



## AAH Policy

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### INNOVATION AND SCIENCE AUSTRALIA 2030 STRATEGIC PLAN ISSUES PAPER

#### 1.1 Introduction

The Australian Academy of the Humanities (AAH) welcomes the opportunity to provide input to the Innovation and Science Australia (ISA) consultation on its 2030 Strategic Plan (the Strategy). We provide comments below on the overall Strategy, and then address the individual challenges identified in the paper.

#### 1.2 Conceptualisation of the Strategy: ‘How we think about the future’

The AAH welcomes the vision articulated for Australia in 2030 – that innovation is considered not as an end in itself but for the purpose of providing ‘meaningful work, and a great quality of life, in a fair and inclusive society’. The AAH also strongly endorses the acknowledgment that this goal will require ‘many players to work together’.

Our concern is that the current policy signals (including those in the Strategy) are working contrary to this goal. Despite acknowledging that innovation means more than technological advances, innovation policy continues to have a focus on technological and scientific innovation. While this is unquestionably a critical component of innovation, it is not sufficient to achieve the Government’s aims.

All of the ‘megatrends’ identified in the Strategy, including the rise of China and India, digital disruption, and urbanisation, are the result of complex social, cultural, technical, environmental and political change. They are human issues, and the effectiveness of Australia’s response to these challenges will, therefore, be dependent on deep understanding of human behaviour, culture, attitudes and values. Cultural and social knowledge and skills will be essential – to identify the problems, develop deep understanding of the issues, and design and implement solutions that have greatest social benefit and public value.

While the Strategy recognises the need to understand ‘the root causes of these megatrends’, it does not make the link that the source of this understanding is the discipline-specific knowledge and skills (political, cultural, economic, historical, arts/design, communications, and linguistic) of the humanities, arts and social sciences (HASS).

Policy strategies must include clear and strong signals that effectively mobilise all agents in the innovation system, including the full range of knowledge, training and skills across HASS and the science, technology, engineering and mathematics (STEM) disciplines – at all stages of education and research.

### 1.3 Challenge 1: ‘How do we ensure our current (and future) workforce has the necessary skills to support firms in their ambition and realise Australia’s vision to be a “top tier” innovation nation?’

#### 1.3.1. Skills and capabilities for innovation

A recent report by the Australian Council of Learned Academies (ACOLA) *Skills and Capabilities for Australian Enterprise Innovation* (2016) found that the ‘future of high value, high paid work depends on Australia learning the lessons of STEM and HASS skills mixing from some of its leading innovative enterprises’.<sup>1</sup> Training in the HASS disciplines produces people who ‘understand business, systems, culture and the way society uses and adopts new ideas’.<sup>2</sup>

Australia has not yet developed the policy mechanisms and programs to operationalise this skills mixing. The whole-of-government attention to the area of cybersecurity provides a recent example. The policy response focuses on developing technical expertise. This is critical, but not sufficient to achieve the aims of this policy agenda. Effectively addressing Australia’s cybersecurity challenges will require the full breadth of expertise:

computer scientists to design the software and networks; cryptographers to protect confidentiality of communications; economists to explain how the competing incentives of stakeholders might play out; anthropologists to explain cultural contexts and how they impact solutions; psychologists to explain how decisions are made and the impact on system design; the legal and policy scholars to set out regulatory constraints; criminologists and crime scientists to explain the motivations of perpetrators; and experts in strategy to frame the international context.<sup>3</sup>

This need has been recognised by foreign governments also working to tackle cybersecurity challenges. The UK Government’s five-year Cybersecurity Strategy calls for investment in skills and capabilities to ‘ensure that the human and behavioural aspects of cyber are given sufficient attention’. This extends to encouraging research collaboration across the disciplines and ‘innovative and flexible funding models for research, and the commercialisation of research’.<sup>4</sup>

Australia needs a whole-of-government skills agenda that recognises the broad range of skills and capabilities needed to address innovation challenges, which includes a plan for HASS and STEM skills mixing.

