REDEFINING THE ANU PHD

Green Paper

June 2018

Please note this document is for internal ANU circulation only
Acknowledgements

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FOREWORD

ANU was founded in 1946 as Australia’s first research intensive university, with the ANU PhD at the centre of our institution’s mandate to ‘encourage post-graduate research and study, both generally and in relation to subjects of national importance to Australia’. And the ANU exceeded any reasonable expectations, quickly rising to become one of the world’s great universities, and creating a graduating PhD cohort which has gone on to not just populate Australian universities and societies, but the region’s and the world’s as well.

In 2018 we find ourselves in a time of great change, yet our PhD graduates undertake a programme that is largely unevolved from that of our first doctoral graduate nearly 70 years ago. We have a once-in-a-generation chance and, I would say, a once-in-a-generation responsibility, to redefine our PhD to reflect our contemporary world, to distinctly match our University’s national mission, and to be one of the most sought-after, prestigious, and enabling PhDs in the world.

This Green Paper is a chance for all of us to reflect on who we are, and what we want to be. It provokes us to think about questions like:

‘How does being the national university help us create a distinctive ANU PhD Experience?’
‘Does the PhD still lie at the core of ANU, and is its stature reflected in our planning and strategies?’
‘Does ANU use its stature as one of the world’s most international universities to provide unrivaled opportunities for its PhD students?’
‘Should an ANU PhD be more than just a thesis?’
‘In each of our schools, is an ANU PhD competitive with the best in the world?’

In each of these questions above, I believe my own answer indicates that I am not content with the status quo. And with these, and other questions raised in the Green Paper it is essential that we think – sometimes well outside the box – about what a contemporary PhD should and could be. We are not looking for homogeneity, conformity, or mediocrity. We are looking to the future, a future that enables our PhD graduates to be leaders that artfully use their knowledge for the betterment of humanity in whatever way they conceive.

This paper is not exhaustive – it is meant to provoke a response. A response to the principles, provocations, and recommendations it contains. Be part of the discussion, and be part of history. A history where ANU reimagined its PhD to create one of the world’s most distinctive and empowering degrees.

Professor Brian P. Schmidt AC FAA FRS

Vice-Chancellor and President
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STRUCTURE OF THE GREEN PAPER

Part A provides the context and rationale for redefining the ANU PhD, including a vision statement, as well as principles, provocations and initial recommendations. This section also includes summary detail for new flagship PhD programs.

Part B provides detail of the deliberations of the Committee of Inquiry organised into the following sections:

- The value of HDR Programs at ANU
- Recruitment, Pathways and Programs
- Candidature, Progress and the HDR Experience
- Coursework
- Research and Transferable Skills
- Examinations and Assessment
- Widening Graduate Opportunities and Employability
- Supervision
- Enablers
- Conclusion
This document sets out principles and recommendations for redefining the PhD at ANU. Its purpose is to offer a distinctive HDR experience appropriate to the University’s role as the national university and as Australia’s premier research-intensive University. In that vein, the Green Paper considers the possibilities for a range of flagship programs designed for ANU students and suited to its unique character, as well as ensuring that the process of redefinition delivers a distinctive HDR experience for all. It was prepared by the Office of the Dean, Higher Degree Research in consultation with the members of the Committee of Inquiry on Doctoral Education. It is informed by engagement with and feedback from members of the ANU community with an interest in higher degrees by research and outlines the broad field of issues relevant to graduate research at ANU.

This document is a ‘Green Paper’ in that it outlines a range of proposals for debate and discussion, along with principles for guiding relevant activities and resourcing now and into the future. It offers an environmental scan of institutional, national and global contexts for ANU and raises a series of questions, challenges and resourcing issues relevant to the purposes of redefinition consistent with these aspirations. As these ideas are subject to further consultation and feedback consistent with the concept of a Green Paper, final recommendations will follow in a White Paper which takes account of this feedback and represents institutional endorsement of short, medium and longer-term actions, priorities and investment towards a ‘gold standard’ of candidate experience.

This document does not aim to provide an exhaustive survey of issues relevant to research higher degrees, nor does it aim to offer a solution to every conceivable challenge in this context. Stakeholders who participated in the Open Forum and Committee of Inquiry processes offered many useful insights and made a substantial contribution to progressing discussion around improving and enhancing the University’s HDR-related activities. This document aims to describe the broad parameters for redefining research degrees at ANU and the kind of experiences and outcomes appropriate for research graduates from Australia’s national university in the twenty-first century.

This Green Paper has been developed based on review of relevant national and international discussion and consultation documents on the PhD, information collected during Open Forums, material from witness statements and the discussions and ideas presented at the Committee of Inquiry on Doctoral Education. Open forums and the invitation to submit written witness statements provided an opportunity to convene ANU-wide conversations about how we can provide programs, experiences and outcomes that set ANU HDR candidates apart. Each forum saw expansive discussion on the University’s role in graduate research and on contemporary challenges for both individuals and institutions. They provided a means for engaging with a broad range of stakeholders from across ANU.

The membership of the Committee was drawn from across the academic community including undergraduate student, higher degree research candidate and early career researcher representation, and was envisaged as a collegial initiative. The committee were invited to consider and discuss issues raised in open forums, expressed in written submissions from stakeholders, and to review background information provided. To support their deliberations the Committee were also provided with a briefing document outlining the national and international context for policy and practice in doctoral education, including examples of good practice. Thematic areas for discussion were identified and witness statements and feedback from the open forums were shared.
II CONTEXT AND RATIONALE

We will redefine the ANU PhD Program to deliver a new generation of graduates, who successfully use their research training to advance careers in universities, and across all industries and sectors.

Key Initiative 1.7, Strategies for Change, Strategic Plan 2017-2021 (ANU, 2017).

This document attempts to distil the core issues raised by both the ANU community and the Committee of Inquiry as well as consider the international context of HDR education today, and looks to the medium and longer term, outlining principles and recommendations that support the sustainability and quality of graduate education at ANU, and reaffirm the University as a global leader in higher degree research.

The character and governance of higher degree research at ANU has been a topic of active discussion for over a decade since the disestablishment of the ANU Graduate Research School (GRS) in 2006. In the Report of the 2007 Review of Higher Degree Research at ANU (January 2008), emphasis was laid on the unique profile of ANU in Australia ‘that requires the University to be a national leader in the delivery of high quality higher degree research programs’, followed by the assertion that ‘The PhD is the flagship degree of ANU’ (ANU 2008: 5). In 2016 a working party developed further key strategic objectives, which led to the affirmation of the need to ‘redefine the ANU PhD Program’ in the 2017-21 ANU Strategic Plan. These findings also underpinned Committee discussions and are summarised as Appendix 1.

The ‘Redefining the ANU PhD’ project was inspired by the ANU Strategic Plan 2017-21, informed by previous reviews and findings and follows the ANU tradition of consultation as part of the development of new strategies and directions. The project began with a series of Open Forums for the ANU community at large and inviting written submissions for consideration by a Committee of Inquiry, which met six times from August-October 2017. While acknowledging the strengths of the University’s current research training environment, it points to challenges that have been a recurring theme in reviews and reports since the 2007 Review of Higher Degree Research at ANU. This Green Paper suggests that part of the process of redefinition entails deeper reflection on the culture of research training across the University and its alignment with wider institutional research and education agendas.

The process is also informed by national and international discussions on the value and purpose of the contemporary PhD. The new Australian Government Research Training Program provides more flexible funding arrangements to support HDR study and is informed by, among other things, the Australian Council of Learning Academies (ACOLA) Review of Australia’s Research Training System (2016) which emphasise the government’s priority of improving links between industry and universities and ‘ensuring that HDR training makes its maximum contribution to national prosperity’ (McGagh et al., 2016). A subsequent Research Training Implementation Plan identified five priority areas with 18 actions to address the recommendations of the Review: pathways to HDR training; industry-university collaboration; equity, including Indigenous participation; quality of the HDR training system; and data and evidence to better monitor HDR system performance. This paper examines in detail the first four of these and notes the fifth as a feature of national monitoring and quality assurance. As the national University ANU clearly has to take account of this important national debate, but our focus is also global in taking account of wider discussions regarding the role, function and value of the twenty-first century PhD.

i. Vision Statement

A vision for the ANU PhD is for a distinctive approach and unique candidate experience appropriate to the status of ANU as the national university – both in terms of its premier position in Australia and the world, and its heritage in providing postgraduate education.
ii. Getting there: Redefining the ANU PhD

In deliberating on the ANU PhD the Committee of Inquiry reflected on our current position and any impediments that might hamper a positive change. In preparing the following principles, provocations and initial recommendations we considered the following:

- How do we define a ‘flagship’ PhD program for ANU and what would be its key features?
- What as an institution can ANU offer that few others can? How do we celebrate the diversity of current ANU PhD programs and support College and School approaches to research training while considering an institutional HDR strategy for redefinition and improvement?
- What model of HDR academic and administrative governance meets the needs of the current ANU structure?
- Are there core attributes – such as critical thinking and ‘thought leadership’ that are central to all PhD study?
- What is the value of the PhD to the contemporary research-intensive university?
- What does success look like and how will the University as a whole embrace change?

The Committee of Inquiry considered the challenge of distinctiveness, given prevailing notions of what a PhD involves and the natural diversity of specific features across the academic community of ANU. It noted the need to identify elements that exemplify the institutional character whilst respecting local diversity. Further, the Committee of Inquiry considered the issue of the distinctive experience of candidates, noting the current value proposition rests largely on the high status of ANU and excellence of its researchers rather than a more deliberative strategy of experience.

This review of the ANU PhD has been undertaken in the belief that the University should site the fundamental PhD objective of globally excellent research training within a twenty-first century framework of rigorous intellectual and personal challenge delivered through flexible pathways, entry and exit points, in a context of collegiality, with a focus on national and international strategy and responsibility, and lifelong engagement with the research culture at ANU. It lays out principles and proposals to ensure that ANU continues to deliver on its responsibilities as a national university with strong engagement with the Asia Pacific region – themes that emerge strongly throughout the 2017-2021 Strategic Plan.

ANU should redouble its efforts to recruit the brightest and the best higher degree researchers in a way that opens up opportunities to global talent, is inclusive and embeds all candidates in our vibrant world-class research culture. These proposals consider the higher degree research journey holistically, considering everything from attraction of the best applicants, relevance and flexibility of research skills, training, professional development and industry engagement activities, through to deepening a connection with HDR alumni.
III PRINCIPLES, PROVOCATIONS AND RECOMMENDATIONS

i. Contextual statement for Principles, Provocations and Initial Recommendations

ANU was established in 1946 on a distinct mission as the national research university, providing postgraduate education. This Green Paper begins by honouring this heritage. While ANU continues to enjoy a high proportion of HDRs as a fraction of the total student body – currently around 12% v. a Go8 average of 8% - this figure has declined in recent years. These principles and recommendations address the ways in which ANU preserves and enhances its distinct mission and continues to offer a rich and enduring research culture.

ii. Principles

Principle 1: The University’s position as Australia’s national university offers unique opportunities for the attraction of both domestic and international candidates and allows for the development of both a distinctive character to the HDR experience and relevance to candidates from a broad range of society, including those from post-honours or masters pathways, those in senior positions in government, the professions, education and a range of industries, those currently in the workforce who need to enhance their skills, those from developing countries and those from disadvantaged backgrounds in Australia.

Principle 2: As Australia’s national university we will be exemplars and leaders in higher degree research training, responsive to national and global social, cultural, political, economic and technological change.

Principle 3: In redefining graduate research education at ANU we commit to benchmarking ourselves against global best practice.

Principle 4: Through the establishment of a bespoke cluster of ‘flagship’ PhD programs ANU will re-emerge as cutting-edge leaders in graduate education globally.

Principle 5: An increasing element of the ANU PhD should be enhanced through external engagement and collaboration with partners such as world-leading universities (joint, dual, cotutelle and visiting scholar arrangements); industry (sponsorship, internship, collaboration, shared supervision); government and not-for-profit organisations.

Principle 6: In redefining the ANU PhD the University honours its commitment to the Reconciliation Action Plan, in both attracting, supporting and retaining a greater number of Aboriginal and Torres Strait Islander candidates and ensuring that indigenous knowledges and research are shared with the wider HDR community.

Principle 7: ANU welcomes diversity in the candidates we engage, the research they conduct and the outcomes they pursue. We conduct all our research in a respectful and inclusive environment, which honours core principles of academic freedom. The University values all HDR researchers for their significant contributions to the research efforts of the University, the creation of original knowledge, methods and applications, their enrichment of our research culture, their representation of ANU at conferences, through publications, in the media and as visitors to other universities.

Principle 8: That the University must increase its investment in the HDR student experience to match its excellence in taught undergraduate and postgraduate programs in the recognition that this investment reflects a holistic approach to HDR mental, physical and academic well-being, as well as promoting mobility through engagement with partners.

Principle 9: The ANU PhD experience prepares and supports all candidates for an uncertain future where creativity, innovation, leadership and critical thinking will always be highly valued. The ANU PhD equips individuals for careers regardless of pathway, and commits to recruit HDR candidates from diverse backgrounds and with a range of experience.

Principle 10: That supervision is a central aspect of academic responsibility and intellectual leadership.

iii. Provocations

(in no particular order of priority)

Provocation 1: Does being the national University impart a responsibility to create a distinctive ANU PhD experience?

Provocation 2: Does ANU use the NIG optimally to support the HDR community?

Provocation 3: Can ANU challenge the dominant form and structure of the PhD as understood in Australia and in the Go8 through a range of distinctive flagship programs?

Provocation 4: Does ANU reflect the primacy of PhD programs in its planning and strategies?
Provocation 5: Does ANU consistently optimise its international links to maximum effect for global opportunities and world-leading supervision of PhD candidates?

Provocation 6: Does ANU value and support its higher degree research population?

Provocation 7: Should the thesis be accompanied by broader graduate attributes at the end of the HDR program?

Provocation 8: Does one become a great supervisor by osmosis?

Provocation 9: Are ANU HDR graduates internationally competitive?

iv. Initial Recommendations

Recommendations are organised into categories as follows: distinctive profile of HDR programs of study, including flagship initiatives; issues of enhancing supervision; proposals for enriching the experience of HDR students and opening up new pathways into and out of PhD study; those enablers relating to supportive infrastructure and governance and philanthropic investment.

Recommendation 1: That the University does more to capitalise on its responsibilities as Australia’s national University in attracting high quality domestic and international students.

Recommendation 2: That the University specifically considers a range of distinctive flagship PhD programs.

Recommendation 3: That the University embeds a distinctive University-level identity and appropriate graduate outcomes and achievements relevant to the needs of candidates.

Recommendation 4: That the University ensures excellence in supervision for all HDR candidates and utilises more fully its global networks for this purpose.

Recommendation 5: That the University develops explicit strategies, including stipends and modes of study such as part-time enrolment to open up access to low-SES, indigenous, regional and remote applicants, and those with caring responsibilities.

Recommendation 6: That the University more formally recognizes the skills and experiences candidates bring to their studies in appropriate ways, including flexible entry and professionally-oriented programs.

Recommendation 7: That the University pays greater attention to HDR pipelines including Honours, Masters, MPhil, female students in male-dominated disciplines, indigenous students in bachelors programs, low-SES recruitment strategies and highly-qualified senior leaders in the professions and government.

Recommendation 8: That the University enhance the once-popular Summer Research Scholarships program.

Recommendation 9: That the University considers innovative exit pathways from the PhD.

Recommendation 10: That the University expresses its deep commitment to the traditional owners and custodians of the land by embedding indigenous understanding as a core part of HDR skills development and of supervisory training.

Recommendation 11: That the University does more to engage PhD candidates in inter- and transdisciplinary experiences and exposure to ‘grand challenges’.

Recommendation 12: That the University reviews the function and purpose of coursework in programs that require this as a condition of the award.

Recommendation 13: That the University reviews and refines what is meant by ‘research culture’ in an HDR context and how candidates can be given greater collegial opportunities and cohort identity.

Recommendation 14: That the University explore innovative post-thesis submission opportunities, including employment, honorary fellowships, publication scholarships, leadership programs and industry partnerships.

Recommendation 15: That the University foregrounds preventative strategies to promote safety, physical and mental health and well-being at every stage of candidature.

Recommendation 16: That the University considers reform of current administrative and academic structures and governance of HDR candidates, including a graduate research college.

Recommendation 17: That all opportunities to raise the profile and resourcing of higher degree research are realised through leveraging philanthropy, overseas government funding, international and industry partnerships.

