



ACEAS

Australian Centre for Excellence in Antarctic Science

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The Australian Universities Accord Consultation Paper response

The Australian Centre for Excellence in Antarctic Science (ACEAS) welcomes the opportunity to provide a submission on The Australian Universities Accord Consultation Paper.

Over the coming decades Australia, and our regional neighbours, will face unprecedented impacts of climate change and extremes, affecting our weather, coastal systems, fisheries, agriculture, homes, businesses and infrastructure. In seeking to advance understanding of these risks and associated hazards our national efforts are at times fragmented and not at the scale required to advance knowledge at the pace required. In some cases, answering the presently unanswered in a timely period will require large-scale, coordinated, and sustained research effort led by the University sector. It is our primary submission that the Accord should create a mechanism to support sustained, large-scale research effort in a small number of areas of great national importance that goes beyond present funding models.

We provide more detail and address a subset of the specific consultation questions below.

Q4 Looking from now to 2030 and 2040, what major national challenges and opportunities should Australian higher education be focused on meeting?

Q5 How do the current structures of institutions, regulation and funding in higher education help or hinder Australia's ability to meet these challenges? What needs to change?

Q23 How should an Accord help Australia increase collaboration between industry, government and universities to solve big challenges?

Q24 What reforms will enable Australian research institutions to achieve excellence, scale and impact in particular fields?

The impacts of climate change are already being felt within Australia, but by 2040 these will be even clearer in number and more intensely felt. Australia must rapidly prepare, and the universities have a critical role.

Australia has a narrow window to understand and adapt to risks that are yet to be fully understood. Taking the example of sea-level rise, which is still not well specified in climate projections due to limited knowledge of future ice-sheet change, it will take decades to plan and modify ports, airports, roads, coastal cities but progress in advancing knowledge is slow internationally. Impacts on our regional neighbours will, at times, have existential consequences, with downstream affects on migration and regional security.

Australian universities are well placed educate, preparing and upskill individuals, industry, governments, etc., to adapt to climate change impacts and where, necessary, prepare for damage and loss. A national distribution of universities means essential local knowledge can be added to this education and reflect local needs and interests.

However, the rapid development of knowledge around climate change requires sustained scale and coordination, something isolated, investigator-led research alone cannot provide. The many years of successful terrestrial climate research undertaken by the (now) Climate Extremes Centre of Excellence (CLEX) highlight the advances that can be made with appropriate funding mechanisms. But if an Australian Research Council funding panel had thought differently, CLEX would not have been funded and this research would not have occurred at the scale and speed it has. Sovereign capabilities in climate change risk and adaptation are required, with sustained funding to allow the speed of research required by the risk. Sea-level and climate-change risk from Antarctica, where Australian Antarctic Territory resides, is one example area

where research is currently fragmented and subject to at-times ad hoc decision-making by funding bodies. There are, no doubt, other areas of sovereign need.

The model of the Australian Institute for Marine Science (AIMS), with its track record of advancing knowledge of tropical marine environments, may be an appropriate model for replication, or as a virtual or partially virtual version of AIMS.

Q9 How should Australia ensure enough students are studying courses that align with the changing needs of the economy and society?

The existing bottom-up approach to undergraduate->honours->PhD pipeline needs further consideration and strategic alignment. In particular, the honours period is critical to recruitment into later PhD and research careers, and yet there is no coordinated national approach to recruiting domestic honours students, or consideration of dedicated funding in priority areas. Often PhD students stumble into research rather than as a result of a well-thought-through national strategy.

The consequence of this limited domestic honours intake is that in some fields domestic students fill less than half of PhD projects, with many projects having no domestic applicants. This also creates reliance on sometimes small number of overseas nations, creating sovereign risk. The present approach is effectively agnostic at honours entrance, and this then sets the supply level for domestic PhD intake. In areas of national priority this is far from ideal. Honours scholarships or other recruitment mechanisms should be considered to increase critical mass of domestic researchers in areas of high priority but low domestic interest.

The presently below-poverty-level funding for PhD students must be addressed, with locked-in indexing to avoid a cycle of plenty-to-poverty. Universities or Centres of Excellence are now often providing scholarship top ups, originally to recruit the best domestic students into key areas but now these are covering basic living expenses. As with honours scholarship incentives, additional scholarship funds for priority national areas should be considered to boost domestic recruitment.

Q27 How can we improve research training in Australia including improving pathways for researchers to gain experience and develop high-impact careers in government and industry?

PhD or postdoctoral career phases are the natural times to explore such pathways, and so schemes which explicitly target these groups are required. Co-design of research projects across academia and government/industry provides a deeper level of engagement for the researcher and other staff than short internships, and hence is ultimately more effective than short-term secondments. Schemes which encourage such joint university-government projects would assist but they must recognise the vulnerable employment status and limited income of PhD and postdoc researchers. Universities can assist by consciously articulating fulfilling careers of researchers in industry and government from commencement of PhD studies.

In climate science, barriers to greater government engagement includes hurdles of working in a classified environment, restricting, or discouraging the free and open movement of ideas and knowledge or people. These require review on a case-by-case basis and a leadership-driven desire to build pathways for researchers into government.

ACEAS thanks the Accord Panel for the opportunity to contribute to this issue.

Best Regards,

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