centres and CRCs and other industry bodies by offering an NRI fellowship scheme, internships that link NRI capabilities with industry sector and scholarships for facility-industry HDR students. A shadowing program (like the one currently run for facility staff

between facilities (nationally and internationally) to upskill staff) could be envisaged for staff visiting industry to exchange knowledge and idea to bridge the gap.

Microscopy Australia has shared templates and has worked with partner organisations to ensure institutions have pre-approved standard contracts for external industry users saving time when an industry partner needs rapid analysis and results.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Long-term investment (strategic plan for 10+ years) and a substantial uplift in funding in NRI, such as Microscopy Australia, is critical to improve translation capability.

To improve research translation capability we would in particular need an uplift in:

- Instruments and facilities: physical and digital resources, such as microscopes, supercomputers, and data platforms, to move research from the lab to practice. Here, the major bottlenecks currently are a limited number of high-throughput instrumentation and well-developed pipelines between workflows from characterisation to manufacturing and its quality control across high-end microscopy centres. Developing one-stop-shops for industry clients to engage with one shopfront for the above, linking e.g. facilities supported via Microsocpy Australia, AusCope, NCI and ANFF would lower the barrier for industry clients to engage with NRI.
- specialist workforce: Investment in this workforce is essential not only for assisting with and developing new pipelines, but also for enabling teams to pursue innovative and creative approaches to research questions. These approaches often require additional time and resources, yet they are critical for advancing technical capability and maintaining national competitiveness. It is also important to emphasise that we need sufficient staffing capacity to meet existing demand while still having the time and flexibility to explore new and emerging methodologies.
- Data integration and analysis support: ML and AI-supported pipelines for large-scale data set analysis. For example, data analysis workflows for volume electron microscopy, structural biology with access to cryo electron microscopy and automated mineralogy are strongly dependent on computational tools that rely on large datasets to increase accuracy and speed of analysis. Without AI-assisted segmentation, pattern detection, and structural identification, generated data sets remain underutilised. Investment in improved data analysis infrastructure enables next-generation drug pipelines, vaccines and bespoke modeling for population health research approaches and development of personalised medical translations. It also underpins exploration of critical minerals and avenues towards a net zero society.

Q12. How should research translation be planned for in the development of new NRI?

R&D is heavily supported by microscopy and microanalysis tools and expertise. Microscopy Australia is a consortium of university-based microscopy facilities that enables advanced research in fields like health, agriculture, environmental and climate research and materials science through its open-access policy and collaborative approach. In order for the facilities to continue enabling world-class research, a substantial uplift of the capabilities needs to be funded and there needs to be a long-term plan to build and retain the skilled workforce we have in the network.

Furthermore, ensuring long-term funding for essential constant upskilling of our specialist microscopy and microanalytics staff, and retaining a highly skilled workforce by offering mobility programs for knowledge exchange is another essential pillar. Investing in data

processing pipelines boosted by AI is also paramount to ensure successful research translation.

187

Mon, Dec 8, 2025, 11:25 AM Australian Eastern Daylight Time
[ID: sbm399171bf4accf9bb10033]

Title
Dr

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Nian

Last Name
Jiang

Organisation
Astralis

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Industry represents a major component of Australia's innovation system, with businesses reporting $11.2 billion in R&D expenditure in FY2021–2022 — an investment comparable to annual Commonwealth R&D funding. Better connecting this private R&D effort to national research infrastructure could unlock substantial productivity growth, accelerate translation, and strengthen sovereign capability.
A coordinated approach – responsive to the needs of both research and industry – is required to increase awareness, visibility and utilisation of NRI across sectors. Astralis recommends:
• First, stabilise the NRI human capital with sustained baseline funding – this is essential to retain specialist technical staff who enable translation, reduce risk for industry partners, and carry institutional knowledge across research projects.
• Provide (realistic and sustained) seed funding for workforce and engagement pilots, including industry-aligned skills mapping, and trial programs that link technical career pathways to industry-embedded training, secondments and shared workforce models. Expectations around industry co contribution should be balanced against the medium-term return on the investment.
• Raise national awareness of NRI through a workforce-aligned strategy — positioning NRI not only as infrastructure, but also as a skilled talent ecosystem. A coordinated NRI skills strategy aligned with industry requirements will help industry understand where and how to engage.
• Target firms that already benefit from the RDTI, and providing incentives that encourage them to partner with NRI facilities as part of their R&D programs. Alignment between public infrastructure and private R&D investment will amplify national return.
• Adopt an industry-centred engagement framework, ensuring NRI capability development responds to industry pull as well as research push. This will increase adoption, accelerate research translation and support sovereign capability building.

Together, these measures would make NRI more visible, more accessible and more relevant to Australian industry — creating stronger collaboration pathways, increasing utilisation, and ultimately improving research translation outcomes at scale.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

To increase productivity from research–industry collaboration, we must first acknowledge the persistent Valley of Death — the gap between discovery and the point at which industry is willing and able to invest. This gap endures because of funding mismatches, capability deficits, incentive misalignment and risk asymmetry. Academic reward structures prioritise publications, grants and citations rather than prototyping, IP generation or industry engagement. Industry, meanwhile, perceives early-stage research as too speculative and high-risk, while researchers often lack the resources or commercial frameworks needed to de-risk technologies to a level where firms can confidently invest. These systemic misalignments and asymmetries slow translation, fragment collaboration, and limit research-derived innovation.

As identified in the 2021 NRI Roadmap, NRI is uniquely positioned to help bridge this gap; the 2026 Roadmap now provides an opportunity to strengthen this role and move from aspiration to structured implementation. Astralis supports the emphasis on NRI as an enabler of translation. The technical expertise embedded within NRI facilities can help address capability gaps in engineering, manufacturing design, systems integration and regulatory readiness. Because technical staff are not constrained by academic promotion systems, research agendas or profit-driven incentives, they can play a crucial role in de-risking and prototyping — undertaking work that academics are not rewarded for and that industry is not yet ready to fund — thereby reducing both risk asymmetry and incentive misalignment.

However, Astralis does not agree with the assertion that "Better tools to analyse and track Australia's NRI and to highlight linkages for development and innovation" will, on their own, improve productivity or meet industry needs. International experience demonstrates that successful translation requires a systematic national approach with dedicated institutions, long-term stable baseline investment, integrated technical workforce capability and structured industry pathways.

Examples from the United Kingdom, Germany and South Korea illustrate this clearly. The UK's Catapult Centres, Germany's Fraunhofer Society and South Korea's ETRI were all established to bridge research and industry through coordinated, mission-aligned approaches. They integrate research, education and industry within coherent technical domains tied to national priorities; combine core public funding with competitive or industry revenue; provide structured pathways such as contract R&D, collaborative projects, licensing agreements, SME engagement programs and industry secondments; and maintain strong engineering and prototyping capability. Critically, they operate with sustained government commitment — the 2021 Catapults Review emphasised that such centres typically require more than a decade to fully mature. The Fraunhofer model also highlights the essential role of base funding for precompetitive research that industry will depend on in the future. This approach ensures we ask "where shall we innovate" and not "how can we secure funding to support the key resources to allow us to innovate".

Astralis therefore recommends that NRI be supported to provide engineering expertise, test facilities and prototype capacity that move discoveries toward application; create collaborative environments where industry partners can co-design and de-risk emerging technologies; and develop a technical workforce that understands both research and industrial production contexts. These functions require dedicated and sustained long-term baseline support.

With such investment, NRI could significantly strengthen Australia's translation capability, build enduring research–industry partnerships, and contribute directly to sovereign capability and national economic benefit.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Improving research translation capability requires strategic strengthening of the NRI system. Astralis offers the following recommendations, grounded in its demonstrated track record in research translation.

First, recognise and expand cross-disciplinary capabilities within NRI. Translation challenges frequently occur at the intersections of disciplines — where engineering, data science, manufacturing, regulation and domain science must converge. Astralis, as Australia's national capability for optical and infrared astronomical instrumentation, already exemplifies this breadth: astronomy and instrument science; optical, mechanical, electronic and software engineering; systems engineering; project management; and quality assurance. This integrated capability is what enables complex technologies to be conceived, designed, prototyped and delivered. Growing similar cross-disciplinary capability across NRI would accelerate technology maturation and reduce friction in translation for other sectors.

Second, create mechanisms that align NRI investment with nationally agreed missions and areas of strong market potential. International exemplars — the UK's Catapult Centres, Germany's Fraunhofer Institutes and South Korea's ETRI — show that mission-directed investment and coherent institutional coordination drive powerful translation outcomes. These models focus investment where nations possess both strategic importance and global market opportunity, underpinned by strong research capability and an industry base able to capture value. Translation success depends on the overlap between competitive research advantage and market pull. Aligning NRI capability uplift and funding decisions with national missions — and concentrating investment where Australia can capture significant positions in global value chains — will ensure translation that is purposeful, economically grounded and globally competitive.

Third, provide dedicated funding for de-risking and prototyping capability, especially to support the technical workforce. At Astralis, technical staff — engineers, systems specialists and instrument scientists — routinely work with researchers and industry partners to de-risk and prototype advanced technologies. This collaborative process helps industry develop new products and gain market margins, while progressing technologies that industry is not yet ready to fund and that academics are not rewarded for developing. This capability has enabled Astralis to deliver breakthrough optical systems and adapt core technologies into priority areas beyond astronomy. As a coordinated multi-institution joint venture, Astralis has converted national research strength into globally recognised leadership in astronomical instrumentation, delivering major international systems and securing contracts across space, Earth observation, laser communications, quantum technologies and national security. Despite this, translational capacity remains limited by the absence of baseline funding for precompetitive research, long-term workforce development and technology de-risking. Dedicated, ongoing investment in technical capability within NRI would materially reduce risk asymmetry, accelerate readiness levels, and enable industry partners to adopt emerging technologies with confidence.

With sustained investment in cross-disciplinary capability, mission- and market-aligned infrastructure, and technical workforce support, NRI can significantly enhance Australia's translation performance. Astralis has already demonstrated that these capabilities deliver research translation and impact. This experience is ready for NRI to adopt and scale nationally. Dedicated funding to strengthen these capabilities will enable NRI to make

critical contributions to national missions, sovereign capability and long-term economic benefit.

Q12. How should research translation be planned for in the development of new NRI?

Australia's research is globally competitive, with world-leading capability in many fields. The challenge is not research excellence, but ensuring that excellence is systematically converted into national capability, industry outcomes and sovereign benefit. Astralis demonstrates that this is achievable: as Australia's national capability in optical and infrared astronomical instrumentation, it has transformed domestic research strength into global leadership, secured international contracts, and delivered multi-sector technology translation spanning space, Earth observation, laser communications and quantum technologies. Australia already possesses the ingredients for successful translation — but these capabilities must be intentionally planned, coordinated and scaled through NRI.

Planning for research translation in new NRI requires a systematic national approach. This includes coordinating existing capabilities across sectors, bridging skills gaps in engineering and systems integration, and integrating education, research and industry around clear and coherent technical domains. Investment should be aligned with national strategic priorities and areas of strong market potential, focusing on fields where Australia holds research advantage and credible pathways to capture global value.

Astralis recommends that planning for new NRI incorporate the following elements:

• Develop a national NRI technical workforce strategy, mapping skills needs, creating structured technical career pathways, and enabling mobility across universities, NRI facilities, industry and government. The highly specialised technical workforce is the cornerstone of translation.

• Grow cross-disciplinary capability across NRI, recognising that translation often occurs at the interfaces between disciplines and requires coordinated engineering, scientific, data and manufacturing expertise.

• Provide dedicated funding for de-risking, prototyping and readiness advancement, with sustained support for the technical workforce that progresses early-stage technologies toward adoption.

• Adopt long-term investment models aligned with national missions and market opportunities, concentrating effort in areas of strategic importance and where Australia can claim meaningful positions in global value chains.

• Implement targeted industry engagement mechanisms, including incentives for RDTI-active firms to partner with NRI, structured collaborative pathways, and co-design environments that enable early de-risking of emerging technologies.

These measures will ensure that research translation is embedded into the planning of new NRI from the outset, enabling Australia's research excellence to deliver broader economic impact, sovereign capability and long-term national benefit.

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Mon, Dec 8, 2025, 11:23 AM Australian Eastern Daylight Time
[ID: sbm399136e2b1e140a7d663d]

Title
A/Prof

First Name
Melanie

Last Name
Rug

Organisation
Australian Microscopy and Microanalysis Society

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
This can only be achieved through proactive and consistent advertising, which should be a top priority and resourced appropriately. NRI must maintain a strong presence at discipline-specific scientific conferences to ensure visibility across research and industry communities. It would also be beneficial for NRI/NCRIS nodes to mandate acknowledgement of facility support in presentations and manuscripts, increasing awareness of available capabilities.
Additionally, facility websites should clearly highlight the instruments, services, and expertise they offer. This information should be presented in a standardised way across facilities to make it easier for potential users across cities and regional areas to understand what is available and how to access it.
Ideas to explore further:
- Create a portal for capability finder which links up all NRI capabilities; keyword search should enable finding relevant specialist experts, facilities and capabilities. This could be built by extending support for Research Infrastructure Connected (RIC).
- Compile a list of potential industry clients and distribute to relevant facilities: facilities to pro-actively seek out listed industry clients that would benefit from their expertise and capabilities; invite stakeholders to visit the facility and offer training courses and presentations at both ends
- Provide industry sector with a catalogue of NCRIS capabilities including contacts details across disciplines and states/territories.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
As the funding landscape shifts, many research groups are increasingly focused on translational and commercially oriented projects, often leading to spin-out companies.

Partnering facilities with these groups would be an effective way to initiate industry partnerships.

By building stronger relationships with researchers, NRI facilities can position themselves as early, trusted partners in these collaborations. This will create more reliable and productive research-industry connections and ensure NRI capabilities are embedded in emerging commercial pathways.

As examples, NRI funding could facilitate interactions between NRI, Industry Growth Centres and CRCs and other industry bodies by offering internships that link NRI capabilities with industry sector, scholarships for facility-industry HDR students or programs like ITTC but with facility staff linking researchers with industry partners.

This could be mediated through Research Infrastructure Connected (RIC) to enhance understanding, knowledge sharing and needs assessment. To ease this engagement, Microscopy Australia for example, has shared templates and has worked with partner organisations to ensure institutions have pre-approved standard contracts for external industry users. This saves time when an industry partner needs rapid analysis and results.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Long-term investment (strategic plan for 10+ years) and a substantial uplift in funding in NRI, such as Microscopy Australia, is critical to improve translation capability.

We would be able to bridge the gap between fundamental research and applications/translation through a substantial uplift in:

- Instruments and facilities: physical and digital resources, such as microscopes, supercomputers, and data platforms, to move research from the lab to practice. Here, the major bottlenecks currently are a limited number of instruments across various high-end microscopy centres with high-throughput instrumentation and well-developed pipelines between workflows from characterisation to manufacturing and its quality control. Developing one-stop-shops for industry clients to engage with a shopfront for the above, linking e.g. facilities supported via Microscopy Australia, AusCope, NCI and ANFF would lower the barrier for industry clients to engage with NRI.

- Specialist workforce: we have a limited number of specialist staff available who cannot meet the demand of industry clients . This requires investment in continuing positions for specialists to assist with and develop new pipelines for a more streamlined path to commercialising discoveries.

- Data integration and analysis support: ML and AI-supported pipelines for large-scale data set analysis. For example, data analysis workflows for volume electron microscopy, structural biology with access to cryo electron microscopy and automated mineralogy are strongly dependent on computational tools that rely on large datasets to increase accuracy and speed of analysis. Without AI-assisted segmentation, pattern detection, and structural identification, generated data sets remain underutilised. Investment in improved data analysis infrastructure enables next-generation drug pipelines, vaccines and bespoke modeling for population health research approaches and development of personalised medical translations. It also underpins exploration of critical minerals and avenues towards a net zero society.

Q12. How should research translation be planned for in the development of new NRI?

Research translation is always built on knowledge gain from fundamental research which feeds future innovation and economic and societal benefit. Trailblazing results are in many cases supported by 'workhorse' high-performance equipment, generated with the excellent support of a highly skilled workforce.

Therefore, an uplift in support of replacing ageing equipment and increasing the fleet of new analytical and characterisation instrumentation is crucial, enabling high throughput at highest resolution. Furthermore, ensuring long-term funding for essential constant upskilling of our specialist microscopy and microanalytics staff, and retaining a highly skilled workforce by offering mobility programs for knowledge exchange is another essential pillar. Investing in data processing pipelines boosted by AI is also paramount to ensure successful research translation.

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Mon, Dec 8, 2025, 11:23 AM Australian Eastern Daylight Time
[ID: sbm399170315ee119491fd00]

Title
Mr

First Name
Dale

Last Name
Holland

Organisation
The Australian National University

In what capacity are you responding?
A representative of an organisation or group

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Investment in activities that increase connectivity between research and industry are welcome. Planning for new infrastructure should engage and leverage industry priorities. However, investment in research translation cannot replace investments in the discovery pipeline. Enhanced research translation requires an enhanced pipeline of fundamental research discovery. Please consider in the final document that 'translation' is a far more inclusive concept than commercialisation, especially when capabilities work with government and community sectors. This is critical in humanities disciplines and for Indigenous data and knowledge.

Q12. How should research translation be planned for in the development of new NRI?
Through independent board representation. For a truly new NRI it will be important to be patient with translation.

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Mon, Dec 8, 2025, 11:16 AM Australian Eastern Daylight Time
[ID: sbm399168a9b1e57492267b5]

Title
A/Prof

First Name
Ron

Last Name
Hackney

Organisation
Australian and New Zealand International Scientific Drilling Consortium (an AuScope project)

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
See the contribution from AuScope and their Research Translation Strategy (2025 – 2030), available at https://www.auscope.org.au/translation

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
See the contribution from AuScope and their Research Translation Strategy (2025 – 2030), available at https://www.auscope.org.au/translation

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
See the contribution from AuScope and their Research Translation Strategy (2025 – 2030), available at https://www.auscope.org.au/translation

Q12. How should research translation be planned for in the development of new NRI?
See the contribution from AuScope and their Research Translation Strategy (2025 – 2030), available at https://www.auscope.org.au/translation

183

Mon, Dec 8, 2025, 11:07 AM Australian Eastern Daylight Time
[ID: sbm3991613a7de541176e92f]

Title
Ms

First Name
Toni

Last Name
Moate

Organisation
Marine National Facility - CSIRO

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Clear discoverability of research capabilities and facilities, through NRI Directory and host organisation websites is key.

The access model and associated governance should also be clear to potential users, i.e. the step from capability discovery through to mechanism to apply for access and the governance around assessment of applications must be easily apparent.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities need to show structured engagement with their user community within their existing governance processes. It is also important that funding certainty allows for long-term investment in people and their ability to develop relationships with industry to pursue opportunities for collaboration. It is difficult to develop meaningful relationships and explore innovative solutions to industry problems if it is not clear whether staff can be retained to follow through with commitments.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
We wholly support the concept of Marine Technology Accelerator (at 2.4.2 in the Roadmap Issues Paper) to nurture and fast-track the maturity of autonomous technologies to be translated to operational readiness. Presently, autonomous marine technologies require significant engineering effort to adapt to new purposes, at times greater effort than undertaking work in a traditional (labour intensive) way, however the opportunities to use autonomous technologies for numerous use cases, with low labour and carbon intensity, is tantalising.

The white paper submissions to the soon to be released National Marine Science Strategy (NMSS) 2025-2035 call for the establishment of a National Centre of Marine Technology (NCMT), focused on national infrastructure for Technology Development, Engineering and Prototyping infrastructure to enable a future marine science strategy. The finalisation of the NMSS is expected in Q1 2026.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be planned as a core design principle when developing new National Research Infrastructure (NRI), not as an afterthought. Equally important is engagement and capacity building. New NRI should incorporate co-design processes with end-users, including industry, government, and community stakeholders, to ensure relevance and usability. By integrating technical readiness, user engagement, and impact measurement into the initial design, NRI can become powerful enablers of research translation and real-world impact.

Strategically selected technology incubators, where value may be realised which dramatically outweighs the initial investment (once translated to industry), can be revolutionary. Those examples at 2.4.2 in the Roadmap Issues Paper are some good examples of the kinds of technologies that could benefit and this concept would be transformative if included in the new NRI.

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Mon, Dec 8, 2025, 10:39 AM Australian Eastern Daylight Time
[ID: sbm398da85188f03df1b7905]

Title
Prof

First Name
Alastair

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Stewart

Organisation
ARC Industry training Centre for Micropysiological Systems Technology

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
promotion at annual scientific meeting of relevant learned societies
regular roadshow - style lectures/workshops - use similar promotion strategies to commercial suppliers eg sponsored meetings and morning teas
systematic dissemination of electronic information through email via universities, CSIRO and research institutes collaborating with senior exec in research and development portfolios

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
staff retention, increased funding, increased availability of discount voucher incentives

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Novel approach methodologies comprise in silico, in chemico and in vitro. NAMs are increasingly being accepted for use by drug and chemical regulatory authorities globally. US, UK and European agencies are making long-term substantial and strategic investments in NAM technology which will replace many existing animal based models used in drug testing.In contrast, Australia has not made any National investment in this area other than via sporadic success of submissions for ARC industry training centres such the recently concluded Centre for Personalised Therapeutics Technologies and the new Centre for Microphysiological System technology. Similarly NHMRC does not have any dedicated funding stream for NAMs, nor does MRFF. This lack of strategic investment is an under-appreciated threat to the international competitiveness of our medical research, the industries it spawns and the Clinical trials sector. Whilst NCRIS is the logical home for scaled offerings of NAM technology and this will require expanded investment, such efforts

should be underpinned by NAM specific funding streams in NHMRC and MRFF schemes, as well as the ARC schemes where technology development is the focus. Without such a coordinated concerted approach we will be left far behind.

Q12. How should research translation be planned for in the development of new NRI?
There is no plan without a budget. Funding translation is key. NRCF/AEA have picked up activity in this space but the longevity of these initiatives is uncertain.
NHMRC development grants are supportive but the funding available has rendered success rates at about 8%. ARC linkage is an excellent scheme and it is laudable that it runs with two submissions annually, a frequency that is important to global competitiveness of initiatives in the drug development space which require global markets for return on investment. However, ARC's mandate excludes many biomedical innovations.
A dedicated, domain agnostic translational research fund needs to be established as a matter of national priority. Our competitor nations are investing heavily in the translation of drug development novel approach methodologies (NAMs) area. Much of the GLP safety toxicology requirements for drugs to enter phase one clinical trial are animal based and are most often conducted overseas. The advent of NAMs to replace or markedly reduce animal toxicology studies and the existence of biomedical research strengths in organoids and microphysiological systems in Australia offers a window of opportunity to repatriate this safety/toxicology work, creating high value jobs and new businesses (or evolution of existing allied businesses).

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Mon, Dec 8, 2025, 10:36 AM Australian Eastern Daylight Time
[ID: sbm3991453864cc4e7706f33]

Title
Prof

First Name
Jenny

Last Name
Fisher

Organisation
James Cook University

In what capacity are you responding?
An individual

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Funding schemes that recognise industry in-kind contributions (i.e. without cash input) for areas of benefit where industry partners have limited cash reserve (e.g. not-for-profit organisations, other government agencies, etc.) to enable public good research-industry collaboration.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
New NRI: An integrated atmospheric composition observing network.

Addressing several of the needs identified in the first round consultation responses, and integrated atmospheric composition network would enable research to support environmental regulation (indoor and outdoor air quality, through state and federal Environmental Protection Agencies) and international convention obligations (Minamata Convention on Mercury, Montreal Protocol on Ozone-Depleting Substances, Stockholm Convention on Persistent Organic Pollutants, etc.). It would promote less siloed and more holistic evidence-based responses to issues like net zero, climate change, and public health by enabling better analysis of trade-offs and co-benefits for air quality and related impacts.

179

Mon, Dec 8, 2025, 10:30 AM Australian Eastern Daylight Time
[ID: sbm39913f1a31ccd6b84653c]

Title
Dr

First Name
Judith

Last Name
Bishop

Organisation
La Trobe University - School of Humanities and Social Sciences

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Engage with broadcast media, including radio and podcasts. Many people listen to audio media today.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Both sides (industry and research) need to listen to and understand each other better and find common ground between their often distinct goals. NRI facilities can potentially learn to play this mediating and translating role, which often seems to be missing, especially in the humanities, which have so much to offer industry but may have challenges engaging with it.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Speaking specifically to a piece of NRI I am familiar with, AustLit needs much better discoverability. The current keyword search mechanisms too often bring up false matches and keyword searchers require researchers to know what they are searching for before they begin. How can researchers use AustLit, for example, to discover stylistic connections or social networks or influences between writers they never knew existed?

Q12. How should research translation be planned for in the development of new NRI?
Develop staff who have research translation as their primary area of concern.

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Mon, Dec 8, 2025, 10:22 AM Australian Eastern Daylight Time
[ID: sbm3991384dd5e58028804c5]

Title
A/Prof

First Name
Roger

Last Name
Osborne

Organisation
Association for the Study of Australian Literature

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
One of the most successful digital humanities projects in Australia is AustLit, which provides research infrastructure to literary and historical studies in the form of comprehensive bibliographical data. It is the most comprehensive national bibliographical database in the world. AustLit provides a model for academic and community engagement that any NRI facility to follow.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities can increase productive research-industry collaborations through transparent academic and community collaborations that foster a mutually beneficial research and development environment.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Research translation capability can be improved with transparent overviews and detailed descriptions of collected data, as well as overviews and detailed descriptions of the architecture of the NRI. This would enable more critical engagement with the data.

Q12. How should research translation be planned for in the development of new NRI?
New NRIs should engage more directly (and regularly) with the research communities being served, in order to better understand the present and future needs of those research communities through user stories that best capture current research trajectories.

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Mon, Dec 8, 2025, 10:10 AM Australian Eastern Daylight Time
[ID: sbm3972646aefcbbc4e2b08d]

Title
Prof

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Daniel

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Angus

Organisation
ARC Centre of Excellence for Automated Decision Making & Society

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The most effective way to make NRI capabilities visible to industry and communities is to ensure they are genuinely useful to researchers. When cutting-edge infrastructure underpins high-impact research, researchers themselves become the most credible and far-reaching channels of engagement. This model is already working: the ARC Centre of Excellence for Automated Decision-Making and Society (ADM+S) has shown how deep collaboration with industry, government and community can grow from infrastructure that directly supports research ambition.

ADM+S researchers routinely demonstrate new methods and tools, enabled by the Australian Internet Observatory (AIO), to partners who want to understand emerging technologies but lack direct access to advanced infrastructure. This creates a two-way benefit: researchers help refine and shape infrastructure in response to live research challenges, while partners see the value of national capabilities through real-world application, not abstract brochures.

Rather than relying on passive promotion, NRI facilities should activate their user communities as ambassadors, showcasing what national infrastructure can do through applied projects, shared tools, and visible outcomes. High-quality capability attracts users, especially when it is embedded in collaborative research that solves problems industry and communities actually face.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Existing NRIs like Australian Internet Observatory (AIO) provide a strong foundation for research translation, but targeted enhancements are needed to maximise their impact. The AIO has already developed critical observability tools that the ADM+S team has used in

nation-leading research on everyday automated decision-making. Notable initiatives include the Australian Ad Observatory, which has exposed problematic practices in computational advertising, attracting strong interest from market regulators and industry stakeholders. These outputs demonstrate the capacity to translate complex research into actionable insights for policy and industry, that is underpinned through national research infrastructure.

To further strengthen research translation, additional investment is needed in capabilities that can monitor and interpret AI and automation in dynamic, ephemeral, and everyday contexts. Expanding AIO's tools and expertise to continue to service these areas would ensure an NRI that can continue to deliver research that is both rigorous and immediately relevant, helping Australia maintain a world-leading position in understanding and responding to the rapidly evolving digital ecosystem.

175

Mon, Dec 8, 2025, 10:04 AM Australian Eastern Daylight Time
[ID: sbm399126fb91e52e229ab14]

Title
Dr

First Name
Tom

Last Name
McGoram

Organisation
Heavy Ion Accelerators

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Raising the profile of NRI within industry will require a sustained, coordinated effort across multiple sectors over several years. Key lines of effort include:

• Strengthening sector-specific engagement. NCRIS groupings (e.g., Made2Measure, NEESF, Health) should proactively engage with their corresponding industry sectors through peak bodies and through a coordinated "Team NCRIS" presence at conferences, trade shows and industry forums.

• Building on the early success of Research Infrastructure Connected (RIC). The RIC program should be resourced to maintain consistent industry outreach, deepen relationships with industry peak bodies, and broaden awareness of NRI capabilities across their memberships.

• Elevating national visibility through coordinated communications. The Department of Education and the Department of Industry, Science and Resources should jointly maintain a sustained web and social media presence promoting NCRIS and other NRI capabilities to industry. Success stories should be amplified, and voucher-style initiatives expanded to lower barriers to access.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NCRIS providers hosted within universities require faster, more flexible and more responsive hiring processes. Current HR systems—designed primarily for academic recruitment—are not agile enough to meet industry-facing expectations, and university professional pay scales are often uncompetitive, limiting the attraction of industry-

experienced candidates. In addition, ongoing barriers to international recruitment continue to prevent NRI from accessing global talent to address domestic skills shortages.

• Increase flexibility in university support systems. Universities aiming to strengthen research translation may need to increase the flexibility and responsiveness of HR, financial, procurement and IT services. Where central services cannot meet the requirements of NCRIS providers (eg due to resoruce constraints), greater autonomy should be provided to lead Grant Agents to pursue alternative solutions.

• Enable short-term secondments to industry. There is potential to establish structured placements that allow NRI professional staff to undertake short secondments within industry. This would strengthen mutual understanding, deepen collaboration, and mirror successful initiatives in other parts of government, such as programs between the Australian Signals Directorate and major cyber security firms.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
HIA notes the very large number of published survey responses which make it a challenging task to identify a top three as most important for inclusion in the Roadmap. HIA clearly has interests in a number of responses, most notably HIA's own survey response which addresses all the key research themes.

We suggest it would be valuable for the Roadmap to reflect on how to introduce new research infrastructure in a way that does not disperse or weaken the existing national research infrastructure (NRI) system. The Roadmap should also clearly outline whether "new RI" refers to fresh priorities, new capabilities, standalone NCRIS Projects, or enhancements that would be delivered as new Activities within current projects. Adding a capability to an established NCRIS Project can streamline delivery, minimise administrative burden, and take advantage of mature governance and operational frameworks.

Q12. How should research translation be planned for in the development of new NRI?
Planning should include:
1) extensive consultation with industry, to identify requirements over a range of timescales.
2) close collaboration between existing NCRIS providers, universities, states and territory government and the Commonwealth to idenfity collaborative approaches to meeting these requirements with optimal cost-benefit ratio and long -term sustainability.
3) carefully observance of the NRI definitions and avoidance of fragmentation of NCRIS across multiple new providers.

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Mon, Dec 8, 2025, 09:49 AM Australian Eastern Daylight Time
[ID: sbm39911a1ff7e15a45fd1fb]

Title
Mr

First Name
Anupam

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Pilli

Organisation
The Australian National University Institute for Space

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
• Establish national coordination gateways that provide a single front-door to distributed infrastructure, the National Space Qualification Network (NSQN) model demonstrates this improves SME access.
• Fund dedicated Business Development staff within NRI operators to drive industry outreach, especially for SMEs lacking technical literacy.
• Adopt standardised service catalogues, transparent pricing, and online booking across NCRIS facilities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Strengthen applied engineering and Quality Assurance expertise within NRI to bridge academic research with commercial deployment.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
• Expand National Space Test Facility's capacity & capability with human resources, larger vibration systems, EMI/EMC capability, enhanced thermal-vacuum testing, and solar simulators, reducing reliance on overseas facilities.
• Develop national coordination platforms (like NSQN) to unify scheduling, reporting, and billing across multiple infrastructure operators.
• Increase industry-facing capability by resourcing specialist staff in mission assurance, certification, and advanced instrumentation.
• Improve digital integration so test data, provenance, and metadata are standards-compliant and export-ready for regulatory submissions.

• Upgrade Australia's radiation-effects capability at Heavy Ion Accelerators with high-energy (≥100 MeV/n) heavy-ion testing, meeting international standards for space qualification.

Q12. How should research translation be planned for in the development of new NRI?
• Co-design facilities with industry, government end-users, and sovereign capability priorities, ensuring alignment with Defence, space, manufacturing, and critical technologies strategies.
• Build in operational funding models that support long-term specialist workforce retention.
• Hard-wire interoperability and cross-facility coordination into procurement, governance, and data systems.
• Require early translation planning, including service models, access pathways, pricing, and pathways to certification.

