

**National Workshop on
Responsible Research & Innovation in Australia
7 February 2017, Canberra**

Executive Summary

Australia's national workshop on Responsible Research and Innovation (RRI) was held on February 7, 2017 in Canberra. Participants from 13 organisations attended representing research, government, industry, civil society and non government organisations. A wide ranging discussion on the topic of RRI ensued. Participants acknowledge that although the term is not well recognised in Australia, RRI has diverse meanings that will be influenced by the scale and context at which it is being considered. Organisational culture, politics, practices and the rules and regulations that govern research and innovation were all seen to impact on RRI. Research integrity and impact were two terms that frequently arose. Research integrity focused around research governance, codes of conducts and other guidelines for ensuring ethical conduct of research. Conflict of interest and reputational risk arose as important considerations when discussing research integrity and RRI more broadly. Impact was about ensuring a common understanding of the desired outcome for the research and the intended audience. Trust and transparency were seen as essential components of RRI and discussion mentioned holding a social licence for research. Several of the RRI keys arose in discussion with gender equality, ethics, science engagement and education being the ones most often mentioned. There was discussion around the role of industry-academia-research collaborations to drive responsible research. It was felt that overall, Australia has less examples of researchers placed in industry when compared to other countries, with most research being undertaken in universities and research institutions. The Australian Government's tax incentives for Research and Development (R & D) were seen as one way of driving these collaborations and would be particularly helpful for small to medium enterprises who often lacked discretionary funds to invest in research and innovation. Regardless, it was recognised the influence of political context over the focus of RRI and associated pillars. All participants actively engaged in the discussions, openly shared their thoughts and were interested to be kept up to date with project developments.

Introduction

Date and location of workshop

The University of Queensland, in conjunction with the Commonwealth Scientific and Industrial Research Organisation (CSIRO), hosted a National Workshop on Responsible Research and Innovation on the 7th February, 2017. The workshop was held at CSIRO's Discovery Centre, Black Mountain, Canberra, Australia. In total 13 participants and two researchers from the RRI Practice project attended the workshop. Participants were from a range of institutions including research, government, industry and non government organisations as detailed below.

Organisational affiliations

Organisation	Type
Academy of Science	Research
Academy of Social Sciences in Australia	Research
Australian Council for International Development (ACFID)	NGO
Australian Council of Learned Academies (ACOLA)	Research Not for Profit
Australian Research Council (ARC)	Government
Boeing Australia Limited	Private Sector
Business Council of Australia	Private Sector Peak Body
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Research (2)
National Health and Medical Research Council (NHMRC)	Government
Office of the Chief Scientist	Government
Questacon - National Science and Technology Centre	Research
Universities Australia	Research Peak Body

Comments on participation

The Australian Research Council (ARC)¹ provides advice to the Australian Government on research matters and has responsibility for the National Competitive Grants Program, which comprises a significant component of research investment in Australia, and Excellence in Research for Australia (ERA), Australia's national research evaluation framework. The ARC is also developing an Engagement and Impact Assessment that will run as a companion exercise to ERA. Similarly, the National Health and Medical Research Council (NHMRC) has responsibility for funding health and medical related research and oversight of the Australian Code for the Responsible Conduct of Research as well as issuing the ethical guidelines for the conduct of human and animal research. These two bodies are highly influential in how research is administered in Australia. The Commonwealth Scientific and Industrial Research Organisation (CSIRO) is Australia's national science agency that attracts funds from government (~60%) and industry (~40%) and is often cited as Australia's most trusted research institution. The Academies of Science and Social Sciences are not-for-profit organisations of esteemed scientists. The Academies' remits include promoting science engagement to build public awareness and understanding of science and social sciences, and providing strategic advice to government on issues of national importance. The Australian Council of Learned Academies (ACOLA) brings together all four of Australia's academies to ensure an interdisciplinary approach to problem solving for the Australian Government who funds much of their research. The Office of the Chief Scientist also has a key science advisory role to government. Questacon is part of the Department of Industry, Innovation and Science and has responsibility for science communication and engagement about research and have a remit around promotion of the public image of science into society. The Australian Council for International Development (ACFID) is the peak body for all international development, humanitarian aid organisations and affiliated universities. The Business Council of Australia as the peak body for large Australian businesses to contribute to public policy debates and Boeing - one of the world's largest aerospace companies provided very helpful industry perspectives.

Notably absent from the day was representation from the Department of Education and Department of Foreign Affairs and Trade. Both these organisations impact on universities through the funds they provide for international education and research. Following up with more industry representatives will be a critical part through interviews as well as accessing views from more NGO's given only one representative was able to attend. Finally, state level organisations were not recruited for this national workshop however, will be part of the interview process going forward in the research.

¹ <http://www.arc.gov.au/welcome-australian-research-council-website>

Understanding of Responsibility and RRI

What do people understand by RRI?

