

Submission in response to the consultation paper:

Boosting Commercial Returns from Research

The Council of Deans and Directors of Graduate Research (DDOGS) note the four ambitions of the competitiveness agenda and in this submission, focus on point 2, development of a *more skilled labour force* and in particular on the statement concerning:

“Opportunity to ensure graduate industry skills

The Government has an opportunity to reform research training arrangements, including scholarships, to ensure that, in relevant disciplines, universities are producing graduates with business, management, and entrepreneurial skills.”

Specifically, the consultation paper calls for comments on the proposal for:

Increasing industry relevant research training

The Government will take steps to ensure that the research workforce is equipped to work with industry and bring their ideas to market. To achieve this outcome the Government is looking to provide greater opportunities for industry relevant research training, provision of industry and business relevant skills, and recognition of PhD candidates with existing industry experience. These issues will be a focus of a review of research training arrangements which will be informed by consultation with the research sector and industry.

1. DDOGS agrees with the need for a review of research training arrangements and in particular the research training scheme. The RTS was implemented in 2001 and has well served universities and HDR candidates but a review in light of contemporary issues is warranted.
2. The DDOGS group is a critical one within the university/research sector and needs to be included as a key component of the consultation process.
3. Recognition of the importance of development of employment skills in our research graduates is also welcome.
4. However, it is important that any review of research training is conducted through the lens of continuing to build Australia’s **research excellence** and providing **well prepared graduates** for ALL employment options, not simply industry.
 - **Research excellence:** It is important that research training continues to offer all candidates the depth of disciplinary training in knowledge creation and allows them to contribute to the body of knowledge in their discipline through traditional outputs.
 - **Well prepared graduates:** Generic skills that employers require are typically ones that are valued across all sectors (refer to the report by the Commonwealth on Employer Demand for Researchers in Australia, March 2010) and thus industry relevance is too narrow a lens from which to view skills development. For example

- teamwork, communication, creativity and innovation are skills that benefit all employers of research graduates including universities.
5. Australian universities are modern, innovative, business focussed and entrepreneurial organisations that cannot be characterised simply as “ivory towers”. Universities have an excellent track record in engaging with industry and government as well as running one of the most successful export industries in the country – international education. With the introduction of schemes such as Easy Access IP in several Australian universities over the past 3 years, this level of engagement is growing and already producing more knowledge exchange between universities and business.
 6. Research training in Australia is dynamic, responsive and globally competitive and universities engage positively with industry and government to develop better prepared graduates.
 - Supporting this, a recent study of industry focussed PhDs at RMIT identified 424 individual cases where candidates had some form of industry engagement component in their HDR program. This represents over 25% of all enrolments that are actively working with and supporting industry partners and problems during their candidature. A key finding was the engagement of candidates from the Arts and Humanities with 42% of all enrolments in the College of Design and Social Context conducting applied research with industry partners. Partners included large corporates, small business, government and not for profit agencies.
 - Another example of this engagement is in the success of prior schemes funded through the Commonwealth that very successfully embedded directed skills in commercialisation within graduate programs (the Commercialisation Training Scheme). Although less successful, universities also engaged positively with the more recently introduced engineering cadetship program. Although both schemes had at their heart the objective of providing industry relevant skills development in our higher degree researchers, both suffered from lack of consultation with the sector prior to their introduction and the CTS was not given sufficient time to run in order to have the desired impact. The ATN graduated 274 PhD candidates with a Graduate Certificate in Research Commercialisation as part of the CTS Scheme with many similar success stories around the sector including 98 at UNSW alone.
 7. The importance of generic (transferable or “soft”) skills is clearly on the research training agenda with most universities across Australia offering formal and informal support for development in the spaces of entrepreneurship, communication, teamwork, management/leadership, problem solving across disciplines and other employment skills.
 - This is a major principle under the Graduate Research Good Practice Principles developed by DDOGS and released in 2014, which states the principle that “Graduate research candidates are supported to undertake original research and

scholarly activities while developing key research and employability skills.” (see <http://www.ddogs.edu.au/>).

8. As noted, most universities currently offer generic and employability educational opportunities to their HDR candidates and internship programs for graduate researchers are on a growth trajectory. Examples include:
 - e-GradSchool Australia (eGSA) is a collaborative initiative of the ATN group of universities, provides training to HDR students via flexible online 5 week modules focusing on discrete skill sets (e.g. research commercialisation, entrepreneurship, project management, public policy); in addition to award courses in Research Commercialisation and Research Management. Since its launch in 2003, eGSA has processed over 8990 registrations for its courses from students from over 15 universities, with expectations that this figure will rise to over 10,000 in 2015. The modules on employment related skills that form the Learning Employment Aptitude Program (LEAP) received an award from The Australian Learning and Teaching Council (ALTC) for the outstanding contribution it makes to participant learning.
 - The 3M PhD Career Development Scholarship at UNSW is an industry partnership program which provides PhD candidates with professional mentoring, access to soft-skills development modules and a 12 week professional placement in one of the 3M facilities in the Asia Pacific region.
 - iPREP WA, is a recently launched initiative involving all five WA based universities in partnership and designed to further support research collaboration between universities and industries in Western Australia. The program involves interdisciplinary teams of PhD students working on short research projects hosted by an industry partner while their thesis is under examination. iPREP WA is designed to develop industry-ready PhD students and to foster a better awareness in the wider industry community of the value of PhD trained graduates as potential employees.
 - More than 1,700 RMIT students from all disciplines have been given the opportunity to work overseas through the RMIT International Industry Experience and Research Program (RIIERP) since 1992. Currently, there are 165 international companies involved in RIIERP, including such respected names as Airbus, EADS, Bentley Motors, the Siemens Group, Nestle, McQuay, Robert Bosch, Volkswagen, BMW, and the Rolls-Royce Group in Europe and North America.
 - AMSI Intern is a national program that links postgraduate students and their university supervisors across all disciplines with industry partners through short-term 4-5 month tightly focused partner research internships. The postgraduate student is supported by an academic mentor from the host university throughout the internship placement period. The AMSI Intern model provides a valuable opportunity for academic mentors and industry to develop new and strengthen

existing relationships through these research collaborations and many universities across Australia participate in these programs.

- As part of its suite of Doctoral Program activities, Monash established the Graduate Research Interdisciplinary Projects (GRIPs) for PhDs. The GRIP is a thematic umbrella under which a small group of about 15 PhD students are working on industry-led interdisciplinary projects focused around one specific research theme. Each GRIP has external partners including SMEs, Government and community groups. Two GRIPs were launched in 2014 with up to six anticipated in 2015.
 - The University of Melbourne in its 2013 strategic plan for research (Research@Melbourne) recognised that increased industry engagement would not occur passively and responded by building capacity in industry research development. This new, large business development unit will promote University research and research training capabilities to industry to create 'industry immersion' opportunities through short placements, longer internships and fully embedded research training positions.
9. The lessons that have been learned by both business and universities from the strong and continuing engagement between the sectors need to be considered in developing a future roadmap for Australian research training.
 10. Included in the terms of reference of any review should be an examination of funding models that will appropriately resource higher levels of participation of research candidates as well as initiatives designed to develop soft skills. Longer term commitments are needed to provide the best chance of developing programs that will have an enduring impact