Recommendation 18: That sustainable, supportive structures for supervisors be implemented.
We have many well-established HDR programs, and the achievements of our alumni are testimony to the health and superiority of the research culture here at ANU. Some, such as the RegNet PhD program, already regard themselves as ‘flagship programs’\(^1\). Given the strategic imperative to create flagship programs which can signal a new commitment to graduate research at ANU, and create unique, distinctive and unapologetically selective programs, the following models are outlined to initiate further discussions. Such bespoke programs must enhance what ANU already has to offer or speak to a new level of collaboration and partnership with other world-class universities, government or industry. Such programs will draw energy and impetus from our outstanding intellectual infrastructure and represent the highest quality research and focus on impact, engagement and cross-disciplinarity from the start. The following are proposed as examples of paradigm-shifting initiatives:

1) The IARU partnership program - ANU has a place amongst ten of the other most prestigious universities in the world. This groups sees part of their function to be a defence of the value of research-intensive institutions to what they term the ‘knowledge ecosystem’ - the co-existence of research, education and technology transfer. This program will place 10 ANU candidates a year with a supervisory team which includes at least one other IARU partner. A 3.5 year stipend scholarship will include funding to undertake a visiting fellowship at the host supervisor’s institution. The IARU scholars will identify as a cohort with the hope that partners send visiting HDRs to ANU as part of a widening exchange. The emphasis is on matching areas of research excellence or emerging significance to the University’s research strengths and supporting candidates with a global approach to their research questions.

2) The Grand Challenges HDR program. This ANU program supports ambitious cross-disciplinary research to solve complex real-world problems. Grand challenges depend on teamwork and building solutions through disciplinary cooperation: this represents an important model for researcher development at HDR level, and it is proposed that the successful team take on 6 PhD candidates who are allotted cross-disciplinary panels and spend six months of a full 4 year funded scholarship period in ‘sandpit’ mode, where the scope and research aims are developed and pitched to the whole Grand Challenge team for refinement and testing of methodology and scope in an iterative process similar to that followed by the team themselves before securing Grand Challenge funding from the University.

3) The Australian National PhD in Public Policy: Our proximity to government and policymakers is a much-vaunted feature of the University’s special relationship and standing as the national university. Following on from the success of the Sir Roland Wilson scholarships, the Australian National PhD in Public Policy scheme offers funded part-time scholarships to public servants in mid to senior positions while they remain in fully-paid employment. The chosen research project of the applicant responds to a research question or problem relevant to the applicant’s workplace environment and where, if necessary, they are given access to information which allows them to pursue the project in partnership with their employer. The scheme depends on co-funding by employers in terms of allowing study periods for intensive research skills development, project completion and access to relevant data.

4) The ‘Philanthrophic’ PhD program: to be named after a high-value donor/donors to reflect the ambition to draw significant philanthropic funding to support a PhD cohort or program, including dedicated accommodation, leadership training, expert mentoring and a ‘service’ component which involves outreach into schools and undergraduate programs to inspire others to undertake higher degree research. Beyond the example of the undergraduate Tuckwell scholarships here at ANU, an impressive model to review is WA’s Forrest Research Foundation, which has invested two $65m tranches of support for HDR and postdoctoral fellowships in the mission to attract ‘the world’s brightest minds’. $27.5m has gone towards investment in a five-storey building

\(^1\) We regard the RegNet PhD program as a flagship program within the College of Asia and the Pacific (CAP) and ANU. First, RegNet offers one of the few interdisciplinary regulation and governance PhD programs in the world. Our research and education programs adopt an innovative approach that critically considers the many diverse forms of regulation in society. RegNet scholars and students work across disciplinary lines on regulation, governance and policy-relevant projects. In doing so, RegNet has developed a unique research culture, which derives from the intensive supervision arrangements; the interdisciplinary coursework program; and a program of intellectual, methodological and mentoring enrichment on offer to students.\(^2\)
in a prime location on the UWA campus offering single and family accommodation and including multi-purpose accommodation for seminars and functions.

5) **Redefining knowledge and power: twenty-first century Indigenous studies** - a highly provisional title for a program that could be overseen by the NCIS, and which provides for a strong and vibrant cohort of indigenous scholars with flexible support arrangements to allow travel to and from home locations to attend regular intensive research labs and colloquia, but in pathways tailored to the personal and professional circumstances of each candidate.

6) **The National PhD program** – one high-value scholarship will be offered to the best candidate in any field from each state and territory. The aim is to encourage further interest in ANU as the favoured destination for HDR applicants from across the country and build a wider representation of domestic candidates. This campaign could involve visits and presentations to each state and territory capital.
1 THE VALUE OF HDR PROGRAMS AT ANU

There is scope to better exploit the Australian National University’s unique characteristics as a national and international destination for HDR study. While ANU currently attracts applicants of the highest calibre, there is more that could be done to select, orient and support candidates for their best chance at success through a coherent strategy which encompasses initial engagement, and support for progress throughout the candidate journey. From application to completion there are a number of elements of HDR experience and governance that warrant review to ensure strategic alignment with the University’s future vision.

ANU already has a number of strengths and advantages when it comes to graduate education. These include our superior research reputation, the calibre of academic staff across the disciplines and our partnerships with high-ranking universities across the globe (not least as member of the International Alliance of Research Universities (IARU)). Our proximity to government and policy-makers offers unrivalled opportunities in the domain of public policy, and our expertise in scholarship related to the Asia Pacific region is world-renowned. Our current Vice-Chancellor, a Nobel Prize winner, represents research standing and impact at the highest level. With 50% of students registered as postgraduates the atmosphere on campus is distinct and this distinctness is supported by the presence of a dedicated postgraduate and research student association, PARSA.

There are, however, a number of key challenges in the context of higher degree research at ANU, including declining enrolments (see Table 1, below) increasing competition from universities beyond the Group of 8 (Go8) with national competition for research training program funding (the RTP). Unpredictable international demand and heterogeneous markets, flattening of domestic applications, and new national drivers attached to research excellence, such as impact and engagement agendas, have changed the research training environment significantly.

Some of these challenges are shared across the sector, and higher degree research is always in internal competition with undergraduate and taught postgraduate provision within higher education institutions (HEIs), bolstered by the dominant view that HDR recruitment and supervision is a loss-making exercise. Further challenges are structural ones: while Research School structures at ANU create the appropriate environment and cultures for higher degree research, sharing good practice and innovation across the institution is fraught with difficulties. Equally, implementing central strategic changes can be a

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Talented, defined by excellence, confident in pursuing original ideas, ethical, collegial, undertaking research ‘that will equip Australia to cope with challenges not yet imagined’ and that will ‘change the world’ – these descriptions, from the Strategic Plan 2017-2021 (4), describe our HDR students. Given our HDR students are going to transform the community, the environment, Australia, and the globe, their redefined HDR educational experience should be transformational in nature.
complex matter – from establishing the best channels of communication, to influencing well-established research communities who may see such change as needlessly ‘corporate’ and homogenising. Access to different levels of resource creates diverse environments and uneven access to funds and infrastructure, even for candidates in the same School. Most HDR governance and leadership functions reside at School level; yet the value attached to leadership roles in this area (such as the function of the HDR Convener) vary enormously; in addition, existing workload models obscure the value and place of HDR supervision and administration for individual academics. The majority of academics recognise the value of HDR supervision to their research and that of their scholarly community and find many rewards in the role, but in an increasingly complex and multivalent professional context, obligations to candidates may be hard to maintain at the appropriate level.

Across the world debates about the value and function of the PhD continue to rage, often in recognition of new drivers for change in the twenty-first century PhD. Higher degree research programs no longer guarantee academic or research employment; nor do applicants enrol in PhD programs with this sole destination in mind. With renewed pressure on HEIs to show their research has impact and increased criticism of the sector’s patchy engagement with ‘industry’ (broadly defined), there has been a deeper questioning of the purpose, value and function of the PhD. HEI responses have generally resulted in initiatives which place greater emphasis on quality supervision and support for professional and transferrable skills assessed as part of the program, while maintaining the thesis (defined ever more broadly) as the capstone and definition of higher degree research.

In Australia the Australian Council of Learned Academies (ACOLA) report on Research Training (2016) has been followed by an implementation plan released at the end of 2017. This plan emphasises the need for agreed threshold statements about good practice principles, to give applicants better information about the quality and success of programs at discipline level and to ensure that transferrable skills and high-quality supervision training are at the heart of the HDR experience. This puts the onus on universities to be clearer about what they offer potential candidates from the point of application, to outline graduate attributes associated with programs and offer clarity about the extent of support (financial and other) that candidates can expect. International applicants will still consider research rankings and affordability when making decisions about where to study; and while the positioning of ANU as Australia’s national university is attractive and may suggest an experience not available in other Australian universities, it remains unclear what that currently means in practice.

In light of these global discussions and national changes in research training funding, it is timely for ANU to express a commitment to redefining the PhD at the heart of the 2017 Strategic Plan. There is much that can be learned from global deliberations and reports that have questioned the purpose and function of the PhD; and there is much good practice that is worth emulating. For this process to have value for the institution going forward, the focus should be on honest review and the foregrounding of what is and could be distinctive about ANU HDR programs.

1.1 The Value of HDR Candidates to the University

As Ian Chubb noted in a speech made during his tenure as Chief Scientist, ‘PhD graduates are some of our nation’s most creative citizens. They have skills in problem solving, project management, working within tight budgets and answering and developing innovative solutions to novel questions.’ (Chubb 2014). What is often less clear is the extent of the contribution HDRs make while still enrolled. Higher degree researchers make a huge contribution to the reputation of ANU, through their publications, their contributions to research projects as part of a team, their interactions with fellow academics at conferences, as visiting scholars, through articulation of impactful research via media interactions, and the impact their innovative projects have to refresh research cultures within their disciplines or fields, where they often act as the social and academic ‘glue’. It is very difficult to quantify the benefits HDRs bring to the University in the ways they foster, develop and take part in internal and external engagement and collaboration; in these respects they act as cultural and intellectual ambassadors and leaders, and as the face of ANU in the field. Those HDRs who also teach are a high-quality source of academic labour, needless to say. With a growing emphasis on industry engagement, employability and social contribution our HDRs need to be equipped with the appropriate skills from the start.

From my experience in the HDR space at ANU over many years, it appears to me that ANU has a huge opportunity to distinguish itself on the national scene by promoting HDR study and making it central to all that we do. [S#24]

2 ‘Combining data on HDR graduate experience, career outcomes, research quality as defined by ERA outcomes, and other newly developed HDR training quality measures would provide a comprehensive snapshot of the quality of HDR training environments. Such snapshots and further information to aid candidate choice should be made available in an easy-to-use website that compares institutions and disciplines (as defined by field of research). The recently launched Quality Indicators for Learning and Teaching website allows prospective undergraduate students to compare student experience and graduate employment for courses and institutions.’ (McGagh et al, 2016: 14)
A 2005 report on the costs of training and supervising postgraduate research students, commissioned by the Higher Education Funding Council for England (HEFCE), noted the essential benefits of HDR candidates to HEIs. All the elements outlined above are referenced and, additionally, HDRs’ important contribution to the research environment for their supervisors: ‘They offer benefits to their supervisors from conferring “a mark of a good researcher;” and they can increase the opportunities for academic collaboration later in their careers’ (HEFCE 2005: 3). This report emphasises how important it is to take these ‘significant and most unquantifiable benefits’ into account when assessing the costs to HEIs of HDR supervision. A recent European report on ‘Reforming the Doctorate in the Social Sciences’ opens with the premise that ‘PhD candidates are acknowledged as drivers of change and innovation who contribute crucially to the production of knowledge’ (EUI 2017: 4).

The kind of skills and expertise candidates acquire during these various forms of engagement are diverse, but to date we have not been adept at supporting their articulation in preparation for the future, which beyond academia remains largely a ‘hidden job market’ (see Mewburn et al. 2017). We know that the post-degree employment rate for ANU graduates is good (see Table 2, below) and that we are producing future leaders and pioneers of social and political change at home and abroad. Yet our contact with HDR alumni generally depends on continued communication with supervisors, or Research Schools which may mean that graduates do not identify, or feel highly valued, as ANU alumni. We make it difficult for HDR alumni to feel part of the ANU community, despite that fact that these are the people who can help us better understand the impact of the ANU PhD, and who could productively engage with current candidates.

### 1.2 The Value of HDR Programs at ANU

Given that research excellence is at the heart of higher degree research study, ANU is well set up to provide candidates with an academic community that is eminent and international in the reach of its scholarship and in the potential for collaboration and exchange. The rich physical and intellectual infrastructure that underpins academic life ensures a strong network of scholarly support. Proximity to government and policy-makers offers opportunities as yet under-utilised at a strategic level. The esteem associated with Go8 universities and the international reputation of ANU make a compelling case for domestic and international student interest in higher research degrees. There is, however, a general dissatisfaction with the ways we present the opportunities available to research candidates at the moment, not least because our current online information and admissions processes are complex and off-putting. There is no ANU PhD ‘brand’ that supports recruitment efforts.

### 1.3 The Profile of HDR Candidates at ANU

In Australia ANU has the greatest proportion of HDR candidates in relation to its total student population. Currently we have approximately 2800 HDR candidates representing about 12% of our total EFTSL. Last year’s open forums and written submissions highlighted this as a potential strength of the ANU experience, and one worth capitalising on and communicating more effectively

#### Table 2: Full-time HDR employment rates (2016)

<table>
<thead>
<tr>
<th>Full time employment rates*</th>
<th>ANU</th>
<th>CASS</th>
<th>CAP</th>
<th>CECs</th>
<th>Science</th>
</tr>
</thead>
<tbody>
<tr>
<td>n %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
<td>n %</td>
</tr>
<tr>
<td>Domestic HDR</td>
<td>134</td>
<td>83%</td>
<td>27</td>
<td>74%</td>
<td></td>
</tr>
<tr>
<td>International HDR</td>
<td>56</td>
<td>84%</td>
<td>#</td>
<td>#</td>
<td>73</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>84%</td>
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<td>13</td>
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<td></td>
<td></td>
<td>85%</td>
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<td>15</td>
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<td>87%</td>
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<td>25</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>92%</td>
</tr>
</tbody>
</table>

* As a proportion of graduates available for full-time employment
# Results suppressed due to small number of respondents in this category
CBE and COL results excluded from display due to small number of respondents in these categories
Source: 2016 Graduate Outcomes Survey
Several submissions reiterated that positioning ANU in this way would enhance recruitment efforts both in Australia and overseas.

There is scope for ANU to place a more deliberate emphasis on postgraduate research as a core part of its institutional identity, and for this to be more widely communicated. The University’s role as a research-intensive institution, and its unique national mission, were a recurrent theme in forums and Committee discussions, and these reflect a guiding rationale for this Green Paper. As some submissions emphasised, in practical terms there will always be more than one ANU PhD, since HDR study at ANU takes place with diverse candidates working in a variety of contexts [S#13; S#24]; and management of candidature and supervision largely takes place at the School and within the supervision team. Questions were raised as to the extent we understand the complexion of our current candidate profile or whether the support we provide meets their needs. It may be futile to delineate the ‘average’ candidate given the focus on embracing diversity, but in the case of the National Centre for Indigenous Studies (NCIS) their description of an ‘average’ candidate in the Centre – a 44 year old woman who is enrolled part-time and already has extensive professional experience [S#31] – is presented to underscore the fact that this profile probably differs widely from what many imagine to be ‘typical’ of the wider ANU HDR student body. It is important that programs continue to remain responsive to their candidate and discipline needs, as well as considering whether certain characteristics and program outcomes might be articulated as common to the entire student body.

1.3.1 Modes of Study: retaining the brightest and the best

Submissions emphasised that ANU should have programs and structure in place tailored to the needs of both full- and part-time candidates, given the number of candidates who work on their degree part-time at some point [S#13; S#34]. Over the last decade part-time commencing enrolments have shown a marked increase, although trends vary across Colleges, with CAP and CASS showing the largest proportion of part-time commencements relative to their total. Those who transfer to part-time enrolment vary their candidature for a number of reasons, one common factor being the expiry of their scholarship stipend and the need to supplement their income; another is family commitments or health issues. Greater research is needed to explore how HDRs experience their journey and whether training and support regimes are modelled on an outdated notion of cohort identity.

ANU must accommodate the specific needs of both locally-based and off-campus candidates, as well as those required to spend time elsewhere – involved in fieldwork, at a host university etc. These considerations overlap with those about accessibility, and the efficiency and effectiveness of the University’s services and support for HDR candidates. ANU could aim to be more flexible in the support and services we offer HDRs, particularly in terms of scheduling events and provision of online support. A number of submissions touched on conflicting commitments for candidates, many of whom have work and carer commitments over and above the regular demands of their research projects.