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Mon, Dec 8, 2025, 08:55 AM Australian Eastern Daylight Time
[ID: sbm3990e87efacccc0aad251]

Title
Prof

First Name
Coral

Last Name
Warr

Organisation
La Trobe University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
• Targeted awareness campaigns, for example, a strong presence in both academically focused conferences as well as industry-focused conferences, trade displays, specialised workshops. Including industry-specific messaging with technical capabilities translated into clear value propositions for sectors like health, energy, agriculture, manufacturing, and creative industries. This could also encompass successful case studies showcasing real-world applications and ROI from collaborations with industry partners.
• Offer training workshops open to all researchers not just current members/users.
• Better promotion of the Research Infrastructure Connected online portal listing NCRIS capabilities, services and access pathways. Consider having a unified and coordinated branding across all NCRIS facilities, rather than just the NCRIS logo.
• Simplify access models including legal agreements, pricing, and virtual access where samples are sent in and analysed online remotely.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
• Invest in industry engagement and business development resourcing via appointing staff within NCRIS capabilities who facilitate the connection of industry clients with the capability. Develop a set of resources that can be used across all NCRIS capabilities that includes standardised agreements covering aspects such as confidentiality, services and IP, and pricing models.
• Allocate seed funding to incentivise research translation and industry-focused projects that leverage NCRIS's advanced technical expertise.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

To improve research translation enhancements of existing NRIs may include:
• Implementation of common agreement templates for research services, IP agreements and licensing to reduce barriers for industry to commercialise.
• Implementation of quality management systems such as ISO9001 for GLP or GMP accreditation, to support industry needs.
New NRI may include:
• Pilot-scale manufacturing facilities for scaling up advanced materials, biotech, agritech, food science, and clean energy technologies.
• Secure, federated data environments for industry-research collaboration in sensitive domains (health, finance, energy).

Q12. How should research translation be planned for in the development of new NRI?
NCRIS facilities are well-placed to provide real-world testing environments for (pre)pilot scale testing of new technologies, including the relevant characterisation, enabling earlier validation and adoption. This can be planned for and supported by:
• Defining translation objectives early, including how the infrastructure will enable outcomes beyond academia - commercial products, policy influence, societal benefits. Map industry use cases with potential applications in priority areas during design.
• Including translation-enabling features such as prototyping and pilot-scale facilities, commercialisation support and industry advisory panels.
• Aligning with national strategies, including the forthcoming National Health and Medical Research Strategy and outcomes of the Strategic Examination of Research and Development, to ensure new NRI investments complement existing translation frameworks and innovation priorities.

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Mon, Dec 8, 2025, 08:50 AM Australian Eastern Daylight Time
[ID: sbm3990e4457ee562298dc0b]

Title
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Organisation
Microscopy Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To have an integrated, highly visible consistent presence on all relevant government departmental and agency websites to complement the individual NRI communications and marketing activities. For NCRIS projects, this could be delivered through ongoing support for Research Infrastructure Connected with its website providing the recognisable, highly visible presence and its staff to provide additional marketing capacity for cross-NRI events and strategic communications. This needs to be complemented with additional staff capacity at NCRIS projects so they are able to respond promptly to translation and industry partners.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Productive research-industry collaborations are built on shared knowledge, expectations and delivery timeframes. NRI capabilities need to ensure they their language aligns with industry and their service match industry expectations. This is also relevant in data sharing spaces, where increasingly information and data are valuable currency, and return on investment for all parties is needed. In Microscopy Australia's experience, what seems to work best with engagement with industry is one on one engagement, but at a broader level how NRI communicates generally for industry requires a nuanced communication style to engage with Australia's SMEs and large corporations.

Microscopy Australia has shared boilerplate templates and has worked with partner organisations to ensure institutions have pre-approved standard contracts for external industry users. This saves time when an industry partner needs rapid analysis and results.

Through facilitated interactions between NRI, Industry Growth Centres and CRCs and other industry bodies. This could be mediated through Research Infrastructure Connected to enhance understanding, knowledge sharing and needs assessment.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Many existing NRIs currently underpin research translation activities through their general support activities for research and industry. To improve and support an enhanced translation ecosystem, the major enhancement needed to existing NRI would be an increase in general capacity so those NRIs can do more of what they already do so well. To complement that increased capacity of techniques/instruments, would be additional experts to target and facilitate translation-focussed engagements. To create a significant uplift in the amount of research translation done in Australia, a multi-departmental approach would be optimal to build an integrated ecosystem in which NRI is an essential component.

For example, Microscopy Australia's operating model is built on training researchers to become independent operators of our advanced microscopes, however, this model doesn't serve industry needs that require staff members to be available to provide this service for them. Therefore, an investment in expert workforce is critical to accelerate innovation for Australian businesses, including start-ups, spin-outs and SMEs.

Q12. How should research translation be planned for in the development of new NRI?
More recognition and enabling of staff flow between universities, NRI, and industry would build cross-sector literacy and understanding. A defined scheme that facilitates this could be beneficial for building better connections between these sectors and fostering research–industry–NRI collaborations. This would also be enhanced by more support for industry-focussed positions such as the Industry Professorship of Colin Hall and others at the University of South Australia. Greater collaboration between NRI schemes and other government departments, schemes and initiatives would help to enable a more integrated approach.

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Mon, Dec 8, 2025, 07:01 AM Australian Eastern Daylight Time
[ID: sbm39908095245167382f9c9]

Title
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Organisation
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Emergency medicine research and funding opportunities:

Despite managing 10 per cent of all clinical encounters, on average emergency medicine receives roughly 0.4 per cent of available research funding. In 2024, only 0.6 per cent of National Health and Medical Research Council (NHRMC) funding was awarded to projects in the field of emergency medicine research. This is magnified in rural, regional and remote (RRR) communities, where relationships with traditional research institutions, such as tertiary hospitals and centres, are comparatively lacking.

Despite the volume of attendances to Australian EDs, emergency medicine research is one of the most underfunded areas of medical research in Australia. This underfunding has contributed to a serious lack of evidence underpinning clinical practice guidelines and as such, can result in suboptimal, ineffective or harmful practices.

ACEM recommends ensuring equitable funding between academic and research institutions and clinical research within hospitals and other health services – with priority given to emergency medicine research that promotes cost savings and efficiencies in the healthcare system.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Strong, collaborative research networks:

The lack of centralised and national emergency medicine research has resulted in the current situation whereby many routine standard treatments in emergency care are not supported by the latest high-level evidence, but rather they are based upon consensus.

Consequently, the effectiveness of these routinely administered treatments is uncertain; some may in fact even be harmful. This would not be considered acceptable in other clinical fields such as heart disease or cancer treatment (which received 6 per cent and 7 per cent, respectively, of NHRMC project funding in 2024).3

It is clear that there is a vast array of areas for suitable for collaborative research, but EDs need structured support to emergency medicine research networks to strengthen the culture, profile and skills base of emergency medicine research.

ACEM's Clinical Trials Network (CTN) is a community of practice promoting investigator-initiated, collaborative, multicentre clinical research and trials in emergency medicine through Australasia. In parallel, ACEM's ED Epidemiology Network (EDEN) seeks to use large scale, routinely collected data to equitably improve ED care. Both networks aim to raise the profile of ED-based research, increase the share of competitive funding that it attracts and improve the outcomes for patients by focusing on the research questions that are most relevant to the quality of their care.

Efficient governance and approvals for multi-centre research:

Interjurisdictional barriers in research approval processes continue to hinder the ability for multi-centre studies in Australia. The ethics approval process is comparatively efficient, with a single approval able to cover multiple sites nationally.

In contrast, research governance processes remain fragmented and burdensome. Despite the National One Stop Shop (NOSS) initiative, which aims to simplify processes, it remains unclear if it can be operationalised. This complexity makes large-scale research extremely difficult.

The research community consistently identifies governance reform as a priority. Streamlined, nationally consistent governance processes are essential to enable collaborative emergency medicine research at scale.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Digital transformation and unified emergency department data infrastructure:

Current emergency medicine data is frequently siloed across individual health services and jurisdictions, resulting in significant fragmentation that hinders large-scale research, reduces opportunities for meaningful benchmarking and limits the sector's ability to participate in coordinated quality improvement initiatives.

ACEM's research networks are promising but are limited by the abovementioned challenges such as variable data quality, fragmented registry infrastructure, and inconsistent access across jurisdictions and health services. ACEM's Australia and Aotearoa New Zealand Emergency Registry (AANZER) is currently under development and will aim to demonstrate how connecting EDs through shared data and collaborative insights can drive continuous improvements in quality, safety and efficiency, and shows the broader value of investing in emergency medicine clinical data registry for policymakers, service design and clinical care.

The development of a unified digital infrastructure for ED data, leveraging ACEM's AANZER clinical data registry has the potential to support more robust evidence-based practice, strengthen patient safety initiatives and improve the quality of emergency care in Australia.

Q12. How should research translation be planned for in the development of new NRI?
Embedding research into clinical practice:

ACEM strongly advocates for investment in emergency medicine research to enhance evidence-based care in EDs. Because ED clinicians operate in fast-paced, time-critical environments with limited research capacity, it is vital that funding supports embedded clinician-researchers working within health services, rather than focusing exclusively on university-based research.

Research must account for real-world clinical contexts from the outset. This requires early integration of contextualisation and translation processes, supported by dedicated funding to ensure findings can be implemented effectively. ACEM therefore recommends prioritising clinician-led and hospital-embedded research that can be translated directly into everyday ED practice, in order to improve patient outcomes where care is delivered. Embedding research and evidence-based practice foster a learning health system, which accelerates translation, improves patient outcomes, and builds research capacity

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Mon, Dec 8, 2025, 04:17 AM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
TERN's approach and recommendations

1. Targeted industry engagement strategies
- Develop sector-specific use cases demonstrating infrastructure value for industries (agriculture, environmental consulting, resource management, insurance, infrastructure planning)
- Create industry advisory groups providing direct feedback on capability requirements and access barriers
- Attend industry conferences and forums, not just academic meetings

2. Reduce barriers to access
- Simplify access processes with clear guidance on costs, timeframes, and support available
- Develop "try before you buy" programs enabling industries to pilot infrastructure capabilities with minimal commitment
- Provide technical support helping industry users understand how to apply infrastructure capabilities to their challenges

3. Demonstrate value through case studies
- Document and widely disseminate examples of successful industry-research infrastructure collaborations (with industry permission)
- Quantify economic and productivity benefits where possible
- Profile industry users and their outcomes

4. Regional presence and relationships

- Establish regional champions or liaison points providing local access to national infrastructure (e.g., TERN runs the Regional Ambassadors program)
- Partner with state governments, regional development organisations, and industry associations
- Ensure infrastructure presence at regional events and networks

5. Digital discoverability
- Maintain comprehensive, searchable catalogues of capabilities, datasets, and services
- Optimise web presence for industry search terms and use cases, not just academic language
- Provide clear pathways from general enquiry to specific expertise

6. Intermediary partnerships
- Collaborate with industry-facing organisations (research and development corporations, industry associations, innovation hubs, CRCs) who understand sector needs and can broker connections
- Support embedded researchers or secondments between infrastructure and industry

TERN-specific example
TERN's environmental monitoring data serves agricultural productivity modelling, natural resource management planning, climate risk assessment, biodiversity accounting, and environmental compliance monitoring. We are developing sector-specific data portals and tools, partnering with agricultural R&D corporations, and working with environmental consultancies to demonstrate how continental-scale environmental data enhances industry decision-making. However, sustained resourcing for industry engagement activities is essential: this capability cannot be assumed as an unfunded addition to core infrastructure operations.

Building civic environmental capability. TERN's 2025 Research Directions Survey (181 responses from Australia's ecosystem science community) reveals a vision where environmental understanding becomes a shared civic capability by 2035. Researchers envision transparent, real-time evidence showing how ecosystems, economies, and communities are linked—where "people, from farmers to policymakers to households, can see impacts as they unfold."

This points to NRI's role extending beyond serving researchers to enabling "public data rooms, shared dashboards, and community co-design tools" that make environmental information accessible in forms people can act on.

This suggests NRI facilities should invest not only in industry liaison but in public-facing platforms that normalise data-driven environmental thinking from classrooms to boardrooms—making research infrastructure a foundation for collective environmental stewardship, not just scientific inquiry.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Building internal organisational capability

1. Employ boundary-spanning professionals. Dedicated roles combining technical infrastructure expertise with understanding of industry needs, commercial realities, and

translation pathways. These professionals should have credibility in both research and industry contexts
2. Industry secondments and exchanges. Structure opportunities for infrastructure staff to spend time in industry settings, and vice versa, building mutual understanding and trust
3. Translation training. Professional development in intellectual property, commercialisation pathways, project management, and industry engagement for infrastructure staff

Creating enabling mechanisms
4. Flexible collaboration models. Develop various partnership frameworks accommodating different industry needs: from fee-for-service access through to co-investment in capability development
5. Co-design processes. Engage industry partners in infrastructure planning and development, ensuring capabilities align with real-world application needs from the outset
6. Proof-of-concept funding. Dedicated support for pilot projects demonstrating infrastructure applicability to industry challenges, reducing risk for industry partners

Reducing friction and building trust
7. Clear IP and commercialisation frameworks. Transparent, fair, and efficient processes for managing intellectual property, confidentiality, and commercialisation opportunities
8. Streamlined contracting. Simplified agreements for industry access, reducing legal and administrative burden
9. Trusted intermediaries. Partner with organisations that industry already engages with (research and development corporations, CRCs, innovation precincts) to broker introductions and collaborations

Demonstrating value systematically
10. Impact measurement and communication. Develop frameworks for capturing and reporting infrastructure contributions to industry outcomes, productivity improvements, and economic value
11. Success story dissemination: actively promote examples of productive collaborations, creating demonstration effects

Sector coordination
Cross-NRI learning community. A forum for research infrastructure projects to share experiences, challenges, and innovations in industry engagement

A missing capability layer
TERN's 2025 Research Directions Survey (181 responses from Australia's ecosystem science community) identified a gap in the ecosystem science pipeline. That is, the sector may lack an entire layer of data professionals who can work directly with government, industry, and community at the translation end, not just the production end. Traditionally, ecoinformaticians concentrate on collecting, curating, and analysing data. Respondents pointed to the need for these same professionals helping interpret evidence in context, understand uncertainty, and apply insights to real-world decisions.
This suggests NRI facilities building industry engagement should recognise translation as a distinct technical capability requiring dedicated roles—"data interpreters" who bridge between research infrastructure outputs and decision-maker needs, ensuring evidence arrives in forms that can actually inform choices. These aren't science communicators but rather technical experts who understand both the data and the decision contexts well enough to make connections responsibly.

TERN's perspective
Environmental data infrastructure serves diverse industries—agriculture, environmental management, climate risk assessment, biodiversity markets, infrastructure planning. Building productive collaborations requires understanding each sector's decision-making timeframes, regulatory contexts, and commercial pressures. We have found that providing analysis-ready data products tailored to industry workflows, rather than requiring industries to become environmental data specialists, significantly enhances uptake. However, developing and maintaining such industry-facing capabilities requires explicit funding recognition, not expectation that core infrastructure operations can simultaneously serve academic and commercial users without additional resource allocation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
With reference to TERN's translation infrastructure priorities, we provide the following.

Enhancement 1: Digital Twin Ecosystems for Translational Environmental Research
Need: bridge the gap between environmental monitoring data and practical land management decision-making. Current research infrastructure generates extensive observational data, but translating this into actionable insights for land managers, policymakers, and industry requires dynamic, predictive capabilities.

Capability: Expand TERN's existing monitoring network to create integrated digital twin ecosystems combining:
- real-time environmental sensor networks (expanded soil moisture, flux towers, water quality monitoring)
- AI-driven predictive analytics and scenario modelling
- validation against actual landscape outcomes
- decision-support interfaces for land managers and policymakers

Community validation: TERN's 2025 Research Directions Survey (181 responses from Australia's ecosystem science community) reveals researchers envision a fundamental shift by 2035: moving from downloading and managing data to "plugging questions into integrated data systems" where environmental observations, management actions, climate trajectories, and socio-ecological variables exist in a coherent, queryable national spine. Respondents emphasised the need for real-time data producing science that informs today's decisions, enabling proactive rather than reactive environmental management.

This community vision directly validates the digital twin approach: providing decision-support systems where land managers can simulate interventions before implementation, where evidence reaches decision-makers in time to matter, and where monitoring shows recovery as it happens rather than merely documenting loss.

Current emission estimation uncertainties often exceed expected reductions from mitigation strategies, representing substantial financial risk at current carbon prices. Inventory methods significantly under- or over-estimate emissions across key sectors (cattle, wastewater, landfills), undermining both climate policy credibility and carbon market integrity.

TERN's complementary terrestrial capability: as part of a nationally coordinated atmospheric observatory, TERN can contribute essential terrestrial components through an

expansion of TERN's existing monitoring network to create integrated digital twin ecosystems combining:
- real-time environmental sensor networks (expanded soil moisture, flux towers, water quality monitoring)
- AI-driven predictive analytics and scenario modelling
- validation against actual landscape outcomes
- decision-support interfaces for land managers and policymakers

Medium-term goals:
- enable land managers to simulate ecosystem responses to management interventions before implementation
- provide climate adaptation planning tools for agricultural and natural resource management sectors
- support biodiversity credit and carbon accounting verification
- accelerate translation of research into evidence-based environmental policy

Impacted communities: land managers, agricultural sector, conservation organisations, environmental consultancies, state and territory natural resource agencies, Indigenous ranger programs

Enhancement 2: Atmospheric Composition and Greenhouse Gas Monitoring Integration

Need
The Australian atmospheric science community has consistently identified the critical need for a nationally coordinated atmospheric composition observing network. Despite 5+ years of advocacy by leading researchers from CSIRO, Bureau of Meteorology, universities, AAD, and ANSTO, and community planning including an AuScope NCRIS proposal in 2019/20, Australia still lacks comprehensive, coordinated measurement of greenhouse gas fluxes and atmospheric composition at scales necessary for credible emissions accounting, carbon market verification, and climate change mitigation.

Capability
Establish coordinated measurement campaigns and modelling infrastructure targeting:
- under-represented gaseous fluxes (nitrogen oxides, sulphur gases, reduced carbon species) across key biomes
- integration of eddy-covariance, isotopic, hyperspectral, and soil data
- enhanced temporal resolution trace gas measurements at TERN flux tower sites
- extension to freshwater wetlands, coastal wetlands, and near-shore ecosystems
- coupled carbon-nitrogen-sulphur biogeochemical modelling capability

Medium-term goals:
- provide robust, verified emissions data supporting Australia's climate commitments
- enable credible carbon farming and biodiversity credit verification
- support agricultural sector in quantifying and reducing emissions
- inform climate policy with 'ground-truthed', high-resolution emissions data

Impacted communities: climate science community, agricultural sector, carbon market regulators and participants, climate policy development, international climate reporting obligations

Note: this positions TERN as a core contributor to a coordinated national atmospheric observatory, leveraging existing infrastructure whilst filling critical gaps in Australia's greenhouse gas monitoring capability.

Enhancement 3: Geospatial Foundation Model

Need: rapid advances in geospatial AI internationally (NASA/IBM Prithvi, ESA initiatives) risk leaving Australia dependent on foreign models not optimised for Australian landscapes, governance arrangements, or industry needs.

Capability: allow development of Australia's first dedicated Geospatial Foundation Model through:
- multi-modal satellite data integration (hyperspectral, thermal, commercial constellations, SAR)
- enhanced ground truth integration from TERN's UAV-LiDAR, flux towers, and field surveys
- continual pre-training and domain adaptation as new data becomes available
- open-source tools enabling research and industry fine-tuning for specific applications
- cloud-native deployment ensuring national accessibility

Medium-term goals:
- provide sovereign geospatial AI capability tailored to Australian landscapes
- enable rapid environmental change detection and disaster response
- support precision agriculture, biodiversity monitoring, and natural resource management applications
- accelerate research-to-application translation through accessible, analysis-ready AI infrastructure

Impacted communities: environmental science researchers, agricultural sector, emergency management agencies, environmental consultancies, urban planning, biodiversity conservation organisations

Enhancement 4: Earth Observation Calibration and Validation Infrastructure

Need: Australia's increasing reliance on satellite Earth observation for environmental monitoring, agricultural management, and disaster response requires robust 'ground-truthing' infrastructure ensuring data accuracy and reliability.

Capability: expand TERN's operational calibration/validation system through:

- thermal and hyperspectral UAV sensor integration
- enhanced spatial coverage of validation sites, particularly in Western Australia
- analysis-ready data pipelines for fractional cover, canopy height, evapotranspiration, and soil moisture validation
- integration with Geoscience Australia's LIDAR data for vegetation structural analysis
- protocols for scaling UAV data to satellite resolutions

Medium-term goals:
- ensure Australian and international Earth observation products are validated for Australian conditions
- enable confident use of satellite data for agricultural management decisions
- support emergency services with reliable, validated fire risk and flood monitoring data

- position Australia as a trusted source of validation data for international satellite missions

Impacted communities: agricultural sector, emergency services, water resource management, environmental monitoring agencies, international Earth observation missions requiring Southern Hemisphere validation sites

Cross-cutting observation: these enhancements leverage TERN's existing continental-scale infrastructure and expertise whilst deliberately building translation pathways. They exemplify how research infrastructure can evolve from primarily serving academic research to simultaneously providing decision-support capabilities for industry, government, and community users: a key priority identified throughout the Issues Paper.

Q12. How should research translation be planned for in the development of new NRI?
Based on TERN's experience with continental-scale environmental infrastructure, we recommend the following.

1. Translation intent from inception
New NRI should be designed from the outset with translation pathways explicitly defined, not treated as an afterthought. This requires:
- end-user co-design. Engage potential industry and policy users during infrastructure planning to ensure capabilities align with real-world decision-making needs
- translation metrics in business cases. Include quantifiable translation goals alongside research excellence metrics. These might include industry users served, policy decisions informed, or economic value generated
- dedicated translation roles. Budget for boundary-spanning professionals who understand both research infrastructure and application contexts

2. Design principles supporting translation
- Interoperability. Ensure data standards, formats, and access protocols enable integration with industry systems and workflows
- Scalability. Design infrastructure that can accommodate both research-scale and operational-scale applications
- Analysis-ready outputs. Develop data products and tools tailored to end-user workflows, not just research needs. Users should not require deep technical expertise to derive value
- Accessibility. Provide tiered access mechanisms accommodating different user needs, from basic data access through to sophisticated analytical capabilities

3. Governance and sustainability models
Multi-sector governance. Include industry and government representation in infrastructure governance, ensuring end-user needs influence strategic direction
Blended funding models. Design business models combining research funding with cost-recovery from high-value industry applications, ensuring sustainability whilst maintaining accessible pricing for research and public good uses
Clear IP frameworks. Establish transparent, fair intellectual property and data access policies that protect commercial interests whilst enabling research advancement

4. Building translation capability systematically
Staged development. Plan infrastructure rollout enabling early proof-of-concept applications to inform later development

Pilot funding allocation. Reserve resources for demonstrator projects showcasing infrastructure value to potential industry users
Impact assessment framework. Implement systems capturing infrastructure contributions to industry productivity, policy outcomes, and economic value from commencement

5. Integration with translation ecosystems
Partnership planning. Identify and engage research translation intermediaries (CRCs, research and development corporations, innovation hubs) during infrastructure design
Skills investment. Include workforce development in translation-relevant skills (industry engagement, commercialisation, project management)
Knowledge exchange mechanisms. Create structured opportunities for infrastructure staff to understand industry contexts and for industry to understand infrastructure capabilities

6. Sector-specific considerations
Translation requirements differ substantially across sectors. Environmental infrastructure translation emphasises accessible data products supporting operational decision-making. Medical research infrastructure emphasises clinical trial readiness. Digital infrastructure emphasises computational accessibility and sovereign capability. New NRI planning should identify sector-specific translation requirements early.

Critical insight from TERN's experience
Continental-scale environmental monitoring generates public good data serving diverse users from academic researchers to policy makers to agricultural industries. Translation requires explicitly funded capability development: analysis-ready data products, user-oriented tools, industry engagement resources, and technical support. Expecting core infrastructure operations to simultaneously serve translation functions without dedicated resources undermines both research excellence and practical impact. Translation capability should be funded as an integral component of NRI, not an optional add-on.

Recommendation for the 2026 Roadmap
Establish translation planning as a mandatory component of all new NRI business cases, with explicit consideration of end-user needs, translation pathways, impact metrics, and dedicated resourcing. This would embed translation thinking systematically rather than treating it as peripheral to research infrastructure's core mission.

165

Mon, Dec 8, 2025, 01:07 AM Australian Eastern Daylight Time
[ID: sbm398f3bd937a6b79f69d8f]

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Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
There is a strong cross-disciplinary need for enhanced image analysis capability spanning multiple NCRIS facilities. This includes expertise in research data management, statistics, scalable analysis pipeline development, quality assurance of quantitative imaging, reproducible publication standards, and data sharing in line with FAIR principles. While grassroots organisations and professional societies are beginning to address aspects of this skills gap, a coordinated national approach—supported through existing NRIs or a dedicated capability network—would be more effective in building consistent, high-impact capacity across disciplines.

In addition, there is a significant gap in the translation pipeline for optical microscopy and spatial imaging technologies. Understanding disease mechanisms requires observation of biological structure and function across scales, from tissues to individual molecules. Rapid technological advances now integrate optical microscopy with spatial genomics and proteomics, enabling high-resolution, spatially resolved molecular analysis. Furthermore, emerging super-resolution techniques, such as MINFLUX, are pushing biological imaging into the nanometre and even angstrom regime, opening unprecedented opportunities for single-protein discovery and mechanistic insight.

These technologies are expensive, evolve rapidly, and require deep technical expertise and national coordination to achieve scale, sustainability, and broad accessibility. Enhanced support within existing NRIs—or the development of a dedicated optical and spatial imaging NRI—would ensure strategic investment, workforce development, equitable access, and effective translation of these capabilities into biomedical, clinical, and industry outcomes, maintaining Australia's position at the international forefront of optical imaging and spatial biology.

164

Sun, Dec 7, 2025, 11:41 PM Australian Eastern Daylight Time
[ID: sbm398e90209751585595b03]

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Establishment of portals for connection of industry to NRI facilities that have capabilities and experience relevant to advance discovery and clinical translation projects.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Through the establishment and support for NRI staff and facilities to maintain capabilities relevant for industry partnerships, particularly in research and development leading to clinical translation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Provision of support for NRIs to create infrastructure and capabilities aligned with the requirements of industry for research and clinical translation, including imaging biorepositories for preclinical and clinical research, and analysis tools (including image analytics/AI) to facilitate development of novel diagnostics and therapeutics.

Q12. How should research translation be planned for in the development of new NRI?
- supporting a translation pipeline from innovation/discovery to clinical application through personnel and capabilities that enable high quality collaborative clinical trials
- integration of advanced biomedical imaging techniques in research translation
- funding of national initiatives/capabilities that will support and enable multicentre clinical trials, including imaging biorepositories and linking of imaging data to clinical and biological data in order to utilise precision data to improve health outcomes.

163

Sun, Dec 7, 2025, 10:32 PM Australian Eastern Daylight Time
[ID: sbm398ea9b0b1a60df4b6d38]

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A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to
potential users in relevant industry sectors across Australia's cities and regions?
Promotion of NRI facility capabilities can be through active engagement in industry sector
events (from SME level to international industry) to promote the infrastructure, services,
and specialist skills accessible via NRI facilities; promotion through all levels of
Government at the state and national level; and active collaboration between NRI
facilities and industry.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in
productive research-industry collaborations?
Improve access by defining clear and consistent pathways for collaboration across NRI
facilities especially for SMEs. Encourage the sharing of learnings and knowledge across NRI
to improve future collaborations. Establish communities of practise between researchers
and industry to support understanding/awareness and uptake of use of NRI facilities.

Q11. To improve research translation capability, can you identify and briefly describe needed
enhancements of existing NRIs, and/or new NRI?
Support for, and growth of, specialist skills to support researchers and build their research
translation capabilities. This includes the development of training for researchers to build
skills in research translation, industry collaboration, and commercialisation.

Q12. How should research translation be planned for in the development of new NRI?
No comment.

159

Sun, Dec 7, 2025, 07:23 PM Australian Eastern Daylight Time
[ID: sbm398e0183e751ea6b08ed2]

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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The development of a national discovery and access platform for samples, data and services in alignment with the CSIRO "Valuation of increased coordination in Australian biobanking" report is critical. There is a need for standardised metadata and access processes across NRI facilities. Furthermore, regional outreach and industry engagement programs must be funded.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
The ABNA suggest offering co-funded pilots and translational vouchers for industry engagement. Standardising IP, contracting and access processes which lead to an increase in productive research-industry collaborations.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To improve research translation capability, ABNA suggest the following enhancements in alignment with the CSIRO "Valuation of increased coordination in Australian biobanking":
• Establish national biobank coordination (standards, governance, shared systems).
• Expand discovery platforms linking biobanks and datasets nationally.
• Fund translational infrastructure within NRI facilities (regulatory, prototyping, scale-up support).

Q12. How should research translation be planned for in the development of new NRI?
To ensure research translation is planned for in the development of new NRI, ABNA require translation and industry engagement plans in business cases. ABNA suggest including

industry partners in governance from inception. Finally, the measurement of impact using translation KPIs (partnerships, uptake, commercialisation) is essential.

2026 National Research Infrastructure (NRI) Roadmap Issues Paper Consultation
Issues Paper Consultation Survey
Department of Education

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Sun, Dec 7, 2025, 06:55 PM Australian Eastern Daylight Time
[ID: sbm398de79a7d51500e5acc6]

Title
Prof

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James

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The Busselton Population Medical Research Institute

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Publish an easily accessed annual list of NRI supported capabilities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Target industry with the list suggested in Q9.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Support for existing legacy biobanks.

Q12. How should research translation be planned for in the development of new NRI?
N/A

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Sun, Dec 7, 2025, 05:24 PM Australian Eastern Daylight Time
[ID: sbm398d948feda617e0fb91e]

Title
A/Prof

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Branka

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Miljevic

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Better communication with relevant councils, societies and industry regulators, e.g. Council of Deans; Clean Air Society of Australia and New Zealand, Australian Meteorological and Oceanographic Society; Royal Australian Chemical Institute, Climate Council etc.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Funded time for staff to engage with end users, data platforms and dashboards that are optimised for users; for any new NRI ensure training, mentoring and best-practice learnings from success stories

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Sun, Dec 7, 2025, 05:21 PM Australian Eastern Daylight Time
[ID: sbm398d913dc0f004ca459dc]

Title
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In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities and their staff underpin a lot of research in Australia. Unfortunately this is not always recognized by the researchers who have made much use of the facility. Researchers are very good at acknowledging funding bodies in their work and they should be taught to similarly acknowledge the NRI facility that they used to conduct the research, which often has been heavily subsidized and made available to them novel technology and expertise that underpins the research.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

154

Sun, Dec 7, 2025, 03:24 PM Australian Eastern Daylight Time
[ID: sbm398d2652075171501e502]

Title
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Goscinski

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National Imaging Facility

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NCRIS industry engagement is growing and should continue to build on this positive trajectory. To ensure NRI capabilities are widely known and accessible to industry users across Australia's cities and regions, several actions are recommended:

— Focus on high-value, high-impact industry support —

NCRIS should prioritise engagement where its specialised, technically advanced capabilities deliver the greatest benefit—supporting innovation and research translation rather than commodity services.

National "front door" initiatives are helpful for discovery, but deep-tech industries require deep engagement. This can only be achieved through the NCRIS capabilities themselves, supported by staff with industry and translation expertise who can build relationships, understand commercial needs, and guide industry users through complex scientific services.

— Promote quality and reliability —

Shared branding around accredited quality systems (e.g. ISO standards, GLP, GMP) would signal consistency, reduce perceived risk for industry users, and strengthen trust in NRI facilities nationwide. Accreditation also helps industry identify facilities capable of supporting regulated or commercial activities.

— Support fit-for-purpose business models —

NCRIS facilities must operate under business models that reflect their technology, user base, and purpose. To support industry collaboration, many facilities will need to adjust operating models—for example, executing contracts within commercial timelines. More flexible access pathways, cost-recovery structures, and partnership frameworks should be developed to better align with industry expectations and improve responsiveness.

— Embed translation and industry activity in NCRIS funding rounds —

The recent NCRIS Translation Round ($15M) was a positive step but insufficient to meet nationwide demand. Future NCRIS funding should include a dedicated Translation and Industry component with clear expectations, measurable outcomes, and appropriate resourcing. This will support NRI facilities to engage more effectively with industry and expand access to advanced national capabilities.

