Australian and European Health Research Infrastructure Symposium

5-8 September 2023
Monash University Prato Centre, Italy

OVERVIEW AND OUTCOMES

A collaboration between the Australian NCRIS health groups, EMBL and the ESFRI RIs

NCRIS
National Research Infrastructure for Australia
An Australian Government Initiative

Australian and European Health Research Infrastructure Symposium

Overview and outcomes

Introduction

The Australian and European Health Research Infrastructure Symposium brought together the Australian National Collaborative Research Infrastructure Strategy (NCRIS) Health Groups, Bioplatforms Australia (BPA), National Imaging Facility (NIF), Phenomics Australia (PA), Population Health Research Network (PHRN), Therapeutic Innovation Australia (TIA), and EMBL Australia, and eight European research infrastructures from the European Strategy Forum on Research Infrastructures (ESFRI) Health and Food Groups. The aim of the meeting was to identify the opportunities, synergies and challenges facing the international research infrastructure sector broadly and examine opportunities for greater collaboration between European and Australian health research infrastructures. The Symposium Program and Participant List are available here.

Purpose and themes

The purpose of the Symposium was to:

- Identify opportunities for collaboration and related impact with a particular focus on the priorities in the 2021 NCRIS Roadmap recommendations and step changes;
- Build on existing, and forge new, relationships and collaborations between European and Australian research infrastructures; and
- Understand the strategic planning strategies, structure and processes that have been established in Europe and identify potential for greater alignment.

The Symposium took advantage of the strong links established between Australian and European infrastructures, largely developed through the EMBL Australia program, and existing links across the Australian, European and Global BioImaging communities. The program was structured to facilitate deep and open discussion, interrogation and debate on the current and future challenges for the research infrastructure (RI), with a focus on health.

The Symposium's themes included:

- Research infrastructure enhancements covering sustainability, workforce, ethical, legal and social implications, and accreditation;
- Convergence science and cross-capability interactions;
- Research translation;
- Data challenges - with particular focus on data storage, security, harmonisation, emergence and impact of artificial intelligence (AI);
- Understanding government and industry drivers and needs; and
- Opportunities into the future.

Think-tank sessions were developed to discuss the challenges across all the themes.

Key Discussion Points

1. Research infrastructure enhancements covering workforce, sustainability, ethical, legal and social implications, and accreditation

Career prospects for infrastructure staff remains high on the agenda and is an international issue. Identified priorities to help address this included intercontinental staff exchanges or internships and the need to address the issues around: salary continuity, training and upskilling, retention and career path development [1], and succession. It was noted that recruitment and retention can be challenging. It was also noted that the RI workforce is a valuable and strategic source of skilled people for the knowledge economy.

With respect to sustainability, there is a need to define the objective and processes more clearly for collection of metrics that reinforce the value proposition and define and articulate that value. Also, to define and articulate the data needed to support the identified KPIs. This will inform the return-on-investment assessment and would be useful in influencing funders, partners and engagement and reinforce the value proposition which supports the discussion around financial sustainability. In the Australian sector, users are identified through their ORCID number. This may be a standardised method of collecting data that can be authenticated. The challenge of extracting the right information is dependent on the specific audience. For instance, researchers often have a different emphasis/priority to university partners, government, and industry. Reporting is needed for input through to impact.

ESFRI has established a working group to establish domains of KPIs to demonstrate impacts and outcomes [2]. These are publicly reported and monitored according to the capability. There should be lessons from this work for Australian RI.

Attendees agreed that ethical, legal and social implications and considerations were important for the implementation and ongoing operations of health/medical RI. Accreditation of RI was seen as increasingly important.

2. Convergence science and cross-capability interactions

Group discussion and presentations provided an overview on this topic in the Australian and European landscapes. Discussion on the Australian sector focused on the NCRIS health capabilities, convergence sciences and interactions, particularly around health outcomes, climate change and digital infrastructure. The European Commission funds programs that promote and support cooperation and integration among RIs in the Health and Food infrastructure. This has been a broad program running over many years and includes activities from clinical trials to marine biology. The key to these interactions has been engagement with each RI to build relationships and trust and to share challenges with the goal of common service to offer pipelines of infrastructures to researchers. These interactions are facilitated by the European Commission work programs under Horizon Europe and is something Australia is working to achieve with the NCRIS Health Group.