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<sup>1</sup> Cunningham, S., Theilacker, M., Gahan, P., Callan, V. and Rainnie, A. (2016) *Skills and Capabilities for Australian Enterprise Innovation*. Report for the Australian Council of Learned Academies, <http://acola.org.au/wp/PDF/SAF10/Full%20report.pdf>

<sup>2</sup> Professor Stuart Cunningham AM FAHA quoted in ‘National Science Statement a positive gesture but lacks policy solutions: experts, *The Conversation*, 22 March 2017, <https://theconversation.com/national-science-statement-a-positive-gesture-but-lacks-policy-solutions-experts-74987>

<sup>3</sup> Moore, T. and Pym, D. (2016) ‘Editorial’, *Journal of Cybersecurity*, 2(2): 119-20, p. 119, <https://academic.oup.com/cybersecurity/article/2/2/119/2909320/Editorial>

<sup>4</sup> UK Government (2016) *National Cybersecurity Strategy 2016-2021*, p. 59, [https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/567242/national\\_cyber\\_security\\_strategy\\_2016.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/567242/national_cyber_security_strategy_2016.pdf)

### **1.3.2. Gender equity and cultural diversity**

Although there is much research to suggest that achieving gender equity and cultural diversity in the workforce will help Australia meet its innovation objectives, such ambitions are currently missing from the Strategy.

It is estimated that the ‘current gap in [workforce] participation between men and women is closer to 40 per cent, rather than the headline 12 per cent, due to high part-time employment of women’.<sup>5</sup> The Cultural Diversity Council’s research shows ‘that while cultural diversity on ASX boards has increased, boardrooms don’t yet reflect the cultural diversity in the Australian community and are failing to realise the potential benefits’.<sup>6</sup> In ‘each of ASX 100, ASX 200 and ASX 500 listed companies, only a quarter of directors are from culturally diverse backgrounds compared with a third in the wider Australian community, and only 5% are from Asian backgrounds versus 8.5% of the Australian community’.<sup>7</sup>

Improvements in these areas will drive significant social and cultural transformations and innovations in the future, and should be a feature of the Strategy.

## **1.4 Challenge 2: Moving, and keeping, Government closer to the innovation frontier**

The AAH strongly supports the goal that ‘governments are dynamic in delivering services and public value’.

In regards to the question of how government could leverage greater social benefit and public value from major program expenditure, the AAH believes that the ‘human’ needs to be at the centre of the policy-making process for current and emerging issues of national importance including environmental challenges, ageing population, migration, shifting geo-politics, new technologies and security issues. Government needs to consider what assumptions are made about humans in policy, and how we regard humanity in policy formation, such as trade and diplomacy. Are we ensuring that policy is developed and executed effectively and to the broad benefit of humanity? The public reception and social ‘anchoring’ of innovation policy itself has not been as successful as it could be. A deep understanding of stakeholder communities and community engagement is vital, and policy development needs to be underpinned by research on social and cultural risks, benefits and impacts.

## **1.5 Challenge 3: Delivering high-quality and relevant education and skills development for Australians throughout their lives**

The AAH strongly supports the statement that ‘our workforce will require deep discipline skills to generate, transfer and implement knowledge and ideas’. This is as true for the humanities as it is for the science disciplines. Deep disciplinary training and research gives the system its core capacity and ultimately underpins discovery and innovation in a range of workforce settings and sectors.

There have been some exciting initiatives internationally in realising the innovation potential of the humanities disciplines to generate, transfer and implement knowledge and ideas. In the Netherlands, the Anchoring Innovation research agenda of OIKOS, the National Research

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<sup>5</sup> CEDA (2015) *Australia’s Future Workforce?*, p. 12, [http://adminpanel.ceda.com.au/FOLDERS/Service/Files/Documents/26792~Futureworkforce\\_June2015.pdf](http://adminpanel.ceda.com.au/FOLDERS/Service/Files/Documents/26792~Futureworkforce_June2015.pdf)

<sup>6</sup> Cultural Diversity Council (2015) ‘Is There Harmony in the Boardroom’, <https://www.dca.org.au/media-releases/there-%E2%80%98harmony%E2%80%99-boardroom-2015>

<sup>7</sup> Ibid.

School in Classical Studies, has been funded EUR 18.8 million from the Dutch Research Council. The group is investigating the phenomenon of ‘innovation’ in the ancient world, and the ways in which ‘innovations are embedded in and attached to what is older, traditional, known’. This research suggests that ‘successful innovations ‘must be “anchored” for the relevant social group(s)’ – the ‘new’ needs to be connected to the familiar. Their research is about ‘the way in which people regard and cope with ‘newness’, and about the question under what conditions new things become ‘anchored’, and thus successfully implemented – or not!’.<sup>8</sup>

The deep discipline knowledge of HASS in and of itself, and in collaboration with STEM, can lead to discovery and innovation in a range of sectors. A national education and R&D strategy is needed for the humanities, arts and social sciences, along the lines of that developed for the STEM sector. But importantly, these sector-specific strategies should underpin a higher-level national plan which considers the system as a whole, how the component parts interact to produce effective innovation outcomes, undertakes forward-planning in areas of national priority (including where we may need to build critical mass and address under-investment) and assesses the ability of the broader system to deliver on the skills and capabilities for an innovative society.