Table 3 Part-time v. full-time commencing enrolments 2007-17

![Table 3 Part-time v. full-time commencing enrolments 2007-17](image)
2 RECRUITMENT, PATHWAYS AND PROGRAMS

ANU has the opportunity to create an extraordinary cohort of PhD graduates who will be leaders in industry, government and research around the globe. [S#27]

2.1 Engagement and Recruitment

2.1.1 Excellence

As a University ranked with elite universities across the world, we need to understand what our top students look like on entry and exit. A first stage in redefining the ANU PhD entails a reconceptualisation of our HDR programs as graduate programs which carry guarantees of excellent supervision, training, support and superior professional and career development opportunities. We are looking to grow a community who engage with ANU programs throughout their lives and to accommodate them we need to be as flexible as possible. The benefits of such programs need to be clearly stated and supported by graduate case studies. We want our HDRs to identify strongly with both School, College and University and to enjoy being part of an HDR cohort which builds engagement with the work of the University at large and develops the spirit of a researcher community.

In order to recruit the brightest and the best from around the world ANU must diversify its marketing, communications and recruitment activities, but also be much clearer about why ANU is an attractive destination for graduate research study. Different recruitment strategies will be required to capture a range of groups, including: Aboriginal and Torres Strait Islander applicants, international applicants from diverse countries, part-time professional applicants, individuals returning from caring commitments, and those from lower SES environments.

A more effective recruitment strategy should be built on a better understanding of our current population, a clear vision of what our future HDR population might look like and a granular understanding of the character of each program cohort – as well as awareness that we may not yet be attracting the full range of top applicants because of program structures, scholarship requirements or inaccurate perceptions of opportunities available at ANU.

2.1.2 Attracting the world

The main scholarship ‘season’ in Australia is towards the end of each year. This is the best time to secure the highest quality candidates; but it is also a highly competitive period where marketing and establishing the correct ‘brand’ is crucial. Consider this statement on the UNSW Graduate Research pages: ‘You may think of yourself as a student, but we think of you as a professional researcher in the early stages of a long and vibrant career. Beyond the development of fundamental research skills, you will live and work like a career researcher at every stage of your degree. You can publish, teach or travel; network with or be mentored by high achievers in your field; conduct blue-sky research or apply your knowledge in the world beyond our campus.’ Statements which summarise benefits and resources available to all ANU HDRs would help generate interest and excitement about the HDR candidate journey and, if well-articulated, allow the applicant to imagine their successful future as a direct result of this important choice.

It is important to discuss what the optimal number of HDRs to support the research we do might be, as well as the significance and value of the size of our HDR population as a fraction of the total student body. It is not just about scholarships; although money is clearly a consideration for all candidates planning a research degree, we do little to anticipate other concerns about what actually comes with the PhD ‘package’? How much support can they expect? What qualifications or other kinds of ‘value add’ might they pursue in addition to obtaining a degree? Applicants might be looking for flexibility and choice alongside financial support and guarantees about the nature of the supervision they can expect to receive.

2.1.3 The internal market: recruiting honours and masters graduates from ANU

There is demand for HDR places from ANU honours and masters graduates, but little evidence of a strategy to track and understand its extent, or the extent to which we lose excellent honours and masters graduates to our competitors. The tables below show a significant decline in ANU honours and masters students transitioning into ANU HDR programs. If we want to retain more of our best graduates we should provide a pipeline model which enables high-performing students to be confident that they can transition to scholarship-supported places for PhDs. Furthermore, in areas of strongest research performance we might want to encourage earlier aspirations in our undergraduates. A discussion about ANU pipelines to the PhD might inform further strategic discussions about the research training offered to honours and masters students.
2.1.4 The domestic market

In terms of domestic honours applicants beyond ANU, the Summer Research Schools used to be an effective method of attracting potential talent from across the country and of showcasing facilities available at ANU. Masters students are often looking for a quick assessment of their eligibility for HDR study. There are mixed opinions about the quality or consistency of research training provided across all Australian honours and masters programs: one topic for further discussion is whether our HDR programs should be designed to detect any deficiencies early on to support progression through intensive workshops or online courses.

Further research is required to analyse the profiles of domestic applicants who seek enrolment without a stipend in order to better understand this segment of the market. As noted earlier, a significant number of part-time commencements are clustered in CASS and CAP. Further information about part-time commencers would help understand if this segment of our HDR population is growing, what its training and support requirements are and what, if anything, hampers successful timely completion.

2.1.5 Aboriginal and Torres Strait Islander Candidates

The University’s commitment to grow its Aboriginal and Torres Strait Islander candidate population is a strategic priority. There are currently 38 ANU HDRs (10 MPhil and 28 PhD) who identify as Aboriginal or Torres Strait Islander; many have been in the program for a protracted period, punctuated by periods of leave. Attrition of Indigenous HDRS is currently not high, but neither is completion, suggesting a number are languishing in the system. The National Centre for Indigenous Studies (NCIS) specialises in interdisciplinary Indigenous research training. The Centre for Aboriginal Economic Policy Research and the Australian Centre for Indigenous History are other important sites for Indigenous research; some programs such as the MPhil in Applied Epidemiology have successfully recruited Indigenous candidates in the past. In order to attract and retain a greater number of Aboriginal and Torres Strait Islander candidates, we need to consolidate and better advertise the support mechanisms we have in place as well as understanding that the candidates we attract are often making tough choices between research and well-paid and socially-relevant professional positions.

There is strong competition in the sector for talented Aboriginal and Torres Strait Islander candidates – not least because under new RTP rules, such candidates earn double the completion funds for their HEI. ANU must honour the RAP and invest in the vibrancy and diversity of its research cultures, as well as ensuring that centres of support, such as NCIS and the Tjabal Centre are adequately resourced and well-known to new candidates. It might be possible to explore an ANU pipeline by identifying and supporting promising undergraduate students early on. Meanwhile, we have much to learn from the experiences of our current candidates.

2.1.6 Women in male-dominated disciplines

While women represent around 50% of the HDR cohort at any given time, there are disciplines where they are very much in the minority – particularly in many STEM subjects. Focused recruitment drives in some areas would show commitment to gender equality and cultural change in male-dominated areas and express a wider commitment to social transformation in the support and skilling of more women in these fields. Such commitments might
be accompanied by support for further research into the problem of retaining women in science and R & D, for instance.

2.1.7 The International Market

Our view is that the market for PhD students is not one single market, either globally or within Australia. So, for example, within the Asia-Pacific region, China is multiple markets and is different again from the situation in Pacific micro-states. While it is appropriate for ANU to recruit students with outstanding educational qualifications for our PhD, we may also want to embrace an equity-driven approach for students in developing or fragile parts of our region and in Indigenous Australia. That approach is consistent with RegNet’s educational mission and with the societal transformation goal of the University’s strategic plan [S#22]

While domestic applications have been declining in many areas, international interest in HDR programs is buoyant, and changed RTP stipend rules allow greater investment in international candidates (up to 10% of the total fund). As the quotation above suggests, this is not a single market and it is not a static one. Australian universities are in general investing a great deal in this growth area – some with campuses in-country or with handpicked international partners. The University’s international partnerships are strong and varied; but there is little evidence of targeted strategies to develop further HDR engagement to strengthen these partnerships. Furthermore it is important to improve and update our understanding of what different groups of international applicants look for in an Australian University and what their chief needs might be.

2.2 Program Aims and Outcomes

The qualities crucial to professional success and leadership in the 21st century are many and varied. In considering these in the context of university research training, the ability of students to develop capacity for independent and critical thought, problem-solving skills, expert technical and creative skills, and project design and management skills, in addition to high-level disciplinary research skills, is critical to their future success. Beyond these skills, the capacity to work flexibly across a range of fields or disciplines, and the ability to combine critical thought with practical application and outcomes are increasingly vital to a range of career destinations. An understanding of the range of qualities and skills required of a 21st century HDR graduate necessarily informs considerations of the purposes and goals of HDR programs. In particular, universities need to critically assess the goals of research training in the 21st century to best cater to the needs of graduates for their future careers, both in academia and in other industries. [S#1].

There seems to be a general consensus regarding the University’s general aims for graduate research, including supporting graduates in attaining an internationally competitive doctoral qualification with world-class graduate research experiences and outcomes. The quotation above articulates the qualities crucial for HDR success and preparation for life beyond candidature, and compellingly suggests that when planning HDR programs we should first consider the graduates we wish to produce and how we maximise their chances of future success and recognition.

2.2.1 Redefining how we understand the candidate journey

In characterising the candidate journey it has become commonplace to separate an ‘academic’ pathway from a ‘non-academic’ one. While it was once the case that a PhD was a pathway to an academic career, this is no longer the norm. The 2016 ACOALA Report, while noting the paucity of longitudinal data on HDR graduate career destinations, estimates that around 40% remain in higher education in the short term and notes that a recent UK survey estimated 50 per cent of doctoral graduates worked in higher education (McGagh et al. 2016: 11). Given the realities of the twenty-first century employment market where it is predicted that most people will experience numerous career changes, it may be sensible to assume that both pathways are options for all candidates. Most skills acquired during HDR study have wider applications beyond the academy; the focus on the discrete research project itself suggests the ability to explore and analyse a topic at a high level of functionality relevant in many professions. Even teaching experience has transferrable applications beyond the university lecture theatre or seminar room. While we should encourage our students to consider their preferred pathway and ensure they are supported to develop the skills and outputs most prized in those areas, it is our duty to provide research training and professional support that speaks to the uncertainty of the future workforce and emphasises the strengths of PhD study as a viable qualification for numerous careers.

2.2.2 Who don’t we attract?

Domestic HDR applications have been flatlining for some time; however, there are aspects of the market that may have growth potential. For example, mid-career professionals in public service, defence or embassies looking to upskill or evince greater leadership potential may look to HDR study. Applicants such as these may be a valuable market that, hitherto, has not been explored. The graduates of the Roland Wilson Scholarships are
senior professionals given paid time to leave to embark on a full-time PhD program: while this is an elite resource-hungry program, the right kinds of part-time pathways with appropriately flexible, work-friendly support may prove increasingly attractive as a form of high-value professional development. Public service employers might be persuaded to offer in-kind support (in terms of study leave, etc) for their employees.

2.3 Pathways

The ANU PhD should be able to be configured to cater for people working part-time, for people coming back from a long break in their studies or transferring in with skills from related areas. [S#34].

The University should aim to select, orient and support candidates for their best chance at success through a coherent strategy which encompasses initial engagement through to confirmation of candidature. This requires a better understanding of the types of research preparation applicants in different areas would be expected to possess, as well as how we judge ‘equivalence’ for those who have been away from formal education. Each of these areas of activity will benefit from strategic alignment and regular review informed by the credible use of evidence.

2.3.1 Program and pathway development

ANU should implement a coherent and integrated pathways strategy to govern its HDR engagement, recruitment, admissions, orientation and confirmation of candidature activities. Each element of the strategy should acquit against desirable graduate outcomes and predictors of success. The University needs to feel confident that each of its programs can meet these outcomes and that there is a clear understanding of the expectation of the skills we would like our students to have on entry and at graduation. There is the opportunity to be more restrictive about direct access to PhD programs with greater use of the MPhil as an entry point for applicants whose qualifications are borderline as well as using the MPhil entry as a qualification in its own right.

Other universities are considering or have implemented models along the lines of that established by Macquarie University (the ‘Macquarie model’) where an MRes hybrid hons/research masters is a pathway to PhD registration. This approach to research preparation is raised in the outcomes of the ACOLA Research Training Working Group Implementation Plan (DET 2017: 1-4). There are mixed views about ideal preparation for a PhD and the most appropriate pathways. Further discussion of ANU pathways should be underpinned by better analysis of our current enrolment data in order to understand the impact of any change, as well as an assessment of international qualifications and their research training elements. The Macquarie model reflects the institutionally specific character of the cohort; the ANU PhD (and MPhil programs, appropriately refreshed) should approach such discussion mindful of its leading global and national position.

2.3.2 Pathway strategies

In determining a future pathways strategy, the following summary of the discussions that have contributed to the development of this paper suggest that ANU:

a) Review the way we attract ANU honours and masters students to HDR programs, including reviewing the undergraduate pipeline and investigating the aspirations we build in our students, particularly those who are underrepresented at higher degree research level – for example Aboriginal and Torres Strait Islander applicants, candidates from a low SES background and women in STEM.

b) Consider how we improve our market share of top-quality domestic post-honours applicants – this might include redefining Summer Research Schools programs using a central fund and ensuring an interdisciplinary focus; or a series of visiting programs for targeted cohorts of international candidates.

c) Improve our understanding of international postgraduate programs and how to assess applicants’ preparedness for research degree study.

d) Make better use of the MPhil pathway as a qualification in its own right as well as additional research preparation for applicants whose prior experience/qualifications do not make a clear case for PhD entry. Such programs could be accompanied by competitive scholarship opportunities.

e) Plan entry pathways with constructive exit options for those who cannot complete their chosen program. In the case of PhD this might be offering the MPhil as a credible qualification rather than a ‘failed PhD’; for those who
discover that they would prefer to explore postgraduate coursework options, there should be clear support and advice to make that transfer.

2.4 Scholarships

Stipends and fees support are a significant factor informing HDR choices of program and institution. Currently ANU allocates RTP and University Research Scholarship (URS) stipends to Colleges based on lag indicators around load and completion performance: this gives a ‘fair’ spread of funding across the University, but does not easily allow for innovation and investment in new programs, or the strategic targeting of particular types of student or mode of study. Historically ANU has been slower than our competitors in making scholarship offers at key times of year and the disjunction in the current system between offers of a place and offers of a stipend cause confusion and may prompt candidates to go for the first clear offer from competitors. What applicants require at this stage is utter clarity of process and some ongoing contact with prospective School and/or supervisors.

2.4.1 Scholarship Allocation

The restriction of the current ANU PhD to four years, and the current dislocation between this and the three-year (plus six-month extension) scholarship is an issue for consideration. Greater flexibility of stipend support, now facilitated by the RTP, could be further extended to better support HDR students in the completion of their research and the development of the research skills and experience they require. [S#1]

2.4.2 Modelling types of scholarship

RTP and URS scholarships include allowances for thesis preparation, relocation, dependent child allowance, parental and other leave. There is an opportunity to review these allowances (which are different for domestic and international stipend holders) and reflect on other ways to make our scholarship ‘packages’ look more attractive in an increasingly competitive environment.

2.4.3 Scholarship Allowances

While it is understood that different HDR programs have different characteristics to suit the training needs of the cohort, it is proposed that ANU benefit from clearly articulating a set of ‘core’ requirements associated with academic and researcher development in all HDR programs, which are then complemented by program requirements. This sets a standard for understanding what comprises an ‘ANU PhD’, giving applicants a clearer picture of program expectations, provision and characteristics, and allowing current candidates to reflect on the value of graduating with an ANU research degree. Setting a framework for what characterises an ANU PhD is the first step to redefining the ANU PhD, where discussions about ‘value-add’ components for PhD study could begin.
2.5.1 Interdisciplinarity and cross-disciplinarity as a cornerstone of the ANU HDR experience?

The continued facilitation of interdisciplinary research and inter-College interaction within HDR programs is also a strategic priority. The encouragement and support of interdisciplinary research at HDR level is of potential significance to successful graduate outcomes, and intersects with other University initiatives in this space, most particularly the ANU Grand Challenges Scheme. The facilitation of increased collegial interaction between Colleges, particularly where there is disciplinary overlap, is also important [S#1].

Interdisciplinary collaboration is core to the ANU Strategic Plan and is present in initiatives such as the Grand Challenges Scheme, ‘however, the experiences of ANU CD-HDRs that have been shared with the NECTAR community do not describe a collegially supportive journey’ [S#9], suggesting that internal structural obstacles get in the way of such initiatives. Some programs are set up to embrace interdisciplinarity such as:

RegNet offers one of the few interdisciplinary regulation and governance PhD programs in the world. Our research and education programs adopt an innovative approach that critically considers the many diverse forms of regulation in society. RegNet scholars and students work across disciplinary lines on regulation, governance and policy-relevant projects. In doing so, RegNet has developed a unique research culture, which derives from the intensive supervision arrangements; the interdisciplinary coursework program; and a program of intellectual, methodological and mentoring enrichment on offer to students [S#22].

and NCIS:

One hundred per cent of [NCIS scholars] are undertaking multi-disciplinary research with crossovers between law, anthropology, history, biography, environmental studies, health, gender studies, art, development, human rights, policy studies; often with international comparative components [S#31].