— Alignment with Government Translation Initiatives —

As highlighted by the SERD, Australia's innovation and translation landscape is fragmented. Closer alignment between NCRIS and Government-funded translation programs—through joint promotion, coordinated targeting, and co-investment—would create clearer pathways for industry engagement. Integrating NCRIS capabilities into national initiatives such as MRFF, AEA, NRF, ARENA and other translational programs would strengthen visibility, reduce duplication, and drive greater industry uptake across regions.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To build the know-how and support needed for productive research–industry collaborations, NRI facilities require stronger alignment across funding, capability, staffing, and quality systems. Key actions include:

1. Align Government Translation Funding Programs

Current grant settings often disincentivise NCRIS co-investment in translation-focused programs such as the MRFF. Greater alignment between NCRIS, MRFF, the NRF, Critical Technologies initiatives, and other national translation programs would create coordinated pathways for industry-focused research. This would reduce duplication, create shared investment opportunities, and strengthen NCRIS's ability to support industry-led research and build sovereign capability in high-impact areas.

2. Expand Translation-Specific NCRIS Funding for Market-Driven Activities

The recent NCRIS Translation Round was a welcome step but insufficient to meet demand. Future investment should include a dedicated, sustained stream for translation and industry-focused proposals, allowing NCRIS capabilities to submit business cases tailored to their technology, maturity, and market.

Funding should explicitly support industry co-designed projects, ensuring alignment with market needs and leveraging NCRIS's advanced technical expertise.

NIF has translation and industry -focused research infrastructure initiatives that are ready for submission.

3. Invest in Dedicated Industry-Focused Staffing

NRI facilities need staff with business development, partnership brokerage, regulatory literacy, IP management, and contract negotiation expertise. These roles are essential for meeting commercial timelines, navigating regulatory and IP requirements, and translating research capabilities into industry-ready outcomes. Industry engagement must be a resourced function, not an added responsibility on research staff.

4. Evolve Co-Investment Expectations for Market-Focused Initiatives

A strong market focus naturally reduces academic co-investment. For industry-facing NCRIS activities, co-investment expectations should shift away from traditional university contributions.

Instead, NCRIS funding models should bootstrap the establishment of sustainable operating models over the medium and long term, with appropriate partner contributions during the establishment phase.

5. Adopt and Promote Quality and Accreditation Frameworks

Industry requires outputs that meet quality-assured standards. Supporting NCRIS facilities to adopt ISO, GLP, GMP and related accreditation frameworks will:
• build trust and reduce partner risk,
• enable collaboration on regulated or commercially sensitive projects, and
• support progression to higher TRLs, which is essential for translation and commercialisation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
NCRIS capabilities are well placed to submit fit-for-purpose proposals that directly address research translation and industry engagement.

Under the NCRIS25 process, the National Imaging Facility (NIF) submitted a proposal to develop an MRI Safety Service to Support Australia's Medical Implant Industry. This initiative is highly translation- and industry-focused, targeting researchers working at the interface between research and the Australian and International medical devices industry. It demonstrates how NCRIS investments can de-risk innovation, accelerate product development, and build sovereign capability when appropriately resourced.

NIF has other nationally important initiatives, focused on research translation and industry, ready for submission.

The budget allocation under the recent Translation funding round was insufficient to support initiatives of this nature. The Department should consider running a dedicated call targeting high-TRL (Technology Readiness Level) research translation and industry collaboration, enabling NCRIS facilities to develop specialised infrastructure and services that bridge the gap between discovery and market adoption.

Additional enhancements that would strengthen the translation capability of existing NCRIS facilities include:

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1. Integration into clinical facilities, as outlined in the Draft National Health and Medical Research Strategy, to support translational pathways in health and medical innovation.

Over the past five years, NIF has significantly expanded its presence in clinical environments. This integration has delivered measurable benefits for translation, including:

- Providing real-world testing environments for new imaging technologies and medical devices, enabling earlier validation and clinical adoption.
- Embedding imaging within clinical trials, improving trial design, participant selection, and endpoint assessment, and reducing time to translation.
- Facilitating clinician–researcher collaboration, allowing faster feedback between discovery research and clinical implementation.
- Supporting training and workforce development for clinicians and researchers in advanced imaging applications, strengthening translational capability.

2. Industry-focused staffing, ensuring personnel have the business, regulatory, and partnership skills required to engage effectively with commercial partners.

3. Formal quality accreditation, such as ISO, GLP or GMP certification, to provide industry assurance, support regulatory compliance, and facilitate collaboration on product development and clinical validation.

These measures would enable NCRIS capabilities like NIF to operate effectively at higher TRLs, delivering greater national impact through research translation and industry growth.

Q12. How should research translation be planned for in the development of new NRI?
— Enable fit-for-purpose, industry-oriented strategies and business models within individual NCRIS providers. NCRIS capabilities should have dedicated industry-facing staff and the flexibility to adapt its operations to market needs and national priority sectors. Industry partners consistently seek end-to-end support—particularly for experimental development and validation—which requires specialised, commercially focused expertise.

— Ensure strategic alignment across national and state industry programs such as MRFF, Future Made in Australia, the Australian Economic Accelerator, ARENA, the National Reconstruction Fund, and Industry Growth Centres. Cohesive policy settings and coordinated investment will maximise impact and streamline access for industry partners.

— Support initiatives that strengthen the full translation pipeline. NIF provides a model by integrating facilities that span the discovery, development, and clinical application continuum—enabling researchers to move seamlessly from proof-of-concept through to validation and clinical translation.

— Align with national strategies, including the forthcoming National Health and Medical Research Strategy, to ensure new NRI investments complement existing translation frameworks and health and medical innovation priorities.

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Sun, Dec 7, 2025, 10:20 AM Australian Eastern Daylight Time
[ID: sbm398c1064965170f3eef56]

Title
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The biggest issue in the sector is mixed branding. Despite the NCRIS logo, each facility is added in its own right with its own acronym but the universality of borderless access to the services remains unclear, particularly outside the university environment. Diversifying away from the university only or university preferred environments to involve other research sectors like medical research institutes research arms of hospitals for funding and physical infrastructure would be beneficial to engage industry partners and would encourage engagement and access outside the university sector.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Provide encouragement for staff to engage outside the sector (incentive based engagement). Provide more management and industry skills and placements. Support initiatives like AusBiotech which promotes industry sector enaggement

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Curated collections of medical research samples, or biobanks, have the potential to unify important or valuable biological material to enhance the speed, power, and integrity of medical research; and prevent re-sampling or oversampling of the population. States and countries that have created biobanks, including New South Wales and the UK, have demonstrated the power of centralised collections to elevate medical research, increase trust, and enhance reputation. A national biobank using a state based hub and spoke model would promote collaboration, access to bigger cohorts, and accelerate translation of medical research into clinical applications.

Q12. How should research translation be planned for in the development of new NRI?
Collaborative engagement at a state level is essential to ensure a national benefit and growth across the entire sector.
Actively engage research, industry, or end user engagement in planning, governance, and execution.

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Fri, Dec 5, 2025, 05:07 PM Australian Eastern Daylight Time
[ID: sbm398336db57e6c0ddb4fe3]

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
• Digital Tools: Support for tools that make searching for RI nationally simpler and more efficient. Include AI tools and functionality that allow non-experts to connect appropriate RI with known research or industry problems.
• Cross-Facility Access Models: Simplified cross-institutional access models that allow industry a single point of contact for: project design and management, provision of the deliverables, and financial transactions. Domain champions that can engage, communicate, and effectively manage projects across areas with partners should also be built into these models (see expertise section, below, also).
• Expertise: NRI experts that span multiple disciplines and that build trusted relationships/partnerships with industry to ensure both greater understanding of capability available (in language understood by industry), and surety in the delivery of meaningful outcomes.
• Communicate: Ensure there is a unified communication plan that speaks to the impact of NRI, particularly in terms of the economy, employment, health, and other societal outcomes. Promote the benefits of highly impactful NRI partnerships with research, government, and the community to enhance future engagement.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
• Foster meaningful and long term partnerships -> build trust and demonstrate excellence
• Highlight quality and assurance -> ISO, GMP, GLP; demonstrate reliability in service and partnerships
• Flexibility to meet demanding environments and the dynamic research ecosystem -> Be open to different modes of operation; through workforce stability, ensure rapid transition within and between project goals for partners

• NCRIS Translational Round of funding should underpin major initiatives -> increase the funding quota to these initiatives that demonstrate long term partnerships and economic uplift
• Develop strategies to better correlate with other government funding bodies, including MRFF, AEA, ARC, NHMRC, etc. Leveraged contributions will lead to stronger linkages and partnerships
• Leverage existing strong collaborations and partnerships to highlight what NRI can achieve using the established frameworks -> exemplify impact to attract new partnerships

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The existing fabrication and measurement NRIs (for example, ANFF, MicroAu, NIF) have enabled access to world class tools and instruments, strongly supporting rapid prototyping and the development of advanced devices. These facilities should continue to be well-supported as a national priority, especially with regards to maintaining staff, organisational knowledge, and expertise in the projects.

However, we highlight that enhanced translational research support requires flexible pilot-scale facilities. We suggest that the NRI work closely with state and local governments to support ecosystem development for manufacturing advanced devices at scale. This complementary infrastructure to the existing ANFF, MicroAu, and NIF will permit rapid prototyping and standards testing. This capability is crucial for deep-tech translation across the rapidly advancing quantum, bio, and medtech fields.

Additionally, the Department might consider opportunities to:
• As exemplified above, leverage other government and private schemes to align funding into areas to achieve critical mass; e.g. ACRF co-funded capabilities with NIF
• Build relevant accreditation into NCRIS facilities, and support facilities to adopt these capabilities (GMP, for example)
• Put translation at the centre of major funding priorities
• Promote opportunities for industry buy-in to schemes, offering opportunities to co-contribute into areas of strategic importance to particular sectors. This may also allow NRI facilities to become part of the national voice with respect to their integration into our sovereign objectives.

Q12. How should research translation be planned for in the development of new NRI?
• Workforce: Ensure that staff are sufficiently trained to engage with all partners of NCRIS projects. Consider opportunities to build in dedicated industry-facing staff for those facilities that are more translationally-focussed

• National and International alignment with other government and private schemes; NCRIS should be a partner on MRFF-NCRI and ARC grants, for example. Better leverage NCRIS projects to support industry schemes such as AEA and Trailblazer; philanthropy and charitable foundations

• Promote cross-cutting initiatives that highlight Australia's pipelines, most of which require contributions from multiple different projects within the NCRIS scheme. For example, biotherapeutics translation builds across fundamental discovery, manufacture, GMP, imaging, and Phase 1 trials that can be achieved totally using NCRIS capabilities in Brisbane.

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Fri, Dec 5, 2025, 04:59 PM Australian Eastern Daylight Time
[ID: sbm398330b328e6155558489]

Title
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Organisation
Academy of the Social Sciences in Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
In the context of socials science NRI, relevant industry sectors include:
• government (Federal and State/Territory)
• think tanks and non-university research institutes
• not-for-profit organisations working in social welfare and social policy
• private-sector research organisations such as consultants and industry bodies

While some of the organisations operating in these sectors will already be aware of the relevant NRI capabilities (currently those hosted by ARDC, AURIN and PHRN), many others will not.

Looking ahead, the Academy of the Social Sciences in Australia recommends the establishment of an overarching social science research infrastructure capability, such as the AIRESS model presented in the Decadal Plan, as an important facilitator and broker of new linkages between new and existing NRI and organisations in these industry sectors.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Fundamentally, NRI facilities require dedicated resources to invest in collaborations through dedicated programs and staff resources, as well as capacity building within their own organisations.

Some of the approaches that have been shown to be successful include:
• appointment of dedicated partnership managers and knowledge brokers, with experience in relevant research and industry sectors
• ongoing on one-off co-design hubs or programs that link researchers, industry and government

• incentives at state/territory or federal government level for shared infrastructure use in joint projects

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The Academy of the Social Sciences in Australia recommends the following enhancements.

• Improved integration of longitudinal and administrative data assets through existing national PLIDA and BLADE infrastructure. This integration should priorities state and territory data and NFP data
• Expansion of secure facilities for handling sensitive social and cultural data.
• Enhanced interoperability between ARDC-supported infrastructures and social science platforms.

Q12. How should research translation be planned for in the development of new NRI?
The Academy of the Social Sciences in Australia recommends the following approaches be embedded from the outset in the development of new NRI.

• Embed translation pathways from design stage, including industry and community co-design.
• Establish governance frameworks that prioritise practical application of research.
• Allocate funding streams for translation activities (including promotion and partnerships) alongside infrastructure development and operations.

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Fri, Dec 5, 2025, 04:52 PM Australian Eastern Daylight Time
[ID: sbm398329e070806c00062d7]

Title
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Engagement and awareness. All NCRIS capabilities do this to a more or lesser extent. Providing a coordinated plan, through professional business developers would be more constructive. Many in the NCRIS world speak at events where the vast majority of the room are already aware of their capabilities. We need to move beyond this model. Success in commercialisation depends on industry's R&D absorptive capacity—firms must be aware of NCRIS's capability and understand how it can benefit their business. BD professionals play a critical role in identifying latent industry users and proactively suggesting how NCRIS can support innovation. However, the current reach of the small number of BD professionals across NCRIS is limited, especially in the SME sector. To address this, we recommend expanding the number of BD professionals and providing targeted support to increase their engagement with SMEs, particularly in regional and emerging sectors. This would help root out potential users who may not be aware of ANFF's offerings and facilitate more effective demand-pull commercialisation.
NRI need a clear, funded engagement strategy that will inform people beyond the usual sectors about the capabilities available. Websites and social media can be effective to raise awareness but the enthusiasm needed to convert awareness to a phone call is difficult through those mediums. BD professionals are needed. This outreach should be conducted at a local level (chambers of commerce, local industry groups, etc) to maximise the cut through to those that might need these services. We can also partner with various other peak bodies and national organisations (CRA, CoEs, AI group, industry growth centres, state based innovation systems) to help spread awareness of the capabilities. Through this mechanism NCRIS can also provide targeted support to increase NCRIS engagement with SMEs, particularly in regional and emerging sectors.
The staff for these initiatives should be sector experts working within their fields, but they also need to have awareness of activities across NCRIS to ensure that they can help people with enquiries from all manner of potential clients.

There is also a policy opportunity for other departments to integrate NCRIS capabilities with existing programs, for example the Department of Industry's R&D Tax Incentive.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

When collaborating with industry, it is essential to recognise that their requirements differ considerably from those of academic research partners. A shift in organisational culture is needed, moving from a traditional research-focused approach to one that delivers high-value services tailored to industry needs. This involves integrating elements such as business support, quality assurance, certification processes, project management, demanding timescales, and effective communication throughout the organisation. The distinction between providing research services and undertaking industry-driven projects must be clearly understood, balancing collaboration with fee-for-service arrangements. Delivering consistent and responsive customer service across all levels of the organisation is crucial. It is important to define clearly what capabilities can be offered to meet industry standards and expectations, and to be transparent about any limitations. Furthermore, acting as a facilitator for industry, helping them transition into broader supply chains following engagement, adds significant value and strengthens long-term partnerships.

Productive research-industry collaborations require not only awareness but also accessible pathways for firms to engage with NCRIS. Policy support should focus on lowering barriers for SMEs and non-traditional users to access NCRIS's equipment and expertise. This could include streamlined processes for connecting firms with relevant researchers, dedicated funding for collaborative pilot projects, and incentives for industry-led innovation partnerships.

Many potential industry users may lack the internal R&D capacity to identify how NCRIS offerings could benefit their business. Currently, these firms must first find some research resource to formalise their needs—a gap that is not adequately addressed. NCRIS in partnership with, relevant government programs, could develop mechanisms to directly support firms in scoping and formalising research collaborations, such as matchmaking services, technical advisory panels, or innovation clinics.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

In any thinking about research infrastructure we need to be clear about what scale we are working with. In this answer I will use the terms research infrastructure and technology infrastructure. The definition from the EU for Technology Infrastructure is provided below. TIs are defined as facilities, equipment, capabilities and resources required to develop, test, upscale and validate technology. They include, amongst others, test beds, pilot lines, pilot plants and demonstration facilities, cleanrooms, and living labs. Their primary purpose is to enable and accelerate technological innovations towards societal/market adoption, boosting industrial competitiveness. The key added value of technology infrastructures lies in allowing companies to derisk their R&D&I investments before market introduction and to have ideas and concepts tested and validated for faster uptake at commercial scale.

The addition of various enhancements to the RI system can assist in the development phase of technologies. These enhancements can include
▪ Industry relevant systems, tools and services
▪ Faster equipments (turn around time or higher throughput)
▪ More automated systems
▪ Contained within an intergrated process flow

▪ Quality assured results
▪ Systems operated to a recognised standard
▪ Interoperability with regulatory requirements.

All of these enhancements can be funded within the scope of the schemes that currently fund NRI and they ensure that the research outputs meet industry standards for reliability and usability, making them more attractive for commercial uptake. By expanding infrastructure that supports the final stages of product development—such as environmental testing, certification, and integration with end-use systems—NCRIS can help researchers and industry partners overcome common barriers to translation. This approach not only increases the viability of research outputs but also accelerates their adoption in real-world applications.

The current NRI system (NCRIS, MRFF NCRII and LIEF for example) is scaled to provide effective RI and NRI. It is not scaled to create Technology Infrastructures at the scale envisioned by industry and the European system. TI's cannot be funded within the level of funding that currently supports the NRI system.

If Australia wants to begin to develop Technology Infrastructures (as defined above) a substantial additional input of public funding would be required. The current alternative is to go overseas to find the appropriate capability or to drop the project altogether. In addition, the number of these TI's that could be supported is substantially fewer than the current NCRIS system (with 28 providers covering a vast array of services). These would be substantial single investments into a very small number of facilities. This would mean that extensive consultation would be needed to find the sweet spot that covers a technology type that Australia holds significant amounts of research-generated IP, a market failure to supply TI or a development pathway, and a potential market where Australia can capitalise. The ideal facility would be able to help a number of related technologies and not be a single product factory. This could be described as a development or flexible OEM, able to support the products of a number of clients.

As previously discussed in an advice paper and as indicated below, the workforce for this style of facility is also different from the current RI workforce, and its development would also require strategic planning and development.

Q12. How should research translation be planned for in the development of new NRI?

Currently, NRI can and does help translation of research in variety of important ways. The existing infrastructure can be augmented as described in Q11 to assist with the needs of industry. The service culture of NCRIS is a clear example where NRI can be applied in a way that helps research translation by just providing services at the appropriate level.

As we are thinking of new NRI, the relevant industries need to be consulted to gain a clear understanding of what 'industry relevant standards' are needed at what point in the development pipeline. Industry advisors or interaction with groups like industry growth centres or Semiconductor Sector Services Bureau would be invaluable in helping shape the initial needs of new NRI.

In addition, the workforce needed to help research translation is slightly different from that needed for high end research. Knowing what the requirements and constraints of the industry sector the IP is targeting can be a critical factor if provided early in the R&D journey. Having that kind of expertise available to help shape and guide R&D towards a more realistic development pathway would be beneficial to the clients of NRI.

If, however, we are looking to develop Technology Infrastructure, that requires a different system and a different weighting on the opinions of various stakeholders. The needs of an academic researcher, the start-up entrepreneur, the existing company adopting new technologies are all weighted differently in NRI vs TI and they are not always compatible.

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Fri, Dec 5, 2025, 02:50 PM Australian Eastern Daylight Time
[ID: sbm3981f31cd0e67e95889dc]

Title
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Cooke

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI need a clear, funded engagement strategy that will inform people beyond the usual sectors about the capabilities available. BD professionals are needed to build a pipeline of translation opportunities and grow visibility of the potential opportunities.

In the case of astronomy, visibility of the potential capability is limited because there is no resourcing to support this work and the translation of astronomy-based activities to industry requires multiple steps that are higher risk than other opportunities being explored by institutions.

In an environment with limited resources, universities will direct their efforts elsewhere to shorter term activities in other disciplines with more immediate impact – even if longer-term, higher-risk and more transformational opportunities in the astronomy domain are available.

AAL has explored this issue with its Industry Engagement Committee and clear feedback from industry is that the private sector needs significant work done by research organisations to de-risk new ideas and make them commercial-ready.

The last few years has seen an increased focus on managing security and foreign interference issues. The overheads involved in managing these issues is substantial and no additional funding has been made available to facilities to address these new requirements. Providing resources to support effective management of these issues could deliver greater benefits into the defence and other industry sectors without compromising Australia's interests.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Productive research-industry collaborations require not only awareness but also accessible pathways for firms to engage with NCRIS. Policy support should focus on lowering barriers for SMEs and non-traditional users to access NCRIS's equipment and expertise. This could include streamlined processes for connecting firms with relevant researchers, dedicated funding for collaborative pilot projects, and incentives for industry-led innovation partnerships.

However additional support (both time and cash) is required for researchers to further de-risk their ideas and make them ready for investment by industry.

Many potential industry users lack the internal R&D capacity to identify how NCRIS offerings could benefit their business and when operating in a financially constrained environment, this is likely to be under-resourced. NCRIS in partnership with relevant government programs could develop mechanisms to directly support firms in scoping and formalising research collaborations, such as matchmaking services, technical advisory panels, or innovation clinics.

As an example, the NCRIS funded Macquarie node of Astralis received $1.169 million from the Government of NSW to support local SMEs to access their optical design and data management expertise at low to no cost.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

All NCRIS Providers currently provide services across the translation pathway, from early stages of investigating an idea to market deployable solutions.

All of these enhancements can be funded within the scope of the schemes that currently fund NRI and they ensure that the research outputs meet industry standards for reliability and usability, making them more attractive for commercial uptake.

The current NRI system (NCRIS, MRFF, NCRII and LIEF for example) is established and resourced to provide effective RI and NRI. However they are not resourced to create Technology Infrastructures at the scale envisioned by industry. TI's cannot be funded within the current level of resources without a diversion of resources away from the early stage high risk R&D-related activity that firms will not invest in.

If Australia wants to begin to develop Technology Infrastructure, a substantial additional input of public funding would be required to build on rather than divert resources away from NRI.

In addition, the number of these TI's that could be supported is substantially fewer than the current NCRIS system (with 28 providers covering a vast array of services). These would be substantial single investments into a very small number of shared use/cross-cutting facilities. This would mean that extensive consultation would be needed to find the sweet spot that covers a technology type that Australia holds significant amounts of research-generated IP, a market failure to supply TI or a development pathway, and a potential market where Australia can capitalise.

The workforce for this type of facility is also different from the current RI workforce, and its development would also require strategic planning and development.

Q12. How should research translation be planned for in the development of new NRI?
The multi-year nature of national research infrastructure investment requires confidence in national scale demand and aspiration for the research and science that it permits.

The primary use of RI is to support the research ecosystem, and to focus it from the outset on research translation would steer activity away from achieving this primary purpose.

Many of the research translation opportunities arising from astronomy infrastructure investments, including astronomy instrumentation, only become known once a technology has been developed. It is difficult to know in advance what the translation opportunities could look like. In most cases experience shows that the translation of basic/fundamental science into impact takes 10-20 years. As such the expectations should be clear around delivery of outcomes from this effort.

When closer to technology readiness, the best way to facilitate research translation is through providing ongoing visibility of new technologies being developed, as they are being developed, so that potential end-users could understand the market potential.

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Fri, Dec 5, 2025, 02:48 PM Australian Eastern Daylight Time
[ID: sbm3982b8b8a3e68b43e908b]

Title
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Organisation
CSIRO

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To overcome the geographic limitations of some physical NRI, consideration could be given to developing standalone or partnered digital assets and offerings for use Australia wide. An example of this is the National Energy Analysis Centre (NEAC), an open, collaborative, national energy data and research centre hosted by CSIRO on a collaborative and noncompetitive basis. NEAC's Living Lab gives instant access to a pre-recruited research pool of Australian households and businesses, so energy-related hypotheses can be tested at scale, quickly.

With particular reference to biobanking, consideration could be given to the implementation of a shared national platform to search, and apply for access to, biospecimens and associated data across Australian biobanks and cohort studies (further detail can be found in Recommendation 2 of the CSIRO Futures biobanking report).

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
National Research Infrastructure (NRI) represents Australia's nationally significant research capabilities – spanning digital and physical assets, sophisticated facilities, and the highly skilled technical workforce that underpins their operation. These capabilities enable leading-edge research and innovation and are accessible to publicly and privately funded users nationally and internationally. To increase productive research–industry collaboration, NRI can play a pivotal enabling role.

Evidence from the Enablers and Barriers to Industry–Research Collaboration report (https://www.csiro.au/en/work-with-us/funding-programs/sme/enablers-and-barriers) shows that SMEs frequently face challenges in identifying the right research partner, navigating complex institutional processes, accessing specialised equipment, and

understanding the research environment. The report highlights that early engagement, practical intermediaries, and dedicated facilitation significantly accelerate collaboration by reducing transaction costs and improving mutual understanding. In particular, businesses value support that demystifies research processes, helps scope problems, and provides structured pathways to engage with researchers.

NRI facilities can help address these barriers by embedding facilitation, technical advisory support, and streamlined access pathways into their service models. Facilities can adopt a more "industry-ready" posture through targeted engagement activities, co-location options, flexible access modes, and the presence of facilitators or industry liaison specialists who understand both scientific capability and commercial drivers. Leveraging their national scale, NRI facilities can also standardise user-experience processes, reduce administrative burden, and improve visibility of capabilities – helping industry partners more easily identify the right equipment, expertise, or data assets for their R&D objectives.

CSIRO plays a critical facilitation and technical-advisory role across the research system, creating structured pathways that assist Australian researchers and SMEs to translate research outcomes and progress commercialisation. CSIRO's matched-funding programs, such as CSIRO Kick-Start and the Regional University Industry Collaboration Program (RUIC), are strong exemplars of how coordinated support increases industry engagement with research infrastructure and capability. Kick-Start helps eligible start-ups and SMEs connect with CSIRO's technical expertise and access subsidised research using fit-for-purpose facilities. RUIC strengthens the innovation ecosystem in regional Queensland by connecting SMEs with university facilities, experts, matched funding, and collaborative networks that transform early R&D opportunities into impactful solutions.

Relationship-building through these structured programs has led to significant follow-on collaboration. Many Kick-Start alumni continue beyond initial projects, engaging with multiple CSIRO Research Units, and generating more than $32 million in follow-on contracts since 2017. This demonstrates how guided access to capability and infrastructure not only reduces early barriers but also builds long-term confidence and trust.

The combined impact across Department of Industry, Science and Resources programs and CSIRO innovation programs shows deep national reach, growing SME R&D maturity, and expanding commercial capability. These programs build know-how, reduce risk, and directly address the barriers identified in the CSIRO evidence base, suggesting that embedding similar support structures within NRI facilities would significantly strengthen research–industry collaboration across the national system.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Improving Australia's research translation capability requires enhancements that strengthen accessibility, coordination, and industry-readiness across the national research infrastructure landscape.

Insights from the Commercial Outcomes of SME–Research Collaboration report (https://www.csiro.au/en/work-with-us/funding-programs/sme/enablers-and-barriers/commercial-outcomes) show that matched-funding models, dedicated facilitation, and access to specialised expertise substantially increase translation outcomes by lowering barriers for SMEs to engage in R&D projects. The report highlights

that SMEs value structured programs that reduce uncertainty, help refine problem statements, and ensure access to the right technical capability at the right time – ultimately generating stronger commercial outcomes. These findings suggest that NRI facilities could increase translation impact by embedding similar support models.

Enhancements to existing NRIs could include:

• Expansion of flexible, industry-oriented access pathways
SMEs often need rapid, cost-effective access to equipment and expertise. Enhancing NRI facility access models to include shorter project windows, shared-risk funding options, or micro-access packages would enable industry partners to trial or prototype concepts before committing to large-scale R&D.

• Embedding matched-funding or co-investment mechanisms
The commercial outcomes report demonstrates that matched funding accelerates collaboration and reduces risk for SMEs. Embedding similar models in NRI facilities – particularly for prototyping, pilot studies, validation testing, or early-stage scale-up – would significantly enhance translation outcomes and broaden industry participation. Collectively, these enhancements would position NRI as a more integrated, industry-ready system capable of supporting translation at scale.

• Integrated translation support services
Introducing dedicated translation support – such as facilitators, industry engagement managers, and commercial advisers – within NRI facilities to guide industry partners from scoping through to project execution. This aligns with evidence that facilitation is a major determinant of collaboration success.

• Workforce development for industry-engaged technical specialists
The operational workforce across NRI facilities is a national asset. Targeted development programs that build research translation, commercial understanding, project-management capability, and communication skills within technical teams would increase their ability to support translation-focused projects. As an example, CSIRO ON programs (https://www.csiro.au/en/work-with-us/funding-programs/innovation-programs) are empowering Australia's publicly funded researchers and SMEs with the skills, networks and pathways needed to translate their big ideas into real-world impact.

Q12. How should research translation be planned for in the development of new NRI?
Planning for research translation could be integrated from the earliest stages of designing new NRI facilities. CSIRO's studies on industry–research collaboration and commercial outcomes (https://www.csiro.au/en/work-with-us/funding-programs/sme/enablers-and-barriers/commercial-outcomes) identify several factors that consistently improve translation outcomes.
New NRI could therefore focus on:

• Built-in facilitation and engagement support
CSIRO evidence shows that facilitation is one of the strongest enablers of collaboration because it helps SMEs navigate capability, access processes and technical complexity. New NRI could include dedicated translation support roles such as technical navigators or industry engagement managers to guide industry users through scoping, access and project delivery.

• Co-investment or matched funding to reduce barriers
CSIRO's matched funding programs demonstrate that SMEs benefit from low-risk and structured pathways into research partnerships. New NRI could plan for flexible access models that offer short projects, pilot access options or subsidised early engagement pathways that mirror the successful features of Innovation Connections, Kick-Start and RUIC. Integrating similar matched funding mechanisms into new NRI facilities would likely reduce entry barriers for SMEs and stimulate industry-led R&D activity. These programs have a strong track record of seeding longer term research partnerships that extend well beyond the initial project, which in turn strengthens Australia's overall research translation pipeline.

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Fri, Dec 5, 2025, 02:47 PM Australian Eastern Daylight Time
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Organisation
Florey Institute of Neuroscience and Mental Health

In what capacity are you responding?
An individual

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
A gap limiting Australia's research translation capability is the absence of coordinated national infrastructure to access clinically acquired biomedical imaging and associated health data. While existing NRIs (eg NIF) provide strong support for research imaging, there is no unified approach to curate, harmonise and govern access to clinical imaging collected across hospitals and jurisdictions. State-based health systems and institutional differences result in fragmented, siloed data, inconsistent standards, and inaccessibility, preventing Australia from assembling large, clinically meaningful and nationally representative datasets required to develop and validate useful data-driven AI tools.
New or enhanced NRI is required to provide secure pathways for integrating biomedical imaging with health records and outcomes. This would enable Australia to participate meaningfully in global data-driven health initiatives and accelerate translation of imaging-based innovations into the clinic.

Q12. How should research translation be planned for in the development of new NRI?
Top-down policy direction to reduce barriers to data access. National frameworks that mandate that hospitals and healthcare providers make clinically acquired imaging and associated metadata readily accessible to patients, and provide simple, secure mechanisms for these individuals to share their data with approved researchers and NRIs.
- Standardised governance and consent models to facilitate data flow across jurisdictions
- Interoperable technical infrastructure and data portability
These elements would create a pipeline from clinical data generation -> research -> clinical translation

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Fri, Dec 5, 2025, 01:26 PM Australian Eastern Daylight Time
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Title
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Organisation
The Peter Doherty Institute for Infection and Immunity

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
A workforce with technical understanding of the platforms and their capabilities is critical, but it is also important for this workforce to promote the platforms in forums where industry gather. We recommend having representatives from either research institutes or the NRI facilities themselves (who are well versed in the capabilities the platforms offer) present the platforms in a 'showcase' style at relevant local and international industry/research meetings and forums e.g. Ausbiotech, BioMelbourne Network. Strategic connections between state and federal government departments, industry-focused bodies (e.g. mRNA Victoria, RNA Australia, Global Victoria) should also prioritised and supported with investment.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
In addition to technical capabilities, NRIs need industry, business development and research translation expertise to enable them to effectively tailor their offerings to industry.

NRI facilities would benefit from more co-ordination and promotion to ensure that the most is made of their capabilities. Facilities should consider contract work to provide funding to fill gaps between research projects. Development of clever pricing models could improve their use, particularly by small to medium enterprises (SMEs) who may not have large starting budgets, but where engagement may lead to longer-term collaboration and use. Initiatives such as the Jumar Bioincubator (https://www.jumarbio.com/) and the recently launched BioIntelect Venturer (https://www.biointelect.com/biointelect-venturer/) program provide excellent exemplars of building cross-sectoral collaboration and SME development of vaccines and therapeutics.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Process development for manufacture and delivery into the marketplace offers an area where NRIs could add value for newly developed products or public health interventions. Researchers advancing products with novel and protected intellectual property assets could engage in process development under a quality manufacturing framework. This would maximise cost effectiveness in a highly competitive marketplace.