One of the gaps in Australia’s strategic policy agenda is a national, whole of system plan for education, research and skills development.

#### **1.6 Challenge 4: Maximising the engagement of our world class research system with end users**

The AAH endorses the vision that Australian research is ‘ethically sound, independent’ and ‘supported by appropriate funding levels, equitably shared across the system, and supported by world-class research infrastructure’.

On the matter of achieving ‘enhanced mobility for innovators across the system’, we would emphasise that the definition of ‘industry’ should be broadly applied – encompassing businesses, governments, government business enterprises, non-government organisations, not-for-profit organisations, and community organisations.

We agree that one of the biggest challenges is to ensure that the research training system ‘produces a quality and quantity of graduates, in a diverse range of sectors that adequately serves the needs of a knowledge-intensive future’. The core objective of research training should be to develop deep knowledge and high quality skills and competence in a particular discipline. Those who wish to engage with end users should be supported to do so, and policy levers, such as those that encourage PhD placements with end user organisations, should not be restricted along disciplinary lines but rather incentivise researchers across the system.

#### **1.7 Challenge 5: Maximising advantage from international knowledge, talent and capital**

In regards to maximising the advantages of international knowledge, talent and capital, we would point to the work of two ACOLA projects, with which the ISA are familiar: *Smart Engagement with Asia: Leveraging Language, Research and Culture* (2015)<sup>9</sup> and *Australia’s*

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<sup>8</sup> Sluiter, I. (2017) ‘Anchoring Innovation: A Classical Research Agenda’, *European Review*, 25(1): 20-38, <https://www.cambridge.org/core/journals/european-review/article/anchoring-innovation-a-classical-research-agenda/EB4A06F32AA42EAE8F732DF658687A42>

<sup>9</sup> Ang, I., Tambiah, Y., and Mar, P. (2015) *Smart Engagement with Asia: Leveraging Language, Research and Culture*, Australian Council of Learned Academies, <https://www.acola.org.au/PDF/SAF03/SAF03%20SMART%20ENGAGEMENT%20WITH%20ASIA%20-%20FINAL%20lo%20res.pdf>

*Diaspora Advantage: Realising Transnational Business Connections with Asia* (2016).<sup>10</sup> Both projects examined in detail the role of diasporic researchers and business communities contributions to the circulation of ideas between Australia and international counterparts.

## 1.8 Challenge 6: Bold, high-impact initiatives

In response to this section of the Strategy, the AAH would point to a nation-building initiative which has the power to enrich our communities by unlocking Australia's cultural record. The aim of the HASS Platform, which forms part of the 2016 National Research Infrastructure Roadmap, is to enable researchers to connect and curate the vast social and cultural record which documents who we are as a nation, how we experience and interact with our environment, and our understanding of cultures and communities around the world. The sector has welcomed the clear recognition that the HASS sector's national infrastructure requirements are significant and urgent, and cannot be met through institutional or commercially available infrastructure. The role for government in facilitating processes of transformation of this kind is profound. This national strategic initiative is an opportunity to accelerate the impact of Australia's social and cultural research through a coordinated strategy which builds on collective national research infrastructure capabilities and takes a next-generation approach to big data.

We would be happy to elaborate on any of the feedback in this submission. Please direct your initial enquiries to our Executive Director, Dr Christina Parolin.

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President

The Australian Academy of the Humanities (AAH) is one of Australia's four Learned Academies, established to advance knowledge and the pursuit of excellence in the humanities for the benefit of the nation. A key role of the AAH is to provide independent expert advice to government and policy makers, promoting the social significance of humanities scholarship and its vital importance in shaping effective public policy.

[www.humanities.org.au](http://www.humanities.org.au)

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<sup>10</sup> Rizvi, F., Louie, K., and Evans, J. (2016) *Australia's Diaspora Advantage: Realising the Potential for Building Transnational Business Networks with Asia*, Australian Council of Learned Academies, <https://www.acola.org.au/pdf/saf11/SAF11%20extract.pdf>