Participants agreed that RRI is not a term that is frequently used in Australia. However, it was recognized by many as an area that is emergent in Europe and was influencing some Australian research groups' interests. For example, Questacon and the Office of the Chief Scientist had some familiarity with the term through their international connections. Discussion arose on how RRI differs from research integrity which is dominant in Australia's research landscape. Several participants' organisations have responsibility for oversight of research codes of conduct and governance of research issues. This resulted in some discussion around the management and reporting of research misconduct and its relationship to ensuring RRI.

Participants addressed RRI at organisational and national levels. The underlying elements of responsibility were perceived to cut across different organisational tiers and scales. Participants felt that researchers were the first port of call when it came to 'responsible research' and there was a concern that RRI may place an unnecessary burden of expectation on researchers above what they already do. There was much discussion on the notion of responsibility and common themes included trust, transparency, equity, inclusiveness, collaboration and risk management. Ways to build stronger partnership with civil society and media to communicate research outcomes more broadly was also seen as important for RRI in Australia and perhaps a need for more focus of research funding.

Ideas and concepts of RRI?

The concepts in the map below, emerged through the early roundtable discussion where participants reported on their organisation's interpretation of RRI. The lines between the concepts were added when a researcher reflected on the audio recordings of the discussion noting the emerging and casual relationships amongst them with dark lines representing more frequently occurring linkages. The figure suggests that RRI definition has multiple dimensions and potentially spans beyond the five key pillars of RRI.

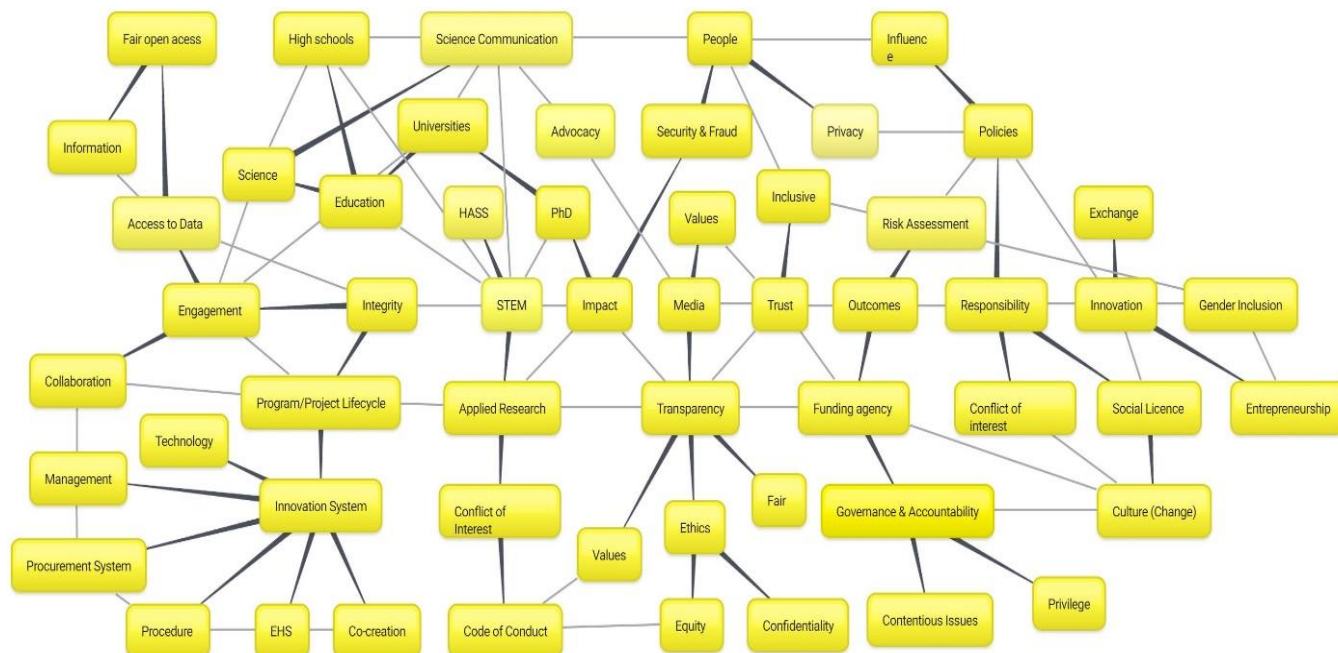


Figure 1 Concepts that arose from early discussion on RRI in participants' organisations

Another theme that dominated the discussion was the new *Impact Agenda* proposed by the Australian in late 2016. From 2018 research block funding for universities will, in addition to research excellence, be awarded based on research impact. While the focus of the *Agenda* is on generating commercial and economic outcomes, it was recognized that not all the research is geared towards commercialization and economic gain, but also focused on broader public policy and societal well being. A framework for measurement is still being developed and trialled during 2017 which made it difficult to settle on what the best metrics to include for *societal impact* might be under a national approach. CSIRO noted they had been measuring the impact of their research using a triple bottom line approach which they felt helped to crystallise the important elements of *research impact* beyond economics. While it was recognized industry-research collaborations are much less in Australia than in other countries, there is a trend in research and development (R & D) that shows an opportunity for growth of industry-academia-research collaborations. The government R&D tax incentives for businesses, was seen as a successful initiative to encourage industry to invest in research and innovation.