NRIs should offer quality manufacturing facilities where confidential improvements to formulation, manufacturing or dispensing can be made and protected by patent or as a trade secret.

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Fri, Dec 5, 2025, 01:10 PM Australian Eastern Daylight Time
[ID: sbm39825e8f3950d1094bd31]

Title
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Organisation
Curtin University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
In a flat funding environment, Curtin University considers it essential that policy settings for National Research Infrastructure (NRI) explicitly recognise that facilities are almost never funded in isolation. Their sustainability is contingent on substantial co investment from universities, state and Commonwealth governments, and industry partners. Any requirement to expand awareness and access across Australia's cities and regions must therefore be framed within these funding and governance realities.
From a policy perspective, making NRI capabilities widely known and genuinely available to relevant industry sectors requires resourced, professional engagement rather than unfunded expectations. Dedicated personnel with commercial, communication and sector specific expertise are needed to articulate clear value propositions, segment and target different industry audiences (including those not traditionally connected to the research system), and manage metropolitan and regional relationships. Promoting facilities to new user communities without commensurate operational and engagement funding risks generating unmet demand, eroding trust, and undermining the credibility of the NRI system.

Curtin therefore supports policy settings under which any explicit expectation to increase promotion and accessibility of NRI capabilities:
1. Is led by facility operators, aligned with their host organisation's commercial engagement and innovation strategy, and delivered in a manner consistent with, and endorsed by, their co investors; and
2. Is accompanied by sufficient, ongoing funding to sustain core operations and to support dedicated industry engagement and translation functions.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

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Curtin University considers that increasing research–industry collaboration should be treated as a core function of National Research Infrastructure (NRI), supported by dedicated capability rather than informal, ad hoc efforts. This includes placing industry focused liaison and business development staff within major NRI facilities so that technical strengths can be translated into clear offers for potential partners and one off access can be converted into longer term relationships, including with SMEs and regional firms. Locating key NRI assets within university anchored innovation precincts, and more deliberately aligning their activities with national initiatives such as Trailblazers, CRCs and the AEA programs, would help create more coherent translation pathways and clearer entry points for industry engagement across Australia.

Productive research–industry collaboration could also be accelerated through modest, strategic NCRIS investment in proven, self funded translation activities. Experience from the Murchison Widefield Array (MWA) and its translation into an operational space domain awareness capability demonstrates how NRI derived techniques can support sectors such as space, defence, earth observation and telecommunications through financially efficient, extensible upgrade paths that respond to market demand. However, the success of such efforts depends on effective collaboration with other NCRIS funded infrastructure, which is currently constrained by flat funding and timing uncertainties. These pressures lead to sub optimal integration of complementary capabilities and a loss of opportunity and productivity. Policy and funding settings that support embedded industry facing roles, precinct based collaboration, alignment with national translation programs and better resourced cross facility integration would provide the practical foundations needed to increase high value, enduring research–industry collaborations.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

In the context of our recent Curtin led bid for the "Australian National Institute for e Science", we wish to reiterate the strategic importance of such a platform for meeting future NRI needs across Australia. Long term resourcing for high quality research software has been identified internationally as a critical, but currently under served, requirement for the success of the entire research ecosystem. Numerous reviews have underscored that this is a specialist domain, requiring dedicated research software engineers working in close partnership with domain experts to maximise and sustain returns on national research infrastructure investment. International exemplars such as the Netherlands eScience Centre, the UK Software Sustainability Institute and Germany's new FutuRSI service organisation demonstrate the value of national, distributed structures that provide pooled research software engineering and data science expertise, deployed via merit allocation to support researchers across all fields.

Looking ahead, Australian NRI policy should recognise that the same structural approach is needed to underpin emerging computational and data intensive priorities, particularly as we enter an era shaped by AI and quantum technologies. There is an urgent need for a coordinated, national e science platform that can deliver energy efficient, federated, AI optimised computing and software support, compliant with stringent data protection and patient privacy frameworks, and capable of supporting big data processing, deep learning and real time simulation across disciplines. A distributed National Software Centre, built on existing Australian strengths and structured similarly to an ARC Centre of Excellence, would provide the long term, merit allocated access to specialist research software engineers required to maximise returns on both research and research infrastructure investment, while ensuring that future NRI is secure, sustainable and fit for purpose for advanced applications in health, national security, climate, space and beyond.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be built into the design, funding and governance of new NRI from the outset, rather than treated as an optional add on once facilities are operational. Curtin University recommends that:
• Translation capability is planned as a core function. New NRI should include, in their initial business cases, explicit objectives and resourcing for translation and industry engagement, including dedicated staff (e.g. industry liaison, business development and research software/engineering support), clear pathways from discovery to application, and alignment with institutional commercialisation strategies.
• Foundational resourcing comes first. Robust, long term operational funding and provision for timely upgrades and maintenance must be secured before translation expectations are imposed. Without this "pre requisite" funding, facilities are forced into survival mode, with no genuine capacity to support industry projects, meet timelines, or adopt required quality and accreditation standards—creating a risk of reputational damage for both the facility and the broader NRI system.
• Co investment and integration are designed in. New NRI should be conceived with explicit co investment models (universities, governments, industry) and with mechanisms for integration with other NCRIS capabilities, so that translation opportunities can draw on complementary infrastructure rather than operating in isolation.
• Realistic expectations are tied to realistic resources. Any policy or contractual requirement for research translation must be matched by commensurate, ongoing funding to support the additional workload, quality assurance, data governance and stakeholder management that industry facing projects entail.

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Fri, Dec 5, 2025, 12:20 PM Australian Eastern Daylight Time
[ID: sbm398231003850a8f169472]

Title
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Organisation
Bioplatforms Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Engagement and awareness. Bioplatforms provided support for approximately 3,000 industry projects in 2024/25, collaborating with approximately 500 discrete industry focused organisations. This level of activity requires sustained engagement in end users needs and meeting these needs not only with relevant NRI offerings but structuring partnerships in a way that is beneficial to the user, as opposed to the provider. Dimensions include fit for purpose
• IP arrangements – user pays, user owns
• Quality management systems that permit outputs to meet industry standards
• Access to dimensions such as animal ethics and biosafety committees

Whilst routine resources such as optimised websites and information are necessary, dedicated business development professionals are needed to engage, understand and ensure delivery against user requirements.

There are opportunities to partner with various other peak bodies and national organisations (CRC Association, CoEs, AI group, industry growth centres, state-based innovation systems) to help build awareness of the capabilities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI providers need to evolve and execute as strategic partners in translation and innovation, not just a service provider. Large industry engagement is valuable, both in building profile and providing for financial sustainability, however developing a culture for start-ups, enabling SMEs and acting as venture support represent a largely unmet responsibility and may represent the area of greatest national leverage for NRI investment.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Australia has strong discovery-focused research infrastructure, but translation often requires capabilities that sit just beyond the current remit, including regulatory-grade systems, quality frameworks, pilot-scale environments, commercial pathway expertise, and structured support for early-stage companies. Enhancing translation therefore requires extending existing NRI strengths into pre-commercial capabilities.

A successful model has been demonstrated through Bioplatforms coordinated activity at Bioplatforms node the Australian Genome Foundry (AGF), strengthened by Bioplatforms role as a partner in both the ARC Centre of Excellence in Synthetic Biology and the UNSW 10x Founders accelerator. Together, these partners have created an environment where leading-edge infrastructure sits alongside technical expertise, commercialisation experience and entrepreneurial support.

Over the past year, this integrated environment has enabled four early-stage ventures to incubate within the AGF, providing access to high-throughput infrastructure, technical mentoring, regulatory guidance, and structured commercialisation support. Three of the four have subsequently attracted further investment and expanded their workforce, while the fourth has completed further technical development and validated their product with strategic partners in the UK, US and China.

This approach delivers benefits at multiple levels: universities benefit through increased grant success, enhanced reputation, and strengthened industry partnerships, emerging companies accelerate their development, and Australia builds deeper sovereign capability and skilled jobs in a strategically important technology area.

Key NRI enhancements to improve research translation include:
1. Co-located Incubation space
Embedding incubation space within or adjacent to NRI platforms allows early-stage companies to work alongside technical experts and accelerate the transition from research outputs to proof of concept in an environment that supports cutting-edge technology, meets regulatory expectations, and provides an environment that fosters knowledge exchange. Including access to safety and ethics committees, secure data systems, and quality management processes provides early-stage companies with foundational infrastructure typically difficult for small companies to reach.
2. Pilot-scale facilities
Pilot-scale capability is a critical bridge between research and commercial manufacturing where early-stage companies often face a structural gap. They must validate and optimise their production processes before they can attract the capital needed to operate at commercial scale. Providing accessible pilot scale facilities, particularly in biomanufacturing, would accelerate commercialisation and strengthen Australia's sovereign capability.
3. Dedicated translation support capability

Technical staff with commercialisation experience and understanding, regulatory awareness, and project-delivery capability can guide SMEs and research groups through early development stages, bridging the 'know-how gap' between research and translation.

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Today ANFF-C and Bioplatforms Australia are the only NCRIS projects that offer structured commercialisation assistance linked to NRI capability, supporting start-ups in areas such as IP strategy, regulatory planning, business model development, and investment readiness for NCRIS enabled technologies. Providing similar support across other NCRIS projects would accelerate innovation translation and industry formation, improving the return on federal research investment.

Q12. How should research translation be planned for in the development of new NRI?
The multi-year nature of national research infrastructure investment requires confidence in national scale demand and aspiration for the research and science that it permits.

Identification of research infrastructure priorities (including new NRI) could be systemically derived through a number of empirical studies, including
• Mapping of research quality and intensity by FoR code, such as undertaken historically through the ERA process
• Mapping of industry research requirements by FoR code against the R&D Tax Incentive
• Overlaying of key national research and science programs and strategies such as CSIRO strategic programs, National Reconstruction Fund, MRFF Missions, NHMRC priorities, ARC Centres of Excellence, awarded CRCs.
• Consideration of NRI required for the long-term delivery of the science agenda (as above) could be undertaken, evaluating what already exists, needs for enhanced cooperation, gap analysis and disinvestment if deemed necessary.
• The ability to withhold agility support for unforeseen new Research Infrastructure, such as reasonably experienced with mRNA and Artificial Intelligence would be rational.

New Research Infrastructure as identified may suitably be implemented on a needs basis as
• A new Capability as the identified technology and expertise required is reasonably unrelated to any existing (NCRIS) delivery partner
• An integration into one or more relevant existing delivery partners
• Collaboration of existing delivery partners to a new function or gap, as has been exemplified through the development of the CoastRI capability that brought together 13 existing delivery partners to meet a coastal observational gap.

Workforce planning and research translation should be embedded from the outset, not treated as an optional or downstream activity. Planning should ensure new infrastructure supports pathways from fundamental research to application and commercial adoption.

135

Fri, Dec 5, 2025, 12:10 PM Australian Eastern Daylight Time
[ID: sbm398228310d80ed703cc9b]

Title
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Organisation
Atlas of Living Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
We can only reflect on the model adopted by the ALA to achieve these outcomes given it has supported a successful industry engagement program for some years. The Atlas of Living Australia (ALA) makes its capabilities known to industry users through a combination of strategic partnerships, tailored engagement, and capacity-building initiatives. Specifically:
• Sectoral Engagement Approach: ALA adopts a targeted approach to engage priority sectors such as environmental consulting, biosecurity, and industry partners requiring biodiversity data for assessments and compliance.
• Training and Capacity Building: ALA provides training offerings and developer tools to deliver training. ALA partners with and presents at national and state-based biodiversity and industry conferences (e.g., Ecological Society of Australia, Environmental Institute of Australia and New Zealand) to showcase capabilities and build awareness.
• Industry Tailored Data Solutions: ALA provides analytics-ready data streams, APIs, and tools like Galah and ALA Labs to support industry needs for biodiversity reporting and decision-making. It also develops restricted-access data solutions for sensitive use cases, including environmental and biosecurity applications, which is a need identified by industry.
• Communication and Outreach: ALA leverages its reputation as a trusted national research infrastructure and actively communicates through annual work plans, user satisfaction surveys, and participation in sectoral events to demonstrate impact and reliability.
• Governance – The ALA has recently appointed an industry representative to its Advisory Board, which provides an excellent mechanism to better engage strategically with industry sectors.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities like the Atlas of Living Australia (ALA) can boost research–industry collaborations by focusing on practical skills and strong connections. This means helping staff understand things like commercialisation and IP, finding ways to turn research into real-world solutions, and creating spaces where researchers and industry can work together—like advisory panels or co-design workshops. Sharing stories of success is a great way to show what's possible. It also helps to have clear processes, dedicated people to manage partnerships, and support for joint funding opportunities. Building a culture that values collaboration is key, so things like incentives, knowledge-sharing sessions, and offering extra services alongside open data can make a big difference. Finally, tracking results and telling the story in business-friendly language helps show the impact and attract more partners and increase utilisation and adoption.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Reflecting on our experience with biodiversity data at the ALA, successful research translation requires enhancements that make data more actionable and accessible for applied science and industry. This includes advancing data interoperability through analytics-ready formats and real-time pipelines, as well as integrating AI/ML capabilities to enable predictive modelling and automated assessments. Developing sector-specific dashboards and visualisation tools would simplify complex data for decision-makers, while pre-trained models for common use cases could accelerate adoption. These technical improvements should be complemented by frameworks that measure and report translation outcomes, ensuring impact is visible and quantifiable.

Equally important are capacity-building and co-design initiatives. Scaling up training programs, micro-credentials, and practical case studies will support industry users to apply data effectively. Engaging industry partners in co-designing tools and workflows ensures relevance and usability, while strengthening partnerships.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be planned as a core design principle when developing new National Research Infrastructure (NRI), not as an afterthought. This means embedding mechanisms that make data and outputs interoperable, analytics-ready, and aligned with global standards from the outset. Infrastructure should include APIs, real-time data pipelines, and user-friendly interfaces that allow seamless integration with industry and policy tools. Planning should also anticipate emerging technologies like AI/ML, ensuring datasets and workflows are structured to support advanced analytics and predictive modelling. Additionally, frameworks for measuring translation outcomes—such as impact on policy, industry decisions, and societal benefits—should be built into governance and reporting systems.

Equally important is engagement and capacity building. New NRI should incorporate co-design processes with end-users, including industry, government, and community stakeholders, to ensure relevance and usability. Training programs, micro-credentials, and best-practice guides should be planned alongside technical development to empower users to apply infrastructure capabilities effectively. By integrating technical readiness, user engagement, and impact measurement into the initial design, NRI can become powerful enablers of research translation and real-world impact.

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Fri, Dec 5, 2025, 11:56 AM Australian Eastern Daylight Time
[ID: sbm396f5493c5167e1dc815f]

Title
Dr

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Liisa

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The University of Western Australia

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Discount scheme for businesses to try out new facilities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Funding for industry support positions, who can manage industry connections and contract negotiations so that technical staff can focus on providing the service.
Ensuring enough staff are funded to run instruments. At our facility, staff availability severely limits the amount of contract work that we can take on.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Microscopy underpins many translational capabilities, by e.g. by screening novel drug candidates, plant prototypes for agriculture research etc. Continued investment in national microscopy facilities is essential to support improved research translation capability.

133

Fri, Dec 5, 2025, 11:33 AM Australian Eastern Daylight Time
[ID: sbm398206314de66e6752381]

Title
Prof

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Jasieniak

Organisation
Monash University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To ensure NRI facilities are widely known and available to potential industry users across Australia's cities and regions, a coordinated, proactive engagement strategy is required. This strategy must acknowledge that availability is not simply accessibility and marketing, it also encompasses the alignment of the NRI facility's capability with industry needs. This alignment will need to include equipment, workforce, cost, capacity and location.

Dedicated business development capacity: NRI facilities should be supported to employ dedicated business development professionals with relevant technical skills, whose sole focus is to increase visibility, awareness, and engagement with industry. These roles would build relationships with sector bodies, promote facility capabilities, and coordinate collaborative opportunities across facilities. Embedding these roles in NRI facilities would simplify access for non-academic users by helping industry partners navigate project planning, proposal development, and facility processes. This hands-on support would lower barriers to engagement and improve the user experience.

Unified national platform for visibility: Develop a single, interactive online platform, available via both web and mobile app, that provides a visual map of all NRI facilities across Australia. The platform should clearly outline available capabilities, interconnections, and contact points, replacing fragmented and inconsistent facility lists. This would offer a central, easily navigable entry point for industry and government users, improving accessibility and coordination across the national system.

Sector-specific communication and engagement: Implement targeted communication strategies tailored to the needs of different industry sectors. NRI facilities should highlight and showcase relevant infrastructure, case studies, and success stories through focused campaigns, trade events, and digital outreach. This approach will strengthen awareness of

NRI capabilities, foster new collaborations, and build stronger engagement across diverse markets and regions.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

The relationship between academia and industry needs a cultural shift. Collaborations should be given time to develop organically, which requires both sectors to become less risk averse. As a society, we must accept that not every partnership will yield billion-dollar returns. The fear of missing out on large profits often prevents meaningful collaboration. We also need to redefine what makes a partnership productive: success should not be based solely on transactional exchange of skills, but on how well solutions address shared problems. When scientific solutions are effective, financial benefits will naturally follow.

To strengthen collaboration between research and industry, NRI facilities should embed dedicated roles, programs, industry-aligned governance and pathways that actively bridge the gap between discovery and commercial application. Considerations include:

Dedicated business development and translational roles: Sustained funding should be provided for business development professionals and embedded translational experts within NRI facilities, and as well provide access to legal services ensuring rapid turnaround of contractual matters. These staff would focus exclusively on fostering industry engagement, guiding both academic and industry partners through project ideation, access processes, planning, and collaborative problem solving.

Workforce development for translation: Invest in career pathways and training programs that equip NRI staff with skills in translation, commercialisation, and partnership management. Developing personnel who understand both research and industry contexts will enable NRI facilities to operate as true innovation intermediaries, supporting projects from discovery through to translation.

Cross-sector mobility and exchange: Facilitate mobility programs between NRI facilities and industry to encourage mutual understanding and skill exchange. Embedding industry scientists within NRI facilities, and providing secondment opportunities for NRI staff into industry, will strengthen trust, build shared capability, and accelerate innovation outcomes.

Industry-aligned governance: Embed market-responsive mechanisms and commercialisation pathways into infrastructure planning and investment decisions, thereby providing a balance between technology push and pull. Industry-aligned governance frameworks ensure that the NRI offering is attractive to industry and can facilitate researcher-industry partnerships for both scientific and economic outcomes.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Developing sovereign translational research capabilities is essential to driving innovation, commercialisation, and national productivity. Sustained, strategic investment in translational research infrastructure will strengthen Australia's capacity to attract partnerships, secure co-funding, and deliver long-term economic and societal benefits.

Enhancing existing NRI capabilities

Future investment should be strategically directed towards areas of established national strength, particularly where Australia demonstrates mature translational ecosystems. Among these, med-tech and drug discovery have more mature translational research infrastructure and supporting ecosystems, in part through NCRIS projects and also the MRFF program. Considerations include:

Strategic focus and prioritisation: Funding should be concentrated in domains where Australia holds a clear competitive advantage and where investment can achieve measurable, high-impact outcomes.

Capacity expansion: Scaling up throughput and access at existing translational facilities, such as MedChem Australia, Monash Institute of Pharmaceutical Sciences, and Melbourne Centre for Nanofabrication, will help meet growing demand and alleviate bottlenecks in project progression.

HPC: Australia must significantly increase investment in Tier-1 high-performance computing (HPC) facilities. Advanced computational modelling is essential for breakthroughs across disciplines, from climate modelling and new energy storage to drug discovery and theranostics. Yet current funding for the National Computational Infrastructure (NCI) is insufficient to keep pace globally. Researchers must compete for limited supercomputer time, which disadvantages even highly skilled modelling scientists. This bottleneck undermines Australia's innovation potential. Computational modelling is the starting point for translating research into industry impact, identifying viable pathways faster than experimental methods. Without stronger support for tier-1 HPC facilities, Australia risks falling behind in global scientific competitiveness.

Integration and coordination: Greater connectivity between facilities is needed to create interoperable, cross-disciplinary networks. Strengthening these networks will foster collaboration across research, industry, and government, accelerating translation from discovery to application.

New research infrastructure needs

While some sectors are well established, others require significant uplift. For example:

Advanced materials and manufacturing: Australia currently lacks national-scale infrastructure supporting mid-stage technology development (TRL 3–5), limiting its ability to transition from early-stage discovery (TRL 1–2) to industrial application (TRL 6–7). Establishing coordinated, regionally networked facilities and associated industry partnerships would close this gap and enhance national resilience. The Advanced Materials and Manufacturing Australia (AMMA) initiative outlines a proposed concept (https://ammaust.org.au).

It is recommended that a dedicated national review of translational research infrastructure across sectors should be undertaken to identify gaps, strengths, and regional priorities, providing a robust evidence base for future investment.

New and enhanced NRIs should be underpinned by long-term (10–20 year) funding strategies that provide stability and flexibility to evolve with technological and industry needs. Governance frameworks must incorporate industry and translational expertise to ensure alignment with end-user requirements and readiness for investment.

Q12. How should research translation be planned for in the development of new NRI?
To maximise the impact of future investments, research translation should be embedded as a core design principle in all new NRI developments. Effective planning should ensure that facilities are built not only to generate knowledge but also to enable its rapid and responsible application. Considerations include:

Embed translation from the outset: New NRI should be designed with integrated translational expertise, scale-up compatible tools, services and industry partnerships. This includes establishing dedicated translational "concierge" roles and clinical or commercial advisory groups to guide projects from early-stage research through to deployment, commercialisation, or clinical implementation.

Strategic governance and selection processes: Where relevant, independent governance and project selection panels should include industry partners, translational specialists, and investors. Their involvement will ensure that project pipelines are investment-ready and that infrastructure priorities remain aligned with industry and community needs.

Flexible and adaptive operational models: NRI operational frameworks should incorporate milestone-based project reviews and flexibility for adaptation or troubleshooting. This approach supports dynamic project lifecycles and helps facilities manage risk while maintaining momentum in translational outcomes.

Sustainable and diversified funding models: New NRI should be planned with long-term (10–20 year) financial sustainability in mind.

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Fri, Dec 5, 2025, 11:01 AM Australian Eastern Daylight Time
[ID: sbm3981e88586e696a318624]

Title
Dr

First Name
Adam

Last Name
Chrimes

In what capacity are you responding?
An individual

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
These dual-purpose research & industry facilities rarely work. For research, the infrastructure is too ridged and inaccessible to allow true research capabilities. And for industry, the infrastructure is not controlled sufficient to produce reliable and repeatable results/outputs. What is needed is a clearer definition of the purpose of the NRI capability, and then allow it to service that need specifically. Is it to help commercialise TRL 4+ research? Then it should have tighter controls to enable repeatability for commercial use. Is it for exploration and TRL2-3? Then it should have sufficient flexibility and openness to research access. At the moment, this is not clear and is causing confusion and frustration for both industry and researchers, forcing a lot of great new ideas to use overseas capabilities to get the job done.

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Fri, Dec 5, 2025, 09:40 AM Australian Eastern Daylight Time
[ID: sbm39819eb87ce62cc06347e]

Title
Ms

First Name
Chloe

Last Name
Cai

Organisation
Advanced Materials and Manufacturing Australia (AMMA)

In what capacity are you responding?
A representative of an organisation or group

Q12. How should research translation be planned for in the development of new NRI?
Clearly, if the NRI process continues to operate in the same way as it has in relation to translation research, it will continue to get similar results. To maximise the impact of future investments, research translation should be deliberately embedded as a core design principle in the NRI landscape. Effective planning and deliberate focus will ensure that facilities are built to not only to cater for discovery research, but also to enable its rapid and responsible application. Considerations include:

Operate at TRL 3–7: Build NRI around the mid-TRL gap with pilot-scale environments, scale-up infrastructure, and full-scale validation/qualification so projects can move from proof-of-concept to deployment without leaving the system.

Strategic governance and selection processes: Governance and project selection panels should include industry partners, translational specialists, and investors. This will ensure that infrastructure priorities remain aligned with industry and community needs.

Quality & compliance baked in: Provide digital quality assurance and traceability and build towards relevant accreditations (e.g., ISO, NATA) to shorten time-to-market and lower risk/cost for partners.

Single-entry, industry-friendly access: Offer a streamlined front door so large and small companies can easily discover and book capability and support.

Co-designed, co-funded programs with priority sectors: Work with industry stakeholders from early design stage and be aligned with existing NCRIS nodes.

National reach, local strengths. - Use a hub-and-spoke model to ensure coverage across Australia while leveraging specialised local expertise and infrastructure.

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Fri, Dec 5, 2025, 09:39 AM Australian Eastern Daylight Time
[ID: sbm39819d7979e62fb03bec2]

Title
Ms

First Name
Louise

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Soroka

Organisation
Geoscience Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
* Ensure projects have funding for or access to highly-skilled science communicators.

* Increase the awareness of the importance of impacts for Australia through well written case studies that are backed up by resources to promote these.

* People who write grants to access tax payer funds, NHMRC, ARC etc. for their research and projects could be incentivized to include NCRIS and NRI facilities. Rather than build their own internal capabilities/pay for external facilities. This would provide strong political information and data to support new funding for NRI and NCRIS.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
* Industry-backed projects (similar to CRC model)

* People who write grants to access tax payer funds, NHMRC, ARC etc. for their research and projects could be incentivized to include NCRIS and NRI facilities. Rather than build their own internal capabilities/pay for external facilities. This would provide strong political information and data to support new funding for NRI and NCRIS. (note duplicate on purpose)

* Consider a funded scheme to embed industry representatives within NRI facilities and vice versa (i.e. NRI staff embedded within relevant industries) for 'secondments'. This has the potential to greatly increase awareness of NRI facilities amongst relevant industries AND to provide industry feedback to NRI facilities regarding industry challenges, leading to new productive collaborative opportunities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

* Through awareness of projects - communication should be imbedded in projects not appended after all the work is done. If you are speaking to the stakeholders to understand their needs and the questions they want answered as the projects are developed and have check-ins to ensure goal alignment and involvements at regular intervals, then the result/product is more likely to have the impact and applications that are used. This generates word of mouth and promotions that will increase interest in the use and collaboration with NRI facilities.

* Consider a funded scheme to embed industry representatives within NRI facilities and vice versa (i.e. NRI staff embedded within relevant industries) for 'secondments'. This has the potential to greatly increase awareness of NRI facilities amongst relevant industries AND to provide industry feedback to NRI facilities regarding industry challenges, leading to new productive collaborative opportunities.

* Much fundamental science talent is being lost to the AI sector. While AI is here to stay, it is critical to encourage participation in fundamental science pathways, such that the NRI workforce will be able to vet and prioritise promising leads from AI assisted research in fundamental science.

* A mechanism for projects to access "commercialisation"/translation expertise (e.g., like commercialisation specialists embedded in universities, CSIRO, CRCs) to guide alignment with user needs and support uptake on project completion.

Q12. How should research translation be planned for in the development of new NRI?
* Translation should be embedded from the design stage.

* Clear articulation of intended users and beneficiaries, and evidence of engagement.

* Co-design and user needs assessments with government, industry, and community partners to ensure adoption and relevance.

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Thu, Dec 4, 2025, 07:25 PM Australian Eastern Daylight Time
[ID: sbm397e8fc6db814b4e540f9]

Title
Prof

First Name
Ricardo

Last Name
Ruiz Baier

Organisation
MoCaO (Mathematics of Computation and Optimisation)

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
By having them consistently advertised and with a sustained and growing budget.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
They should provide shared expertise, structured engagement programs, and accessible environments where researchers and industry partners work together on clearly defined, real-world problems.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The Mathematics of Computation and Optimisation (MoCaO) group, a Special Interest Group of the Australian Mathematical Society (AustMS), represents a vibrant national community working at the forefront of numerical analysis, scientific computing, and mathematical optimisation. Our scientific domain encompasses the rigorous development, analysis, and implementation of numerical algorithms for models based on differential equations and optimisation frameworks. These areas underpin key technological and industrial processes that are central to Australia's current and emerging national priorities, including climate modelling and mitigation, economic forecasting, artificial intelligence and machine learning, sustainable resource management, advanced manufacturing, and complex systems engineering. Robust computational mathematics is the engine that drives predictive capability, data-driven decision making, and innovation across these sectors.
A crucial component enabling MoCaO's research excellence has been access to the MATRIX Institute in Creswick, established in 2015. Every year, MoCaO members organise intensive 1–2-week residential research programs at MATRIX that have consistently produced high-

impact scientific outcomes, fostered new collaborations, and attracted leading international researchers to Australia. I have organised one in 2025 and am heavily involved in another for 2026. These activities culminate annually in a peer-reviewed scientific report, published as part of a book series that disseminates cutting-edge developments to the global research community.

In mathematics – particularly in areas requiring deep theoretical insight, creative problem solving, and sustained collaborative effort – residential research visits are not merely beneficial; they are essential. They play an analogous role to laboratories in chemistry or biology, or observatories in astrophysics: foundational research infrastructures without which the discipline cannot maintain international competitiveness. Residential mathematical research institutes provide the uninterrupted time, intellectual environment, and concentration necessary to advance difficult theoretical challenges and cultivate new ideas.

MATRIX has become recognised domestically and internationally as one of the preeminent residential mathematical research environments in the Asia-Pacific region. However, it currently operates with significantly fewer resources than comparable global institutes such as the Mathematisches Forschungsinstitut Oberwolfach (Germany), the Banff International Research Station (Canada), or the Casa Matemática Oaxaca (Mexico). I am presently working from the Institut Mittag-Leffler (Sweden), a similarly structured institute with an extraordinary global footprint, made possible through sustained governmental and agency-level investment. A defining characteristic shared by Oberwolfach, Banff, Oaxaca, and Mittag-Leffler is that – unlike MATRIX – they receive long-term block funding from their respective national governments or research councils, ensuring stability, strategic planning, and continuous expansion of their scientific missions. MATRIX, by contrast, relies predominantly on university contributions and project-based funding, limiting its ability to scale and fulfil its potential as a national research infrastructure asset.

MoCaO strongly believes that Australia now has a strategic opportunity to build upon the proven success of MATRIX (or, if appropriate, establish a complementary national research centre) dedicated to hosting short- and long-term residential programs in mathematical sciences. A properly funded national residential research institute would:

Consolidate Australia's global standing in mathematics, computation, and optimisation, enabling our researchers to compete at the highest international level.

Strengthen national capability, especially in areas where mathematics underpins critical technological and societal challenges.

Support and retain early-career researchers, providing them with access to high-impact collaborations and training environments that are currently only available overseas.

Accelerate cross-disciplinary translation, enabling mathematical innovations to be rapidly transferred into industry, engineering, climate science, AI, and other strategic domains.

Enhance Australia's digital readiness, empowering sectors to adopt advanced modelling, simulation, and optimisation tools essential to innovation and competitiveness.

A dedicated, nationally supported residential mathematical research infrastructure would be a transformative investment, aligning directly with the objectives of the NRI Roadmap and establishing a legacy of long-term capability for Australia's knowledge economy.

We urge the NRI Roadmap Committee to recognise the strategic value, demonstrated success, and substantial untapped potential of this form of research infrastructure for the mathematical sciences and for Australia's broader technological future.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be built into new NRI from the beginning by involving end-users early, supporting ongoing collaboration, and ensuring strong links to national digital

and computational platforms. Clear pathways (from fundamental research to practical tools) along with training for researchers and simple mechanisms to share results, will help mathematical and computational advances move quickly into industry, government, and other priority sectors.

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Thu, Dec 4, 2025, 04:30 PM Australian Eastern Daylight Time
[ID: sbm397def758f81209358393]

Title
Dr

First Name
Felicity

Last Name
Flack

Organisation
Population Health Research Network

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities already use SEO, social media, conferences, webinars, and business development managers to promote their capabilities. Additional strategies could include targeted partnerships with industry associations and chambers of commerce, outreach through roadshows and collaboration with universities, and enhanced storytelling via case studies in trade publications. Virtual engagement through interactive demonstrations and on-demand webinars can broaden reach, while industry secondments and staff exchanges build trust and familiarity. Leveraging government programs such as CRCs and Industry Growth Centres, combined with targeted digital advertising on platforms like LinkedIn, can further connect NRI facilities with decision-makers. These approaches, alongside the existing Research Infrastructure Connect (RIC) directory, will help ensure NRI capabilities are visible and accessible across Australia's cities and regions.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To increase productive collaborations between NRI facilities and industry, a proactive and structured approach is needed.