In these examples interdisciplinarity underpins the constitution of the cohort; other candidates need to find ways to navigate College and School structural obstacles, and disciplinary silo-ing recurs. Making cross and interdisciplinary research more visible is an important step that strengthens a culture of collaboration across the University. In their statement to the Committee, NECTAR proposes that a Cross-Disciplinary Research Network is established at ANU. This Network would offer CD-HDRs mentoring and peer support. It should provide a sense of academic and social connectedness; much like NECTAR currently provides for Early Career Academics. Indeed it could be part of NECTAR and we are open to that discussion. We believe that such a Network would help CD-HDRs, and other cross-disciplinary researchers, feel more like empowered knowledge nomads and less like they have fallen into the no-person’s-land of academic territorial-borders’ [S#9].
3 CANDIDATURE, PROGRESS AND THE HDR EXPERIENCE

3.1 Admission and Candidature at ANU

The transition into HDR education should be an empowering experience for all students, one that sets them up for success and enhances their preparation for their research journey. Transition may involve moving from interstate or overseas to Canberra, discovering a different approach to teaching, learning, and receiving feedback, going from an undergraduate experience or a period of paid employment. There are many stressors associated with the HDR experience. Informing students about these stressors (‘imposter’ syndrome, lack of motivation, anxiety) and how to recognise and mitigate them would be a key part of this orientation. A redefined HDR experience would encompass a University-wide welcome and orientation and a College- or School- specific induction that address the academic, social, personal, and cultural changes that HDR students may face [...] Providing HDR students at the outset of their ANU experience with an holistic overview of student support will signal to students that ANU is committed to their development and has put in place a supportive structure and network around their study experience, a network that can be drawn upon at any stage of their candidature. [S#17]

Consideration of the management of candidate progress should properly begin at the point of admission. 2017/18 has seen some improvements that ease the application and admissions process; additionally it is hoped that scholarship awards will dovetail with admission points, allowing an efficient and timely offer regime. While it is important that the first point of entry – the website and electronic form system – offers a transparent system, the most important point of contact for the applicant is the potential supervisor(s). An ANU HDR prospectus could act as an introduction to the University, its strengths and the opportunities presented by the campus environment.

Induction events are highly valued by HDRs. In 2018 ANU Research Skills and Training (RSAT) have revised induction programs to give all candidates information about what central service divisions offer HDRs. This is a crucial part of the work of RSAT as the HDR-focused support unit on campus, and the success of this venture is already clear in the high level of satisfaction rates; other central units such as Academic Skills and Learning (ASLC) and the Statistical Consulting Unit (SCU) have been asked to track any increased demand for support as a result of their involvement in these events. It is hoped that, depending on resources, a central HDR support program can be expanded throughout the HDR journey and complement School-level initiatives. In the meantime an online toolkit is in development to support face-to-face induction. Such events need to be inclusive so ‘The ANU PhD should be able to be configured to cater for people working part-time’ [S#34]; steps might be taken to ensure that program structures anticipate part-time as well as full-time registration. In induction information part-time candidature should be given specific mention with accompanying guidance about balancing research with other commitments.

3.1.1 Candidature duration

It has become a sector norm to assume completion of candidature within four years FTE, and for most universities this is the maximum period of registration (also the maximum period of RTP fee offset support for domestic candidates). The question of the optimum period for candidature was a recurring theme during Open Forums and for the Committee of Inquiry, with some respondents favouring the US model of 5+ years candidature in an ‘apprenticeship’ PhD model and others in favour of supporting 3.5-4 years as best practice in Europe and elsewhere. Average duration of candidature suggest most of our candidates complete satisfactorily within a four-five year period (and this figure is trending downwards since the introduction of a maximum period of candidature). Some reiterated the financial hardships caused by the 3-year stipend “cliff”.

3.1.2 Milestones and other HDR ‘curriculum’ features

All HDR programs in the sector make use of milestones as a means of charting progress and reviewing candidature where necessary. A recent Office for Learning and Teaching (OLT) funded study on ‘Reframing the PhD for Australia’s Future Universities’ has reviewed and benchmarked the use and content of milestones and notes the frequency with which the same ones are cause by the 3-year stipend ‘cliff’. It has become a sector norm to assume completion of candidature within four years FTE, and for most universities this is the maximum period of registration (also the maximum period of RTP fee offset support for domestic candidates). The question of the optimum period for candidature was a recurring theme during Open Forums and for the Committee of Inquiry, with some respondents favouring the US model of 5+ years candidature in an ‘apprenticeship’ PhD model and others in favour of supporting 3.5-4 years as best practice in Europe and elsewhere. Average duration of candidature suggest most of our candidates complete satisfactorily within a four-five year period (and this figure is trending downwards since the introduction of a maximum period of candidature). Some reiterated the financial hardships caused by the 3-year stipend “cliff”.

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– is progress sufficient for completion? If milestones are seen as important markers of essential knowledge and skills acquisition during candidature, it is possible to add more components to them and minimise the risk that candidates reach the final stages of their project without, for example, a clear understanding of ethics and integrity, or a comprehensive literature review.

3.1.3 Broadening the focus

The new Australian research training funding model is even more focused on completions and this emphasis shapes core concerns about appropriate duration of program and, where relevant, financial support. There are costs on both sides for extended candidature times – for the student for whom protracted debt may cause further delays to completion as employment is sought, and for HEIs in workload costs.

The candidature journey is much more than completing on time, and too much emphasis on the endpoint devalues the candidature experience as a whole, prompting HDRs to feel like an ‘output’ themselves. As noted earlier when discussing the value of HDRs to ANU, the significance and importance of our current candidates must not be under-estimated. A redefined PhD strategy could fruitfully concentrate on candidature and its phases with greater attention to acknowledgement of achievement and recognition of success. ANU should implement an integrated attainment strategy to help ensure candidates are able to make the most of their HDR experience with ANU. Relevant activities and requirements should be governed by the principles of flexibility and choice.

3.2 Opportunities to Enhance the Candidate Experience

3.2.1 The cohort experience

Opinion is divided about the importance of promoting a ‘cohort’ experience for HDRs that extends beyond their home discipline or area to bring individuals together across the University to share common milestones – for example their first year of enrolment on an HDR program, or the writing-up period. Broader opportunities to engage with fellow candidates – socially and in academic settings – offers the possibility of interdisciplinary encounters, sharing ideas and building a wider research culture with yet to be realised possibilities. Greater identification with ANU, as well as School or Colleges, may in the future promote alumni engagement, allowing the University to better track and celebrate the achievements of its graduates.

University-wide networking activities for HDRs are rare at the current time. Recent feedback suggests that new students value induction events and the opportunity to learn how the university can support them through candidature. Some areas have well publicised events – such as the two-day Crawford School PhD retreat held in April 2018, or the annual NCIS research lab. It is timely to discuss whether more should be done to encourage annual HDR conferences or retreats, and whether central events (that build on the success of the annual 3MT final, for instance) should be resourced.

There is no physical ‘hub’ on campus for HDRs to meet as a group, but it might be useful to explore whether such a hub – that might act as a social, training and events space – is desired. University House, with its prominent historical position on campus and its traditional function as a social meeting place, already acts as a social hub, not least because of the number of graduate students who reside there or at Graduate House. In 2018 University House committed to ‘extend our reach to HDR students by inviting each new student to join to one of our House Dinners in their first year, as our guests. This would provide opportunities for them to meet our Early Career Academic Fellows and others associated with University House, as well as our resident postgraduates’ [S#33]. There may be further value in formalising networks between HDR candidates and early career researchers at the university, which capitalises on the important work already done by NECTAR. A sense of wider postgraduate community is also fostered through PARSA: whatever cohort-building initiatives are developed, both NECTAR and PARSA are key partners.

3.2.2 Tackling isolation and anxiety: HDR health and wellbeing

Just like people in our broader society who experience social isolation and marginalisation, these experiences can impact unfavourably on health and wellbeing. [S#9]. Isolation- especially in the peer group on campus – if the student is alone in their topic, they are often alone in their day-to-day contact with other peers [S#15].

While many efforts are made to create active cohesive cohorts within Schools, a startling number of HDRs report isolation and experience difficulty maintaining their focus over the period of candidature. Studies of HDR mental health make grim reading: a recent survey of PhD candidates in Flanders concluded that 51% of PhD candidates experience at least two symptoms of mental
health problems and 40% experienced at least three: ‘most prevalent are feelings of being under constant strain, unhappiness and depression, sleeping problems due to worries, inability to overcome difficulties and not being able to enjoy day-to-day activities. The prevalence of having or developing a common psychiatric disorder was 2.43 times higher in PhD students compared to highly educated employees.’ (Levecque et al. 2017: 877). Feelings of dislocation or isolation may be exacerbated by those working away from campus, during fieldwork, placements or those without regular contact with supervisors.

With a greater emphasis on preventive health strategies in employment it is timely to review the support offered to candidates from the early stages of candidature, through to submission and examination. The focus should be on promotion of self-help as well as collective strategies for wellness and resilience. We do not always respond well to individual cases where candidates present with ongoing chronic health conditions or develop them during their research. As one witness commented, ‘I have found the central ANU support to be lacking. …and there have been lengthy delays when seeking advice from central ANU units on how best to handle the extended leave of absence necessitated by my chronic fatigue’ [S#20]. Central units need greater support in dealing with such issues, where the considerations offered coursework students (such as extra time in examinations) are generally irrelevant. Supervisors also need support and guidance to counter the concern that they have ‘the ability to significantly damage a student’s future career if they respond poorly to the disclosure of a student’s disability’ [S#20]. Central units need greater support in dealing with such issues, where the considerations offered coursework students (such as extra time in examinations) are generally irrelevant. Supervisors also need support and guidance to counter the concern that they have ‘the ability to significantly damage a student’s future career if they respond poorly to the disclosure of a student’s disability’ [S#20]. A central consultant role for HDRs with disabilities might create improved processes for students and increase staff understanding of these issues – ‘By giving disability support a clear place in the HDR student experience, staff in leadership positions are less likely to overlook disability support when reviewing the student experience.’ [S#20].

A recent UK pilot project undertaken by Vitae concludes that cultural change is required in most HEIs to support HDR wellbeing: ‘The academic culture of high-achievement, expectations of high workloads and not displaying any weaknesses can mitigate against PGRs feeling this is a safe environment where they can talk about their wellbeing. Institutions need to find ways to support PGRs to disconnect the “healthy stress” related to the intellectual challenge of undertaking a doctorate from other stresses that have a negative impact on wellbeing and mental health.’ (Metcalfe et al. 2018: 30)

3.2.3 Respectful Relationships: addressing sexual harassment, sexual assault and bullying

While the 2017 Australian Human Rights Commission (AHRC) report into sexual harassment and assault in Australian universities did not provide specific figures which identified HDR candidates as a group, the postgraduate students surveyed reported a greater incidence of sexual assaults and harassment in the office and perpetrated by staff in a supervisory or line management role (AHRC 2017). This report emphasized the need for a safe working environment for all members of the university community. There is little research on the prevalence of sexual harassment and bullying in the HDR supervisory relationship and ANU needs to be proactive – for example by supporting further research into the incidence of such abuses, making awareness of these issues a mandatory feature of supervisor training, and ensuring HDR policies reinforce appropriate behaviours. Building a culture of respectful relationships, ensuring candidates feel they have choices in the ways they engage with their panel, and indicating clear routes for concerns to be heard is essential to a redefined HDR program. To better understand what the headlines in the report are telling us we need communicate further with our candidates and supervisors. Focus groups, surveys and the possibility of funding further research
are essential components in steering cultural change. The recommendations from the Council of Australian Postgraduate Associations Incorporated (CAPA 2017) emphasize the importance of mandatory supervisory training and facilitating confidential reporting for HDRs.

### 3.3 Graduating from ANU: rewards and recognition

Graduating with a higher research degree is a huge achievement for anyone, but the long period of limbo associated with the examination process risks the degree award notification being something of an anti-climax. Given the fact that completing students have often already left the campus to return to their home countries or their next career, it is important to embed a culture of reward and recognition at each stage of candidature. HDR programs should strive to impress upon graduates their value to the University and to their area of research; long-term associations with successful graduates allows us to build an effective alumni community and celebrate their achievements – not just as they cross the stage at graduation.

#### 3.3.1 Post-submission period

The period during examination is often a stressful one for candidates who feel that their life is on hold until results are known. Many industry engagement initiatives use this period to offer placement and development opportunities which themselves demonstrate a sense of commitment on the part of the university to invest in the student’s future beyond their examination outcome. Other popular initiatives are grants to complete publications or find other relevant outlets to continue skills and professional development. ANU HDR alumni could play a part at this stage, acting as external mentors and advisers to those making complex career decisions.

For some the year post completion is one of uncertainty and precarity: RegNet ease the transition for their graduates by offering them a year as honorary fellows, which continues the research relationship during a period of job application and publishing results of research.

### 3.4 The Alumnus Experience

ANU alumni are scattered all over the world, many taking prestigious roles in academia, public service, and industry. There is no central repository of details about PhD graduates, and knowledge of destinations is often only retained by the School or supervisory team. These graduates represent the highest level of attainment from ANU and it would be beneficial to maintain stronger communication with this group. This is not necessarily about building future philanthropic support; more significantly, it is about strengthening enduring relationships that might build organic external partnerships and industry links, in-kind support in the form of contribution to events and lectures, and building aspirations for current students. Opportunities exist for ANU to develop unique strategies featuring HDR graduates as part of ongoing local and international community-building and engagement efforts.

HDR alumni communication would allow us to use them as critical friends who can comment authoritatively on the key value of their degrees and possible improvements and revisions going forward. An annual HDR report aimed at alumni which also shares their successes and news would be an invaluable way to demonstrate the impact ANU has had in the lives of this vast population of graduates, as well as allowing current HDRs to better envisage life and work after the PhD.
4 COURSEWORK

It is not the business of this paper to make a definitive statement about whether coursework is an effective form of methodological and research training for candidates, but it is timely to assess the success of such programs and consider alternative options with reference to practices across the world. There is already a diversity of practice at the University and it may be that we continue to offer different patterns of study to suit differing program needs. However, decisions about taught components in HDR programs should be preceded by an understanding of desired program graduate outcomes, as well as institutional outcomes which restate the core value, principles and attributes of the ANU PhD.

The opportunity arising from this Green Paper is to have a nuanced discussion about what we think coursework, as currently structured, delivers; what kind of taught and assessed components suit the character of our higher degree research programs, and whether ‘coursework’ in its current formation provides the research and development capacity those HDRs need. Current views on the place of coursework in the ANU PhD vary enormously, ranging from ‘all Doctoral candidates, both professional and research, should be offered formal coursework and practice to develop the Graduate Skills as set down in the AQF’ [S#10] to ‘the most important and contentious factor affecting all PhD students in HASS disciplines is the introduction of a so-called system of “coursework” as it currently operates. In my view our current system is a fundamentally flawed farrago and a fiction’ [S#12].

4.1 Pathways to the PhD

The current philosophy behind the implementation of coursework (or lack of coursework) requires refreshed interrogation and alignment with discussions about the required skills and professional attributes a candidate requires during candidature. It is worth considering whether existing coursework models at ANU are based on an assumption of deficiency in new candidates, and whether this reflects a flaw in current patterns of admission, or a need to accept that despite their qualifications, the research-readiness of our candidates will vary. If the majority of candidates enrolled onto programs lack the requisite skills to embark on their research projects immediately, there are a number of possibilities which include:

1) Greater use of MPhil enrolments as a pathway for students where there is reasonable doubt about their capacity to enrol directly into a PhD. Alternatively all or some entrants to PhD programs might be enrolled as MPhil candidates until they satisfy all requirements at Confirmation (at ANU the annual TPR milestone) at which point they migrate to PhD candidature. This latter proposal carries some potential negative consequences: for example, international candidates may not favour initial enrolment on MPhil, or it may impact on their ability to secure sponsorship.

2) The creation of a hybrid 2 year coursework/research degree along the lines of the ‘Macquarie model’. This might address the perception that ‘Compared to many of our international competitors, many of our students are under-done in their coursework when they start and complete their PhD’ [S#34].

3) Build a diagnostic function early into enrolment to identify any foundational research training needs and provide a range of intensive research training modules.

