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

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

Q20.

Part 2: Research themes

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

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

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

Do not limit your commentary to NCRIS funded capabilities.

Q21.

Resources Technology and Critical Minerals Processing

Q22.

Food and Beverage

Q23.
Medical Products

• Properly funding medical translation is a critical activity for an advanced society - we should not reply on other countries to produce the products we need. Translation of medical products (new medicines and devices to manage disease and disability) means the process of developing a new product from the research phases into human testing. • We need an unbiased government body that can support translation if the product fits agreed criteria. This criteria can be constructed easily from expertise available in the sector. These decisions should not be given to biased organisations who have too many internal conflicts. • The importance of quality systems to ensure quality and investable outputs – e.g. much of biological research in academia is not reproducible. A new medicine should have robust confirmed data as a basis for clinical investment. • MRFF is starting to co-ordinate better with NCRIS - this must continue to ensure minimising duplication of investment. • Translation relies on a network of expertise, not a single centralised facility. This networked approach may look fragmented, but it is often well co-ordinated. We need quality well supported facilities or we will continue to rely on overseas services that can compete with what is available in India/China. • One key database with all funded medical products in translation (use of Persistent Identifiers (PIDs)) could be easily tracked, reduce duplication. • NCRIS facilities should continue to be accessible to all potential users, however, facilities should prioritise access by local researchers rather than overseas. New core support for key NCRIS facilities that have performed well in the past and are central to the product development process should be considered. • Voucher-based access schemes are a very successful mechanism for facilitating meritorious access, as well as making outcome tracking easier and identifying joint projects between multiple nodes. These seed funding initiatives need to be expanded into vouchers for more expensive activities that are required in translation. E.g. $500k 'vouchers' for exploratory toxicology. • Research infrastructure is an investment rather than a cost, and like many investments is long-term. Short-term investments may not have sufficient runway to demonstrate their value. E.g. a new drug could take 15 years to get from first synthesis to marketing approval due to the time and investment it takes to develop it in the clinic (note clinical trials are still a research phase where the potential of the product is being ascertained and validated). • The MRFF NCRI scheme is a useful complement to NCRIS, however there is often confusion between the two schemes due to the title/acronym. Given the lack of industry in Australia it is critical for government to be able to fund the sector with long term commitment otherwise the value from our intellectual property will go overseas.

Q24.
Defence

Q25.
Recycling and Clean Energy

Q26.
Space

Q27.

Environment and Climate

Q28.

Frontier Technologies and Modern Manufacturing

Q29.

2.2 The 2024 statement of National Science and Research Priorities (NSRPs) includes outcomes linked to each priority to assist in identifying critical research needed in the next 5 to 10 years.
Consider the priority statements and, with respect to one or more of the 5 priority areas as listed below:

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

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

Q30.

Transitioning to a net zero future

Q31.

Supporting healthy and thriving communities

The outcome: • improved preventive health through new screening, diagnostic and treatment techniques and models of care is key to reducing the burden of serious illness taking pressure off the health system, and impacting the other measures such as ‘improved physical and mental wellbeing’, equitable health outcomes and improved community health. Treatment techniques are the basis for health and mental care. Doctors require new medical products, medicines and devices, to treat unmet medical needs. Hence improving Australia’s output in this area is critical. Currently intellectual property is commonly sold cheaply to an overseas entity before it has a chance to realise its value. To improve these outcomes we need better coordination of qualifying translational projects through an unbiased government body to oversee new medicines development. Every potential new medicine that meets a certain criteria should be registered and considered for core support. This criteria is for example the same as used in the pharma industry for product that have entered into preclinical development, typical having had >$10m invested so far in research. We need: - specific translational funding for qualifying projects to support them in an unbiased way through the process, .e.g see the Critical Path Therapeutics (TRxA) group in the US. They provide excellent support for translation. Emerging directions should be in line with unmet medical needs and focused on diseases that affect the most people and cause the most suffering. For example, neurodegeneration is a great fear of people, also cancer and heart disease being the greater killers that have the greatest economic impact. - Key national disease priorities should be decided for core funding of products that meet the translational criteria. Develop of new medicines is a special area that is more costly and time intensive than diagnostics and device but which has the potential to help the most people. What value is a diagnostic if there is no treatment to follow?! - We need infrastructure to address these concerns, specifically a National Centre for Medicinal Product Safety of new medicines – use of mice, rats, dogs, pigs and monkeys where required. Currently we have to go overseas for this work at great expense. Safety work is compulsory for translation and is by far the biggest cost in preclinical development. There is a large value inflection when a product translates into the clinic, such a centre will pay for itself eventually.

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

Q33.

Protecting and restoring Australia's environment

Q34.

Building a secure and resilient nation

Q35.

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

For successful translation of medical products each project must traverse the requirements of preclinical development. This stage is the essence of translation and encompasses 3 parts: clinical, non-clinical and Chemistry, Manufacturing and Controls (CMC). The clinical part is covered well in Australia with excellent networks of clinicians and clinical trial capability (will be required to be maintained long term). The non-clinical part is grossly underserved as is the CMC part. To address this we need: - A National Centre for Medicinal Product Safety – such a centre will have long term core funding and include all the needs of preclinical safety testing for new medicinal products (non-GLP and GLP) suitable for assessment of new products for clinical testing. This will include the use of various species that are required such as rodents, dogs and monkeys. Results will be submitted to the TGA for approval of a new product for human testing. The core funding for the centre will reduce the costs to the client to such an extent that the overall cost for doing the required studies becomes less expensive than going to currently preferred overseas suppliers, e.g. WuXi or Pharmaron in China. These costs are currently at least $2m for the key rodent and non-rodent safety testing that is required for a new drug. Note that safety testing does not require specialist models of disease, that will remain the responsibility of the research phase which has other funding mechanisms. - A National Centre for Medicinal Product Manufacturing – such a centre will enable rapid and cost effective chemical development of new drug entities, and devices. This is the largest area of an investigational new drug program and currently is not available competitively in Australia. Entities in Australia that profess to conduct such work and in fact doing the real work in China. This is contrary to our national interests. The ability to develop a manufacturing route and consistently manufacture a new medicinal product is critical for success. It can also generate new intellectual property. This involves chemical development up to a scale suitable for early clinical trials and analytical chemistry able to validate the product quality. Both the above centres could operate on the same basis at the current National Drug Discovery (Screening) Centre (NDDC) at WEHI which covers 90% of the cost of doing a high throughput screen, the client pays 10%. This could work with a 80% subsidy. NDDC has been a great success for early drug discovery screening.

Q36.

Part 3: Industry perspectives

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

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

Q37.

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

- ◯ Yes
- ◯ No

Q38.

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

This question was not displayed to the respondent.

Q39.

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

This question was not displayed to the respondent.

Q40.

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

This question was not displayed to the respondent.

Q41.

Part 4: Other comments

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

Australia needs to do more to punch above its weight in the area of new medicinal product development. The basic success of a society is built upon the availability of clean water, shelter, food, education and medicines. Without a strong pipeline of new medicines, that are properly supported, to meet the specific needs of Australians we will continue to be completely reliant on other countries.