Key strategies include:
• Clear and Flexible Access Models: Develop transparent pricing structures, service agreements, and IP frameworks to reduce barriers and provide certainty for industry partners.
• Co-Design Opportunities: Engage industry early in infrastructure planning and project design to ensure relevance, alignment with market needs, and mutual benefit.
• Shared Innovation Programs: Establish joint research challenges, pilot projects, and innovation voucher schemes to encourage industry uptake and foster collaborative problem-solving.

• Embedded Industry Roles: Facilitate secondments or joint appointments between NRI facilities and industry to build trust, share expertise, and strengthen long-term relationships.

These measures, combined with ongoing communication and showcasing successful collaborations, will help NRI facilities build the know-how and support needed to deliver impactful partnerships that benefit both research and industry.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
For the Population Health Research Network (PHRN), industry partners consistently identify the need for greater certainty and efficiency in accessing data. Key enhancements include:
• Predictable Timeframes: Establish clear service-level agreements (SLAs) for data access to provide industry with certainty around timelines.
• Faster Data Access: Streamline approval and provisioning processes to reduce delays and enable timely research and innovation.
• Detailed Metadata: Improve metadata quality and accessibility to help users understand data scope, structure, and limitations before committing to projects.
• Tiered Data Access: Offer flexible access models, including synthetic data for early exploration, aggregate data for feasibility analysis, and unit record data for detailed research, while maintaining privacy and compliance.

These enhancements will strengthen research translation capability by making NRI resources more responsive, transparent, and aligned with industry needs.

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Thu, Dec 4, 2025, 03:02 PM Australian Eastern Daylight Time
[ID: sbm396e4ae605224424c4aef]

Title
Prof

First Name
Janet

Last Name
McCalman

Organisation
University of Melbourne

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
A project like ARCHER will attract wide interest and usage in government departments needing population data, genetics, epigenetics, longitudinal health, family studies, criminology, intergenerational studies, wealth transfer, human geography, migration and social policy. It will also, if curated carefully, be of enormous interest through libraries, for local and family history, universities and schools. It will complement TROVE, public records collections and the National Archives.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
This would enhance the reach and capability of AI and provide a foundational population architecture for the nation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Perhaps we need some central organising capacity to protect a continuing and mobile technical workforce and to oversee archiving of projects. NLA??

Q12. How should research translation be planned for in the development of new NRI?
ARCHER aims to build a multi-disciplinary consortium of research institutes, university departments and research teams.

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Thu, Dec 4, 2025, 11:43 AM Australian Eastern Daylight Time
[ID: sbm397ce8df6e998dff2a643]

Title
Dr

First Name
Tara

Last Name
Martin

Organisation
Tasmanian Department of State Growth

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The Industry Capability Network is one potential avenue to advertise NRI expertise to relevant industry sectors.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
It is important to recognise that it is not essential to develop this capability solely in-house within NRI. Many government bodies, universities and research organisations (such as CSIRO) already have bodies that focus on research-industry collaborations. It is recommended that NRIs identify and speak with these bodies to leverage work already undertaken.

Q12. How should research translation be planned for in the development of new NRI?
It is important to understand the impact that NRI is seeking to generate, to understand what research translations would best deliver that impact. Development of an impact pathway (such as the CSIRO Impact Pathway model) would be beneficial to understand where planning is required for research translations.

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Thu, Dec 4, 2025, 11:25 AM Australian Eastern Daylight Time
[ID: sbm397cd8bed8953348ddf10]

Title
Dr

First Name
Michelle

Last Name
Heupel

Organisation
Integrated Marine Observing System

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Dedicated, directed engagement and interaction with industry and peak bodies is essential. This is a core activity of most NCRIS capabilities and one that can and should be supported at the program/project level to ensure targeted, domain-specific engagement. NRI engagement with industry can include speaking at technical conferences or industry forums to reach new potential users, targeted meetings with key industry operators or peak bodies, as well as social media and other avenues of engagement and promotion of NRI. These activities should be encouraged and adequately resourced to facilitate success.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
This should, in part, be an outcome of genuine engagement with industry to understand their needs. NRI can serve as a link and translator between industry and research partners to help ensure both sides understand what is needed and what is achievable. One example of an activity supporting research-industry collaborations is the Integrated Marine Observing System's Forum for Operational Oceanography. This forum, held every two years, brings together researchers and industry ranging from large multi-nationals to SMEs to identify areas of collaboration and partnership. This forum has increased industry engagement, trust in NRI and research capacity, and created solutions for industry needs. Coordinating this discussion has meant IMOS has strong links to industry and continually expanding opportunity for partnership and collaboration.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The definition of translation is a factor in determining what is needed. For example, in environmental capabilities translation is largely in the form of converting data into

information that is suitable for end-users. Therefore, environmental NRIs need to increase data translation via digital tools and products that are designed to meet industry needs. Within NCRIS this may require additional funding to increase capacity, but the capability already exists within the NRI.

The situation for manufacturing and other capabilities will vary significantly from this approach and may require other elements of support. However, research translation is core business for NCRIS NRI and should not require establishment of any new NRI. Given the breadth of industry sectors and NRI capabilities there is also a need to ensure that translation is fit-for-purpose and domain-specific, as such, translation needs to be completed by the relevant experts. Therefore, an overarching translation capability is unlikely to have success working across this spectrum. In short, ensuring NRI are funded and encouraged to adequately engage with and deliver to end-users will help ensure translation capability.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be grounded in the needs of the industry/government sector, national priorities, potential for international leadership, and other related principles. Understanding the needs of end-users and the gap that needs to be filled will ensure newly developed NRI are designed to meet these needs and adequately fill the gap. Based on an understanding of the needs of stakeholders and end-users, NRI can then be developed to deliver the appropriate equipment, expertise, outputs or information to ensure efficient and effective translation.

115

Thu, Dec 4, 2025, 09:29 AM Australian Eastern Daylight Time
[ID: sbm397c6dd2e195d3774a130]

Title
Dr

First Name
Alec

Last Name
Jamieson

Organisation
The University of Melbourne

In what capacity are you responding?
A representative of an organisation or group

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Strengthening Australia's biomedical imaging capability is fundamental to an effective research-translation pipeline. Imaging generates critical evidence required to define mechanisms of action, refine dosing strategies, and measure therapeutic response, all of which are necessary for realised precision medicine.

In brain and mental health research, state-of-the-art imaging provides insights unobtainable through other methodologies. With neurological and mental health conditions increasing across the Australian population, advanced imaging is essential for earlier intervention, monitoring progression, and enabling the next generation of treatments

Upgrading national imaging infrastructure will accelerate scientific innovation, improve health outcomes, and reinforce Australia's position as a global leader in medical technology development.

New NRI should aim for 1) better integration and utilisation of existing capabilities through collaborative and active dialogue, shared governance, and coordinated resource management; 2) strategic investment in emerging imaging modalities, data infrastructure, and workforce development to keep pace with global advances; and 3) mechanisms that ensure equitable national access, foster industry and clinical partnerships, and streamline translation pathways so that imaging discoveries can be rapidly tested, scaled, and embedded into routine care.

Q12. How should research translation be planned for in the development of new NRI?
Given the diversity of clinical and biological manifestations of debilitating neurological and mental health conditions, new NRI should be designed with a strong, explicit

translational focus from the outset. This includes prioritising fast, effective and cost-efficient precision medicine and precision health approaches that can move seamlessly from discovery to clinical implementation.

Research translation should be embedded in infrastructure planning through: co-design with clinicians, consumers and industry partners; interoperable data and imaging pipelines that support multicentre studies; clear governance and regulatory pathways; and dedicated support for validation, implementation and health economic evaluation. Without sustained effort and targeted investment in these precision-focused translational pathways, the impact of new NRI will be constrained and the delivery of real-world benefits to patients will be delayed.

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Wed, Dec 3, 2025, 02:24 PM Australian Eastern Daylight Time
[ID: sbm397856217199ab8358a19]

Title
Prof

First Name
Frank

Last Name
Bongiorno

Organisation
Council for the Humanities, Arts and Social Sciences

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Some NRI facilities are 'famous': Trove is a good example, and it is widely used in industry as a convenient and accessible source of information about the Australian past. Another is the Australian Dictionary of Biography. Yet, in many ways, these are exceptions to the rule and, as already explained, they are subject to precarity. Other facilities and databases are hard for industry to find, or to use. Much more simple pathways need to be created for users who do not have specialist knowledge. There is also a publicity gap: even qualified researchers are often unaware of significant NRI and its potential for their own work. The Commonwealth, in partnership with universities, could do much more to publicise to potential users in government and industry the value proposition of key facilities, many of which are funded by state governments.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Humanities NRI often has many masters. A facility such as the National Library of Australia, or the National Archives of Australia, is expected to serve 'visitors' and occasional users as well as the community of researchers. Once they have done so, there may well be limited capacity for pursuing the kinds of partnerships that could strengthen research-industry collaborations. The funding of HASS research also tends to see industry applications as add-ons. Incentives could be created to encourage NRI facilities, whether found in universities, the GLAM sector or elsewhere, to integrate potential industry collaboration into project design. This was not work for all humanities NRI, and there should be no expectation that it would. But a great deal of data is accumulated that might underpin a report, a scholarly article or two, a university press release, and perhaps a couple of media stories – yet which might, with greater planning, find its way into wider applications.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

NRI, at present, exists as a kind of abstraction. There isn't really a national plan or map that sets out either what exists and what is missing. We lack common metadata. We are subject to the decisions of universities that compete with one another as businesses, and yet paradoxically are expected to develop and maintain NRI that can be used by others – and which, indeed, is usually funded by taxpayers as a public good. We have various silos. What we need is a more coherent structure, as well as a skilled NRI workforce capable of negotiating a complex ecosystem and supporting the wider research community's access to it.

Q12. How should research translation be planned for in the development of new NRI?

There needs to be a stronger emphasis on both planning and sustainability. Transformative ideas can be the result of small numbers of people – or even a single person – working on a particular NRI project within a university or GLAM institution. In some cases, the result is an idea that might take off for a time but is then found to be under-resourced so that it gradually becomes vulnerable to digital decay and eventual dysfunctionality. This is wasteful of resources: any significant plan to create funded Humanities infrastructure needs to have a clear pathway to sustainability. There should also be national mapping of NRI that allows decision-makers to see what exists, what linkages might be made where they are not already in place, and where gaps in capability might be filled with timely investment so that there is a more rational setting of priorities.

111

Wed, Dec 3, 2025, 01:57 PM Australian Eastern Daylight Time
[ID: sbm39783d862595ce06811cb]

Title
Prof

First Name
Rufus

Last Name
Black

Organisation
University of Tasmania

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To maximise impact, NRI facilities must combine national visibility with local accessibility, ensuring that industry partners, whether in metropolitan hubs or regional communities, can easily discover, understand, and engage with available capabilities. This requires a coordinated approach that blends digital tools, physical access points, and proactive outreach.

Key strategies include:
National Visibility with Local Access
• Maintain a single national entry point that clearly explains capabilities, access processes, costs, and contacts.
• Complement this with a federated model of tier-two facilities embedded in universities and regional centres, providing agile, context-aware pathways into the national system.
• Use consistent standards for onboarding, contracting, pricing, and data governance across all nodes.

Regional Access Nodes
• Enable research institutions to act as regional gateways, reducing barriers for SMEs and regional businesses that are often deterred by the scale or distance of major national facilities.
• Support place-based regional infrastructure (e.g., marine, Antarctic, agriculture) as entry points into national networks.

Proactive Outreach and Communication
• Implement coordinated industry engagement campaigns, including:
o Shared case studies showcasing successful collaborations.
o National and regional showcase events, conferences, and media campaigns.

o Incentives for co-located projects to deepen collaboration and knowledge sharing.
Digital Discovery and Brokerage
• Develop a real-time capability catalogue with search and matchmaking tools for industry users.
• Introduce brokerage services to help SMEs navigate access and compliance requirements.
• Align with SERD's proposal for a national "front door" and translation toolkit to simplify engagement.

Strategic Enhancements
• Include programs that set clear challenges for industry and research to solve together, and use government procurement to encourage innovation. These programs should require companies to use national research infrastructure to test and scale their solutions.
• Support regional roadshows and targeted outreach in priority sectors (e.g., marine tech, renewable energy, agri-tech, defence).
• Leverage national branding to position NRI as a trusted partner for industry innovation.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To strengthen research–industry collaboration, NRI facilities must go beyond providing infrastructure, they need to actively enable translation, trust, and co-development. This requires dedicated roles, shared environments for experimentation, and frameworks that simplify engagement while protecting intellectual property and cultural protocols. The following strategies will help build capability and confidence across sectors:

Invest in Translation and Engagement Capability
• Create dedicated roles focused on translation, engagement, and impact, with stable funding to enable long-term collaboration.
• Equip staff with both technical knowledge and an understanding of industry needs to accelerate the uptake of research into practical, high-impact solution.

Provide Practical Demonstration Environments
• Establish shared testbeds, secure data sandboxes, and pilot platforms where industry can experiment at low risk, low cost and validate concepts before scaling.
• Tailor onboarding for sectors such as marine, Antarctic, environmental management, defence, and regional industries to ensure accessibility.

Adopt Consistent National Frameworks
• Implement nationally consistent contracting, IP, and data governance standards to reduce complexity for companies engaging across multiple institutions.
• Align with proposed translation toolkits and streamlined procurement and access processes to simplify collaboration.

Build Workforce and Training Pathways
• Offer industry placements within NRI facilities to strengthen mutual understanding and uptake.
• Embed research–industry collaboration skills into HDR training and doctoral development programs.
• Develop communities of practice and targeted training for NRI staff to support co-development of research solutions with industry, government, and community partners.

Strengthen Strategic Governance

• Introduce multi-stakeholder governance models that actively involve government, research institutes and industry in strategic decision-making.
• Use these models to co-design challenge-based programs and innovation pilots that leverage NRI capabilities.

Showcase Success and Communicate Value
• Share case studies of successful collaborations and run industry-focused showcase events.
• Position NRI as a trusted partner for innovation through coordinated national branding and outreach.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Australia's research translation capability depends on infrastructure that connects discovery to deployment. Enhancements should focus on secure digital environments, applied innovation platforms, and federated systems that reduce fragmentation and accelerate collaboration. Financial sustainability and incentives for engagement are also critical to ensure long-term impact. Key priorities include:

Expand Digital and Data Infrastructure
• Upgrade existing NRIs with secure compute, trusted research environments, and advanced data integration to support co-development with industry.
• Scale platforms for sensitive data sharing, AI testing, and complex modelling that is critical for translation in health, marine science, agriculture, defence, and environmental management.

Develop National Testbeds for Applied Innovation
• Establish marine and coastal technology test facilities, environmental sensing and modelling platforms, and advanced materials/manufacturing pilot environments.
• Leverage Australia's geographic advantage and assets to lead marine and Antarctic-related testbeds, supporting sectors with high translation potential.

Create a Federated Network of Regional Digital Infrastructure
• Link institutional high-performance computing (HPC), specialised labs, and data platforms into a nationally coordinated network.
• Provide a smoother pathway from early research to prototyping and commercial deployment, reducing fragmentation and delays.

Embed Financial Sustainability
• Require business plans that demonstrate predictable, diversified income streams, maintenance schedules, and proactive engagement with research bodies, government, and industry.
• Encourage NRIs to operate without reliance on emergency grants or one-off donations.

Incentivise Use and Engagement
• Incorporate demonstrated engagement with NRI facilities into relevant National Competitive Grants criteria to drive uptake and maximise return on investment.

Q12. How should research translation be planned for in the development of new NRI?
Research translation must be embedded from the very beginning of NRI design and not treated as an add-on. This means planning infrastructure, governance, and workforce

capability to enable seamless movement from discovery to application. Translation should serve industry, government, and community needs while maintaining integrity, scalability, and cultural protocols. Key strategies include:

Embed Translation from the Outset
• Design new NRI with translation as a core objective, not an afterthought.
• Engage industry, government, research institutes and community partners early to ensure infrastructure aligns with sector needs, scalable workflows, and clear use cases.

Plan for Practical Translation Environments
• Include shared testbeds, demonstration spaces, and secure data environments that allow partners to experiment safely and progress quickly from proof of concept to applied testing.

Adopt Operational Models that Reduce Friction
• Implement simple access pathways, transparent and scalable pricing, predictable contracting, and clear IP and data governance frameworks.
• Ensure these frameworks are nationally consistent to streamline engagement across multiple facilities.

Build Translation Capability into Workforce Planning
• Incorporate roles such as engagement specialists, technical facilitators, and data stewards who can scope, design, and deliver collaborative projects.
• Provide training and mobility programs to maintain expertise in emerging technologies and regulatory requirements.

Serve Government, Research Institutes and Industry Needs
• Design infrastructure to support co-development and regional economic benefit, particularly in priority areas such as marine, Antarctic, environmental, and digital research.
• Embed translation planning to ensure impact extends beyond traditional research outputs to commercial and societal outcomes.

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Wed, Dec 3, 2025, 01:52 PM Australian Eastern Daylight Time
[ID: sbm3978388a2095c264d967e]

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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
• National visibility: Develop a single, plain-English national portal showcasing all NRI services, facilities and data, including a searchable catalogue, case studies, and training calendar. RIConnected attempted this but its success could be enhanced.
• Industry engagement mechanisms: - Introduce on-ramp vouchers for SMEs as works well in some NRIs already (eg TIA). - Conduct targeted regional briefings and outreach sessions (showcases, workshops) featuring applied examples in sectors such as health, agriculture, and materials.
• Strategic coordination: Consolidate NRI efforts into a smaller number of large, well-resourced facilities with strong partnerships across universities, CSIRO, and ANSTO to create a coherent national industry interface.
• Best practice sharing: Adopt and scale engagement models from successful facilities (e.g. IMOS) to ensure consistent national reach and quality.
• Promote quality: Consistent adoption of recognised accreditation frameworks (e.g. relevant ISO standards, GLP, GMP) would provide a unified signal of reliability across NRI facilities, reduce barriers for industry users, and make it easier for companies to identify infrastructure that can support regulated or commercially oriented work.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
• Strategic partnerships: Strengthen collaboration between NRI facilities, CSIRO, and universities to bridge early-stage research and industry application, supported by funding incentives for joint projects.
• Accessible entry points: Provide clear industry access pathways through intake services, rapid consultation (e.g. triage within two weeks).
• Training and resources: Fund the development of open, high-quality training materials, to upskill both researchers and industry users. Capabilities such as the proposed National

Quantum Measurement Testbed Platform would provide training in skills highly relevant to industry users.
• Co-designed projects: Use structured short-term collaboration models with defined milestones, decision gates, and transparent data governance to ensure efficiency and mutual benefit.
• Embedded expertise: Facilitate staff exchanges or placements in partner organisations to transfer skills, build trust, and align research outputs with industry needs.
• Performance tracking: Monitor success through practical metrics such as time to first result, number of collaborations initiated, and reuse of shared training materials.
• Targeted resourcing: Recognise that many facilities already operate effectively under resource constraints—new expectations should be matched with appropriate, sustained investment.
• Implement quality and accreditation frameworks: Where appropriate, implement ISO, GLP, GMP and related accreditation frameworks to support industry projects that require these frameworks.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
1. Strategic alignment and consolidation: Reduce the number of NRIs and align them with universities, CSIRO and ANSTO under a coordinated "national lab" model. Incentivise collaboration rather than competition for industry partnerships, following the US National Labs or Trailblazer-style frameworks? There needs to be some incentives to grow the national infrastructure without adding to the administrative burden – and cost.

2. Researcher-driven translation: Research translation should be led by researchers, with NRIs providing enabling infrastructure rather than taking on the full translation role.

3. Targeted capability enhancements:
• Targeted NCRIS Funding Rounds: To enable NCRIS facilities to develop specialised infrastructure and services that bridge the gap between discovery and market adoption, NCRIS funding rounds dedicated to high-TRL (Technology Readiness Level) research translation and industry collaboration are required.
• Quantum technologies: National facilities for making quantum devices and materials (ANFF) exist as well as for visualising at them (Microscopy Australia). What is needed now is facilities to provide quantum characterisation - to see if the materials and devices perform as expected. This needs a network of cryogenic measurement platforms across Australia providing complementary characterisation capabilities (magnetic fields, frequency operation ranges, etc).
• Supercomputing: Guarantee predictable GPU and data access for biomolecular workloads, with national model registries and managed inference services.
• Health and biobank data: Develop a secure, federated on-shore data platform with routine linkage to clinical, pathology, and imaging datasets.
• Pilot biomanufacturing: Establish modular demonstration-scale facilities bridging discovery to production.
• Advanced instruments: Integrate cryo-EM and synchrotron outputs into national workflows for reproducible analysis and interpretation.
• NMR Infrastructure: To strengthen translation of research into real-world outcomes, Australia's NMR infrastructure needs enhancement on three fronts: baseline capability and reliability, frontier instrumentation, and digital/AI integration, all underpinned by sustainable operations.

Q12. How should research translation be planned for in the development of new NRI?
• Balance research excellence and translation: The primary goal of new NRIs should remain to enable excellent, foundational research. Over-emphasising translation too early risks undermining long-term innovation capacity.
• Integrate translation pathways pragmatically: Where appropriate, design translation considerations from the outset—linking computational design, governed data access, and pilot-scale manufacturing into a coordinated national pipeline.
• Transparency and governance: Publish clear access settings, security and IP frameworks, and measurable performance indicators (e.g. time to first result, cost per result, studies initiated, products reaching pilot manufacture).
• External oversight and alignment: Establish independent user councils—including clinicians, SMEs and major industry partners—to guide priorities, and benchmark national efforts against international best practice in computational and applied sciences.
• With a clearer emphasis on the pipeline and TRLs, rather than looking at assisting many small projects.
• By creating a series of dedicated translational industry centres similar to e.g.Carnegie Mellon - National Robotics Engineering Consortium (NREC).

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Wed, Dec 3, 2025, 10:28 AM Australian Eastern Daylight Time
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Title
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Communication Priorities:
• Improve overall clarity and accessibility in messaging
• Use plain English to ensure understanding across all audiences
• Increase visibility of key information and initiatives
• Adopt meaningful, inclusive language that resonates across diverse industries

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Provide targeted training programs, establish clear pathways for engagement with universities, and implement broader, more visible advertising strategies.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Enhancements should focus on addressing regional disparities in access to research infrastructure. Existing NRIs need improved mechanisms for equitable participation by regional and remote communities—such as distributed digital platforms, localized support hubs, and scalable connectivity solutions. New NRIs should be designed with regional inclusivity at their core, ensuring that researchers outside metropolitan areas have the same opportunities for collaboration, data access, and training as those in major cities

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be planned through inclusive and structured consultation with regional universities, industry partners, local government, health providers, arts communities, and education providers of all levels. This approach ensures diverse

perspectives are incorporated, fosters collaboration across sectors, and aligns infrastructure development with regional needs and priorities. The inclusion of the Indigenous Framework should be considered as well.

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Tue, Dec 2, 2025, 06:04 PM Australian Eastern Daylight Time
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Title
Dr

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Caruana

Organisation
NSW Health Statewide Biobank

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Greater involvement/presence in relevant groups/societies. Greater presence at relevant conferences

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Improved exchanges between organisations

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Tue, Dec 2, 2025, 05:27 PM Australian Eastern Daylight Time
[ID: sbm3973d7488b433b848c2ca]

Title
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Organisation
Australian BioCommons

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Something easy to start with: providing very clear messaging that the RI is accessible to industry/commercial users. Microscopy Australia does this very well with exceptionally clear up-front messages such as "Instruments & experts – open to all" (https://micro.org.au/), and "Microscopy Australia provides researchers and industry with access to the nation's largest range of high-end microscopes, microanalysis tools, and specialists" (https://micro.org.au/academic/access-guide/).

To go with this, making it clear under what circumstance the RI is available for commercial or industry users e.g. access costs/quotas, restrictions on content due to licensing restrictions for commercial use.

Engaging with relevant Peak Industry Bodies and Commerce Groups and through relevant networking forums to highlight capability and outcomes and impact to date from prior industry users (subject to any commercial in confidence agreements). Ideally as a set of RIs grouped around the theme of relevance to the peak body.

Engaging with practitioners in industry and government to understand their needs and to identify future collaborative work. We have examples of successes as part of our community and project consultations e.g. DAFF were part of a 'genomics in biosecurity' consultation led by members of our team. That engagement has reaped large returns, with DAFF now routinely using BioCommons and QCIF infrastructures in quarantine screening.

Including in use agreements clauses to the effect that future followups and comms highlighting use successes *may* be undertaken for this purpose (and explaining this at the point of entry).

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Seek advice and understand requirements from relevant Peak Industry Bodies and Commerce Groups and their members.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Coordinated effort and assistance across NRIs to achieve relevant accreditation (e.g. NATA, ISO) to assure industry users the infrastructure is fit for purpose.

For RIs where all access is currently fully subsided, advice/tools/frameworks for moving to a fee-for-service cost-recovery model, including (a) producing appropriate T&Cs, and (b) accepting payment.

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Tue, Dec 2, 2025, 12:29 PM Australian Eastern Daylight Time
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Title
Ms

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Organisation
Stawell Underground Physics Laboratory (SUPL)

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
SUPL offers unique value to industry and defence sectors requiring low-interference testing environments for quantum technologies, alongside position, navigation, and timing (PNT) technologies.
These capabilities directly support the development of distributed national testbeds connecting different sensing and timing modalities — a concept currently being advanced in discussions across the national PNT and quantum technology ecosystem.
This type of testbed integration enables validation of devices and systems under real-world, interference-controlled conditions and directly contributes to sovereign technology resilience.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
SUPL enables industry co-development and testing of:
• Materials screening in low background environment to provide precision measurement;
• Quantum technologies;
• Environmental and safety monitoring systems for underground mining and defence applications.

These collaborations can be expanded through targeted NCRIS translation funding supporting prototype validation in controlled underground environments.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

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Existing NCRIS facilities (ANSTO, CSIRO, AuScope) would benefit from a linked national low-radiation testing node at SUPL to support calibration, detector validation, and material screening under ultra-low-background conditions for precision measurement.

NRI could be strengthened through integration with secure test environments for resilient PNT and quantum measurement systems. SUPL's infrastructure provides the isolation necessary for this function, supporting calibration, validation, and environmental stress-testing for devices contributing to national timing and navigation assurance frameworks.

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Tue, Dec 2, 2025, 11:14 AM Australian Eastern Daylight Time
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Title
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Australian Council of Deans of Science

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
ACDS urges the establishment of a:
• National "Front Door" for Industry
• A coordinated access pathway that:
- Provides a single point of entry
- Matches industry needs to NRI capabilities
- Reduces administrative burden
- Supports SMEs in navigating complex national systems
Improved national storytelling and communication about NRI capabilities would further enhance industry engagement.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Key mechanisms include:
• Standardised national approaches to costing, contracting, IP sharing/ownership and licensing, and data governance.
• Capability brokers within NRI facilities to scope industry needs and connect partners.
• Mobility and placement programs, including PhD internships (including at international facilities, where relevant).
• Closer alignment with university-based training to develop translational capability.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Important enhancements include:
• Strengthened national data and AI infrastructure.

• Clearer visibility and discovery tools for industry, together with relevant training opportunities for industry-based practitioners.
• More consistent translation pathways across facilities.
• Continued investment in university-level infrastructure to ensure people can develop skills and experience locally and compete effectively at the national level. Such investment also supports workforce development and retention.

Q12. How should research translation be planned for in the development of new NRI?
Translation should be embedded from the outset. Essential components include:
• Clear industry access pathways built into governance and operations.
• Transparent costing and engagement models.
• Embedded mobility programs for students and staff.
• Coordination with university training pathways to maintain capability pipelines.
Translation readiness should be a core design requirement, not an add-on.

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Mon, Dec 1, 2025, 06:01 PM Australian Eastern Daylight Time
[ID: sbm396ed0576b16ce2ba1504]

Title
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RNA Innovation Foundry at The University of Western Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Having NRI capabilities reach potential industry users requires deliberate, sustained engagement that goes beyond normal academic outputs. Facilities must actively participate in the industry more broadly by attending sector-specific conferences, trade shows, and networking events where potential users gather. At the RNA Innovation Foundry, we have proactively reached out to biotech companies in our city to arrange discussions and regularly visit research institutions to explain our capabilities directly. We also maintain a very active LinkedIn presence that highlights our team's diverse backgrounds and expertise, showcases our equipment, and shares stories of visiting researchers, hopefully building familiarity and trust with users. Employing dedicated staff with industry networks and sector knowledge is invaluable for building authentic relationships and understanding the specific challenges industry partners face. Collaboration with technology transfer offices, incubators, and industry intermediaries can also extend our reach and credibility within commercial sectors.
Building communities of practice through events and strategic communication amplifies our impact. At the RNA Innovation Foundry, we have organised symposia such as our 'RNA Exchange' event, which attracted over 100 delegates and created valuable networking opportunities between researchers and potential industry partners. Regular outreach through targeted newsletters, maintaining an active digital presence, and issuing calls for projects help keep our capabilities visible to relevant audiences. Innovative mechanisms like the voucher programs can lower barriers for companies exploring infrastructure services for the first time. Showcasing success stories and tangible impact from previous partnerships demonstrates real-world value. Ultimately, none of these efforts succeed without adequate resourcing. Translation and industry engagement require dedicated funding, experienced staff, and institutional support to maintain quality management systems and conduct sustained outreach. Recognising these activities as core to our

mission, rather than peripheral extras, is essential for realising the full innovation potential of Australia's research infrastructure.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Building productive research-industry collaborations requires NRI facilities to operate with industry-relevant capabilities and expertise. Facilities need sufficient capacity to accommodate industry projects alongside academic work, as industry partnerships typically involve different timelines, quality expectations, and resource requirements. Recruiting and retaining staff with direct industry experience is essential. These people understand commercial realities, regulatory requirements, and the practical challenges of translating research into applications. Their expertise bridges the gap between academic innovation and commercial viability, helping researchers navigate intellectual property, quality standards, and market requirements.

Operating to industry-grade quality standards is non-negotiable. Data and materials must meet the reliability and traceability requirements for regulatory submissions and commercial development, not just academic publication. Facilities must actively support the transition from research concept to commercial application, bridging the "Valley of Death" by building internal translational expertise, supporting pilot projects, and creating a culture that values both fundamental discovery and real-world impact. This all needs long-term investment in people, professional development, equipment, and quality systems. While resource-intensive, these investments will help facilities deliver services that create real economic and social benefit. Without adequate long-term support, facilities cannot build and maintain the high-level capabilities that genuine industry collaborations need.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

We need to address critical gaps in our innovation pipeline, particularly around operational capacity and infrastructure maturity. Australia possesses world-class medical research capabilities and a strong foundation for therapeutic development, yet we risk missing significant opportunities if infrastructure cannot scale to meet demand. In the area of complex and advanced therapeutics, such as mRNA, there is a huge opportunity in Australia. Whilst the US is creating uncertainty within its own borders about this technology, other countries recognise the value, flexibility and huge potential of mRNA and are investing heavily. Particularly in the APAC region, we have an opportunity to be part of this wave. But a big constraint is operational expenditure. It is no use having expensive equipment if we cannot fund the ongoing operational costs, quality systems, and specialised staff required to run translation-focused infrastructure at industry-relevant standards. The cost of activities has increased, driven by greater needs for quality materials, regulatory compliance, and data integrity, yet funding models have not kept pace.

Beyond enhanced Opex funding, we need strategic investment in capabilities that address specific bottlenecks in the translation pathway. At the RNA Innovation Foundry, we see particular needs around scale-up and manufacturing capabilities that bridge laboratory research and clinical-grade production. Facilities providing GMP-compliant or GMP-adjacent services, analytical characterisation at industry standards, and support for regulatory submissions would significantly strengthen Australia's capacity to advance discoveries toward clinical and commercial application. Additionally, creating coordinated networks between complementary facilities would help researchers navigate the complex journey from concept to product more efficiently. Rather than building entirely new

infrastructure in all cases, strategically enhancing existing facilities with proven track records and filling identified gaps in the pipeline represents an efficient path forward for maximising Australia's translation potential.

Q12. How should research translation be planned for in the development of new NRI?
Research translation needs to be embedded in national research infrastructure from the outset, not treated as an afterthought. New NRI investment should include an explicit translational strategy identifying potential pathways from research outputs to real-world applications, critical transition points, and how the facility will support users along this journey. This requires thinking beyond buying and installing equipment to think about the operations, expertise, and partnerships needed to move discoveries toward impact. We also need to think about what is genuine demand, by assessing current and future needs from both research and industry perspectives. Infrastructure should provide evidence-based capability gaps rather than assumptions.