The pillars of RRI

Many of the pillars of RRI were easily recognized and form part of institutional strategies for undertaking research. *Gender equality* was frequently discussed during organisations' introductions. There was recognition that gender equality is an issue for many Australian science and technology organisations. Most felt that diversity would be a better term rather than limiting the focus only to gender. Recognition of this issue has seen the emergence of the Science in Australia Gender Equity (SAGE) based on the Athena SWAN program being piloted in a number of institutions across Australia. SAGE was launched in September 2016 by the Australian Academy of Science and the Academy of Technological Science and Engineering to address the underrepresentation of women in science, technology, engineering and mathematics (AAS 2016). A key element is awarding the gender equity policies and practices with either a bronze, silver, or gold status based on how well the organisations are performing on this issue.

Societal engagement, under Australia's Science and Innovation Agenda has been a priority area for many years but with a changing focus based on political context. Being the national science and technology centre means Questacon has a direct remit for this. Citizen science was seen as an emerging way of engaging society successfully in science, with several case study examples provided. It was discussed that increased funding and communication for this pillar may be one strategic approach for raising the profile of a science agenda in Australia.

Science education, particularly relating to Science, Technology, Engineering and Mathematics (STEM), is a key area of intervention in primary and second schools, with the Office of the Chief Scientist providing inputs into the National STEM School Education Strategy (2016 – 2026). Group discussions focused on declining performance of Australian students against international benchmarks, as has participation in senior secondary science. Industry engagement and collaborative efforts, such as the Boeing partnership on PhD training with Australian universities, school talks and engagement into undergraduate teaching was identified as a positive example for improving STEM education opportunities.

Ethics was widely discussed as integral to fostering responsibility, with many organisations such as ARC, NHMRC, ACFID involved in governance of research and the development of national research codes of conduct, tools for research evaluation, standards for the conduct of ethical research and data security.

Open access to data and research methodologies was not a major focus of discussions, however linked to transparency of research outcomes, communication and science education. Organisations such as the ARC have policies (e.g. ARC Open Access Policy) that publications arising from any government funding are made available via open access institutional repositories.

Drivers for increasing responsibility in science and innovation?

A key driver for increasing responsibility in science and innovation was around reputational risk and building trust in science. This was seen as important for continuing to attract public support for funding of science and innovation as well as being able to engage and inform decision makers on contentious issues. Research governance including processes for handling research misconduct were seen as integral to this. Individual organisational cultures were also seen as drivers for increasing responsibility as well as the move to more collaborative research partnerships between industry and academia. Transparency in the use of public and/or private funds and increased accountability were also seen as key drivers.

Barriers for increasing responsibility in science and innovation?

Many of the barriers were seen as the flipside of the coin of the identified drivers. For example, industry funding could be perceived as promotion of vested interests, with industry buying the results they wanted or scientists becoming “researchers for hire”. Both creating a lack of trust in science. Building on the industry-academia partnerships some suggested there can be a clash of cultures with the speed required by industry for results compared to the time needed to ensure rigour in the science by academia. Research agencies having to report on the return on investment (ROI) was also seen as a potential barrier because many organisations were felt to have limited capacity to do this. It was also recognized that a time lag may exist when demonstrating the real value of ROI in research. There was also some discussion about whether the expectations placed on researchers might be too much and the potential for RRI to be seen as just another administrative hurdle.

Examples of RRI and best practices from organisations

- National standards and codes of conduct e.g. NHMRC, research ethics, operational guidelines, evaluation guidelines
- SAGE Athena Swan accreditation for gender equality
- Industry PhD training e.g. Boeing partnership with the Universities in Australia providing additional top up funds for scholarship winners
- Industry funded research programs to allow university researchers to engage and collaborate with industry research facilities
- Investment and promotion of citizen science programs to engage society in science

Reflections on the workshop process

Recruiting participants was relatively easy however many more stakeholders could have been involved but timing of the workshop is always a challenge. With Australia’s seven states and territories, it would be interesting to run similar workshops in each jurisdiction, as each have their own governance structures around research and innovation. This would allow greater insight into how the national structures influence the next level down and how RRI is being operationalised across Australia at a different scale.

There was active participation throughout the day and the structure of the workshop, plenary and breakout groups, helped to ensure the discussions were wide ranging. Overall, a lack of familiarity with the term meant the facilitators had to actively steer the conversation to begin with, however participants responded easily to the questions posed and were able to share relevant concepts from their work. There was very little conflict to the discussions as most were presenting individual observations from within their organisations.

All participants expressed a keen interest in the ongoing results of the project and intimated they would be happy to have their organisations stay involved as was appropriate for the national discussion. Each were happy to provide follow up in relation to the five keys and the aims of the project. The September, Berlin conference was floated, and several expressed a desire to be kept informed of this agenda, as well as outputs from the national discourse analysis.