4.2 Doctorates and Professional/Creative Practice

Professional doctoral programs have been frequently regarded negatively, but such programs are more common in areas such as health, education and law, and offer many advantages. The chief attraction of such a doctorate is the opportunity to pursue research on a work-based problem supported by coursework that is often designed for professionals returning to research. Professional doctorates promote ‘industry’ engagement, especially where the candidate’s employer may recognise the value and even directly benefit from the project undertaken. Public service is an obvious area for possible expansion of a doctoral program with a distinct focus on professional practice.
In some fields where creative practice is the norm, a professional/creative practice doctorate might provide a more logical program of study, for example, ‘The establishment of a Professional Doctorate in the form of a PhD and/or Doctor of Musical Arts (D.M.A. – D.Mus.A.) In doing this we would target music practitioners, performers, composers, teachers and theoreticians who wish to develop their research using a practice driven approach. There is strong evidence for establishing a doctorate of this kind where the taught component focuses on current developments in music technologies affecting its production, exhibition and dissemination, particularly relevant in the area of music, sound and moving image where the school has considerable research strengths’ [S#8].

While such programs have suffered a mixed reception in the past, their success and relevance in a number of countries is proven over the years and their popularity has increased.

4.3 Flexibility of Coursework and Skills Programs

Clearly, unless we abandon or significantly modify the inclusion of compulsory coursework for full-time students in the PhD program in humanities and the arts, we are effectively preventing many students from taking programs who might otherwise study with us: part-time Canberra-based students; off-campus students – full-time and part-time. Students such as these are a valuable market that, hitherto, has not been tapped into systematically. Any examination of the composition of the interdisciplinary and cross cultural research program over the past 15 years, for example, shows that in the Canberra region there are many talented mid- and late-career professional who are looking for opportunities to undertake a PhD. [S#13]

A further consideration in the review of coursework is the question of whether the current structure prevents some high-quality candidates from enrolling on such programs. Several submissions highlighted how the current coursework arrangement is premised on the assumption that those undertaking HDR programs were full-time, on-campus candidates. It was observed that staying with this model precludes engaging a broader field of eligible candidates, including those who might elect to enrol part-time and those conducting some or all of their research in locations ‘off-campus’. It was felt that a more flexible stance on coursework requirements would open up opportunities for recruiting a broader field of candidates with the potential to excel [S#12]; [S#13]; [S#31].

The commitment to serving the needs of a more heterogeneous HDR student body might be seen to fit the University’s obligations: ‘the fact that we can readily offer flexible, high quality bespoke doctoral training outside Canberra is entirely in keeping with our mission as the National University. In sum, the more we seek to define an ANU PhD as a single entity for full-time on-campus students the more we limit the potential to attract high-quality doctoral candidates who don’t fit the mould. We should resist this’ [S#13]. Part of the review of the relevance of current and future coursework provision should consider the mode of delivery in response to a perceived need for greater flexibility: ‘Optional additional coursework could provide growth of well-rounded experience. Courses that are not delivered in current program periods could be scheduled over the summer period as an intensive course when teaching is less active’ [S#16]. It may be the case that a hybrid model that delivers discipline specific support and skills and wider training in a format that allows for flexibility and choice may be the answer.
5 RESEARCH AND TRANSFERABLE SKILLS

ANU should articulate the knowledge, skills, capabilities, and competencies that HDR students will acquire through their participation in a redefined and transformational education experience. The Australian Qualifications Framework specifies the disciplinary knowledge, the generic and ‘specialised cognitive, technical and research skills’ that HDR students will develop and be able to apply. Frameworks such as Research Skill Development or Researcher Development make explicit the developmental approach to the students’ development and skill enhancement in initiated a research topic, choosing an appropriate methodology, managing information, analysing and critically interpreting data to produce new knowledge and understandings, as well as the personal qualities necessary to be successful – enthusiasm, perseverance, integrity, self-confidence, and so on. ANU should review its researcher development framework to ensure that it explains what the 21st century HDR looks like and that it secures our position as a leader in HDR education and outcomes. This framework would empower students to reflect on and monitor their development and to independently identify areas in which they needed further development and support. [S#17]

5.1 Research and Professional Skills

A consideration of broad research and professional skills development raises some similar issues to those discussed in the coursework section: there might even be a case to consider them as part of the same problem. Issues around structure, format and mandating of coursework also apply to skills development and raise broader questions about who should deliver such programs (central/College/School?), how we decide what is obligatory and what is voluntary. We also need a model that emphasises developmental aspects rather than assumes a deficit in applicants. Central to this debate is a consideration of the nature and effectiveness of our current provision and the guidance we offer candidates to ensure they undertake and access the right training and support at the right time. As one submission notes, ‘our experience is that the students access our programs in an ad hoc manner, without understanding the development and support programs that are available. PhD students do not experience well-structured cascading of support’ [S#27].

Another key consideration is getting the workload right, so that HDR candidates can make good progress with their research project as ‘The challenge that always exists is balance; the more training which gets incorporated then the less time for completion of an in-depth piece of research. We should therefore be careful not to confuse the PhD with a ‘big’ Masters by education. The PhD needs to stand alone.’ [S#30].

5.1.1 Research Methods

In Australia the assumption has been that an honours degree in any discipline, successfully completed at the level of First Class, provides an applicant with a strong foundation for transition into a research degree. Opinions garnered through the open forums and Committee of Inquiry suggest that views on the fitness for purpose of honours programs to meet these requirements are mixed. Some coursework in the Colleges has a strong methods component; elsewhere short courses or central services such as the Statistical Consulting Unit provide additional expert support. In some fields the lab environment and the needs of the projects dictate the methods focus, and some training might better sit with the supervisory team. There need be no consensus about this, but a higher degree of reflection is required to reassure ourselves that any program of methods and skills program laid down is suitable to the outcomes and attributes we associate with higher degree research.

5.1.2 Skills credentialing

The university sector needs to ensure that all doctoral graduates have had the chance to build skill sets, realise that they have these skills and can explicitly prove this through some form of accreditation. [S#10].

Unless such skills are embedded in a coursework regime and therefore appear on a candidate’s transcript, there is little formal record of individual attainment in research skills or other forms of professional development. Given that more PhD graduates find employment outside academia and acknowledging that employers cannot be assumed to know the range of skills that underpin this level of scholarship, ANU could develop program-based credentialing for targeted capabilities. This may include the award of stand-alone research training qualifications independent to the PhD, or through a detailed account of these credentials on the AHEG statement. Some discussion would be valuable on what skills and attributes might be a ‘prerequisite’ of the program and what can be the subject of negotiation between candidate and supervisory team. Whether such components are core to the program or whether a broad range of choice is offered is an important topic for discussion. While the judgement
is best made at area or discipline level, the University may consider establishing some broad principles and guidelines to shape such decisions.

The concern for strengthening of transferable skills training in HDR candidature is a global one but there is no clear consensus about what is understood by ‘transferable skills’. As a result of the Roberts Review (2002) Research Councils UK (RCUK) invested 20 million GBP per annum to ensure that HDR training met minimum standards including at least two weeks’ training per year to help researchers develop future career paths. The UK Vitae Researcher Development Framework has been broadly influential in this respect with their emphasis on the importance of strengthening continuous skills development for PhDs and researchers. Such skills include communication (especially communicating with non-specialist audiences), data analysis, working with media/public, planning, time management, skills for entering the job market (CVs, practice interviews), secondments and other work experience. Depending on future employment, training as a researcher – such as grant writing, reviewing, ethics, might also be essential transferable skills.

In Australia the Research Training Implementation Plan agreed to produce ‘national guidelines on the development, assessment and recognition of transferable skills’ (DET 2017). There is also renewed interest in the importance of ‘critical thinking’. Graduate science courses at Johns Hopkins University ‘cover the anatomy of errors and misconduct in scientific practice and teach students how to dissect the scientific literature’ as well as including workshops on leadership and communication skills (Bosch 2018: 277). Skills noted in witness statements included: ‘Negotiation and influencing skills’ [S#2]; ‘Build persuasive arguments’ [S#2]; ‘Executive presence and communication’ [S#2]; and ‘Strategic thinking’ [S#2]. It would be useful to develop a taxonomy of such skills which also indicates at what stage of candidature they should be assessed.

5.1.3 Basic/common practices of research and transferable graduate skills

Many would agree that the skills and attributes required in academic and other professions have commonalities that obviate the need to assume an HDR candidate has to know their destination in order to prepare for it. As one submission argues, ‘doctoral students should also be able to complete concurrent teaching and supervision qualifications during their PhDs as their later roles will require either in teaching in a university setting or supervision of staff in external roles.’ [S#10]. There are mixed views about what should be required: ‘most people recognise the need to broaden the skills for ANU PhD students, however feel that it should not be compulsory. One size fits all will be difficult and each discipline will need to prepare skill sets during any postgraduate program. Otherwise it could become a waste of time. Option for soft skill developments should be offered to all students and it is up to the individuals to choose their path’ [S#16].

There is some agreement that there are skills and competencies we want all our candidates to possess, and the assumption that they already do or should possess them without further support is unhelpful and misleading. There are pros and cons to delivering skills support at program or University cohort level and some virtue in a balance of both, not least because of the potential to promote cross-disciplinary engagement opportunities for all candidates, and prepare them to work with teams of colleagues with diverse specialisms and expertise.

There is also the question of when such skills should be tested and whether those considered compulsory should be attached to milestones. For instance, ‘the mysteries of archives, literature, publishing, copyright, citations and scholarly communications are the focus of many discussions of PhD students with staff in the Division.’ [S#27]. Ideally a principle of supporting flexibility should underpin provision of transferable skills opportunities: ‘as an HDR candidate with a number of time commitments to balance, I find the opportunity to access structured intensive writing workshops critical to my ability to meet major milestones and writing deadlines for my project’, [S#29].

There are some who feel we should ‘stream’ our students into ‘academic’ and ‘enterprise’. For example, ‘as part of their PhD education, our candidates should have the opportunity to develop skills for career outcomes in three separate streams: • Academia/Research • Government/Policy • Business/Industry. Many skills overlap all 3 streams, and they should be developed in the first year. This includes thesis writing and research methods, Communication skills, project management and leadership training. Candidates in first year should also have access to expert career development advice that is tailored to the needs of this diverse cohort. In years 2 and 3 - and beyond - specialised training for each of the 3 streams could be added. For example, the Academia/Research stream might include grant/proposal writing, technical and journal writing, Academic administration, and teaching modules. In all streams, we should look to extend the PhD by 6 months through an external placement that is similar to the current work integrated learning that we offer to undergraduates’ [S#34].
An opportunity presented by redefinition of the ANU PhD is to combine these ‘streams’ into something distinct. We could assert that the idea of a target career is an outmoded and unproductive way of thinking about the PhD as a route to a future job and thereby reaffirm its enduring value as a mark of the highest scholarly attainment and guarantee of high-level cognitive and leadership skills in the workplace – ‘PhDs are fundamentally a degree that recognises academic mastery of a specialised subject area – they are not vocational training … This should be the core focus of our programs, and we should not be ashamed to say so and make that our primary goal. That is not to ignore the need to prepare students for life outside of academia, but we should make sure that we do the core business well – this is what will make our graduates “employable”’ [S#4].

There are a number of examples of good practice in this area: for instance the skills program of the Technische Universität Munchen in Germany offers a program of transferable skill training in Personality and Self-Management, Communication and Methodological Competence, and Leadership and Responsibility; these programs involve everything from creative thinking techniques to stress management, self-care and leadership.

In 2018 the Colleges of Science are piloting an optional skills and professional development scheme which operates on a credit point system and includes the use of an eportfolio function to empower student reflection and ownership of their development. Such a model has the potential to embed both flexibility and choice, and the eportfolio can inform curriculum vitae of the future. Many candidates would like more opportunity to hone their teaching skills and CBE have a program which allows students to apply for support and experience in this area regardless of the availability of paid casual teaching opportunities.

5.1.4 Graduate competitiveness/leadership

While academic positions for HDR graduates are limited, the wider jobs market offers as yet uncharted possibilities; but this is a competitive environment in which ‘industry’ experience and engagement is seen to be a key attribute. The University is competing for top domestic and international applicants at a time when other universities have been quick to capitalise on the new flexibility of the RTP fund. UNSW inaugurated Scientia Scholarships in 2017, offering each year 125 4-year stipends of $40,000 per year with up to $10,000 a year in allowances and embedded leadership and development support. As articulated on their website the aim of the scheme is ‘to enhance the culture of research excellence, mentoring, career development, leadership and community, and to have a positive impact on research quality.’

At this time of reflection and renewal, it is important that ANU ensures its HDR programs are internationally competitive, producing highly-qualified, professionally agile and resilient individuals: ‘as the nature of professional careers becomes more diverse, the ability to work across a range of areas, and to transfer skills from one area to other applications is becoming increasingly important. It is therefore incumbent upon universities to recognise these skills required of graduates as they move into a range of career paths, and to provide HDR programs which facilitate both original and significant research, and the development of these key skills crucial to the future success of graduates’ [S#1].

There are a range of opinions about the international competitiveness of our current programs. From the view of one ANU graduate our candidates ‘are left at a great disadvantage against graduates from countries such as Finland, where a four publication limit is set, and therefore expected. This is not an issue when it comes to landing jobs as a postdoc, but for winning grants this could have very serious ramifications. As grants maketh the researcher, this could lead to a decline in the success of ANU alumni in future years. Especially in Europe, but also for future DECRAs etc’ [S#32]. In terms of marketing the unique strengths of ANU graduate study, ‘the College of Asia and the Pacific, including RegNet, has a signature point of difference from its PhD program competitors worldwide: it can combine the best elements of the British, European and American models, but at a reasonable price. We also have the opportunity to position ourselves as a research training centre for the Asia-Pacific region by underscoring our deep affiliation with countries in the region and our unique capacity to produce graduates who are empirically informed, have had direct exposure to the social issues in the region, are intellectually ambitious and are ready to engage in policy and societal transformation.

NECTAR recommends that ANU set the following goal: that ANU HDR graduates should be not just employable but highly sought after. [S#10]

From my perspective the Westpac Future Leaders programme has a lot to deliver for us here. Having just attended the Future Leaders dinner, if all our PhD candidates could develop their ability to articulate and engage as well as those selected by Westpac the impact would be tremendous. [S#30]
The concern in some fields that our programs cannot compete with the US five+ year ‘apprenticeship’ model has been noted earlier.

National and international discussions have recently focused on the importance of industry engagement and real-world impact, and the consequent need to prepare graduates for career change and periods of precarity. While an important part of the research training agenda, it is misguided to assume that all HDR candidates embark on their research without any prior industry engagement. As the NCIS submission observes, ‘commonly, NCIS HDRs come to their PhD studies with substantial professional careers, extensive industry networks, and existing expertise in communication, policy development, executive decision making, and applied strategic thinking. They need the next level of career professional development, not the basics. This could include assistance with ‘promoting’ to industry the diversity of skills acquired by doing a multi-disciplinary PhD’ [S#31]. One model of what the next layer of career professional development might look like is provided by the Sir Roland Wilson Foundation which ‘currently offers a successful complementary talent management program. This program helps scholars to recognise and target development opportunities in a structured way with support, oversight and feedback from academic staff, their public service mentors and Foundation staff’ [S#2].

ANU should consider implementing institution-wide aims for its HDR candidates and complement that with a program strategy to provide a coherent focus for each HDR program on offer. This would allow us to measure and articulate activities and resources associated with meeting threshold requirements for the ‘core’ academic and researcher development outcomes identified for research degree programs. It could resource a larger central skills and development unit which would inform discipline level support and development as well as leading the sector in transferable and professional skills training. If we agree that academic mastery of specialised subject areas is the core of higher degree research, the challenge is to support and uphold the quality of the research and subsequent outputs while embedding the development of skills to complete the research project successfully, communicate its findings and offer broader skills to fully equip our HDRs for the future.

5.1.5 Publishing and the PhD

There are a range of views about the requirement for HDRs to publish during candidature. In certain fields a minimum number of publications is required to make a graduate competitive in the postdoctoral field. In some areas, particularly in STEMM, a thesis by compilation is becoming more popular and serves the purposes of ensuring candidates have the requisite publications to be competitive for postdoctoral and other positions, and making the writing-up process more manageable, whereas in other fields a post-examination monograph or collection carries more prestige. Rather that setting ‘rules’ for published outputs during candidate it seems appropriate for disciplines to share clear guidelines about discipline norms so that candidates considering an academic career are well supported and competitive in an international field.

Outputs from PhDs take numerous forms and greater industry engagement is likely to promote further diversity in the composition of the thesis. For candidates looking for leadership positions in the professions or to start up their own businesses, other kinds of ‘outputs’ might be more relevant and advantageous. A wide-ranging skills and professional development program under the redefined ANU PhD should adopt a wider ‘engagement’ agenda, ensuring that HDRs have an opportunity to further enhance written and oral skills to suit diverse forms of presentation and communication, and are introduced to networks through a range of events that prepare them for life beyond the PhD.