Successful translation rarely follows a linear path, and infrastructure planning must account for this. Many promising pilot projects end when initial funding ends, not because of a lack of scientific merit or progress. Facilities need mechanisms for follow-up support that allow projects to progress through critical validation stages without stopping, like ringfenced continuation funding or flexible access models. Planning should also help facilities build industry-relevant quality standards, data management systems, and regulatory expertise from day one. Retrofitting these capabilities after infrastructure is operational is more difficult and expensive than incorporating them into initial design and funding models. By explicitly planning for translation throughout the infrastructure lifecycle, we maximise the likelihood that research investments deliver real benefits to society.

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Mon, Dec 1, 2025, 05:59 PM Australian Eastern Daylight Time
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Title
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Organisation
James Cook University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Industry seeks solutions that are prompt, efficient and cost-effective, and the NRI system should be designed and promoted with these expectations in mind. Universities that actively engage with industry, including those in regional and remote areas, should be supported and leveraged as ambassadors for national research infrastructure, helping industry partners navigate available capabilities and understand how to access them.

To increase industry awareness and uptake, the NRI should:

• Provide dedicated funding to support targeted outreach activities including presentations, showcases and demonstrations at key industry events as well as funding to host industry engagement days at NRI facilities.
• Develop and promote clear case studies that demonstrate tangible industry benefits arising from the use of national infrastructure, including examples relevant to northern Australia.
• Strengthen and invest in regional innovation networks that connect local businesses, Traditional Owners, regional councils and universities, ensuring that NRI capabilities are visible and accessible outside metropolitan centres.
• Establish SME-specific engagement strategies tailored to the realities of remote and regional economies, including simplified access pathways, trial opportunities, and outreach activities designed for smaller firms with limited R&D capacity.
Together, these measures would support broader and more equitable industry participation in the NRI system and ensure that regional and northern industries can fully benefit from national research capabilities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

To build strong and productive collaboration between NRI facilities and industry, it is essential that the NRI workforce understands and actively supports the distinct needs, timelines and operating contexts of industry partners.

Industry engagement capability should be recognised as a specialist skillset, with dedicated roles or teams that bring experience in commercial environments, regulatory requirements and partnership development.

To improve industry know-how and collaboration, the NRI should:

• Develop a scheme that enables industry users—particularly SMEs—to trial or sample infrastructure at low financial risk, helping them test feasibility before committing to larger-scale engagement.
• Allow co-funding and shared ownership models, including joint sponsorship with industry and research organisations for NRI investment
• Implement shared IP frameworks that reduce complexity, accelerate translation and give industry clarity and confidence when collaborating with NRI facilities.
• Embed awareness of Industry Readiness Levels (IRL) and Technology Readiness Levels (TRL) into NRI training and operational practices, ensuring workforce capability to support projects at different stages of development and to match infrastructure access to industry needs.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To strengthen national research translation capability, JCU recommends targeted enhancements to existing NCRIS facilities and the development of new infrastructure that supports translation in regions critical to Australia's future prosperity, sustainability, and resilience. The following opportunities align with the Issues Paper and leverage JCU's deep research strengths and geographic positioning in Northern Australia:

1. Enhanced IMOS capability for tropical cyclones, marine heatwaves and reef health

Extending IMOS observational capacity in northern Australian waters would significantly improve translation into industry, government and community practice. High-resolution data on cyclones, marine heatwaves, coral bleaching, and coastal processes underpins decision-making for reef management, fisheries, aquaculture, coastal infrastructure, and disaster resilience. JCU's leadership in tropical marine and climate science positions it ideally to support and translate these enhancements.

2. Expanded TERN infrastructure across northern savanna and rainforest ecosystems

Northern Australia remains under-instrumented in national environmental monitoring. Enhanced TERN sites in the tropics would accelerate translation of ecological, carbon, and biodiversity research into conservation policy, carbon markets, Indigenous-led fire management, agricultural systems, and environmental approvals. JCU's globally recognised expertise in rainforest ecology, savanna systems and tropical biodiversity ensures strong national benefit from these upgrades.

3. A national network of regional social observatories

Regional and remote Australia lack integrated social-environmental data systems that can inform policy and service delivery. Establishing social observatories—linking health, labour markets, housing, digital inclusion, climate impacts and community resilience—would enable rapid translation of research into government policy, industry planning, and community programs. JCU's deep partnerships with northern communities, health providers and regional organisations make it an ideal hub for this national capability.

4. New testbeds for clean energy microgrids and critical minerals supply chains in Northern Australia

Northern Australia is central to the clean energy transition, yet lacks dedicated translational infrastructure for microgrids, hybrid renewable systems, and critical minerals processing. Testbeds in real-world northern environments would enable industry, government and communities to co-develop deployable, place-appropriate energy and resource solutions. These facilities would accelerate translation of engineering, environmental, social and economic research into commercial and community outcomes.

5. Secure storage and compute capacity for Indigenous, health and social datasets through extensions to the ARDC program

Translation of research involving Indigenous communities, health systems and regional populations requires secure, sovereign, culturally governed data environments. Enhancing NRI compute to support CARE principles, Indigenous data governance, privacy protection and ethical AI would unlock translational opportunities in Closing the Gap, health workforce planning, social systems modelling, and community-led decision-making. JCU's long-standing partnerships with Indigenous and regional communities make this a nationally impactful enhancement.

Q12. How should research translation be planned for in the development of new NRI?
Translation should be explicitly recognised and valued as a core objective of NRI facilities. One practical mechanism is to allocate a portion of NRI staff time—such as 0.2 FTE—to conduct research projects linked to the infrastructure they support, similar to models used in leading technology companies. This deepens staff expertise, accelerates innovation, and strengthens engagement with industry and academic partners. Coupled with dedicated translation funding and industry access pathways, this approach would build a more dynamic and translationally focused NRI system.

To ensure that research translation is valued, new NRI should include:

• Funding for translation and capability-building
• Industry access pathways that allow for
o Trial at low financial risk
o Dedicated and confidential areas of the infrastructure that are not shared with universities or other industry competitors

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Mon, Dec 1, 2025, 05:26 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Agriculture Victoria adopts a place-based approach to ensure that research facilities and capabilities align with key industry where it is needed most. Learnings could be taken from the Agriculture Victoria model whereby delivery occurs via a R&I ecosystem comprising:
• AgriBio, located in Bundoora, Victoria serves as the 'hub' of Agriculture Victoria's research and innovation ecosystem. It is Australia's first integrated agricultural systems biology research centre and one of Australia's premier state-of-the-art Agri- bioscience facilities. AgriBio is a joint initiative of the Victorian Government, through Agriculture Victoria, and La Trobe University.
· Ellinbank - R&I for the dairy industry, including progressing to be the world's first grazing-based carbon neutral dairy by 2026
· Horsham – R&I for the grains industry (grains, oilseeds and pulses) including new pulse variety breeding, crop agronomy, soil sciences and nutrient management, crop protection and biosecurity
· Hamilton – R&I in forage innovations for dairy and other livestock industries, cropping in the high rainfall zone, red meat productivity
· Tatura – R&I focussing on temperate horticulture including fruit quality sensing and improvement, economic productivity, and increasing precision and mechanisation and robotics for pears, apples, and stone fruits
· Mildura – R&I for the horticulture industry particularly almonds and table grapes, including in integrated pest and disease management, new planting systems, nitrogen and irrigation management and the use of AgTech.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Agriculture Victoria's co-investment model supports productive research-industry collaborations. Following this model, research is co-designed, co-invested, and co-delivered through multidisciplinary collaborations that accelerate industry impact and ensure Victoria's agricultural industries remain competitive and resilient. This approach:
- Delivers outcomes to recover, grow, modernize, protect, and promote agriculture industries.
- Supports Victorian and Australian agriculture to position for and respond to climate change.
- Strengthens biosecurity to protect food and jobs.
- Delivers smarter and more sustainable farms through science, innovation, and digital agriculture.

Clear articulation and shared understanding of government and industry investment priorities inform and leads development of R&I initiatives and projects, as well as providing the foundation and required agility to respond to competitive processes (e.g. project calls, tenders, commercial research) by co-investors in the development and submission of project applications. A variety of diverse research partners are critical to funding R&I that supports addressing the economic, environmental and other challenges faced.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Opportunities to improve research translation capability include, but may not be limited to:
- Partnership/Co-design: applying co-design model(s) to support collaborations between researchers and end-users to ensure research/infrastructure are as fit-for-purpose as possible
- Funding: more funding opportunities that support the translation of research to a product through commercialisation or other pathways, such as translation of evidence into advice, policy etc.
- Capacity: support capability and capability of researchers through clear investment to provide both the knowledge and infrastructure required

Q12. How should research translation be planned for in the development of new NRI?
The Roadmap's focus on translation is mirrored in Agriculture Victoria's commercialisation pathway through Agriculture Victoria Services Pty Ltd (AVS). AVS assists in the translation of AVR's research into market-ready products and services, which benefit the economy, environment and society. By working with AVR from research strategy to product delivery to market, AVS helps deliver impact and transform scientific advancements into scalable, investible solutions tailored to industry needs while protecting the Victorian government's intellectual property position.

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Mon, Dec 1, 2025, 01:21 PM Australian Eastern Daylight Time
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities can enhance visibility and accessibility through a coordinated, multi-pronged strategy that combines strong online presence, targeted engagement, and dedicated workforce support. Up-to-date websites, social media and domain-specific communication channels—supported by nationally coordinated, centralised capability registries and discovery portals—enable potential users to identify facilities based on research needs rather than specific instruments. Approaches of this kind are most effective when developed at a national NCRIS level, rather than requiring each facility to build and maintain its own bespoke system. This avoids fragmentation, ensures consistent messaging, and provides a single, trusted entry point for industry users. Streamlined access processes, transparent IP arrangements, and industry-focused resources (including voucher schemes or small access grants for SMEs) further lower barriers to engagement. Demonstration projects, workshops, expos, open days and conference presentations can highlight practical applications and translational value, while flexible business models and responsive contracting help meet industry expectations.

Active industry engagement can be strengthened through the development of robust industry engagement plans, business development and liaison roles, and by equipping facility staff to communicate effectively with industry partners about timelines, IP, data handling, analytics and return on investment. National coordination through internships, secondments, exchange programs and regular visits to key organisations supports networking, knowledge exchange and uptake of capabilities across both metropolitan and regional settings. Targeted collaboration with industry clusters and peak bodies (e.g. AusBiotech, BioMelbourne Network, Materials Australia, etc), government agencies and research regulators ensures alignment with sector priorities and promotes translational opportunities across diverse fields, including digital humanities, engineering, agriculture and medical research. Embedding awareness and accessibility KPIs within facility

leadership roles further ensures a sustained, strategic focus on promoting NRI capabilities nationwide.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

NRI facilities can strengthen research–industry collaborations by cultivating a workforce with strong industry engagement capabilities, and the ability to translate research infrastructure into practical, sector-relevant applications. This includes recruiting staff with industry experience, embedding industry liaison officers or translation fellows, and creating co-funded or co-located NRI–industry positions.

The development of industry engagement plans that identify the target market, demand, pricing (taking other related facilities & services into consideration), access model (fee for service, independent access), services (project/service scoping, workshops, embedded researcher, grant development advice), promotion (how industry will be engaged), governance (how industry will be represented on governance or advisory group/s), and evaluation (how industry user feedback will be gathered & acted on) is also essential. A potential program to pilot could be a Nationally-managed pool of Research Infrastructure-literate Business Development experts who could be embedded for a period of months to establish the business development and translation capabilities. This could be introduced in new facilities to front-end the business development function and establish engagement processes, or introduced into existing facilities to uplift their capabilities, rather than requiring permanently in-built, high-cost business development managers.

Ensuring that industry perspectives are represented in governance and strategic planning helps align capabilities with real-world needs. Existing models—such as Quantum Australia and the Australian National Fabrication Facility, which have introduced dedicated staff to connect scientists, engineers and industry partners—demonstrate the value of translation-focused roles. Importantly, this type of expertise is likely to be most effective when coordinated at a national NRI/NCRIS level, rather than developed piecemeal by individual capabilities, but this requires sustained investment in people and resources.

Staff should be trained to understand commercial timelines and expectations, intellectual property, prototyping pathways, return-on-investment considerations and effective communication with industry users. Repeated engagement with stakeholders, targeted networking, and cross-facility collaboration help deepen relationships and ensure expertise is shared across the NRI network.

Structural and funding mechanisms are equally important. Incorporating R&D and innovation programs within facilities supports ongoing capability development, while flexible access models, early-stage funding support and standardised IP frameworks lower barriers to industry participation. Nationally coordinated secondments, exchange programs, alumni networks and recognition schemes can help capture and disseminate research–industry expertise and provide the workforce with opportunities to develop trusted, long-term relationships. A stable, long-term funding landscape that recognises industry engagement and non-traditional metrics—alongside traditional academic outputs—enables staff to commit the time and resources needed to build meaningful, mutually beneficial collaborations.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Improving research translation requires coordinated uplift across workforce, infrastructure and funding. Both existing NRIs and new capabilities must integrate translation-focused design and support.

A core workforce with business and translation knowledge is essential—as noted above balancing short-term expertise to front-end business development functions and overarching uplift of the workforce — to promote industry connections and help interpret commercial needs. This should be complemented by broader workforce uplift and a robust engagement plan so staff understand industry priorities, timelines and expectations, and have the time and incentives to engage in translation activity. Facilities must be easy for industry to access, with visible capabilities, standardised access procedures, secure data handling, and streamlined IP and contract management. Reliability, reproducibility and supply-chain resilience (including complementary facilities that provide redundancy) are increasingly important. Accreditation pathways (ISO/NATA) and alignment with GLP/GMP standards can strengthen translation by supporting progression across TRL and MRL stages.

Many small-to-medium enterprises (SMEs) have a greater need to access equipment and expertise that they don't have in-house. In addition to needing this access, they are less likely to have the expertise in project management, grant development etc. A national program to help NRI facilities engage with SME's, prioritising sector/s based on national priorities, such as NRF priorities, engaging with SMEs in these sector/s about the equipment and expertise they'd like to access, and then supporting NRI facilities to meet these needs could strengthen visibility, utilisation and translation capability. This is a strategic approach that would see the government invest in capability building aligned with national objectives and SME demand.

Early-stage support such as seed grants and technology vouchers can reduce risk for SMEs and first-time users. Nationally coordinated R&D pipelines and cross-facility programs would further strengthen translation but require a secure funding environment to minimise unnecessary competition.

A secure and stable funding environment is essential to minimise unnecessary competition and ensure long-term planning. Timely, coordinated and efficient investment in major infrastructure is also critical. For example, within the National Imaging Facility, access to the latest FDA/TGA-approved clinical imaging technologies is essential for clinical trials. However, Australia's only two 7T ultra-high-field MRI capabilities are more than 10 years old, yet uncertainty in co-investment processes and funding timelines places essential replacement and upgrade at risk and jeopardises large agreements. Replacement is essential to maintain national capability in neuroscience, clinical translation, and medical innovation.

Similar coordination is needed for complex, multi-instrument facilities—such as those supporting quantum device research—where national planning is required to assemble costly equipment and enable both fundamental and translational work.
As highlighted in the Issues Paper, there is an urgent need for a national network of Quantum Device Testbed Facilities. While ANFF provides fabrication capability, quantum measurement infrastructure remains dispersed and lacks sustained support, despite being vital for Australia's growing quantum industry. Dedicated NRI investment is needed to secure equipment, expertise and operational stability in this emerging area.

Q12. How should research translation be planned for in the development of new NRI?

Research translation should be embedded from the outset in the design of new NRI facilities, with business development capability, translation objectives and end-user engagement built directly into governance, workforce planning and operational models. This includes establishing clear definitions, performance metrics and value streams that recognise the continuum from foundational research to potential applications, while acknowledging that translation outcomes may take many years to materialise and that discovery research remains an essential NRI function.

New facilities should develop robust industry engagement plans, incorporating short term and longer term business development expertise as required, planned and costed outreach activities, and governance structures that include industry representation. Mechanisms for shared IP, co-investment, and knowledge transfer should be established early, providing clarity and reducing friction for future collaborations. Early identification of end-user needs and potential applications, co-design processes, and structured engagement with industry, government and community partners help ensure new infrastructure is aligned with real-world pathways.

Existing NRIs should be uplifted through similar support. This may include incentives tied to activity-based KPIs, better coordination across the NRI network, and mapping of current communication, engagement and translation practices to identify exemplars and promote consistency in reporting, usage tracking and best-practice citation. Cross-facility alignment of capabilities—supported by shared communication channels, community showcases, or other coordinated outreach initiatives—would help cultivate a network-wide culture of translation and industry engagement.

Ultimately, planning for research translation requires sustained, long-term operational support, enabling NRI facilities to build trusted relationships, develop internal capability, and nurture a translation pipeline that spans multiple years and multiple partners.

2026 National Research Infrastructure (NRI) Roadmap Issues Paper Consultation
Issues Paper Consultation Survey
Department of Education

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Mon, Dec 1, 2025, 12:23 PM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities should adopt a proactive engagement model that provides clear industry access pathways, simple translation materials and sector-specific demonstrations. Partnerships with regional intermediaries like the CNA ensure NRI capabilities are contextualised and communicated in ways relevant to local industries across northern and regional Australia. Coordinated national campaigns, cross-facility showcases and digital engagement platforms can broaden visibility and help industry users understand the practical value of collaborating with NRI providers.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Facilities should invest in dedicated translation capability, including roles focused on partnership development, commercial readiness and cross-sector brokerage. Working with regional intermediaries such as the CNA helps align NRI offerings with local industry needs and reduces access barriers. Incentives such as co-investment models, shared IP frameworks and streamlined contracting can create a more supportive environment for businesses particularly SMEs to engage in long-term collaboration and innovation.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Translation will improve through enhancements that strengthen industry pathways, simplify access and support interdisciplinary integration. Existing NRI facilities need clearer entry points for industry, stronger brokerage capability and data systems that interoperate to support decision-making. New place-based infrastructures, including distributed hubs like the CNA can connect national capability to regional priorities, enabling practical demonstrations and community-informed research partnerships.

Integrated decision-support platforms combining environmental, economic, social and cultural datasets will ensure that research outputs are accessible, actionable and aligned with real-world planning and investment needs.

Q12. How should research translation be planned for in the development of new NRI?
Translation should be designed from the outset with dedicated roles, resources and governance mechanisms for industry and community engagement. Access frameworks must be co-designed with regional users to ensure relevance and clarity, with alignment to national reform agendas including digital, AI and R&D system reviews. New NRI should incorporate place-based mechanisms particularly via regional partners such as the CAN to ensure capability is connected to supply chains, workforce pipelines and regional economic priorities. Translation should be supported by measurable outcomes, interoperable data systems and decision-support tools that convert research insights into commercial and policy impact.

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Mon, Dec 1, 2025, 12:19 PM Australian Eastern Daylight Time
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Enable engagement through a specific access program that funds early design proof-of-concepts between specific industry and NRI partne s.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Employ people from industry backgrounds to provide linkage with NRI facilities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
This varies broadly across facilities - some are good at industry engagement some are not. Offer priority funding to the ones that are.

Q12. How should research translation be planned for in the development of new NRI?
By relaxation of the "national significance" test and by allow alternate models of funding to allow NRI's to become self supporting (user pays, with reserved capacity for academic researchers).

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Mon, Dec 1, 2025, 11:53 AM Australian Eastern Daylight Time
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In what capacity are you responding?
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Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Uneven visibility of NRI facilities is a major impediment to reaching their full potential. To be visible and regarded as a preferred partner, an individual NRI must:
· Address an unmet need from the sector.
· Communicate their offerings effectively across multiple channels (face-to-face (F2F) forums, online).
· Attend and present at academic and industry events (e.g. Tech Council, BioMelbourne Network, AusBiotech).
· Deliver outstanding service/data/capabilities.
· Have flexible pricing arrangements for users. For example, WEHI's National Drug Discovery Centre (NDDC) has a tiered pricing model and Therapeutic Innovation Australia (TIA) has a voucher system that have both reduced hurdles for access.
· Have flexible IP arrangements for users (when applicable).

We think there are also considerable gains to be made from promoting linked pipelines across a network of NRIs. A network of modular providers will always be more visible than a sole provider, and resources could be pooled to present with more gravitas at industry events like AusBiotech. NRI facilities should also refer potential clients to each other, sending users to the right place even if it is not their own rather than trying to fit projects into their pipeline. This collaborative approach taken at the NDDC and other infrastructure in the drug discovery community is a good example of how one NRI can cross-promote projects of other NRIs and ultimately benefit the whole sector, as is discussed in Question 13.

The sector could consider a centralised website to promote cross-disciplinary interactions among NRIs and increase their collective visibility and accessibility to the broader scientific community. Currently, each facility promotes access to their services

independently, but it is not uncommon to find that an NRI facility with significant capabilities is unknown by potential users in a given field. A centralised website or online platform would also allow NRI facilities to share case studies that demonstrate successful research/industry collaboration models, as examples of real outputs are often the most persuasive form of advertising. It would also allow sharing of resources, toolkits, and guidance on best practices across NRIs and users.

However, F2F interaction remains one of the most effective ways to promote NRI facilities to potential users. Direct engagement helps establish trust, build personal relationships, and create a stronger impression than digital outreach alone. A proactive engagement strategy would include trade stands, sponsoring or presentations at conferences, hosting facility tours, running training workshops and roadshows.

Adoption of codes such as the EU-Life statement on "Acknowledging and citing core facilities" should be encouraged (Kivinen K, et al., 2022, EMBO Reports, doi:10.15252/embr.202255734). This code advocates for recognition of technical experts in publication acknowledgements sections and, where appropriate, co-authorship. This would enable NRI staff to directly demonstrate the considerable impact of their work within a more traditional academic framework.

Regardless of the channel used for dissemination, it is absolutely essential that the success of promotion of NRI infrastructure is tracked with metrics, such as surveys where possible, and that these communications specifically target potential international partners.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

During the creation or identification of NRIs, potential industry partners in Australia and internationally must be meaningfully consulted to define their needs. The design of NRI facilities must be informed by industry; if industry's needs are not gathered or ignored, NRI facilities will not be used by industry. Notably, NRI/industry relationships will take different forms, ranging from contracted service provision to collaborative IP development.

NRIs need to be supported to build relationships and trust with industry partners, which inevitably takes time, but it can be accelerated by:
• Value propositions that are well-aligned with industry needs,
• Well-resourced technology transfer offices that can expedite contracts,
• Established quality management and data storage systems that are compatible with industry needs,
• Co-funding arrangements, such as NCRIS, that derisk and incentivise industry participation,
• Internships and placements (NRI staff/students in industry and vice versa) that support knowledge exchange and bottom-up relationship development.
It is crucial to design internal structures and processes that reduce friction with partners, and one way to achieve this is to embed experts (translational scientists, application specialists, and business development officers) that bridge both worlds with scientific expertise and commercial priorities.

Industry partners can also differ substantially in their scale and liquidity, ranging from small start-ups to multi-national pharma. For some NRI facilities, a significant challenge is effective calibration of the high cost-multipliers that may be charged to industry partners.

It is reasonable for NRIs to expect industry partners to cover the direct and indirect costs of work, and it is reasonable that NRIs recover beyond full-cost of the work when dealing with a for-profit enterprise that stands to financially gain from the work. However, if charges are set too high, it will stifle investment in early, higher risk work performed by small/medium scale enterprises (SMEs), which is the precise segment of the biotech industry that Australia needs to grow. Efforts to reduce cost-multipliers, adjust IP agreements, provide more flexibility, or provide more detailed justification for costings would improve industry buy-in. Some institutions do this well, adapting to partner size and resources; others less well. For example, the NDDC endeavours to make pricing very accessible to smaller players in the private sector to drive longer term growth of the mid-tier biotech industry, who will be future clients, as is discussed in Question 13.

However, NRI facilities should be more than service providers, as they have the potential to drive significant innovation within local industry and facilities need to evolve with advances in technology. Australia could build a globally unique research and development (R&D) ecosystem, where NRI facilities provide critical industry-standard and cutting-edge expertise, freeing industry from the need to invest in these internally. This would be incredibly enabling for Australian biotech SMEs to build much-needed scale and capacity, and develop true partnerships between facilities and industry.

The ability of NRI facilities to build know-how depends on both increasing capabilities and improving staff retention and recruitment. Solutions for this are discussed under Question 8.

Finally, NRI facilities may generate their own IP that should be commercialised. Entrepreneurial activities of NRI staff should therefore be support through professional development, access to innovation incubators and mentorship, and should be appropriately incentivised.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
There needs to be more long-termism in our approach to funding NRI facilities. Facilities should exhibit sustainability, but the definition of sustainability should be consistent with the overall purpose of the NRI, which is to build sector capacity and innovation. A model that relies on solely on immediate cost-recovery is limiting; models that instead aim to build virtuous cycles of innovation should be the goal. In particular, the basic operational costs of facilities need to be covered to ensure that internal and external researchers and industry partners can use facilities at accessible prices.

Of course, if funders adopt more financial risk, it becomes even more essential that there are transparent processes of selection and review for funding. In particular, a clearly defined process for periodic review of each NRI is important. However, critical national facilities like NDDC, MedChem Australia, the Australian Synchrotron and others that provide a unique enabling capacity in the region should be established with the aim that, if they can demonstrate positive outcomes, there is a reasonable expectation of continued funding.

When evaluating NRI infrastructure for its ability to support translation, the following factors should be considered:

• Embedded expertise in commercialisation: NRI staff need to have ongoing professional development and access to resources to ensure that they can identify and support new innovation with translational potential.
• Articulation of value chain positioning: It is essential that funding programs like the NRI provide balanced support for all technology readiness levels (TRLs), as truly transformative technology begins as a long cycle of fundamental research followed by hard won progression through the value chain. However, it is worth noting that there is a current gap in infrastructure that supports TRL 3-5 - known as the "valley of death"- which is where many R&D projects stall before reaching clinical trials or manufacturing. The NDDC is driving to fill this precise niche, as described in Question 13.
• Demonstration of cross-institutional/sector collaboration: It is essential that NRIs provide access to infrastructure that is of broad utility and pricing models enable access by internal and external researchers and industry partners ranging from small/medium enterprises to multinationals. This will help build a culture of working alongside industry.
• Artificial Intelligence (AI)-enabled innovation: To maximise value, NRIs should prioritise leveraging existing datasets and fostering collaboration between AI specialists and domain experts. Drug discovery is a prime example of where AI/machine learning (ML) technologies are already having a significant impact (i.e. AlphaFold) and will continue to improve drug design.

Q12. How should research translation be planned for in the development of new NRI?
To support effective research translation, investment in new and enhanced NRI must be directed to bridge gaps and relieve bottlenecks across all the TRLs and not just the late-stage activities. Australia's ability to convert scientific breakthroughs into new medicines and other commercialisable products depends on integrated capabilities that accelerate progression from TRL1 to TRL5 and beyond.

When deciding on specific areas for investment, we should identify areas that are of strategic importance to Australia, and infrastructure that can create synergies with other sovereign NRI facilities or institutions. The development of novel drugs, both small molecule and biologics, is a good example. It is critical for Australia's pandemic resilience and a wise investment in terms of sovereign innovation and wealth creation to have drug discovery platforms, such as the NDDC, easily available to the research community and industry, as described in Question 13. The NDDC can also leverage resources such as the Australian Synchrotron and MedChem Australia to structurally define new mechanisms of action and use this knowledge to further refine drug activity, to increase the medical and financial value of new medicines. This kind of synergy should be planned for and incentivised.

Given that many NRI facilities will be handling huge amounts of data, that may be patient-derived, it is critical that planning for new technologies at NRIs start with the end in mind. Resources such as AI/ML, quantum computing and secure servers need to be integrated right from the start.

89

Mon, Dec 1, 2025, 11:30 AM Australian Eastern Daylight Time
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
We recommend that the National Partnership for Climate Projections' HPCD statement be considered as input into this question:
https://www.dcceew.gov.au/sites/default/files/documents/hpcd-storage-infrastructure-needs-australian-climate-projections-science.pdf

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
We recommend that the National Partnership for Climate Projections' HPCD statement be considered as input into this question:
https://www.dcceew.gov.au/sites/default/files/documents/hpcd-storage-infrastructure-needs-australian-climate-projections-science.pdf

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Exisiting NRIs require significant HPCD uplift to improve access and integration of data which will help improve research translation.

88

Mon, Dec 1, 2025, 09:48 AM Australian Eastern Daylight Time
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In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
The current landscape of NRI remains fragmented and difficult to navigate – particularly for small and medium enterprises (SMEs) that lack the networks or resources to identify and access suitable capabilities. This causes the underutilisation of research infrastructure (ATSE 2025). A single accessible database of research infrastructure can support users, including industry, to easily find infrastructure to support their aims. This database should include information about all pilot plants, laboratories, manufacturing facilities, digital infrastructure and other infrastructure resources. Ideally, this information would allow users to identify whether a particular NRI meets their needs, while also demonstrating previous outcomes from that infrastructure (where possible). Systems already exist that could manage such a register of national research infrastructure, with institution level databases already acting as valuable resources for both industry and research. These institution level databases can potentially act as a starting point for a national database. This could be further supported by regular outreach programs to universities, industry and not-for-profits – industry roundtables, workshops, networking events and showcases could all be used to promote NRI and support potential users to find appropriate infrastructure.

References:
Boosting Australia's Innovation report: https://atse.org.au/what-we-do/strategic-advice/boosting-australias-innovation/

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Getting the most out of NRI requires more than infrastructure. One major barrier to translating innovation identified in ATSE's Boosting Australia's Innovation report is a lack of intellectual property (IP) support. There are often challenges associated with managing IP ownership arising from research, especially where collaborations between universities

and industry researchers are involved. Investing in talent development programs that support NRI staff to help manage these IP issues can help to build a network of NRI that supports researchers to navigate complex IP issues and unlock greater commercialisation opportunities based on Australian research.

Links:
Boosting Australia's Innovation report: https://atse.org.au/what-we-do/strategic-advice/boosting-australias-innovation/

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Research translation is dependent on research data and findings being widely available and accessible. The Office of the Chief Scientist has proposed a public access model for research that would see all Australian research be made public, helping to disseminate research findings (including negative results) and allowing industry better access to cutting edge research. Similarly, open data that is findable, accessible, interoperable and reusable can help identify new research and development opportunities, allow results to be double checked and build partnerships between industry and academia. Investing in research data infrastructure and open access for Australian research can help improve research translation and industry engagement.

Links
Office of the Chief Scientist Advice: https://www.chiefscientist.gov.au/news-and-media/advice-open-access-models

Q12. How should research translation be planned for in the development of new NRI?
NRI facilities will be most effective when supporting collaboration and integration across the research, development and innovation ecosystem. Industry-academia collaborations result in increased productivity, economic growth and help to ensure the dissemination of knowledge (Bhullar et al. 2019). Research infrastructure is a key component of these collaborative research efforts (ATSE 2025). NRI facilities can act as hubs for local and international industry-academia collaboration, bringing together research stakeholders through partnerships and knowledge-sharing. This can be supported through innovation clusters or precincts that link education (both tertiary and workforce upskilling), research and commercialisation opportunities. Further support can be gained by linking NRI facilities with international funding schemes – such as the Horizon Europe scheme with which Australia is currently negotiating admission. This foundation will work best when industry needs and the broader innovation ecosystem are built into NRI facilities from the beginning. This includes building shared governance and co-investment models to enable genuine collaboration.

References:
Bhuller et al 2019: https://doi.org/10.1016/j.techfore.2019.04.021
ATSE 2025: https://atse.org.au/what-we-do/strategic-advice/boosting-australias-innovation/

85

Sun, Nov 30, 2025, 07:09 PM Australian Eastern Daylight Time
[ID: sbm3969e6291affb16052315]

Title
Dr

First Name
Louise

Last Name
Winteringham

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Exposure, promotion and recognition at a federal government level, requests to consider NRI for government funded grants or research.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Research - industry collaborations face a number of challenges including state-specific regulations, institutional-specifc requirements and ethics and governance considerations when human tissue or clinical applications are involved. Standardised and accessible NRI associated data registries/collections need to be developed. In addition, there are broader challenges including licensing rights and intelectual property rights. In some cases, such as the use of organoids in translation and clinical support, a national framework should be considered.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Two key enhancements include 1) standardised data registries that are NRI-specific and 2) national guidelines / frameworks that consider reulatory, governance and process requirements.

