

**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

The development of new medical products, the repurposing of existing ones, and ancillary diagnostic/prognostic tools is increasingly reliant on innovative, high-throughput omics technologies such as those supported by Bioplatforms Australia (BPA). As Scientific Director of the South Australian Genomics Centre (SAGC), A BPA supported genomics facility in SA (~14 staff) I can provide our thoughts on these capabilities and challenges that will need to be considered/addressed in the next NRI roadmap. SAGC supports a broad range of projects relevant to medical products (as well as food & beverage) at various different stages of development from early-stage cancer and chronic disease prognostic biomarker studies to more advanced SME-led projects in the development of new therapeutic interventions such as novel vaccines and microbiota-targeted products. SMEs could not afford access to such infrastructure in-house nor would they have the necessary advanced skills to operate it. Facilities across the BPA network therefore provide critical support for the development of medical products. Such platforms also provide cost-effective access across Universities and MRIs avoiding unnecessary duplication of expenditure and effort. Future challenges: • Scale of projects means that more investment in laboratory automation is needed across facilities. • There is a need to move from cohort studies to population scale (see UK biobank). Efforts currently very fragmented. • Scale of the data being generated is also a significant challenge and national computing and data storage capabilities are poorly integrated with platforms generating the data. • There is huge demand for bioinformatics and data science and greater support is needed in these areas. Consider a national centre for bioinformatics (nodes distributed across the country but with a centralised directorate). • More investment is needed in supporting bioinformatics software development - Australia currently largely reliant on deploying software developed elsewhere. • Developments in AI provide significant opportunities but there is a major skills gap across the sector that needs investment in training and upskilling. Collaboration with industry leaders in AI is encouraged. • Most facilities focus on a single technology but users are increasingly demanding multiple different technologies be applied. Better integration across different facilities is therefore needed - I would refer to these as Centres for Complex Biology. • Huge demand for spatial omics but again need for integrated end-to-end solutions (bringing histology, pathology, microscopy, omics and data analysis together). • Capacity for facilities to support commercialisation currently very limited. • More effort needed to promote NRI capabilities to industry. • Challenges supporting differing scales of projects (single PhD project to population-scale). • Career development opportunities for NRI staff needs investment

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**

See comments provided under medical products.

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.

See comments provided under medical products which provides thoughts on what is needed in terms of enhancements to existing capabilities.

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.

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.