5.2 Capability Development

The research methods, skills and professional development program should sit alongside and be compatible with the research project at the heart of the program. A University-wide capability framework might involve elements of self-care in order to promote a holistic approach to higher degree research: ‘The Australian Qualifications Framework specifies the disciplinary knowledge, the generic and “specialised cognitive, technical and research skills” that HDR students will develop and be able to apply. Frameworks such as Research Skill Development or Researcher Development make explicit the developmental approach to the students’ development and skill enhancement in initiating a research topic, choosing an appropriate methodology, managing information, analysing and critically interpreting data to produce new knowledge and understandings, as well as the personal qualities necessary to be successful – enthusiasm, perseverance, integrity, self-confidence, and so on. ANU should review its researcher development framework to ensure that it explains what the 21st century HDR looks like and that it secures our position as a leader in HDR education and outcomes’ [S#17]. Technology skills across a wide range of applications also become increasingly important as ‘many of today’s PhD students need to be able to use online tools, manipulate
large data sets, make sophisticated use of data sources, design experiments and collect relevant data, undertake exploratory analyses of data using statistical software, fit complex statistical models, and report their findings of statistical inference’ [S#21].

5.3 Supporting Core Competencies and Productivity

5.3.1 Academic writing, language skills and other literacies

‘A reimagined PhD at ANU is one where HDR students are supported to develop academic literacies early and throughout their candidature’ [S#5]: this is not about addressing fundamental deficiencies in expression or grammar, but in developing broader proficiencies in research writing as a specialist and learned skill. Equally, while HDRs with ESL backgrounds may lose certain language competencies through isolation or irregular writing and oral presentation, ‘research indicates that language issues for ESL students are usually more subtle than sentence-level grammatical errors … This can lead to writing that is not constructed in accordance with the norms of our academic setting; writing like this can seem “foreign” even when the grammar is of a high standard’ [S#5]. The Academic Skills and Learning Centre provides support and expertise in these areas, but is only as effective as the opportunities taken up by Schools and individuals. If such skills were identified as part of a wider capabilities framework all HDRs could be encouraged to assess their own strengths and weaknesses early on and consciously develop further skills as the essential bedrock of research capabilities. As mentioned before, central skills support has the dual value of being both developmental and collegial as emphasised in this statement: ‘In considering the discussion of the current PhD program offered by ANU, with a view to supporting graduates, I would like to commend the support services provided by the Research Skills and Training unit … They boost our productivity, give us places to meet and befriend other HDR candidates, and provide targeted information when we need it. These events also help to combat the at times intensely solitary nature of the HDR candidature. I would not hesitate to say that they are one of the most important “value multipliers” ANU is able to offer its HDR candidates. As an HDR candidate with a number of time commitments to balance, I find the opportunity to access structured intensive writing workshops critical to my ability to meet major milestones and writing deadlines for my project. In any restructure or re-consideration of the PhD programs provided by ANU, I would highly recommend the value of continuing or even expanding such resources’ [S#29].

5.4 Broader Cultural Competencies

Higher degree research candidates are important carriers of innovative thinking into the academic and wider community. There may be opportunities for ANU to enhance all candidates’ current cultural competencies. As a national university it seems clear that an implicit obligation is that our graduates have an advanced understanding of Australia’s place in the world – now and historically – and that understanding includes strengths in indigenous studies. Given the significance of ANU in delivering a wide range of language programs, language acquisition skills could be emphasised and some provision made for access to further language study, as well as other intercultural skills that would prepare our candidates for the global marketplace.

5.5 The Thesis

The Salzburg Principles, developed in 2005, assert firstly that ‘the core component of doctoral training is the advancement of knowledge through original research’ (quoted in EUI 2017: 9). This principle is based on the widespread view that doctoral research endows researchers with a number of valuable skills including ‘creativity, problem solving, critical and analytical thinking, intellectual autonomy and flexibility’ (EUI 2017: 9). While concerns are expressed about whether we are enrolling too many HDRs in Australia, and while we continue to agonise about their contribution to the knowledge economy, it is generally agreed that the research thesis is the defining character of higher degree research and that what needs greater attention is the research training we provide to complement such research endeavours, alongside further recognition of the crucial role of supervision. At ANU we are well-placed to further reflect on our expectations of what makes a superlative thesis in each discipline and assure ourselves that our candidates understand this and are supported to deliver work of the highest quality. The EUI paper states forcefully that ‘the most important “skill” that a PhD graduate has obtained in a PhD programme is represented in the PhD thesis itself, as a demonstration of one’s capacity, as an advanced professional, to conduct methodologically rigorous systematic research and to craft a complex but coherent line of argument. Hence, an academic PhD programme may, without any compromises, prove to be a gate opener for a number of senior positions in both the public and private sectors’ (EUI 2017: 13).
6.1 Examination and Assessment

6.1.1 Examination process and policy

The examination process is the most mysterious and ill-defined part of the candidate journey for many HDRs and at ANU is widely recognised to require improvement in both administrative systems that monitor progress of the exam and stronger guidance for academics on protocols for selecting examiners, interpreting their reports, and determining the most appropriate course of action when examiners’ reports differ substantially. While much progress has been made to simplify the submission and examination process from a candidate perspective, further review of the current examinations policy framework is recommended. Such a review might consider levels of decision making and, at the very least the possibility of the establishment of a graduate board to review complex and conflicting examiners’ reports. Many universities are currently piloting or moving wholesale to the introduction of oral examinations and ANU would do well to assess the pros and cons of the oral examination as well as benchmark examples of global best practice in assessment.

6.1.2 The oral versus the written examination

My own experience of PhD examination in Britain involved the production of a joint report between the two examiners after the viva; it is a thoroughly collaborative process. Current practice in Australia, however, occasionally results in an examiner’s assessment of a thesis being, to all intents and purposes, ‘outrouted’ in a manner that is academically indefensible, if the examiner concerned has examined the thesis according to the rule and in a competent manner. Neither secrecy nor isolation can operate in a system with an oral examination … But if we are not prepared to take the more radical step of introducing a viva, we should at least permit and indeed encourage consultation between examiners. At an absolute minimum, we must allow each examiner to see the reports of the other examiners after the examination process is complete, as a basic accountability measure [Deakin University permits this process and it is superior to my own experience of any other Australian university’s procedures. [S#19].

We know from numerous examples that the oral examination – for example the UK model – is not without problems, often to do with diverse behaviours of examiners or poor processes implemented by HEIs. Issues often centre around lack of transparency, lack of consistency of practice, or unprofessional conduct during the viva. It has been noted that ‘the viva is a process of engagement in which multiple agendas are at work and the rules are more implicit than explicit and are only vaguely defined’ (Park 2003: 50), which increases the potential impact of unequal power relations, and the negative effects of the absence of firm guidance for examiners (some see it as a trial of the student’s mettle). The multiple roles played by the viva are summarised by Park as: ‘authentication of authorship of the thesis, checking the student’s understanding and ability to produce and present work of the appropriate standard, monitoring academic standards, providing advice and guidance, and acting as a rite of passage’ (Park 2003: 49). These features cover disciplinary stewardship, quality assurance, institutional compliance, mentoring, completion and acknowledgment of the significance of the HDR journey. It suggests that the oral examination can possess more conflicting purposes than the written examination most common to the HDR experience in Australia. The challenge for piloting an oral examination that avoids some of these negative effects is in combining robust pedagogical, assurance and professional development characteristics.

In the past the written examination process has served Australia well to mitigate the expense and inconvenience of long-haul travel. Technological developments enable face-to-face communication from afar across multiple sites, and the opportunity for candidates to present their work and its core aims while receiving constructive feedback that can be discussed, qualified and amended. Written reports have their advantage in that each response is ‘blinded’ in the spirit of peer review; but as is implied in the boxed quotation above, the steps taken to reach a decision in the case of conflicting reports may remain obscure to the examiners, who may feel that their expertise is disregarded. Without the opportunity to review the conclusions of their fellow examiners, they might remain sceptical about the value or efficacy of the process: ‘Current rules and procedures isolate examiners and, as a result, are more likely to produce idiosyncratic examiners’ reports that will later trouble the relevant university committee and candidate, since no examiner is ever made practically accountable to any other examiner for their opinions’ [S#19]. The prevention of contact between examiners means the problems of ‘rogue’ reporting can prevail. Whether or not we adopt oral examinations as the norm, it is advisable to review our current protocols to allow or even encourage the sharing of reports between examiners.

The provision for an oral examination in certain situations is already provided for in the current ANU policy framework. Additionally the oral pre-submission
presentation can adopt some of the features of the viva voce – particularly in the opportunities for candidates not just to present but also defend their research.

During 2018 a pilot oral process is being proposed at ANU. This would facilitate further discussion about the suitability of oral examinations for our candidates and ensure that any protocols developed ensure an enhancement of the student experience of the examination process (the opportunity to discuss their research with international experts and network with those best placed to advise on future application of the project); a more timely process; a satisfying experience for examiners who get to discuss the thesis and meet the author; an improvement of examiner accountability to the candidate and their subject community. Additionally, where there are serious concerns about the thesis, ‘the oral examination presents an opportunity to examiners to clarify aspects of the study with the candidate’ [S#19]. Finally, ‘it gives the student experience of explaining the key ideas in a thesis to experts in the field, thereby involving the practice of verbal communication in a scholarly environment – a skill that is not at present part of the formal examination process’ [S#19]. This latter point speaks to a question raised by the ACOLA review of Research Training: in assessing the thesis should we be assessing the person as well as the artefact?

There are ongoing concerns about the tyranny of distance and the logistics of bringing all the stakeholders together on zoom or similar technology; this process is not without its challenges and relies on the flexibility of all involved. ANU will not be alone in this venture in Australia, and New Zealand has utilised this method for some years. Moreover the majority of our IARU partners use the oral examination. There are a number of models to review as we create what we regard as best practice, with some checks and balances to guard against well documented negative aspects of the viva, for example ‘Humiliation: in rare cases the Viva leads to a form of public humiliation when an examiner attempts to “catch” a student out’ [S#14]. Any implementation of oral examination must be accompanied by meaningful preparation and training for all higher degree research candidates.

While the implementation of the oral examination will not mark an original contribution to the sector on the part of ANU we can ensure that our model represents an international gold standard; additionally we might contribute to the setting of national guidelines for good practice in external examination which extends current ACGR good practice principles of Graduate Research Examination to further encourage best practice and professional development for less experienced examiners and HDR conveners.

6.1.3 What should be assessed?

The above focuses on the nature and character of the thesis examination. It is also timely to consider whether coursework, methods training, skills and professional development might also be assessed and acknowledged at the end of candidature. This issue also relates to the earlier discussion about the use of milestones as ‘curricular’ elements of PhD study. Formative assessment practices might be usefully embedded into the progress mapping of a student’s journey to aid successful completion and ensure the quality of the final thesis, as well as to encourage candidates to record and reflect on their own skills acquisition as part of building a skills portfolio for their next career step.
7 WIDENING GRADUATE OPPORTUNITIES AND EMPLOYABILITY

7.1 Career Pathways and Employability for HDRs

The capacity of the University to support appropriate industry internships for HDR students should be supported by other forms of institutional engagement with industry. These could include working with partners in industry to develop understandings of industry-based research applications, and exploring the potential of professional doctorates to facilitate industry engagement in some disciplines. [S#1]

Recent debates about the relevance and value of higher degree research in Australia have been framed by the will to expand industry partnerships and opportunities for candidates to work in a professional context before graduation. The Research Training Program fund allows greater flexibility to reward such initiatives, and the APR intern scheme, funded by government, aims to significantly increase 3-6 month internships for HDRs. Some universities have developed strategies which encourage industry partnership – for example the Western Australia i-Prep scheme is a joint venture between all WA-based universities. The program enables post-thesis submission candidates to join interdisciplinary teams. The placements are relatively short, running for six weeks, but include intensive induction and participation in a two-day entrepreneurial mindset bootcamp at the conclusion of the placement, including a one-minute pitch to industry. The University of Queensland’s Graduate School Career Development Framework, arranges industry placements for HDRs any time during candidature post-confirmation. Monash University’s Graduate Research Industry partnerships (GRIP) is another well-established program which groups industry linked projects under core research themes, with candidates working in a cohort of up to 20 to foster innovation and collaboration.

These examples give a snapshot of some initiatives in the sector which also provide enhanced marketing to graduate research programs at these universities. Universities such as Monash benefit from proximity to a number of industry contacts; an ANU venture could exploit our proximity to public service and government as well as widen links in the NSW region. The University is already well connected with external partners, but there is little coordination of ongoing activities that would allow us to attract partners to a scheme explicitly relating to graduate researchers placed in workplace settings. Such a coordinated approach with a specifically graduate research flavour (which showcases the unique skills of our candidates to problem-solve and identify new frontiers of research) would both better serve our current candidates and attract applicants of the highest quality. A partnership program might draw elements from all the three schemes mentioned above – from cross-disciplinary problem-solving during a short intensive period, to longer individual placements which explicitly draw on a candidate’s research expertise, to mentoring programs which allow candidates to draw on a range of expertise and advice during candidature.

7.1.1 Career pathways – the drying up of the academic pipeline

Many HDR students with academic aspirations are graduating into precarity, often taking casual teaching or short-term project positions while working on publications. They often have no time to work on grant applications that may secure more stable academic career pathways [S#7].

While the realities of the academic job market are well known and for a long time academia has not been the dominant career pathway for PhD graduates, it could be argued that our programs continue to be implicitly shaped to address the needs of an academic pathway. This is also evident in some colleagues’ assumptions that academia is the preferred default pathway, shaping milestones and coursework, and from which all other destinations are a ‘consolation’ prize. HDR graduates, like all graduates, face a degree of uncertainty and precarity in preparing for life after graduation and there is clearly an obligation on the part of ANU to help candidates understand the skills they have acquired and the way to communicate them to future employers. In many cases candidates’ assumptions that the preferable pathway for them is an academic one are not tested by their supervisors or the academic community at large. We still require fresh academic talent to rejuvenate and replenish the disciplines and foster trans and cross-disciplinary links; but the increasing emphasis on understanding the impact of academic research and assessing levels of external engagement suggest that academics of the future more than ever require attributes that enable them to survive and prosper in the wider commercial world.

ANU is well placed to contribute to debates about the place and function of the PhD and MPhil by acknowledging the tension between an ‘academic’ and ‘non-academic’ pathway and refuting the negative assumptions attached to the latter. In order to better prepare our candidates for the future it is advisable to accept that individual supervisors and teams are not always best-placed to advise their students on the range of future opportunities available to them, and that industry engagement specialists should contribute to the development of any professional development framework.
7.1.2 Graduate employment outcomes

HDR programs have research excellence, originality, innovation and methodological expertise at their heart, but there are ample opportunities to embed an employability framework into HDR programs so that candidates are encouraged at each stage to reflect on their contribution to knowledge and its applicability in a number of environments. While discussions have tended to question the value of the PhD beyond academia, given the successful embedding of numerous graduate researchers in the professions the more important task is to make employers aware of the unique value of HDR candidates in the workplace.

A more sophisticated articulation of graduate outcomes would support this task and could identify skills such as high-level problem solving; calculated risk-taking; identification of originality and innovation; social impact relevance; cross-disciplinarity, team work, critical thinking and leadership. We already have access to many skills and resources which help our candidates better articulate the public and social relevance of their research: for example, in CPAS (the Australian National Centre for the Public Awareness of Science) ‘our focus on communication for impact extends to the wider community of ANU PhD candidates. Here too, we hope that students are encouraged by the university, their schools and their supervisors to think of how they can have the biggest possible impact on the world, and are given the research and communication skills to make that happen. To help achieve this, CPAS currently contributes to the wider community of ANU PhD students via a variety of research communication workshops. In particular, for past 10 years we have run 2.5 day workshops covering a variety of core science communication skills for PhD students across the science colleges. Students from this workshop have spoken in glowing terms about the communication skills gained in this course, and have gone on to win a range of disciplinary and wider research communication awards, including the 3 Minute Thesis.’ [S#6].

7.2 International Mobility

International exchanges are another way to improve the attractiveness of our candidates to future employers. Existing international partnerships offer students the opportunity to engage in joint, dual or cotutelle arrangements with prestigious universities across the world and it would be advantageous to better capture the range of opportunities available across our programs and publicise the advantages of international mobility and the enhanced research experience that visiting and working with other institutions offers. Where international travel is not viable there are still further opportunities to create international expert supervisory teams by mutual arrangement with current partners.