Q12. How should research translation be planned for in the development of new NRI?
Identify a clear pathway to translation
Identify, understand and address regulatory requirements
Consider governance and ethical implications to progress to translation
Develop a plan for FAIR data collection, storage and access
Ensure national representation

83

Sat, Nov 29, 2025, 06:05 PM Australian Eastern Daylight Time
[ID: sbm396375f5554afdc3565fc]

Title
Dr

First Name
Tom

Last Name
Honeyman

Organisation
UNSW, Sydney

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities can improve visibility and industry uptake by tailoring their engagement approach to the nature of each capability: rapidly accessible digital assets such as data, models or research software require different pathways from physical facilities where booking, cost and lead-time are substantial factors. For digital and computational capabilities, the most significant opportunity is to surface research software and other intangible outputs as NRI assets, making their relevance, accessibility and industry value explicit—many tools used daily in industry originate in NRI-supported research but remain invisible due to academic framing and a lack of metrics. For all capabilities, industry-facing communication must shift from academic descriptions to clear, sector-relevant value propositions, supported by translation roles and rebranding that speaks to industry needs and reduces wariness about engaging with the research sector. These approaches would create more direct pathways for industry to discover, access and trust NRI capabilities across Australia's cities and regions.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities can build the know-how and support needed for productive research–industry collaboration by strengthening the systematic processes that small NCRIS organisations often lack—such as contracting, pricing, IP management, risk handling, and brokerage capability—and by providing these as a cross-NCRIS support function rather than expecting each facility to develop them in isolation. Translation and industry-facing communication should also be coordinated centrally to ensure consistent value framing and reduce sector wariness. Improved, shared metrics and evidence of industry benefit will help build confidence over time. Finally, cultural barriers associated with co-investment settings need to be addressed: if infrastructure is funded to enable research, but is also expected to serve industry, then industry-engagement mechanisms must not diminish research

capability; rethinking co-investment models would allow facilities to partner with industry without compromising their core mission.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Research translation capability can be significantly improved by enhancing Australia's capacity to produce, sustain and strategically support research software, drawing directly on the framework articulated in the ARDC's National Agenda for Research Software. Research software is a uniquely actionable form of knowledge representation: when researchers express new methods, models or analytical approaches as software, the translation lag between discovery and real-world uptake collapses, enabling direct application by industry, government and society. To realise this potential, NRI needs coordinated uplift across existing capabilities—particularly in cataloguing and monitoring research software outputs, supporting sustainable development pathways from prototype tools to mature, maintained services, and providing secure digital environments where translation-oriented development can occur. New NRI investment is also required to support the method-making disciplines (mathematics, statistics, computational physics, computer science and engineering) that generate the underlying algorithms and models driving national translation but remain structurally underserved by current NRI settings. A national implementation of the framework described in the National Agenda for Research Software would provide the strategic pathway needed to close the gap between discovery and impact.

Q12. How should research translation be planned for in the development of new NRI?

Research translation must be planned into new NRI from the outset, beginning with robust translation governance frameworks that define IP, data governance, risk, ethics, responsible AI, cultural protocols and the professional practices needed to support translation over time. These frameworks should sit alongside explicit translation pathways, so that new NRI capabilities are designed with a roadmap for moving methods, data, software and tools toward application rather than treating translation as an afterthought. Early engagement with non-academic end-users—industry, government and communities—is essential, recognising that trust and relationship-building require longer timeframes than standard NCRIS funding cycles usually allow. New NRI must also incorporate sustainability and lifecycle planning, because translation does not occur through a "build it and they will come" model; it requires maturity, stability and ongoing support. Finally, metrics and evaluation models need to move beyond traditional academic indicators to capture translation and impact outcomes, allowing new NRI to demonstrate value in terms that matter to end-users as well as researchers.

80

Fri, Nov 28, 2025, 06:11 PM Australian Eastern Daylight Time
[ID: sbm395f3ba815a967eab5982]

Title
Prof

First Name
Markus

Last Name
Barth

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
- Align Government Translation Funding Programs
- Expand Translation-Specific NCRIS Funding for Market-Driven Activities
- Invest in Dedicated Industry-Focused Staffing

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Integration into clinical facilities to support translational pathways in health and medical innovation

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Fri, Nov 28, 2025, 05:10 PM Australian Eastern Daylight Time
[ID: sbm395f2e6aa5fff726ed524]

Title
Other: "Emeritus Professor"

First Name
Gottfried

Last Name
Otting

Organisation
The Australian National University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
A single website with links from other websites (e.g. universities, CSIRO etc.). A single coordinated website will greatly facilitate access to the specialised capabilities at different sites in Australia, including optimal support. Examples exist in Europe and the USA.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Close collaboration with researchers! For efficient communication of industry needs and NMR capabilities, NMR operators need to be familiar with the terms used by the customers. This needs dedicated professional employees (not various students and postdocs).

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The existing NMR spectrometers need to be maintained! For example, the ANU was forced to abandon a 600 MHz NMR spectrometer because the $1M cost for fixing a broken console proved unaffordable. It is irresponsible to let existing equipment lapse in this way. Solid-state NMR is on the rise for research in batteries, solar cells and material science in general, but suitable equipment and, therefore, expertise are lacking in Australia.

Q12. How should research translation be planned for in the development of new NRI?
An NMR network will be able to develop standards of good practice that cannot be delivered by temporary staff usually provided by universities.

78

Fri, Nov 28, 2025, 04:58 PM Australian Eastern Daylight Time
[ID: sbm395f22dbb9a936c06195b]

Title
Prof

First Name
Leigh

Last Name
Johnston

Organisation
University of Melbourne

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Involve partner organisations in joint promotional activities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Invest in the people within the facilities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Support for equipment replacement to keep doing well what is currently working well.

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Fri, Nov 28, 2025, 03:48 PM Australian Eastern Daylight Time
[ID: sbm395ee3812ca9a123e303a]

Title
Dr

First Name
Louise

Last Name
Rabbitt

Organisation
Garvan Institute of Medical Research

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Utilise good marketing strategies. Attend relevant meetings and conferences.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Good recruitment practices, staff retention and in house training programs. Keeping up with best practice by seeking out new methods and implementing them.

76

Fri, Nov 28, 2025, 01:09 PM Australian Eastern Daylight Time
[ID: sbm395e51f0c8b3ceec5b763]

Title
Ms

First Name
Lucía

Last Name
Gamarra Cuba

Organisation
ARC Centre of Excellence for the Weather of the 21st Century

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
By publishing examples of how the scientific community uses NRI facilities and their implications for society. For example, High-Performance Computing and Data (HPCD at NCI and Pawsey), as well as software infrastructure (ACCESS-NRI), have direct implications for mitigation actions and adaptation planning. So do observational facilities such as TERN and IMOS. This is currently not communicated effectively. We provide some case studies below.

Case study 1. Mitigation: In a Net Zero economy, weather resources will supply most of Australia's electricity demand. Supporting the transition to clean energy requires increasingly integrated research spanning energy networks, infrastructure and renewable resources. In particular, the variability in renewable resources requires fine-scale models and observational data, mostly from satellites, to resolve day-to-day and hour-to-hour changes in near-surface wind speed and solar irradiance. This research, and its translation into decision-making and policy, requires computing infrastructure in a single location that can support model simulations across multiple domains and accessible storage of diverse datasets.
To better understand net zero pathways, we need better climate projections and high-resolution modelling. Protecting and restoring Australia's environment needs substantial advancements in climate modelling and data management capabilities.

Case study 2. Adaptation: The representation of most hazards is gradually improving with advances in higher-resolution modelling. Our understanding of future climate change is primarily derived from simulations produced by global and regional climate models. While global models provide valuable insights at broad spatial scales, they struggle to represent the small-scale processes that generate high-impact weather hazards. Regional models have higher spatial resolution and can better represent many of these processes. However,

phenomena such as hail and extreme wind gusts can only be assessed indirectly due to insufficient model resolution. Nonetheless, as models approach kilometre-scale resolution or better, these hazards will become resolvable, enabling direct assessment of their behaviour under climate change and quantification of associated risks.
The iterative progress of models must be accompanied by ongoing climate risk assessments and evaluation of adaptation strategies to ensure they remain relevant and effective.

Case study 3. Adaptation beyond net zero: The reality is that even after we reach net zero, we will still face long-term consequences due to the inherent inertia of climate systems. Further comprehensive analysis is needed to understand the implications of climate changes under net zero emissions and the consequences of delay are needed to support robust policymaking.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
The first step to securing industry buy-in is clear communication and adequate promotion of the utility of NCRIS-managed facilities for decision-making. Importantly, communicating the integrated nature of the NCRIS program and its societal applications must be better recognised and communicated (see Q9).
A second important feature for a successful collaboration with industry is that the facilities need to be world-class. In our area, this is no longer the case as the weather and climate supercomputing and data facilities at the NCI have fallen well behind the rest of the world. (see Q 11). This has posed a severe threat to our sovereign capabilities resulting in industry seeking advice from overseas (see IAG's Severe Weather in a Changing Climate report, https://www.iag.com.au/newsroom/company/iag-launches-severe-weather-in-a-changing-climate-report).

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
All information about the future of our weather and climate results from simulations with weather and climate models supported by a large software infrastructure (ACCESS-NRI), supercomputing and data capabilities (NCI and Pawsey), and observations of the current state of the Earth system (TERN, IMOS, AURIN).
As highlighted in Q10, the most significant gap in NCRIS's highly integrated infrastructure environment for informing the nation about possible futures is an inadequate supercomputing and data landscape. This needs urgent attention in the NRI 2026 Roadmap. Australia needs an HPCD-software-people infrastructure that can compete with the rest of the world and provide Australian researchers a cutting edge and undertake the experiments that could support better decision-making by governments, businesses and communities.
The lack of a world-leading HPCD facility constitutes a serious risk to Australia's ability to plan its future. While other countries will base their decisions on the latest developments in climate modelling and computing, particularly high-resolution model simulations, we will continue to rely on tools from the early 2000s for another decade, putting us at a significant disadvantage.
The new generation of high-resolution global climate models developed overseas shows great improvements in capturing global circulation patterns whilst also more realistically representing the landscape, such as urban areas. Australia's lack of access to these capabilities is incompatible with our mandatory climate-related financial disclosures for large businesses and financial institutions. These limitations are a direct result of

insufficient investment in research infrastructure and must be urgently addressed in the Roadmap.

Examples of how to achieve a step-change in climate modelling research infrastructure for the benefit of all Australians are:

- To maintain and significantly uplift the key existing facilities involved; in particular NCI, ACCESS-NRI, and AURIN.

- To fund activities that connect these facilities with each other, with other NCRIS facilities and the wider research community. Examples of such activities are the design, testing and implementation of a next-generation climate modelling system (NCI, ACCESS-NRI, Centres of Excellence including 21st Century Weather); efforts to better model and observe urban climate (ACCESS-NRI, AURIN, TERN, ARDC, and PHRN); or efforts to improve our modelling capabilities around coasts (NCI, ACCESS-NRI, TERN, IMOS, Coastal research community).

- To take significant steps in fully integrating compute, data, software and people in a national climate change research infrastructure.

Q12. How should research translation be planned for in the development of new NRI?

Research translation should be planned in collaboration with the agencies that use NRI facilities to conduct research, as well as by users who can help articulate the utility of the research produced in their operations. It is key to avoid focusing on individual facilities and instead focus on impactful societal issues that are addressed through the integration of NCRIS facilities with the research community, such as climate change. 21st Century Weather would welcome the opportunity to co-produce a case study on translating research in our area, done using NRI facilities.

Leveraging facilities like the Climate and Fluid Physics Laboratory based in the Australian National University also offers unique pedagogical and research value to national and international researchers and students, and can be used to engage a broader audience through visually compelling experiments that make complex climate physics accessible and engaging, helping to foster scientific literacy.

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Fri, Nov 28, 2025, 12:52 PM Australian Eastern Daylight Time
[ID: sbm395e41c6755ec154d7fae]

Title
A/Prof

First Name
Kate

Last Name
Michie

Organisation
Australian Structural Biology Computing

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
• Publish a single national portal with a simple service list, example use cases, prices, expected timeframes and a contact number. Include short videos and case studies from small and large firms.
• Provide an intake form that takes five minutes to complete. Offer a discovery call within one week to help firms match a problem to the right service.
• Assign named case officers so each company has one contact from first enquiry to first result.
• Run regular briefings in every state and territory with local partners such as industry associations, precincts, chambers of commerce and regional development bodies.
• Offer sector packs that explain, in plain language, how to use services for health, agriculture, resources, manufacturing and environmental monitoring. Include sample data needs and a checklist to get started.
• Create on-ramp vouchers or credits for first projects, with a simple application and fast turnaround.
• Provide clear access settings for sensitive work, including options for on-shore secure computing and private data rooms.
• Make booking easy. Provide online booking, indicative queues, and a small pool of rapid slots for urgent industry needs.
• Publish template agreements for confidentiality, data use and intellectual property so firms know the rules before they start.
• Deliver short, online training that fits around business hours, and record sessions so regional companies can watch later.
• Support regional users with remote access options, sample shipping instructions, and occasional pop-up visits or mobile training.
• List accredited service partners who can help companies prepare data, samples or documentation before using national facilities.

• Track and publish simple measures such as time to first response, time to first result, number of new firms onboarded and repeat usage. Use these results to improve the service.
• Coordinate with government programs so firms can bundle NRI access with grants, vouchers and tax incentives, reducing out-of-pocket costs for first trials.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
• Provide a simple intake service. Offer a short discovery call within one week to scope the problem and point the company to the right lab, instrument, data service or computing resource.
• Assign a named case officer. Give each project one contact who coordinates bookings, data, approvals and reporting from start to finish.
• Use short, time-boxed scoping. Run two to four week scoping sprints that turn an industry need into a clear plan with deliverables, costs and risks.
• Co-design the work. Write a brief workplan with milestones and go or stop points so cost and scope stay under control.
• Provide template agreements. Publish plain templates for confidentiality, data use, publication and intellectual property so projects start quickly.
• Fund starter projects. Offer small vouchers or credits for first trials, with a light application and fast turnaround.
• Build an expert bench. Maintain a roster of methods specialists who can be brought in to advise on study design, measurement, analysis and validation.
• Teach the basics. Deliver short online modules and in-person sessions on using facilities, preparing samples and data, and interpreting results. Record sessions for regional users.
• Enable placements. Support short secondments where facility staff spend time inside companies, and company staff spend time in facilities to learn processes.
• Offer secure options. Provide on-shore secure computing and private data rooms where sensitive work is required.
• Make results reusable. Provide standard reports with methods, parameters and data links so companies can repeat or build on the work.
• Track simple measures. Monitor time to first response, time to first result, cost per result, repeat usage and user satisfaction, and publish summaries.
• Share examples. Keep a public library of de-identified case studies that show what worked, what it cost and how long it took.
• Coordinate nationally. List services in a single portal and refer projects between nodes so companies reach the best capability, not just the nearest one.
• Support regions. Offer remote access, sample shipping guides, and pop-up visits or mobile training outside capital cities.
• Recognise collaboration work. Include industry training, method transfer and successful hand-offs as recognised outputs in staff performance and promotion.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
This response is tailored for biomolecular science.
Enhance existing NRIs
• Supercomputing centres. Reserve predictable GPU access for biomolecular work. Provide a national registry of models and ready-to-run workflows for structure prediction, complex modelling, docking and protein design. Include tools that check developability and manufacturability, not just accuracy.

• Australian Synchrotron. Link macromolecular crystallography and small-angle scattering to standard pipelines that validate designed proteins and complexes. Deliver simple "sample to model" reports that include fit to data and basic quality checks.
• Microscopy Australia. Focus on analysis for existing cryo-electron microscopy instruments. Provide national workflows to validate designed binders and complexes from images, with clear pass/fail criteria and storage policies so results can be reused.
• National data services. Host reference sets for design and docking with clear licences and identifiers, including negative controls and real-world edge cases. Publish checked test sets so different design methods can be compared fairly.
• Bioplatforms and analytical facilities. Offer shared assays to test expression, folding, binding, stability and activity of designed proteins, with standard formats for reporting results.
• Secure options for health data. Provide on-shore, private computing so clinical and imaging data can be used safely when designs are intended for use in care.
New NRI to fill critical gaps
• National protein design and modelling service. A staffed expert team with a curated catalogue of fit-for-purpose workflows, a helpdesk, short consults and open training materials. The service guides non-specialists to the right tools, sets up jobs correctly and certifies outputs through benchmarks and simple provenance reports.
• Rapid method evaluation program. A small national program that quickly tests new design and docking tools, writes plain-language guidance on when to use them and when not to, and updates the certified catalogue.
• Pilot and demonstration-scale biomanufacturing. Modular lines from 25 to 2000 litres with upstream and downstream processing so designed proteins, enzymes and assemblies can be produced for testing. This closes the gap between design and practical use.
What this enables
• Faster, cheaper movement from sequence to structure, from structure to design and docking, and from design to test material.
• Clear paths for small companies to use national facilities with simple access and support.
• Results that are reproducible and ready for regulation because workflows, data and reports are standardised.
Simple measures of success
• Time to first result falls from months to weeks for common design and validation tasks.
• More laboratories, hospitals and companies use certified design workflows each quarter.
• More designs reach assay and pilot manufacture, with public benchmark reports to show progress.

Q12. How should research translation be planned for in the development of new NRI?
This response is tailored for biomolecular science.
• Start with design-led use cases. Co-design the first problems to solve: binder design for defined targets, enzyme or pathway design for a named reaction, vaccine-like immunogen design, delivery protein design, and redesign of existing proteins to improve stability or yield.
• Publish a clear service list. State what the facility will do for structure prediction, docking and design, how to access it, expected timeframes and what success looks like. Include simple prices and fair access for public and private users.
• Build an expert front door. Assign case officers who understand protein structure and design. Give every project one contact who turns a question into a short plan with milestones and go or stop points.

• Plan data and privacy from day one. Set consent, storage, retention and sharing rules. Provide on-shore secure options for clinical or commercial work. Respect Indigenous data protocols where relevant.
• Make methods reproducible. Deliver containerised workflows, model registries, reference datasets and validation reports so results can be checked and reused.
• Test for "fit for use," not just "fit to data." Include early screens for solubility, stability, expression, immunogenicity risk and cost of goods so poor designs are dropped early.
• Reserve the right capacity. Ring-fence compute, storage, assay time and specialist staff time for translation projects so they do not sit at the back of the queue.
• Teach at scale. Fund short guides, videos and worked examples for design, docking and validation. Offer brief online modules and office hours so non-specialists can get started quickly.
• Lower the first barrier for firms. Offer small vouchers or credits for first trials, with a fast application and rapid feedback.
• Set simple measures. Track time to first result, cost per result, number of designs that pass lab tests, projects moving to pilot manufacture, external users onboarded and repeat usage. Report these each quarter.
• Connect the chain. Link computing, data services, the synchrotron, microscopy, proteomics and pilot biomanufacturing so projects can move from design to evidence to material without friction.
• Support method builders. Reserve funding and protected time for developing and hardening new design and docking methods, with public benchmarks and plain-language guidance.
• Ensure regional access. Provide remote use, sample shipping options and pop-up training outside capital cities.
• Govern well. Seat an independent user council with clinicians and companies to review priorities and progress.

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Fri, Nov 28, 2025, 09:19 AM Australian Eastern Daylight Time
[ID: sbm395d7e870c5e2bdd154e9]

Title
Other: "Coordinated response"

First Name
International Environment, Reef and Ocean Division

Last Name
DCCEEW

Organisation
DCCEEW - International Environment, Reef and Ocean Division

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Discussions in developing the draft Sustainable Ocean Plan identified the need for broad collaboration to improve the uptake and use of ocean knowledge (across jurisdictions, sectors, and scientific disciplines). A good example of where this collaboration is enabled by NRI facilities is the NCRIS-funded IMOS, which is highly engaged with government and industry sectors and dedicates significant effort to ensuring that end users are aware of the IMOS offerings available to them, including through regular conference attendance and a focus on holistic stakeholder engagement and creative communication products.

DCCEEW is strongly supportive of the NCRIS proposal from IMOS to develop the CoastRI project, which among other benefits will provide national-scale coastal observing and modelling capability for Australia to collect and deliver coastal data that is targeted at the needs of government and industry end users. CoastRI's multidisciplinary approach will help bring multiple parties together to address gaps in national level coastal observations in a collaborative and coordinated manner. If the CoastRI work is supported further by NCRIS, it will be important that external engagement and communication continue to be prioritised to ensure that potential contributors and users can get involved.

More generally, NRI facilities could ensure their capabilities are made widely known and are available to potential users through regular dedicated roadshows, or through other targeted engagement processes.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Genuine engagement between NRI researchers and industry is needed to build productive research-industry collaborations. A good example of where this is working well is through

the IMOS, which has strong links to industry and dedicated forums to identify and strengthen collaborations.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The IMOS and Australian Ocean Data Network are exemplars of how to translate research into outcomes, which could be replicated in other NCRIS investments, such as continuation of the CoastRI Initiative. DCCEEW is strongly supportive of further investment in this initiative, which is a cross-NCRIS collaboration that relies on synthesis, coordination, collaboration and co-design with all coastal observation stakeholders, including with First Nations people, industry and government, to ensure maximum research translation capability. CoastRI will address both national and state-based coastal observation priorities.

Q12. How should research translation be planned for in the development of new NRI?
Where possible, the NRI Roadmap and funding mechanisms such as NCRIS should account for national-level policies and strategies that articulate the needs of industry and other end users. For example, the draft Sustainable Ocean Plan outlines opportunities for collective national action on ocean knowledge and industry. The next National Marine Science Strategy (due for release in early 2026) will also include priorities and recommendations for marine research in support of Australia's blue economy.

Applications for NRI funding could ask applicants to include details on how they intend to undertake research translation as part of their project. This should include asking for details on who their stakeholders are and how they will ensure that their translation provides end users what they need. Project reporting should also require this information.

72

Thu, Nov 27, 2025, 03:16 PM Australian Eastern Daylight Time
[ID: sbm39599fa8483e73291aa89]

Title
Dr

First Name
Christopher

Last Name
Adda

Organisation
La Trobe University

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
• Targeted awareness campaigns including industry-specific messaging with technical capabilities translated into clear value propositions for sectors like health, energy, agriculture, manufacturing, and creative industries. This could also encompass successful case studies showcasing real-world applications and ROI from collaborations with industry partners.
• Better promotion of the Research Infrastructure Connected online portal listing NCRIS capabilities, services and access pathways. Consider having a unified and coordinated branding across all NCRIS facilities, rather than just the NCRIS logo.
• Simplified access models including legal agreements, pricing, and virtual access where samples are sent in and analysed online remotely.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
• Upskill NRI staff through professional development opportunities and training programs in business, commercialisation of research and project management.
• Appoint industry engagement and business development staff to NCRIS capabilities who facilitate the connection of industry clients with the capability ensuring smooth onboarding and clear communication.
• Develop a series of resources that can be used across all NCRIS capabilities that include standardised agreements, covering aspects such as confidentiality, services and IP, pricing models and a seed funding pool to incentivise joint projects with industry.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To improve research translation enhancements of existing NRIs may include:

• Implementing common agreement templates for research services, IP agreements and licensing to reduce barriers for industry to commercialise.
• Expanding training for NRI staff in commercialisation, regulatory compliance, and industry engagement.
• Implement a quality management system into facilities for ISO9001 for GLP or GMP accreditation.
New NRI may include:
• Pilot-scale manufacturing facilities for scaling up advanced materials, biotech, and clean energy technologies from lab to industry.
• Secure, federated data environments for industry-research collaboration in sensitive domains (health, finance, energy).

Q12. How should research translation be planned for in the development of new NRI?
• Define translation objectives early, including how the infrastructure will enable outcomes beyond academia—commercial products, policy influence, societal benefits. Map industry use cases with potential applications in priority areas during design.
• Include translation enabling features such as prototyping and pilot-scale facilities, commercialisation support and industry advisory panels.

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71

Thu, Nov 27, 2025, 01:53 PM Australian Eastern Daylight Time
[ID: sbm3959538c530f3d25ea13e]

Title
Dr

First Name
Edoardo

Last Name
Tescari

Organisation
Melbourne Data Analytics Platform (MDAP), The University of Melbourne

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
As above, while medical, agricultural and engineering opportunities may be most prominent, I think it is important to also identify translational opportunities for digital humanities research.

70

Thu, Nov 27, 2025, 01:36 PM Australian Eastern Daylight Time
[ID: sbm3959444d1b0ff1507c636]

Title
Prof

First Name
Michelle

Last Name
Arrow

Organisation
Australian Historical Association

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Humanities researchers, including historians, are much more involved in both public and private sector 'industry' than often assumed. One example in the discipline of history is the employment of historical researchers in legal estate management. Another is the presence of historians in heritage conservation and architectural contexts. Historians have been contracted to contribute to major government strategies and statements in fields such as immigration and democracy. Nonetheless, there has been a heavy official commitment in recent years to the idea that the skills of historians and other humanities graduates lack real-world relevance. Formal linkages between universities and industry tend to be underdeveloped not least because universities, more interested in the commercial potential of STEM, invest little in fostering such connections. Outside the context of ARC Linkage Grants, there have been limited formal schemes; initiatives tend to be serendipitous, rather than systematic. Yet, to take one example, government and universities could invest in fostering closer links between teachers, commercial producers of educational materials, and history academics to produce high-quality materials in areas of need – which tend to be great when a new curriculum is adopted.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
In the case of history, key NRI facilities are often in the GLAM (Galleries, Libraries, Archives and Museums). The formal connections between these institutions and the community of historical researchers may well be weaker now than 20 years ago. In general, this means very limited understanding of how each side works, knowledge exchange that is at best ad hoc, and limited discussion of how institutions – GLAM and university – might work together with industry partners for human betterment. Every major NRI facility should have a budget-line that is specifically related to working with external partners to promote research translation. At present, there is too much emphasis

on public outreach concerned with visitor numbers and media publicity, and not enough on identifying opportunities to collaborate with universities and industry in ways that generate new knowledge and could yield the very widest and deepest benefits to Australians through a more prosperous economy and a higher quality of life.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
We need a genuinely national approach to research infrastructure, one based on a mapping of existing and required capacities. What we actually have, at present, is a collection of mainly disconnected projects, capacities and databases that are subject to the vagaries of university funding or, in the case of the national cultural institutions, chronic under-funding and continuing efficiency dividends. The incentive structure in universities, meanwhile, is antithetical to industry connections. As a result, NRI in universities tends to be deployed to leverage traditional forms of esteem rather than for building industry partnerships. Prestige lies with traditional outputs. Employment and promotions ride on category 1 grants, and monographs and articles, preferably with international publishers: in other words, remoteness from the eyes and needs of Australian people is actively encouraged. Even museum exhibitions, subsumed under the category of NTROs (Non-Traditional Research Output), are given a residual or supplementary role. These distorted incentives for academics, which distance them from the public, are a result of the university rankings produced by for-profit-companies, which international customers/students use to choose their destination. Government needs to work closely with universities to overhaul their incentive structures to encourage better industry links alongside traditional markers of achievement and esteem.

Q12. How should research translation be planned for in the development of new NRI?
Too much past NRI is established and then found to be unsustainable, or nearly so, because there were no provisions for further investment. Major NRIs – for instance, in our discipline of History, a project such as the National Library of Australia's Trove database – needed a 10- or even 20-year plan when established. It is now actually dangerous not to do so because of the problems of cyber security that magnify when digital software ages. A plan for new NRI should include provision for identifying how the capacities and/or data that it has concentrated will be socially embedded; that is, the kinds of relationships that will be developed to ensure that the maximum benefit is gained from the investment.

65

Wed, Nov 26, 2025, 10:13 AM Australian Eastern Daylight Time
[ID: sbm395363c07d9c3527e7099]

Title
Prof

First Name
Kathryn

Last Name
McGrath

Organisation
The University of Technology Sydney

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
To ensure that National Research Infrastructure (NRI) facilities are widely known and accessible to potential users across Australia's cities and regions, transparency and centralisation are critical.
Transparent publication of access and usage fees across the range of potential users is essential, with the NCRIS Australian National Fabrication Facility (ANFF) cited as "a gold standard" by UTS staff in this regard. This approach not only builds trust but also enables industry partners to make informed decisions about engagement without ambiguity regarding costs.

Equally important is the creation of a centralised platform listing all facilities, equipment and services, which would serve as a single point of reference for researchers and industry stakeholders. Such a platform would streamline discovery and reduce barriers to collaboration, allowing NRI facilities and capabilities to be presented in a cohesive, nationally accessible manner.
Together, these measures will significantly enhance visibility and usability of NRI resources, fostering innovation and partnerships across diverse sectors.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities should embed industry liaison and business development staff as an integral part of the soft infrastructure for every facility. Engagement with industry partners should not be an ad hoc activity but a core function supported by dedicated expertise. Such staff play a critical role in translating research capabilities into industry-relevant solutions, fostering trust, and accelerating collaborative opportunities. Including seed funding for commercial and translational roles, coupled with KPIs that promote autonomy and growth

through measurable impact (more akin to a profit-centre mindset rather than a support-service mindset), may create successful incentives to maximise industry engagement.

Additionally, a set of engagement templates that facilitate rapid response, and transparency in communication, expectations, and obligations should be established. These templates would provide a standardised framework for initiating and managing partnerships, reducing administrative delays and clarifying expectations for all parties involved.
Providing embedded liaison roles and streamlined engagement processes, NRI facilities can enhance agility, accountability, and sustained collaboration between academia and industry.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Many commercial R&D facilities are established with a strong emphasis on equipment acquisition and operational staffing, but with limited planning and investment in the commercial, translational and industry-facing functions that ultimately contribute to whether a facility becomes a successful engine for business growth. As a result, commercial engagement is often left to other teams or to research and operational staff who may not have the specialist capabilities required for industry development, business development or translational strategy. In many cases, the expectation is that industry (particularly larger companies) will carry the burden of translation. This creates a structural barrier for SMEs, who may lack the internal resources, experience and time to navigate complex research environments without significant support.

Enhancements to existing National Research Infrastructure (NRI) should prioritise transparent intellectual property considerations to ensure clarity and fairness in IP ownership. Additionally, confidentiality between users must be embedded in operational protocols to protect sensitive data and maintain competitive integrity, particularly in multi-institutional projects.
Further, integration of venture capital and other sources of translation funding into the NRI would accelerate research outputs into translated solutions. Finally, providing access for users to have training in research translation will build capability across the sector, equipping researchers with the skills to navigate translation processes effectively.

UTS is working to develop staff capability in research translation through initiatives including but not limited to creation of the Research Translation Plan, Research Commercialisation Framework, and Research to Impact (R2I) program, as well as linking staff to associated training via the Research Outcomes Capability Framework (ROCF).

Q12. How should research translation be planned for in the development of new NRI?
For major facilities, translation should be viewed as an essential embedded capability, not an adjunct. Facilities need to be both research-centric and industry-enabling, with sufficient resourcing for each dimension to succeed and with enough autonomy to maintain the right leadership balance across the facility.

When planning for the development of new NRI consideration should be made to the engagement of specialists including dedicated commercial managers, applications/industry engineers, and clear governance structures with strong industry representation. Such specialists would act as connectors between research teams and

external stakeholders, including industry partners and funding bodies, thereby accelerating the movement of research outputs into practical applications.

A consistent national framework for tracking commercial outcomes (such as industry revenue generated, new products and services supported, SME projects delivered, and time-to-translation) may enable performance benchmarking and more clearly demonstrate where capability investments are generating economic value.

The ability to engage industry at scale may be strengthened by embedding commercial and translational functions into the core operating model of each facility, not as support functions, but as leading functions alongside research-driven leadership activity. This proactive approach ensures that NRIs serve as both enablers of discovery and catalysts for impact.

60

Tue, Nov 25, 2025, 02:30 PM Australian Eastern Daylight Time
[ID: sbm394f28aa2199066df3466]

Title
Dr

First Name
Elena

Last Name
Schaller

Organisation
Animal-Free Science Advocacy

In what capacity are you responding?
A representative of an organisation or group

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI facilities can strengthen collaboration by embedding expertise in human-relevant non-animal methods (NAMs), which increasingly demonstrate superior predictive value for human outcomes in key areas such as toxicology and drug development. The CSIRO Non-Animal Models Report (2023) finds that human-derived models are surpassing the performance of traditional animal models at anticipating the safety and efficacy of novel medical products in multiple organ systems. The WA Parliamentary Inquiry into health and medical research funding (2024) recommended that NAMs be a priority focus due to their growing importance for translation and regulatory acceptance.

Building a workforce capable of delivering and scaling these technologies will be essential for industry uptake. This includes joint training programs, exchange fellowships and targeted secondments with international experts in cutting-edge NAMs platforms. As science continues to shift toward data-driven and human-specific research tools, these capabilities will become a core skill set for the future workforce. Providing structured training in emerging technologies such as organoids, organ-on-chip systems and AI-enabled modelling will help retain talent and ensure researchers are equipped for rapid technological change.

International approaches highlight the importance of coordinated long-term support. the UK Compute Roadmap 2025 prioritises large-scale AI in biology, while the UKRI Infrastructure Roadmap Programme 2025 reinforces sustained government backing for alternative methods through entities like the NC3Rs. Europe's research infrastructure strategy emphasises digitalisation and environmentally responsible research practices. These examples show how strategic planning, workforce development and international collaboration enable industry to adopt more reliable, scalable and sustainable research methods.