[1] Global Bioimaging, Charting a Course for Success: International Recommendations for Imaging Scientist Careers in Core Facilities. (2023) doi: 10.5281/zenodo.10200758

[2] Report of the ESFRI Working Group on Monitoring of Research Infrastructures Performance. (2019) www.esfri.eu/sites/default/files/ESFRI_WG_Monitoring_Report.pdf

3. Research translation

The discussions around research translation were wide-ranging and it's clearly an issue that impacts on all RIs across the globe. One of the challenges is that frequently the RI capabilities are used by researchers employed by organisations who will retain and own intellectual property, and thus the rights to oversee any translation opportunities and, ultimately, commercialisation. However, RI capabilities do have a crucial role to play in the overall translation process, from discovery through - for example, in the case of health research - to clinical trials and population studies. One challenge for RIs, host institutions and governments is the precise definition of "translation". This is becoming critical given the emphasis that governments, in particular, are placing on the need to successfully translate research. There was general agreement that at both the local/national level, as well as at the international level, more could be done in terms of both promoting the range of capabilities available to accelerate the translation process, as well as working in a more integrated fashion to provide easier and seamless access to the critical infrastructure needs to facilitate the process. In this context, attendees felt more could be done in terms of "educating" the broader RI workforce around the complexities and requirements of moving research discoveries through the translational process. An important outcome of this session was the clear willingness of the group members to work together to better share experiences and to try and plug any translational capability gaps.

4. Data challenges - with particular focus on data storage, security, harmonisation, emergence and impact of AI

Both Europe and Australia are experiencing significant increases in the volume and velocity of research data. This data is being increasingly used for machine learning and AI. Other common experiences included a focus on FAIR data, improved data management, harmonisation/standardisation/interoperability, and technical training. Legal and ethical arrangements for access to health data were important considerations. The collaboration between ELIXIR and Australian BioCommons was highlighted as a successful EU-Australia model.

5. Understanding government and industry drivers and needs

The need to build and market the RI value proposition to include both tangible and intangible benefits to government, industry, and the broader community was highlighted. Collective advocacy across the network, articulating the value of RI, was seen as important and could include recruiting ambassadors for the capabilities. RI priorities included long-term infrastructure sustainability, addressing the short-term and often uncertain funding environment that we all currently face. Discussion around demonstrating the value of the proposition, impact and intangible impacts, and knowing our audience in relation to Government, Universities/Academic Research Institutions and Industry.

Industry is engaged to some extent with most capabilities. However, all believe engagement could be improved. Improvements could be around addressing the specific needs of industry, as well as training opportunities, with a focus on interdisciplinary training.

There would be benefit in developing common approaches for infrastructure contracts with industry by adopting a standard contract format across categories of IP ownership, and to consider implications around licencing.

6. Opportunities into the future

Outcomes and next steps from the Prato Symposium are summarised below.

Outcomes

Enhanced communication and information-sharing

The meeting provided a foundation for new bridges between Australian and the European Research Infrastructures. It was agreed that the individual RIs and Participants should reach out to their new contacts and RI counterparts to **start the communication on what are feasible objectives and opportunities of future collaboration**, being creative and open-minded.

In this context, the Symposium agreed to launch a Google Docs folder with relevant information from the Symposium (contacts, summary, link to slides etc) and allow all participants editing rights so additional information can be included at a later date. For instance, **training and/or exchange offers**, organisation and participation in virtual activities such as RI-relevant webinars, and exchange of existing documents, regulations and best practices.

Closer collaboration

With the aim to build a global RI ecosystem, Australia and the European partners agreed to take their collaborations to the next level, where feasible, and to **explore the possibilities of becoming members or affiliated partners in each other's organisations**. For example, in the ERIC Forum project there is a dedicated work package to explore the legal possibilities of including international partners in European Research Infrastructure Consortium (ERICs).

ERICs are a legal tool in the EU for member countries to commonly operate a European RI. Currently there are 28 ERICs, most of them recognised as RI landmarks on the European Strategy Forum on Research Infrastructures (ESFRI) roadmap.

Next Steps

Short-term

Symposium participants to reach out to key stakeholders in Australia and Europe to disseminate the message about the successful RI Symposium and to understand when and where ICRI 2024 will take place.

Mid-term

A satellite meeting of the NCRIS Health Group and European partners is planned along with the ICRI in Australia 2024. Future symposia opportunities are to be considered.

Long-term

Participants continue to emphasise the importance of collaboration between Australia and the European RIs, and to alert funders for also earmarking funding for international collaboration, user access and exchange in their funding strategies. NCRIS Health capabilities will investigate opportunities to establish dedicated resources to coordinate the Australian RI to connect and coordinate with European partners. This could be a prototype to assess whether this type of structure would be of value to other NCRIS capabilities and include creation of a capabilities matrix to share best practice.

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