7.3 Understanding and Tracking Graduate Outcomes

A number of commentators have noted the absence of authoritative surveys and data to track graduate outcomes. A recent Go8 initiative is designed to fill this gap and allow benchmarking of Go8 graduates (who currently represent about half the completions in the sector), with international HEIs, through sharing a survey instrument used by the CGS (US Council of Graduate Studies). To complement this activity it is recommended that ANU review the ways in which it gathers data on research graduates and use it to discover patterns of employment both domestically and internationally: ‘Only with such data can the University appropriately evaluate the competitiveness of its graduates in all professions, academic and otherwise, and assess the effectiveness of HDR programs in equipping graduates with the skills required of their chosen careers’ [S#1]. Of course graduate outcomes should not just be measured in terms of employment destinations: there are many ways in which the outcomes of higher degree research enrich the lives of the graduate, society and the nation.
8 SUPERVISION

8.1 The Supervisor

The role of research supervisor is a complex blend of teaching, mentoring, peer review, professional induction and pastoral support. The candidate/supervisory relationship is the most significant aspect of the HDR experience and the most intractable problems arise when this relationship breaks down irretrievably. Transitions are difficult in cases where supervisors move institutions and new members join a panel. Supervision can be time-consuming and it is not always easy to anticipate periods of high demands on time – for instance, when a candidate submits a large piece of work for review or is seeking expert advice on a conference presentation or journal submission. Ideally, a supervision panel of at least three work together to ensure a candidate progresses smoothly.

That there are excellent supervisors at ANU is evident in the performance and experiences of the majority of our students. There are ways in which we could better support this role - in providing support and development opportunities, in rewarding good practice, offering development when challenges arise, and in the way supervision and leadership activities are recognised in a revised workload model.

8.1.1 Good Practice Principles

The policies and procedures that govern and define supervision at the University broadly clarify roles and responsibilities and expectations correlative with the role. Supervisory teams work best when there is a shared understanding of the role of each participant, including the HDR candidate. Where the panel has one or more inactive members this limits the candidate’s opportunity to seek support when the primary supervisor is unavailable. While the supervision procedure indicates the qualities and broad responsibilities of Chair, Primary and Associate supervisors, where one individual takes more than one function (i.e. as Chair and Primary) this potentially limits the candidate’s capacity to seek support in the event of a breakdown in the core relationship. It is recommended that further work be done to formalise an agreed set of expectations at initial meetings between the supervisory panel and HDR candidate.

At the present time, the first annual review, or TPR, is overseen by the supervision team with the expectation that all supervisors are present. Progress is assessed and comments passed to the delegated authority for approval, comment or further action. While practice on the ground varies, this process does not require the presence of an academic external to the panel; at the very least this means that candidates may feel inhibited from raising problems with their team for fear that their progress may be stalled. There is an opportunity to strengthen our quality assurance processes by recommending the presence of an academic external to the team and with sufficient supervisory experience to compare the candidate’s progress to norms in the field and to be available for private discussion with the candidate, or the supervision team, if required.

The minimum number of meetings of the whole panel are two per year: while it is hoped that the research culture of any area affords a greater number of meetings - both formal and informal - between the candidate and the team, there is the possibility that only the primary supervisor is aware of the extent of candidate progress between these meetings. A review of these processes is recommended to encourage best practice and to formalise access to other experts in the field for each candidate.

The mentoring function that often takes place between more experienced supervisors and their colleagues might be further formalised as an aspect of team supervision that allows the development of someone new to the role, as well as a cross-fertilisation of ideas about supervisory practice: ‘Mentorship for new supervisors is a good idea. We should also incorporate postdocs/ECRs more in the supervision role’ [S#16].

Most candidates choose their program of study based on the strengths of their supervisor, and admission is usually preceded by substantial contact between the two to ensure the validity of the project and availability of an appropriate team. If the supervisor becomes unavailable or if the candidate or one of the supervisors requests a change in the composition of the panel there is less clarity about the responsibilities of the area to support the candidate to the full. This is particularly problematic if the candidate is abandoned without prior notice (‘He
said he hasn’t time to supervise me anymore and I’ll have to find another supervisor; I don’t really know what to do’ [S#3] or the performance of the primary supervisor is unsatisfactory (‘I want to change my supervisor but I’m really scared. What will she do when I tell her? What if no-one else will take me on? What then?’ [S#3]; ‘He’s not really helpful but he’s in my area and he’s the only one I know and I might need a reference later’ [S#3]).

Miscommunication can rapidly and terminally sour an HDR/supervisor relationship which is why there should be a formal opportunity for candidates to present their progress to someone beyond their immediate panel. This will also foster broader responsibility for HDR successes in the research team or School as a whole; to paraphrase a well-known aphorism, ‘it takes a village to raise a PhD’.

8.1.2 Supervisory workload

The issue of incentives for academics taking on HDR students was raised several times in submissions [S#24] and during Committee of Inquiry meetings it was clear that there are broad cultural differences between the biological and natural sciences and social sciences, arts and humanities. In science-based topics candidates tend to be embedded in large projects and laboratory or group research opportunities where co-authorship and interdependence of research activities is the norm, versus the tendency in humanities and social sciences for candidates to be working on self-devised projects which may have little overlap with their supervisors’ research. Co-authorship is less common in the latter, and in the worst case, candidates can be seen as a drain on precious research time.

8.2 Developing Supervision and Rewarding Excellence

Over the past two decades or so, there has been a recognition that, while being active in research is a necessary condition for effective supervision, it is not a sufficient one. (Taylor 2008)

There is a commonly-held view ‘that exemplary supervisory performance be acknowledged and appropriately rewarded’ [S#3]. College level awards and a Vice-Chancellor’s Award for Excellence in Supervision offer recognition for a small minority; but quotidian acknowledgement of successes and milestones reached might be as important to supervisors as it is to the morale of candidates.

Great supervisors learn from their own candidature experience (good or bad) and from collegial relationships forged in supervisory panels or in the wider research environment. ANU has not offered consistent and just-in-time support to supervisors to perform at their best; even the opportunity to discuss and reflect on actual supervisory experiences, share good practice and identify common problems can be transformative. Until consistent and sustainable support and development is afforded all ANU supervisors, it is difficult to act on or eradicate poor performance and inappropriate behaviours.

There are a number of areas that formal training can help to support academics – from cross-cultural training, having difficult conversations, communication, team building, to supporting cross-disciplinary candidates. The best form of development in this field is one which exploits communities of practice and informed discussions and review of case studies. It is universally recognised that the ‘on-going development of experienced supervisors is the most challenging aspect of supervisor development, and that there is considerable resistance from supervisors to compulsory, centralised and formal training programs. There is also considerable cynicism about the value of such programs’ (Hammond et al., 2010: 15).

8.2.1 Supervisory Leadership

The University does not yet fully acknowledge the value of leadership roles encapsulated in the function of HDR convener, and this may threaten the sustainability of the role and the building of expertise in an area, meaning that valuable experience is lost in swift turnover. It also means there is little aspirational focus on HDR leadership roles (Associate Dean, Dean HDR) which makes loss of knowledge and strategic discontinuity a material threat. In 2010 a report funded by the ALTC recommended ‘recognising the increasingly important role of research degree coordinators in leading and supporting supervisor development at the local level within (and between) faculties, and providing appropriate resources and support to enable these coordinators to be proactive in this area’ (Hammond et al., 2010: 8). Regular events that address the needs and concerns of HDR Conveners is critical to an improved HDR experience.
Previous sections discuss a number of challenges to the commitment to redefine the PhD. Some of the key enablers for change already identified include a dedicated HDR marketing and brand formation strategy, competitive scholarship funding, investment in skills and professional development and high-quality onboarding and student support. Other factors not fully captured above are briefly outlined in this section, and relate primarily to governance, infrastructure, philanthropy and the University’s people. There is scope to better exploit the University’s unique characteristics as a national and international destination for HDR study. There is more that could be done to select, orient and support candidates for their best chance at success through coherent strategies which encompass initial engagement and support for progress throughout the candidate journey. From application to completion there are a number of elements of HDR experience and governance that warrant review to ensure strategic alignment with the University’s future vision.

9.1 Mapping the HDR ‘footprint’ on campus

HDR candidates generally have work and social spaces in their Schools and access to their near colleagues; but when it comes to broader campus space and access to services the impression is that HDR candidates are not well served. This is not for want of numerous initiatives by a number of central services tailored to HDR needs. For instance, ‘we have implemented a “Personal library contact” program based on the Yale Medical Library program. Each new PhD student is allocated to an individual SIS staff member. The staff member contacts the student regularly through email and aims to be their gateway to scholarly information services. We find that offering this personal service in what is a primarily online support world provides a welcome human voice … It is time to consider how the program can be taken to the next stage, perhaps a cohort-based approach with structured sessions’ [S#27].

The need for a distinct ANU HDR ‘footprint’ is both physical and virtual in order to emphasise the centrality of graduate research to University business: ‘the focus should be on the student and making it a seamless experience in terms of finding and accessing support on the ANU website … A single calendar of events, searchable via College, service provider, and an expanded list of the type of activity, would benefit HDR students. Basing the type of activity on descriptors used to identify the knowledge, skills, and capabilities in the research skill development framework would also lend coherence to the way in which development opportunities are promoted to students’ [S#17]. In terms of a physical presence there is the requirement for a prominent and accessible graduate research office and a social/event space which prioritises HDR needs and contributes to the important business of cohort and identity-building.

9.2 Governance

Since the dissolution of the ANU Graduate School approximately a decade ago, academic and administrative governance of HDR programs has been distributed across central divisions, Colleges and Schools. At its best this ensures disciplinary expertise feeds into program development and that candidates have on the ground contact with both administrators and academics who understand the system; at its worst practices of candidature management and levels of expert advice are variable and even contradictory, and core processes are duplicated, or lost between specialist units.

A more collegial structure of academic and administrative governance would better serve the interests of HDRs, supervisors and professional staff, and present potential efficiencies in workload, resulting in a more forward-looking and agile portfolio. A centralised graduate research office with oversight of recruitment through to exams and graduation would grow a highly specialised administrative team with the capacity to respond and work flexibly in terms of high workload in one area (such as during scholarship rounds). Such a centralised function delivers on common responsibilities for HDR business such as ‘improving the quality of graduate education and the student experience; and sharing good practice in supervision. They all have responsibility for generic skills training programmes and most are responsible for quality assurance and monitoring of student progress’ (McGloin and Wynne 2015).
An ideal governance structure for ANU might be at once top down and bottom up: the Dean HDR leads the strategic and quality agenda through close consultation with Colleges and Schools and Associate Deans and HDR conveners. The ‘bottom up’ influence is less easy to articulate in the current organisation of graduate education at ANU but a change of approach can be detected in the adoption of the Supervisor Framework (HDRC/URC 2017). A more fully articulated engagement strategy might see a graduate research office as a place of meaningful encounter and enrichment between the HDR cohort and the supervisory community which fosters interdisciplinary connections, the sharing of good practice and regular academic and social networking; another focus might be on ECR development. The central support functions of a graduate research office can act as an online portal for graduate student entry, a conduit for cohort building and training, and a showcase for the rich diversity of programs available. From an institutional perspective it is currently very difficult to track the range of HDR programs available or celebrate their distinctiveness: for an outsider navigating our webpages for the first time, the task is well-nigh impossible. The presence of a graduate research office can serve to recognise the importance of both Colleges and Schools in the development of cognate research cultures, and possesses an infrastructure that allows central coordination of research training and professional development solutions, pastoral care and guidance.

9.3 Benchmarking and Strategic Partnerships

Significant differences exist between doctoral programs in the US, the UK, in Europe and elsewhere – differences which preclude the straightforward comparison of program characteristics across educational systems, let alone educational fields (Evans & Nerad, 2014; Hall, Evans & Nerad, 2006). In the case of the US in particular, direct comparison of indicators such as attrition and time to degree can be misleading given differences in assessment practices and the substantial coursework component common to most US graduate programs (Council of Graduate Schools, 2008). Nonetheless, there is tremendous scope for drawing on examples from other educational systems as the global environment for doctoral education continues to evolve.

The League of European Research Universities (LERU) supports a healthy diversity of practice among the doctoral programs of their member institutions and highlight that innovation is crucial for research intensive universities, encouraging them to engage in a continual process of review and renewal. Recommendations offered by LERU include that stakeholders in research education should:

- Recognise that frontier research is the core business of research-intensive universities;
- Support programmes that encourage intellectual risk-taking and creativity whilst not losing sight of other issues such as time to completion;
- Devise systems that allow candidates to take control of, track and self-assess their own development, with guidance from supervisory teams;
- Provide a well-rounded professional development programme which enables doctoral candidates to assemble an individual training programme tailored to their needs;
- Engage with employers to ensure that professional development of researchers is fit for both academic and non-academic employment outcomes;
- Ensure that their doctoral training structures and programmes are regularly refreshed in order for them to remain innovative and responsive to change (LERU, 2014: 104)

9.4 Philanthropy

While philanthropic investment in specific projects already occurs, there is currently no strategic plan to engage significant philanthropic investment in the HDR portfolio more broadly. As previously noted WA’s Forrest Research Foundation represents to date a $130m investment in doctoral and postdoctoral research across the disciplines, including dedicated accommodation and social/event space for the cohort. ANU is well positioned to attract investment at this high level – indeed the Tuckwell investment at undergraduate level is testimony to this. A strategy for investment in graduate education at ANU is overdue and successful future funding could be transformative for the cohort as a whole.

9.5 People

The most powerful advocates for a redefined PhD have been the wider academic and student community at ANU.
The extent of ongoing engagement in this project and the willingness to share ideas and assess current strengths and weaknesses has significantly strengthened and guided the direction of this project. As a veritable engine room of research for the University, HDRs deserve to be acknowledged for the level and range of their contributions to the health of the University; equally a positive and rewarding HDR experience is largely created by supervisory and professional staff. The success and scope of redefinition will depend on our current HDRs, their supervisors, their professional colleagues and alumni, as well as investment decisions endorsed by the University’s Executive group which will facilitate the development of a White Paper and initiate what that Vice-Chancellor has described as “a once-in-a-generation responsibility to redefine our PhD to reflect our contemporary world, to distinctly match our University’s national mission, and to be one of the most sought-after, prestigious, and enabling PhDs in the world.”
10 CONCLUSION

Among the challenges identified by the Committee of Inquiry is the task of ensuring that evidence of performance and feedback from both supervisors and candidates informs the strategic and administrative practices of graduate research in ANU on an ongoing basis. While there was a good degree of overlap between evidence put before the Committee and issues raised in previous ANU consultations, there were clear deficiencies identified in the University’s ability to solicit feedback on the quality and performance in postgraduate research and inform the University’s strategic direction in a systematic, coherent and sustainable way.

There is a growing convergence of opinion internationally on aspects of doctoral education that are associated with success. These commonalities exist against a background of quite different contexts both within and between educational systems. System-level drivers for funding and quality overlay contrasting traditions, expectations and practices when it comes to doctoral degrees, with the strategic imperatives of individual providers also playing a major role. Despite an increasing convergence in narratives around doctoral education internationally there is no universal standard against which the quality of every doctoral degree program can be judged, at the generic level at least, outside of their fundamental characteristics of attainment. Despite, or perhaps because of the diversity found within and between educational systems there is a considerable degree of innovation in doctoral education policy and practice.

While the University’s research degrees are already comparable in many respects with the best in the world, opportunities exist for development and improvement in particular areas. Outcomes from this process may also inform recommendations and proposals we can feed back to Government. This Green Paper initiates the second stage of consultation with the ANU community and we invite you to continue the conversation about PhDs in the 21st Century, and help us determine how ANU reasserts its position among the world’s leading institutions in supporting world-class graduate research experiences and outcomes.
REFERENCES


HEFCE (2005), ‘Costs of Training and supervising postgraduate research students: A Report to HEFCE by JM Consulting Ltd.’

Hodge, A., et al (2010), ‘Review of Progress in Implementing the recommendations of Sir Gareth Roberts, regarding employability and career development of PhD students and research staff’ (RCUK)


Taylor, S (2008). ‘Thinking of Research Supervision as a Form of Teaching’ Research Supervision: an online journal


APPENDICES
Appendix 1: Findings from 2016 Strategic Planning Development Activity

Strategic Objectives for Higher Degree Research proposed as part of the planning process undertaken for development of the University’s 2017-2021 Strategic Plan (ANU, 2017) are outlined in Table 1 below. Two public forums were hosted and two workshops were conducted, involving a broad range of stakeholders from across the ANU community. Outcomes from this process include identification of strategic activities and priority areas, with vision statements and follow-on effects identified for each. The over-arching Vision Statement proposed for these strategic objectives is as follows:

ANU will nurture, enhance and demonstrate our reputation for quality and excellence in HDR and will become the first choice destination within Australia in the fields we offer.