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Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Major enhancements are required to address translational challenges in preclinical research, where poor correlation between animal models and human outcomes contributes to high attrition and economic waste. The FDA estimated in 2004 that 92% of drugs that pass preclinical tests, including animal tests, fail to reach the market. More recent analysis indicates the failure rate is now closer to 96% (Akhtar 2015). These inefficiencies cost industry billions and undermine research translation.

AI and computational infrastructure: Expanding national AI capacity is essential. Jurisdictions like the UK are investing heavily in national AI resources to advance drug discovery, as shown in the UK Compute Roadmap 2025. Strengthening capabilities at NCI, Pawsey and the ARDC would allow for large-scale toxicology modelling, human data integration and computational replacement of animal studies.

Advanced in vitro infrastructure: CSIRO (Non-animal models 2023) and Animal-Free Science Advocacy's economic analysis (2025) show that Australia's non-animal models (NAMs) sector could generate over $1.5 billion in revenue and 5,000 jobs by 2040, with organoids and organ-on-chip technologies contributing more than $1.59 billion. Enhanced microfluidics capability, organoid biobanking and high-throughput screening would support this growth.

Regulatory science infrastructure: Europe's ESFRI Roadmap 2026 introduces environmental considerations as a key requirement for research infrastructure proposals, reflecting a global move toward responsible and sustainable research. Australia should develop infrastructure supporting validation, standardisation and regulatory adoption of NAMs to improve translation and reduce duplication.

Q12. How should research translation be planned for in the development of new NRI?

Translation should be embedded early through explicit pathways for the adoption of human-relevant, evidence-based models. Given the documented limitations in the translational predictivity of many animal models and the strong performance of non-animal models (NAMs) documented in CSIRO (Non-animal models 2023), WA Parliament Inquiry into health and medical research funding (2024) and international roadmaps, planning for new NRI should prioritise infrastructure that supports organoids, organ-on-chip platforms and in silico modelling.

Early engagement with regulators, including the TGA and NHMRC, would mirror the UK approach, where AI-informed regulatory guidance is being developed alongside new infrastructure. Planning should incorporate digital and data standards aligned with international strategies to ensure interoperability across systems.

Environmental sustainability should be a mandatory criterion, consistent with European infrastructure requirements, with NAMs providing inherent benefits through lower energy use and reduced resource intensity (Treherne & Langley 2021).

Built-in mechanisms for industry uptake, such as demonstration projects, access pathways and shared roles across sectors, would ensure that new NRI accelerates the adoption of more predictive human-based technologies.

58

Mon, Nov 24, 2025, 11:40 PM Australian Eastern Daylight Time
[ID: sbm394bf9f867cafe81b2390]

Title
A/Prof

First Name
Brailey

Last Name
Sims

Organisation
University of Newcastle

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
A component of workforce dedicate to this and forging strong links with kee professional bodies and industrial organisations.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Facilitate conduits between researcher (and research organisation) and industry.
Understand and promote the potential applicability of research achievements.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Enhanced expertise.

Q12. How should research translation be planned for in the development of new NRI?
Be recognised as a key capability.

57

Mon, Nov 24, 2025, 07:34 PM Australian Eastern Daylight Time
[ID: sbm394b18f288ca48e699a7a]

Title
Mr

First Name
Steven

Last Name
Tingay

Organisation
Murchison Widefield Array

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
In a flat funding landscape, it is essential to recognise that NCRIS infrastructure and capabilities are rarely funded in isolation. Co-investment – often involving other universities, state and federal governments, and industry partners – is not optional; it is the minimum pre-requisite for viability.
Equally important is the need to recognise that generating visibility for these capabilities requires dedicated resources and specialised skills. This ensures their value proposition is clearly understood, and that communication is tailored appropriately to the relevant industry sector.
Advertising NCRIS facilities to additional communities (who are not traditionally engaged with the research community), without funding to meet additional demand, risks creating expectations that cannot be fulfilled – damaging credibility with industry and other stakeholders.

Any explicit expectation of promotion of NCRIS capabilities to industry sectors should therefore:

1. be led by the relevant facility operators, aligned with their organisation's overarching commercial engagement strategy, and delivered in a manner consistent with – and supported by – their various investors; and

2. be funded sufficiently, to enable robust operations and to support dedicated industry engagement and translation capabilities.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Advanced techniques and technology borne out of MWA investment have application across several sectors, including space and defence. The Ernst and Young Impact Assessment commissioned by the MWA in 2022 identified that these capabilities have potential to support sectors from earth observation improving agricultural, water, and environmental management, to space situational awareness and exploration, and telecommunications satellite infrastructure and positioning (GPS) technologies (https://mwatelescope.org/wp-content/uploads/2022/08/Curtin_University_-_The_economic_and_social_impact_of_the_MWA.pdf).

Curtin University, in partnership with Nova Systems, has developed and operates a multi-function space domain awareness (SDA) sensor system at the Nova Systems' Space Precinct in South Australia, which is based on the translation of MWA techniques and technologies. Our approach delivers novel, low cost, and highly effective SDA capability at low radio frequencies, complementing other Australian SDA capabilities. That project is not supported by NCRIS funding for translation.

Productive research-industry collaboration could be achieved with modest NCRIS investment in this self-funded translation capability, enabling a flexible, extensible upgrade path – financially efficient and responsive to market demand for various SDA products.

Finally, the success of the MWA is dependent on collaboration with other NCRIS funded infrastructure. These facilities, like ours, are under significant pressure from flat funding and funding timing uncertainties. The net result is sub-optimal meshing of different NCRIS capabilities and loss of opportunity and productivity.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

As noted above, NCRIS funding alone would result in a suboptimal operating model for the MWA: co-investment is critical to its productivity. (We assume that there are other NCRIS facilities for which this also holds true.)

This situation is compounded as the cost of operating aging infrastructure increases, further constraining the operating model and resulting in fragile capabilities. There is no capacity to undertake value adding activities such as translation.

Funding to upgrade components and pursue accreditation against industry quality standards is a critical pre-requisite to any aspiration to industry collaboration. Additionally, if there is an explicit expectation around translation, then the funding allocated to NCRIS should enable robust operations and support a dedicated translation function.

Q12. How should research translation be planned for in the development of new NRI?

See responses above for recommendations on critical pre-requisite funding required before research translation can be meaningfully pursued with any impact, and without reputational damage to the facilities.

41

Fri, Nov 21, 2025, 12:56 PM Australian Eastern Daylight Time
[ID: sbm393a3917387157b62298e]

Title
Prof

First Name
Jeremy

Last Name
Mould

Organisation
Swinburne

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Engage DISR to communicate with industry.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Survey ARC grant applicants.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Each NCRIS provider should have a translation employee. Small providers could share these people.

Q12. How should research translation be planned for in the development of new NRI?
Their applications to NCRIS should address translation

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40

Fri, Nov 21, 2025, 12:40 PM Australian Eastern Daylight Time
[ID: sbm393a2ac774ce84b63b415]

Title
Dr

First Name
Saraid

Last Name
Billiards

Organisation
Association of Australian Medical Research Institutes (AAMRI)

In what capacity are you responding?
A representative of an organisation or group

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Embed industry liaison roles within NRI facilities to support co-design of research projects and clarify IP, access, and cost-recovery arrangements. Provide training and secondment programs for both researchers and industry partners to build mutual understanding of translational processes and regulatory pathways.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Enhance existing NRIs to include shared translational platforms — such as integrated biomanufacturing, biobanking, clinical trials, and health data linkage infrastructure — that enable progression from discovery to clinical and commercial outcomes. New infrastructure should focus on compatible health and bioinformatics systems that connect preclinical, clinical, and population data at national scale.

Q12. How should research translation be planned for in the development of new NRI?
Translation should be built into design and governance from the outset, with defined pathways for engagement across academia, industry, and health services. Each new NRI should include a translation plan covering regulatory readiness, IP management, clinical and commercial partnerships, and workforce skills to move discoveries into practice.

36

Thu, Nov 20, 2025, 06:01 PM Australian Eastern Daylight Time
[ID: sbm393629a66a1a0e94e8cf1]

Title
Prof

First Name
Brendan

Last Name
Kennedy

Organisation
The University of Sydney

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Engage with Universities to identify research groups which have strong industry links. Build on these
established and trusted connections.
• Use communication between NRI Facilities to publicise existing industry links (either transactional or
collaborative) and provide guidance and support for other users looking to establish industry
collaborations.
• Coordinated national networks for magnetic resonance and X-ray techniques could act as a "front
door" to capabilities across the country, listing available instruments & expertise, and conduct
outreach to relevant industry sectors (pharma, biotech, energy, materials manufacturing, etc.).

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Develop collaborative projects with industry through targeted funding opportunities.
• National networks for magnetic resonance and X-ray techniques (see Q13) could include skilled
technical staff and liaison experts who bridge academia and industry, providing support and building
confidence in the techniques.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Need for national, open access, coordinated National X-ray
Characterisation and Technology Hub to support research translation and manufacturing across quantum computing, chemical synthesis, materials engineering, environmental monitoring,
pharmaceuticals, agriculture, batteries and renewable energy. This hub should work in consultation with the Australian Synchrotron but should be independent of it.

35

Thu, Nov 20, 2025, 02:42 PM Australian Eastern Daylight Time
[ID: sbm393573ca8628aa3ae6f2f]

Title
Prof

First Name
Mark

Last Name
Paskevicius

Organisation
Curtin University

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Australia's NMR facilities must be visible and accessible to industry users nationwide, including those in regional areas. A coordinated National NMR Network (Magnetic Resonance Australia) would help achieve this by acting as a single "front door" to NMR capabilities across the country.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To foster more productive collaborations with industry, NMR infrastructure should come with built-in expertise and partnership support.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
To strengthen translation of research into real-world outcomes, Australia's NMR infrastructure needs enhancement on three fronts: baseline capability and reliability, frontier instrumentation, and digital/AI integration, all underpinned by sustainable operations.

Q12. How should research translation be planned for in the development of new NRI?
New NRI capabilities like the NMR Network can more effectively drive innovation beyond academia.

32

Wed, Nov 19, 2025, 06:24 PM Australian Eastern Daylight Time
[ID: sbm393118c8da349e9729696]

Title
Prof

First Name
Luke

Last Name
Henderson

Organisation
MBIU

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Australia currently operates only two ultra-high-field MRI scanners—both funded through earlier NCRIS programs—and each is now more than a decade old and nearing the end of service life. Replacing these systems is vital to sustain Australia's strength in neuroscience, clinical translation, and medical innovation.

Ultra-high-field MRI 7T MRI is central to:

- Basic neuroscience: providing the resolution needed for connectomics and fine-scale mapping of brain circuitry, underpinning progress in cognitive science, neurotechnology, and imaging-based AI tools.

- Mental health: revealing the detailed architecture of brain networks relevant to depression, anxiety, PTSD, addiction, and related conditions.

- Neurology: advancing research into disorders such as epilepsy, motor neurone disease, and neurodegeneration.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
A strengthened national biomedical imaging capability is essential for an effective research-to-translation pipeline, enabling pharmaceuticals, biologics, and medical technologies to move more efficiently from early discovery to real-world impact. Imaging delivers the critical evidence required to understand mechanism of action, refine dosing strategies, and measure treatment response. It is also a fundamental complement to genomics, providing the multimodal biomarkers and phenotyping required to realise precision medicine.

Imaging is foundational across Australia's medical technology sector: it validates device performance, supports the development of digital health tools, and enables the creation of advanced therapeutic platforms. It is indispensable to the rapidly expanding field of theranostics, where imaging plays a dual role—diagnosing disease and guiding personalised radiopharmaceutical treatments.

In brain and mental health research, cutting-edge imaging technologies enable insights that cannot be obtained any other way. As Australia's population ages and neurological conditions become more prevalent, demand for imaging will increase—as will its role in enabling earlier intervention, monitoring disease progression, and supporting the development of new neurotechnologies.

Beyond health and medicine, imaging is a key enabling capability for national productivity, with applications in mineral analysis, agriculture, environmental monitoring, and materials science.

Building and upgrading national imaging infrastructure will accelerate innovation, enhance health outcomes, and strengthen Australia's position in global medical technology development.

31

Wed, Nov 19, 2025, 03:32 PM Australian Eastern Daylight Time
[ID: sbm392fcaee033095fdeb4a3]

Title
Prof

First Name
tony

Last Name
bacic

Organisation
La Trobe Institute for Sustainable Agriculture & Food, La Trobe University

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
where appropriate site nodes in centers of research excellence relevant to the capabilities & in precincts focused on the technologies offered; in addition to the usual modes of communications have strong presence in both academically focused conferences as well as industry-focused conferences/trade displays etc; specialised workshops by NCRIS facilities open to all users

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
provide access to state-of-the-art technologies; an ethos of high quality service; voucher schemes;

Q12. How should research translation be planned for in the development of new NRI?
NRIs are best placed to provide (pre)pilot scale capabilities, including the relevant characterisation (imaging/analytical) capabilities, that facilitate taking a product to market. Their role is not to translate the research but to facilitate that process for an industry partner

26

Tue, Nov 18, 2025, 09:33 AM Australian Eastern Daylight Time
[ID: sbm392a020bc921759faf5b5]

Title
Prof

First Name
Mehdi

Last Name
Mobli

Organisation
Magnetic Resonance Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Australia's NMR facilities must be visible and accessible to industry users nationwide, including those in regional areas. A coordinated National NMR Network (Magnetic Resonance Australia) would help achieve this by acting as a single "front door" to NMR capabilities across the country. For example, the network could maintain a central portal listing available instruments and expert contacts, and conduct outreach to relevant industry sectors (pharma, biotech, energy, materials manufacturing, etc.). A similar resources has been established in the US through the federally funded Network for Advanced NMR (NAN). By networking MR resources, we can better promote our capabilities to industry and offer streamlined pathways for companies to access specialiSed NMR equipment and expertise. This approach would ensure that even small or geographically distant firms know where to go for NMR services, supporting broader industry engagement in research.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
To foster more productive collaborations with industry, NMR infrastructure should come with built-in expertise and partnership support. The proposed National NMR Network would include skilled technical staff and liaison experts who bridge academia and industry. By sharing knowledge and providing hands-on support, these experts help industry partners make the most of NMR technology (for example, assisting with experiment design, data interpretation, and custom method development). Such embedded know-how will give industry greater confidence in using NMR, leading to deeper partnerships. The network would also encourage co-development of new applications – allowing companies to work alongside academic researchers on cutting-edge NMR techniques and translating discoveries into real-world innovation. This coordinated

approach (coordinated access to expertise, training programs, and dedicated industry outreach) is key to growing research–industry collaboration through NMR.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

To strengthen translation of research into real-world outcomes, Australia's NMR infrastructure needs enhancement on three fronts: baseline capability and reliability, frontier instrumentation, and digital/AI integration, all underpinned by sustainable operations.

First, modernise and sustain the existing fleet. The immediate priority is to maintain and upgrade the current network of NMR instruments, many of which are ageing or at risk of failure. Dozens of spectrometers nationwide are past their manufacturer end-of-support, and by 2025 nearly 40% of NMR consoles in Australia will be technically obsolete (over 70% within five years) without upgrades. Simply maintaining status-quo capability will require substantial reinvestment – on the order of A$7–8 million per year over the next decade – far above historical funding levels. A coordinated national program is needed to replace or upgrade this ageing equipment, otherwise Australia's capacity for NMR-enabled research – and the translational pipelines that depend on it – will sharply decline.

Second, invest in new frontier capabilities to keep pace with international science. Australia currently lacks any ultra-high-field NMR spectrometer (1 GHz+), whereas the US, EU, Japan and others have had 1.0–1.2 GHz instruments for over a decade. This gap places our scientists at a disadvantage and limits advanced applications such as next-generation drug discovery, biomolecular structure determination and quantum materials research. Establishing at least one 1.2 GHz NMR flagship facility as part of a national network would bring Australia closer to international capability and open up new translational opportunities in therapeutics, diagnostics and advanced manufacturing. In parallel, supporting technologies such as solid-state NMR and hyperpolarisation should be expanded, as they are key enablers for innovation in materials science, energy storage, catalysis and biomedical diagnostics.

Third, treat NMR as an information-rich quantum sensor feeding AI-driven discovery. Conceptually, NMR is an information-dense quantum sensor and therefore an under-utilised resource for AI-accelerated translation. NMR provides a quantum-level readout of local magnetic environments, and thus of molecular structure, dynamics and interactions. Traditionally this power has been used on purified, homogeneous samples, but there is growing recognition that "unfiltered" NMR spectra of complex systems – crude reaction mixtures, fermentation broths, biofluids (blood, urine, CSF), tissues and environmental samples – offer a uniquely rich, unbiased view of underlying processes. These complex spectra are difficult to interpret with conventional analytical workflows, but are ideal inputs for modern machine-learning and AI approaches. Standardised acquisition and processing workflows, combined with FAIR data stewardship, would allow these "big NMR" datasets to be integrated into advanced ML pipelines that optimise reaction yields and process stability, support disease diagnosis and risk stratification, or anticipate ecological change – enabling forms of data-driven optimisation and early-warning systems that are not achievable with other modalities alone.

Finally, ensure sustainability and reliability to support long-term translation. Enhancing translation also requires more sustainable and robust operations. This includes investment in helium conservation and cryogen recycling systems – essential for high-field magnets –

to mitigate supply risks and rising costs. It also involves consolidating and sharing high-end equipment where appropriate so that industry and researchers nationwide can access cutting-edge instruments without unnecessary duplication of capital and operational expenditure. In summary, creation of a National NMR Network – with refreshed instrumentation, new high-field and specialised capabilities, integrated digital/AI infrastructure, and a national helium management plan – is a pivotal enhancement that will support reliable, scalable translation of NMR-enabled research into industrial and societal outcomes.

Q12. How should research translation be planned for in the development of new NRI?
When developing new research infrastructure, it is crucial to embed translation considerations from the start. For the proposed NMR Network, this means structuring the initiative to actively support industry and end-user engagement. Governance and access policies should involve industry stakeholders, ensuring the infrastructure is aligned with commercial R&D needs (for example, by enabling contract research services, IP agreements, or co-investment opportunities). Facilities should be accredited to industry standards where applicable (e.g. Good Laboratory Practice for certain analyses) to facilitate direct use by industry and clinical partners. Planning should also include training programs and fellowships to grow a skilled workforce adept in both research and industry contexts, creating people who can translate technical advances into real-world solutions. By making translation a design priority – through industry partnerships, open-access platforms, and workforce development – new NRI capabilities like the NMR Network can more effectively drive innovation beyond academia.

24

Mon, Nov 17, 2025, 07:28 PM Australian Eastern Daylight Time
[ID: sbm39270699720238e6fd4e9]

Title
Prof

First Name
Michael

Last Name
Giudici

Organisation
Department of Mathematics and Statistics, The University of Western Australia

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Due to the large geographical distances in Australia, NRI facilities need to have a dedicated travel budget so that researchers across the country have the opportunity to take advantage of the facilities.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
A mathematical research residential institute would be instrumental in translating mathematical and statistical research to real-world applications and cross-disciplinary areas. Mathematics is the `enabling language of the sciences' and underpins much of modern society. It will be instrumental for future advances in many areas such as quantum computing and artificial intelligence. A residential institute would enable many researchers and end-users to come together to share knowledge, identify common needs and challenges, and to combine expertise to solve the difficult problems facing many disciplines.

17

Wed, Nov 12, 2025, 03:00 PM Australian Eastern Daylight Time
[ID: sbm390c51113a3cd06ebd167]

Title
Dr

First Name
Giovanni

Last Name
Di Virgilio

Organisation
NSW DCCEEW

In what capacity are you responding?
An individual

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Continued / increased investment in high performance computing (HPCs) like NCI, i.e. in terms of capability, software and storage is essential to enable continued state-of-the-art climate change modelling in Australia, the development of new/next-generation high resolution climate models, and also to properly enable climate services more generally. This means enhancing the current-gen capabilities provided by the Gadi HPC at NCI.

16

Tue, Nov 11, 2025, 09:26 PM Australian Eastern Daylight Time
[ID: sbm39088c650c75a7ff001fa]

Title
Prof

First Name
Andy

Last Name
Hogg

Organisation
ACCESS-NRI

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI Facilities need to ensure adequate reporting of what they have achieved and their capacity. This will enable industry users to better understand the capability that is available.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
NRI Facilities might consider building programs of exchanges/sabbaticals with industry and government agencies. This may also contribute to the workforce initiatives noted above.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
At the current stage, the most critical shortage in NRI is in the area of high performance computing (HPC). We suggest that a business model which would allow industry to buy into Tier-1 HPC centres would both enhance the viability of those centres and form better linkages with industry.

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Issues Paper Consultation Survey
Department of Education

13

Sat, Nov 8, 2025, 12:11 AM Australian Eastern Daylight Time
[ID: sbm38f48a672c8832d7a9565]

Title
Prof

First Name
Jan

Last Name
de Gier

Organisation
MATRIX, The Unviersity of Melbourne

In what capacity are you responding?
A representative of an organisation or group

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Create immersive environments for deep collaboration where researchers/developers in academia and industry intersect through workshops, symposia, and collaborative events where agendas are set by researchers. To create broad buy-in such environments need to be discipline or interest-based, not institutional-based.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
There is a clear need for government supported research infrastructure for the mathematical sciences in the form of a residential research institute. MATRIX has run on a lean budget for ten years, and when scaled up could facilitate such interactions. As national research infrastructure, MATRIX can help bridge the gap between research and industry, creating a welcoming space where academic researchers and industry professionals can converge to solve shared challenges, and where theoretical insights can inform practical solutions. There are overseas examples such as the Institute for Pure and Applied Mathematics at UCLA, and the Newton Institute in Cambridge. Such an integrated approach fosters a continuous dialogue long-term partnerships that benefit both sectors, and ensures that cutting-edge mathematical research finds its way to industry needs.

9

Thu, Nov 6, 2025, 08:06 AM Australian Eastern Daylight Time
[ID: sbm38ebf07751ca113f4acc5]

Title
Mr

First Name
Stuart

Last Name
Milburn

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Workshops, industry partnerships. Open websites such as Oceancurrent, AODN. Combine fieldwork with education outreach.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Invest in partnership expertise, co-design projects and shared platforms.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Tools for researchers and education on how to use these.

Q12. How should research translation be planned for in the development of new NRI?
Design with outcomes front of mind, and provide support for collaboration and data sharing.

7

Wed, Nov 5, 2025, 10:18 AM Australian Eastern Daylight Time
[ID: sbm38e742950dca162d5de4c]

Title
Prof

First Name
Sach

Last Name
Jayasinghe

Organisation
Academy for Collaborative Research Infrastructure

In what capacity are you responding?
A representative of an organisation or group

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Investing in business development/industry engagement professionals, especially those cutting across multiple NRI is a prudent strategy. However, this needs to be complemented with broader training of all NRI workforce. Many of the research infrastructure specialists have an intimate knowledge of their respective technology, whether it is the nuances of the different equipment or pushing the boundaries of applications. This deep expertise lends these experts to be particularly good at addressing a breadth of challenges and to be highly innovative in dealing with industry problems. The specialists, with their close ties with the academics, are ideal brokers in bringing industry opportunities to our researchers and driving industry-academia collaborations. This ability will only be reinforced when the specialists obtain further business acumen through formal training (i.e., can come to appreciate and empathise with often contrasting cultures of industry and academia). However, in order for this workforce to be successful contributors to the industry engagement objectives and research impact, appropriate signals need to be in place to drive this behaviour, including suitable key performance indicators and rewards. Moreover, such engagement activity requires time, and as such capacity must exist to materialise the activity (i.e., the staff must have the time available
to actively engage with industry rather than relying on industry to come to them). Aligned with its mission, ACRI looks forward to investment in developing and deploying aforementioned skills within the NRI workforce.

6

Tue, Nov 4, 2025, 05:37 PM Australian Eastern Daylight Time
[ID: sbm38e3aeb8c4ac65ee79940]

Title
Prof

First Name
Sach

Last Name
Jayasinghe

Organisation
QCIF Digital Research

In what capacity are you responding?
A representative of an organisation or group

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
Having been part of many 'failed' initiatives that attempt to catalogue and display searchable RI capabilities, it is obvious that ultimately the solution rests with people and human-to-human engagements. Therefore, NRIs need to invest in capacity for staff to proactively engage across sectors and regions and ensure capability in understanding the language and nuances of various industries (priorities, timelines, barriers, opportunities).

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Investing in business development/industry engagement professionals, especially those cutting across multiple NRI is a prudent strategy. However, this needs to be complemented with broader training of all NRI workforce. Many of the research infrastructure specialists have an intimate knowledge of their respective technology, whether it is the nuances of the different equipment or pushing the boundaries of applications. This deep expertise lends these experts to be particularly good at addressing a breadth of challenges and to be highly innovative in dealing with industry problems. The specialists, with their close ties with the academics, are ideal brokers in bringing industry opportunities to our researchers and driving industry-academia collaborations. This ability will only be reinforced when the specialists obtain further business acumen through formal training (i.e., can come to appreciate and empathise with often contrasting cultures of industry and academia). However, in order for this workforce to be successful contributors to the industry engagement objectives and research impact, appropriate signals need to be in place to drive this behaviour, including suitable key performance indicators and rewards. Moreover, such engagement activity requires time, and as such capacity must exist to materialise the activity (i.e., the staff must have the time available to actively engage with industry rather than relying on industry to come to them).

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?

Many of the NRIs and NRI nodes are embedded in higher education institutions that have highly conservative risk profiles, reflected in protracted, and often unnecessary, legal and risk reviews, which is misaligned with industry expectations and timelines. The NRI ecosystem would be better served by a bespoke calibration of the NRI risk appetite in working with industry and placing risk assessments outside of higher education (and ensuring associated liabilities are also removed from higher education institutions).

Q12. How should research translation be planned for in the development of new NRI?

Incorporate dedicated business development/industry engagement professionals and training of all the new NRI staff in the 'art and science' of industry partnerships in strategic and operational plans. Organisational culture and artifacts adopted need to also reflect an entrepreneurial mindset championed by NRI leadership and each executive.

5

Mon, Nov 3, 2025, 04:04 PM Australian Eastern Daylight Time
[ID: sbm38ddd61ca3f9b76568a90]

Title
Prof

First Name
Drew

Last Name
Evans

Organisation
Adelaide University

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities need to better understand where they fit within the technology readiness scale and what role they play in bringing research into innovation. In doing so each NRI facility can then understand who their stakeholders are and develop direct communication/engagement strategies.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
In the same vein as Q9, NRI facilities need to better understand where they fit in the innovation ecosystem and what their role is. Their role is not to segment engagement to researchers or industry in a transactional manner - but to be the bridge between their various stakeholders irrespective of where they sit in the spectrum from lab-research through to commercial products.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
The meaning of "research translation" is highly dependent on which sector you are in. Also, not all NRI facilities will play a direct role in translating research. There is a requirement at a National level to map all the NRI facilities to a position within the innovation ecosystem. This then allows non-NRI entities and schemes (including funding agencies) to also be mapped to create a near complete picture of the ecosystem in Australia. Only then can each 'player' in this ecosystem know what their role is towards the end goal of translating research into societal, environmental, and/or economic impact.

Once the Australian Innovation Ecosystem Map has been developed, each NRI facility should revise their strategic plan to be fit-for-purpose to their position in the map. This

would then provide clear focus on who their stakeholders are and then to raise awareness with them of the facilities existence. There are numerous examples where key stakeholders simply don't know of the existing NRI's capability.

I would hesitate in creating new NRI facilities until the Australian Innovation Ecosystem Map has been developed.

Q12. How should research translation be planned for in the development of new NRI?
The development of the Australian Innovation Ecosystem Map with all existing NRI and non-NRI entities/facilities/stakeholders/schemes/funders included would then provide clear motivation and guidance for the role of any new NRI in translating research. This would ensure the investment is needed within the context of driving impact for Australia.

2026 National Research Infrastructure (NRI) Roadmap Issues Paper Consultation
Issues Paper Consultation Survey
Department of Education

4

Fri, Oct 31, 2025, 06:12 PM Australian Eastern Daylight Time
[ID: sbm38cf347e64f81cebcf422]

Title
Prof

First Name
Victor

Last Name
Calo

Organisation
Curtin University

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?
NRI facilities may improve their visibility by developing outreach programs, maintaining clear and searchable online capability directories, and engaging directly with academia and industry through targeted workshops, roadshows, and collaborative demonstration projects.

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?
Building productive collaborations requires dedicated support teams that understand both research and commercial contexts. Embedding industry secondees within academic teams, establishing joint training programs, and streamlining IP and partnership frameworks will strengthen mutual understanding and accelerate collaboration outcomes.

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
We should integrate digital platforms for data sharing, scalable pilot and prototyping facilities, and expand links between NRIs and industry innovation precincts. New NRIs could focus on digital twinning of industrial facilities, robust and reliable AI deployment to advanced manufacturing, critical minerals, and clean energy systems to address national priorities and bridge research-to-market gaps.

Q12. How should research translation be planned for in the development of new NRI?
Research translation should be embedded from the outset of NRI planning, through co-design with academia and industry, the inclusion of translational metrics, and the

allocation of dedicated funding for proof-of-concept and commercialisation pathways to allow the system to take risks and fail!

3

Fri, Oct 31, 2025, 01:42 PM Australian Eastern Daylight Time
[ID: sbm38ce3d6100f8d3b86cdcc]

Title
A/Prof

First Name
Vera

Last Name
Roshchina

Organisation
UNSW Sydney

In what capacity are you responding?
An individual

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
Australia needs a government supported research facility in mathematics, similar to BANFF and Oberwolfach centres. Australian mathematicians managed to keep our own MATRIX institute running on donations, university funding and sheer enthusiasm, but we can't compete with leading international centres that receive substantial government funding.

What we have now (poorly funded small institutes supported by universities and charities) is inadequate, unfair and is an embarrassment for the country on the international stage.

In the rapidly changing technological landscape Australia needs to stay on top of modern developments in mathematics. Cybersecurity, AI, climate change, optimisation of industrial processes, rapid geopolitical shifts - all of these key challenges require the Australian mathematicians to be at the top of their game, and competitive internationally. It is impossible to achieve this when our mathematical research infrastructure is limited to ARC funded individual centres and disjointed grass root initiatives with precarious funding.

All major geopolitical players run well-funded mathematics research facilities, notably China, Germany, France, Canada, and (still) the USA.

While China has been substantially increasing its investment in the mathematical sciences, funding in Australia has declined over the past decade.

2

Fri, Oct 31, 2025, 11:45 AM Australian Eastern Daylight Time
[ID: sbm38cdd221bff81abe6d178]

Title
Dr

First Name
Scott

Last Name
Lindstrom

Organisation
Centre for Optimisation and Decision Science, Curtin University

In what capacity are you responding?
An individual

Q9. How can NRI facilities ensure their capabilities are made widely known and available to potential users in relevant industry sectors across Australia's cities and regions?

Q10. How can NRI facilities build the know-how and support that will lead to an increase in productive research-industry collaborations?

Q11. To improve research translation capability, can you identify and briefly describe needed enhancements of existing NRIs, and/or new NRI?
I strongly support the establishment of a dedicated residential research institute for the mathematical sciences—similar to the Banff International Research Station. Australia's MATRIX Institute has already demonstrated how successful such programs can be. Their smaller scale and emphasis on collaboration, rather than endless presentations, make these research summits exceptionally productive. To put it simply, I would rather attend one MATRIX program than five large international conferences.

In February, I organized my first MATRIX event, and several papers have already emerged from collaborations formed during that workshop—between researchers who met there for the first time—to solve significant problems.

These programs are not only vital for advancing my own research but are transformative for our students. A MATRIX program was catalytic for my PhD research, and now, as a researcher, I've seen the same impact for my students. The program I organized this year gave seven students—including my own—the chance to work directly with leading scientists from Japan, Canada, Germany, and Austria. For many of them, these were researchers

they had previously known only from their books and papers. For two of my students, this event directly seeded their dissertation topics.

The Australian Mathematical Society's special interest group MoCaO (Mathematics of Computation and Optimisation, 250+ members) recently reported that, after adjusting for inflation, ARC support for computational mathematics has fallen by half over the past decade. In that same period, computational mathematics—already foundational to data science and machine learning—gave rise to modern AI and became more essential than ever. With travel costs rising and ARC support declining, opportunities for student researchers are increasingly scarce.

Residential research programs like MATRIX are a bright light in a rapidly darkening landscape. They provide rare, high-impact opportunities for collaboration and mentorship, and securing their financial future would be a meaningful investment in Australia's next generation of researchers.