The thematic areas identified for the Committee of Inquiry follow directly from the strategic objectives outlined in Table 1. The objectives below have been reordered to reflect their alignment with the thematic areas identified for the Inquiry.

Table 1: Objectives identified in 2017-2021 ANU strategic planning public forums and workshops

<table>
<thead>
<tr>
<th>Vision Statements / Strategic Objectives</th>
<th>Strategic Activities/Levers</th>
<th>Flow on Effects</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1. Recruiting Excellence</strong></td>
<td>• ANU will actively identify, target, attract and recruit excellent HDR candidates from around the world.</td>
<td>• Undertake international and domestic marketing</td>
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<td></td>
<td>• The ANU program of candidate enrichment will become and be used as an attractor for the best students.</td>
<td>• Undertake strategic recruitment within each college</td>
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<td></td>
<td>• ANU will provide the best financial support to HDR candidates in the sector.</td>
<td>• Ensure selection processes will focus on candidate capabilities to carry out research</td>
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<td></td>
<td>• ANU will strive to achieve equity and diversity in all recruitment processes so that ‘the best’ is not just ‘the most privileged’.</td>
<td>• All potential candidates will have a formal electronic or face-to-face interview as part of the selection process</td>
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<td></td>
<td>• ANU will actively recruit and support Indigenous HDR students through to completion.</td>
<td>• Identification of research clusters which are best placed to support candidates throughout their degree</td>
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<td></td>
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<td>• Pursue philanthropic funding for scholarships</td>
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<td>• Strategically direct scholarship funding to ensure that our candidates are recruited into the areas in which they can receive the best supervision and support for their studies</td>
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<td>• Implement an evidence-based retention strategy which targets the whole HDR candidate lifecycle</td>
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<td>• Meet or exceed sector average for turnaround time from application to offer</td>
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<td>• Develop a PhD pathway program with flexible financial support to attract Indigenous students to HDR study</td>
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<td></td>
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<td>• Our alumni become our best brand ambassadors:</td>
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<td></td>
<td></td>
<td>• Improved individual and institutional performance in completion rates and times</td>
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<tr>
<td></td>
<td></td>
<td>• Increased retention rates and satisfaction scores in surveys to top 5% in sector –</td>
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<td></td>
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<td>• Application rates and offer to applicant rates will indicate the attractiveness of research training at ANU</td>
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</table>
### 3. PhD Plus

ANU will deliver a PhD program that provides its students with a rich program of skills development and research training that equips them for a range of graduate careers.

- **ANU will assess and respond to HDR student expectations and provide support services and guidance that help them develop their skills in-line with desired outcomes.**
- **Create policy and program measures to ensure that all ANU HDR candidates engage in ‘extras’ as appropriate (examples: workshops and courses in communication, teaching and leadership.)**
  - **ANU will deliver a program that provides its students with a broad and diverse range of opportunities for research skills development and will actively work to remove any barriers to participation.**
  - **Require mandatory participation in 3MT training.**
  - **ANU graduates will have a depth and breadth of research and topic knowledge as well as a solid set of transferable skills.**
  - **Ensure all our research and transferable skills training is of high quality, flexible and fit for purpose. Any additional assessment should be complementary to, and not interfere with, the production of a high-quality dissertation.**
  - **Provide more opportunities for internships, teaching etc. so that ANU candidates can exercise skills gained in formal training programs.**
  - **Support development of Doctoral Training Centres with interdisciplinary cohorts and bespoke research training programs.**
  - **Develop more interdisciplinary centres of excellence and other forms of cross-College collaboration in PhD programs.**
  - **Establish career placement activities that function beyond graduation to support student employment and professional development post PhD.**
  - **Enhanced student outcomes**
  - **Enhanced employability of graduates.**
  - **Improved partnerships with industry and government.**
  - **Improved ANU branding, leading to easier student attraction and recruitment.**
  - **Recognition that our graduates are highly effective communicators and teachers in their field.**
  - **Break-down silo’s and encourage collaboration across the University via joint PhD projects, DTCs etc.**

### 2. Excellent Supervision

ANU supervision will embrace best-practice techniques to support student experience and high completion rates.

- **ANU will lead the sector in supervision on available metrics.**
- **ANU will support its research supervisors to develop, and periodically renew, their professional skills.**
- **Implementation of mandatory supervisor professional development and mentoring activities for all new staff (both new to supervision and new to ANU).**
- **Provide of ongoing opportunities for professional learning/development and incentives for continuing supervisors to take part.**
- **All supervisors will be expected to report on their own supervisor development activity in annual PDR.**
- **Develop and apply evidence-based quality assessment of supervision performance by tracking student progress for supervisor’s cohorts.**
- **Propose that HDR and Honours supervision becomes a separate category (not teaching, not research) in PDR and promotion.**
- **Celebrate and reward excellence in supervision through the development of initiatives such as a prestigious Fellows scheme (HEA or similar).**
- **Establish supervisor mentoring by excellent supervisors and HDR coordinators.**
- **Develop ‘Reverse internships’ for supervisors to engage with industry to improve awareness of career pathways and required student capabilities.**
  - **Enhanced and improved student experience.**
  - **Successful, more comprehensive and faster completions.**
  - **Increased support for supervisors leading to greater engagement and understanding by academics with issues of student welfare.**
  - **Greater awareness and acceptance by supervisors of non-academic career paths for students.**

### 4. Resource Support

ANU PhD’s will be the best, most equitably resourced research degree programs in Australia.

- **ANU will deliver a PhD program that provides its students with a rich program of skills development and research training that equips them for a range of graduate careers.**
- **Create policy and program measures to ensure that all ANU HDR candidates engage in ‘extras’ as appropriate (examples: workshops and courses in communication, teaching and leadership.)**
- **ANU will lead the sector in supervision on available metrics.**
- **ANU will support its research supervisors to develop, and periodically renew, their professional skills.**
- **Implementation of mandatory supervisor professional development and mentoring activities for all new staff (both new to supervision and new to ANU).**
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- **Increased support for supervisors leading to greater engagement and understanding by academics with issues of student welfare.**
- **Greater awareness and acceptance by supervisors of non-academic career paths for students.**
### 4. Resource Support
ANU PhDs will be the best, most equitably resourced research degree programs in Australia.

- ANU will provide the best financial support to HDR candidates in the sector.
- ANU will house world-class infrastructure to support high quality research and cross-disciplinary collaboration.
- ANU will provide collaborative spaces where HDR candidates can meet, share, collaborate and develop a sense of community to enhance HDR training and the student experience.

- Increase investment in scholarships, training and research support.
- Increase philanthropic support of HDR.
- Invest in the provision of infrastructure and collaborative spaces for HDR students.
- Inform the design of campus development plan to meet the needs of HDR students.

- Development of a stronger sense of community
- Attraction of the best students
- Ensure sufficient resources for implementation of all aspects of the HDR strategic plan – “fewer may be more”

### 5. Global HDR Excellence
ANU will nurture, enhance and demonstrate our reputation for quality and excellence in HDR.

- ANU will demonstrate and articulate research training performance to enhance its reputation within academia, industry and government.

- ANU will internationally benchmark our programs and assessment process.
- We will draw on industry and professional relationships to help us define, assess and demonstrate excellence.
- We will commit to supporting our HDR candidates such that within 10 years we will have the best retention record in the sector.

- Facilitate success of ANU HDRs during and post degree completion
- Support the ANU brand and our marketing ability
- Facilitate research excellence
- Encourage philanthropy
Appendix 2 Government responses to recommendations in the ‘ACOLA’ report

Australian Government responses to recommendations in the ‘ACOLA’ Review of Australia’s Research Training System (McGagh et al., 2016) are summarised in Table 2 below. The full version of the Australian Government’s response is available at https://docs.education.gov.au/node/42096 (Department of Education and Training, 2016a).

Table 2 Summary of Australian Government responses to recommendations in the ‘ACOLA’ Review

<table>
<thead>
<tr>
<th>Summary of Report Recommendation</th>
<th>Australian Government Response</th>
<th>Implementation Status</th>
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<tbody>
<tr>
<td><strong>Recommendation 1</strong>&lt;br&gt;Establish a sector-wide working group to develop an implementation plan for reform in Regulation and policy; University cultural change; and Industry incentives/cultural change.&lt;br&gt;This working group should ensure broad consensus on the final plan.</td>
<td>Accepted.&lt;br&gt;The Department of Education and Training will work with representatives from the university sector, industry and community stakeholders to establish a working group to support implementation of the review’s findings.</td>
<td>Implemented, pending outcomes from the Working Group.</td>
</tr>
<tr>
<td><strong>Recommendation 2</strong>&lt;br&gt;Remove the regulatory and financial barriers that prevent universities from developing accessible entry pathways to HDR training and offering flexible scholarships of appropriate duration and value. [As per Recommendation 2 of the review of research policy and funding].</td>
<td>Accepted.&lt;br&gt;This recommendation is being addressed through the National Innovation and Science Agenda (NISA) measure Sharper incentives for engagement.</td>
<td>Partially implemented through Commonwealth Scholarships Guidelines (Research) 2017, effective 1 Jan 2017.</td>
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<td><strong>Recommendation 3</strong>&lt;br&gt;Implement Recommendation 4 from the review of research policy and funding arrangements to provide additional funding to incentivise industry-university collaboration, with a particular focus on initiatives that connect HDR candidates with industry-led research problems.</td>
<td>Accepted.&lt;br&gt;This recommendation is being addressed through the NISA initiative Sharper incentives for engagement. This measure is providing additional funding of $180 million over the forward estimates to increase incentives for universities to engage with industry and other end users of research.</td>
<td>Implemented via MYEFO 2015/2016 as Funding Pool 8 through Other Grants Guidelines (Research) 2017, effective 1 Jan 2017.</td>
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<tr>
<td><strong>Recommendation 4</strong>&lt;br&gt;Implement Recommendation 11 from the review of research policy and funding arrangements to develop a national program to support industry placements for Research Doctorate candidates. Over time, the national scheme should be expanded to be accessible to all HDR candidates who wish to participate.</td>
<td>Accepted.&lt;br&gt;$28.2 million over four years to expand AMSI internships to a national scale, providing 1,400 new placements for PhD researchers, with a particular focus on women researchers. [Note also $3M for to establish a National Career Education Strategy for post-school education with a focus on supporting girls to study STEM subjects.]</td>
<td>Preliminary implementation through the 2017/18 Federal Budget, as announced in MYEFO 2016/17.</td>
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<tr>
<td><strong>Recommendation 5</strong>&lt;br&gt;Institute a longitudinal national data collection exercise to monitor course satisfaction, course completions and career outcomes for HDR training.</td>
<td>Accepted.&lt;br&gt;This recommendation is being addressed through data collections such as the Quality Indicators for Learning and Teaching (QILT) and the Higher Education Student Data Collection.</td>
<td>Ongoing implementation.</td>
</tr>
<tr>
<td><strong>Recommendation 6</strong>&lt;br&gt;Institute increased weighting for Indigenous HDR completions in the Research Block Grants formulae, and flexibility in scholarship guidelines to allow for higher value stipends and real wage fellowships to further encourage Indigenous participation in HDR training.</td>
<td>Accepted.&lt;br&gt;This recommendation is being addressed through the NISA initiative Sharper incentives for engagement. The Government has doubled the weighting for Indigenous HDR students in the student completions formula.</td>
<td>Implemented through Commonwealth Scholarships Guidelines (Research) 2017, effective 1 Jan 2017.</td>
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Appendix 3: The Committee of Inquiry on Doctoral Education

The rationale for the Committee of Inquiry was to convene an expansive discussion on the contemporary PhD and the University’s role in supporting its graduates in attaining an internationally competitive doctoral qualification and world-class graduate outcomes. To do this the inquiry process was established with relatively few preconceptions in mind as to its outcomes. This allowed stakeholders in the inquiry process opportunities to reimagine graduate education at ANU and to explore the full range of opportunities informed by their background in and experiences of doctoral education in Australia and internationally.

The Inquiry process was developed as a collegial initiative: it draws on a broad range of stakeholders for its membership from across ANU. Members will be drawn from each College and include representation from the student body and external partners. Membership of the Committee will be by appointment of the Dean, Higher Degree Research following consultation with College Deans, the Deputy Vice Chancellor (Research) and other senior staff as well as students.

Terms of Reference

The following are draft Terms of Reference, to be modified or ratified at the first meeting of the Committee.

The committee’s purpose is to:

1. Review the features of ANU research degrees, consider examples of good practice and provide recommendations for redefining the ANU PhD to support world-leading graduate research education, experiences and outcomes;4
2. Consider and discuss thematic areas for discussion, issues raised in open forums and background information provided to the committee;
3. Evaluate and discuss written submissions from stakeholders;
4. Develop and co-author a Green Paper, informed by these terms of reference, including recommendations and advice to the senior executive of ANU, by early 2018.

4 The University’s Research Award Rules (2016) specify research degrees as including the degree of Doctor of Philosophy (PhD), professional doctorates by research and the degree of Master of Philosophy (MPhil). While much of this review refers specifically to research doctoral education, the scope of the review includes research education and researcher development in the broadest sense as it applies to current and prospective graduates of research degree programs at the Australian National University.
Appendix 4: Invitations to Open Forums

Invitations to participate in Open Forums were first sent to all staff and selected students at ANU 27/6/2017. Five forums were advertised, with links to register via ‘Eventbrite’ included in the email. Communications via the invitations and registration page were as follows.

We are redefining the ANU PhD program.

During the development of the new Strategic Plan we made a commitment to redefine our PhD program. We are now starting to work out what this will mean for our academic staff, supervisors and students.

Refining our PhD offers the opportunity to reflect on what we do well, what we might review and change. ANU has the highest HDR load per total student population of any Australian university, consistently high research rankings and an enviable international reach. To continue to provide some of the best academic programs around the world and to give our students the best opportunities for their futures, we have a responsibility to reflect on what we do well, and to discuss what we might review and change. We are inviting you to help shape the new ANU PhD and have your say on what the new ANU PhD of the future will look like.

To start the discussion Professor Imelda Whelehan (Dean, HDR) will be hosting open forums for all interested staff and students. Questions will include:

• What should a 21st century PhD look like
• How can we ensure that ANU secures our position as a world leader in graduate research education?
• What is best practice for PhD delivery worldwide?
• What changes can we make?

In these forums we will be using Poll Everywhere to allow live interactive audience participation. Bring a mobile device (phone, tablet, laptop or iPad) to enable you to join the interactive discussions.

The New ANU PhD - Have your Say

To start the discussion I will be hosting open forums for all interested staff and students. Please register below for one of the forums.

FORUMS AVAILABLE

Wednesday, 5 July from 10am-11.30am
Venue: R214 Seminar Room, Ian Ross Building #31 ANU

Tuesday, 25 July from 1pm-2.30pm
Venue: The Drawing Room, University House, 1 Balmain Crescent ANU

Thursday, 3 August from 10am-11.30am
Venue: ANU. Exact venue to be confirmed shortly.

Tuesday, 8 August from 10am-11.30am
Venue: The Drawing Room, University House, 1 Balmain Crescent ANU

Thursday, 10 August from 10am-11.30am
Venue: 1012, Fred Gruen Economics Seminar Room, HW Arndt Building #25A50
## Appendix 5 Submissions to the Committee of Inquiry

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<tr>
<th>No.</th>
<th>Document</th>
<th>Author</th>
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<td>1</td>
<td>CASS Submission to Col</td>
<td>ADHDR, College of Arts and Social Sciences</td>
</tr>
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<td>2</td>
<td>ANU PhD: Producing Future Leaders</td>
<td>Bartsch, Sir Roland Wilson Foundation</td>
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<td>Redefining the ANU PhD</td>
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<td>5</td>
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<td>Redefining the ANU PhD – School of Music Proposal</td>
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<td>ANU PhD - Graduates to be highly sought after as leaders</td>
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<td>Submission to the Redefining the ANU PhD committee of Inquiry</td>
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<td>What should an ANU PhD look like? Coursework</td>
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<td>What should an ANU PhD look like? The Viva</td>
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<td>15</td>
<td>A few reflections on what tends to happen when PhDs go off the rails</td>
<td>Counselling Centre</td>
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