AN AUSTRALIAN DOCTORATE FOR THE 21ST CENTURY

Insights from the ACOLA Review Process

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Would the Minister release the report?

ACOLA Research Training Review

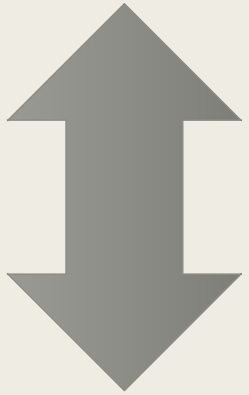
- Expert Working Group –members of 4 academies
- 85 submissions + 6 public forums + forums with ACGR and DVCs-R+ 84 interviews

ACOLA
AUSTRALIAN COUNCIL OF LEARNED ACADEMIES

Watt review

- broader financing issues relating to research in Higher Education

Communication



ACOLA review

- ensuring Australia has a high quality research training system

ACOLA Review – three pillars

HDR training produces high quality researchers capable of succeeding in different sectors

The Person

HDR training contributes to Australia's future prosperity and wellbeing

The Nation

How to structure the research training system to achieve the above

The System

Australia’s research candidates are diverse

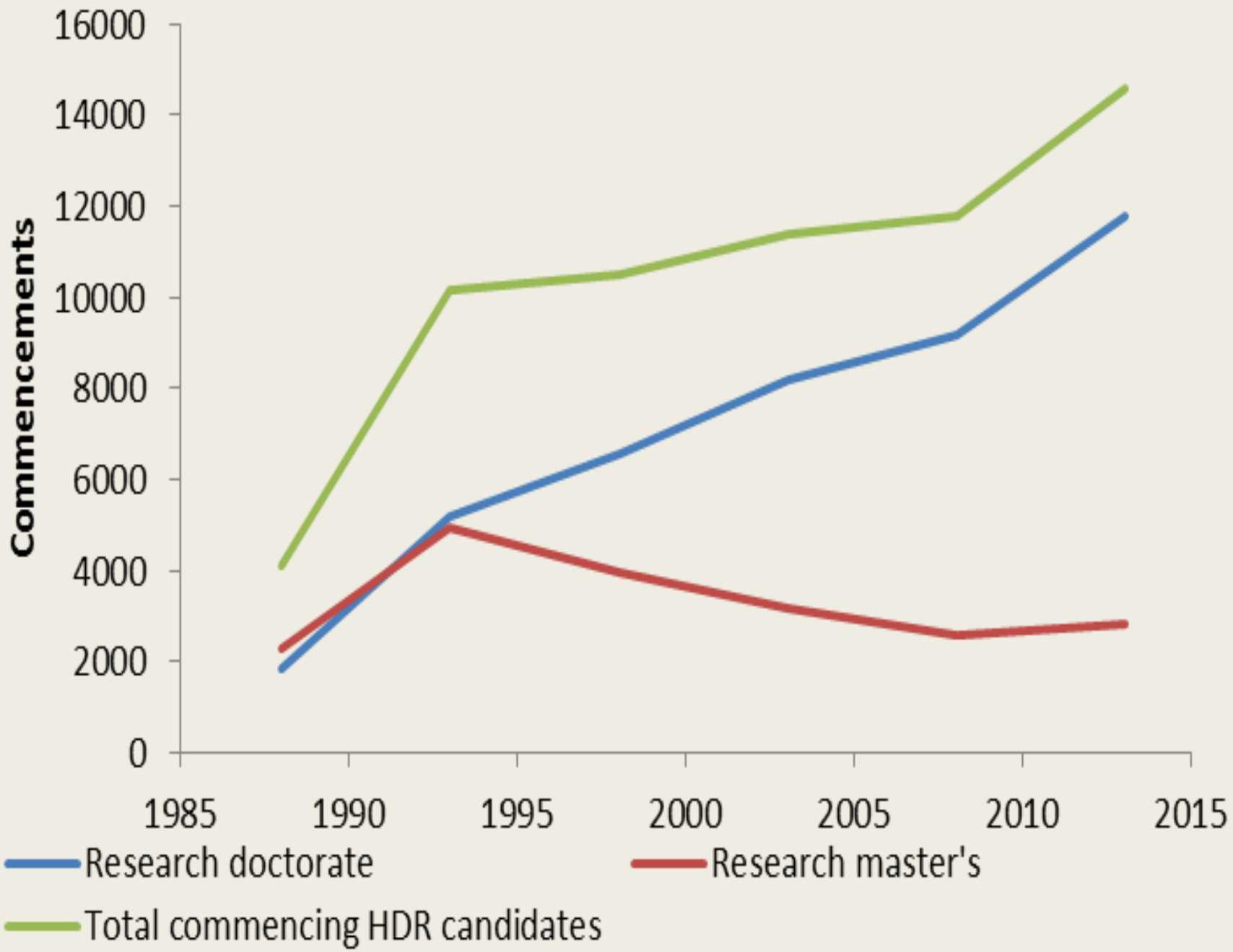
James:
23
Australia,
English
literature

Louisa: 40,
Torres Strait Islander
Education

Anna: 28,
Australia
Physiotherapy

Relia: 35,
Indonesia
Veterinary
Science

Yasif: 44,
Pakistan
Engineering

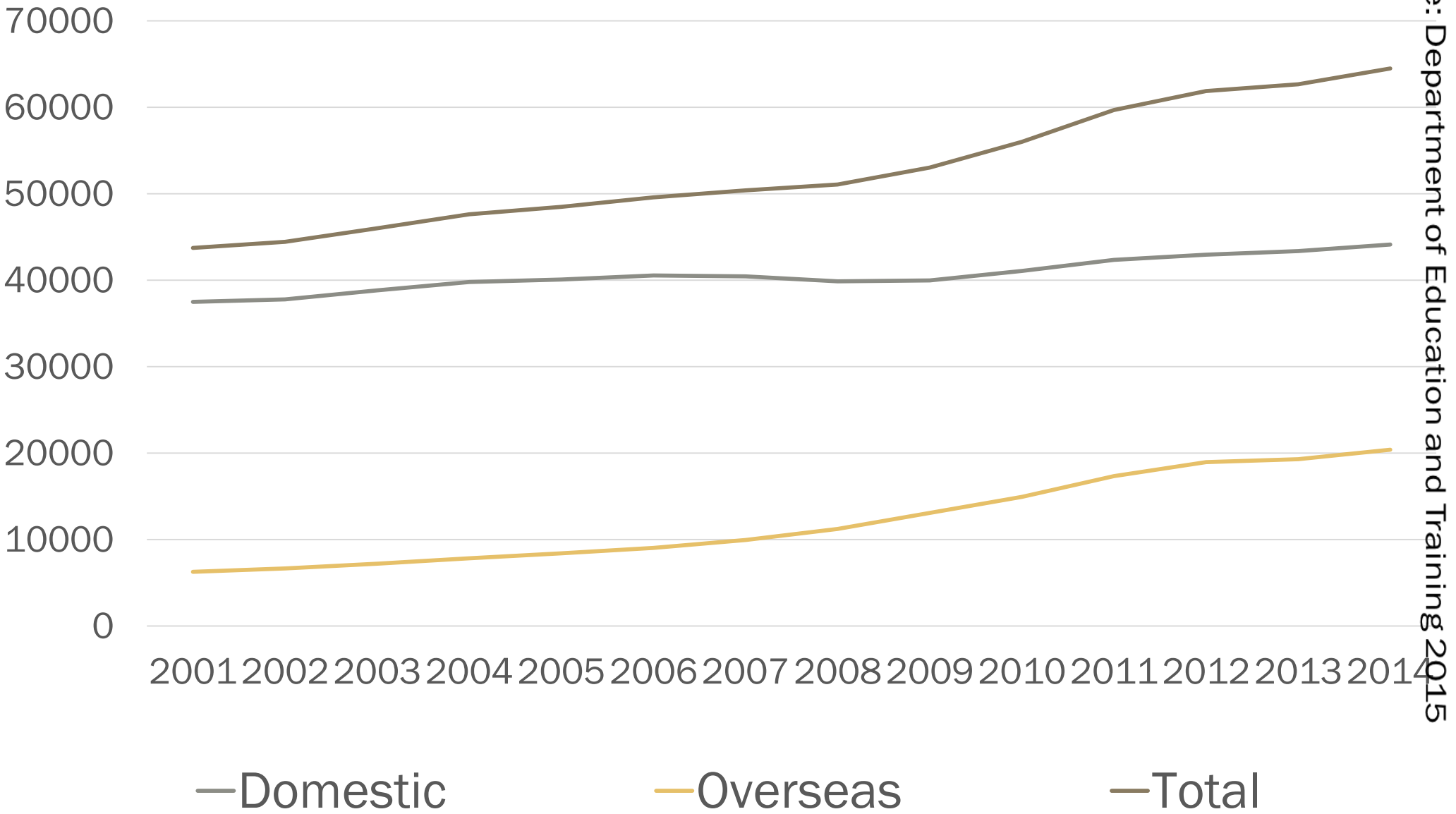


Source: Department of Education and Training 2015

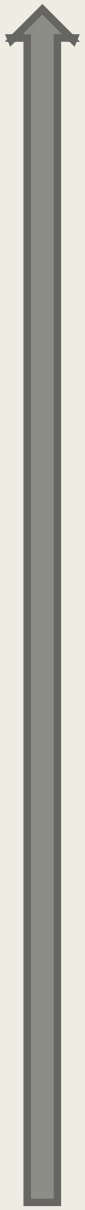
Huge increase in HDR numbers since 2000

Most candidates studying doctorates and proportion increasing

Enrolment data show international candidates are increasingly important



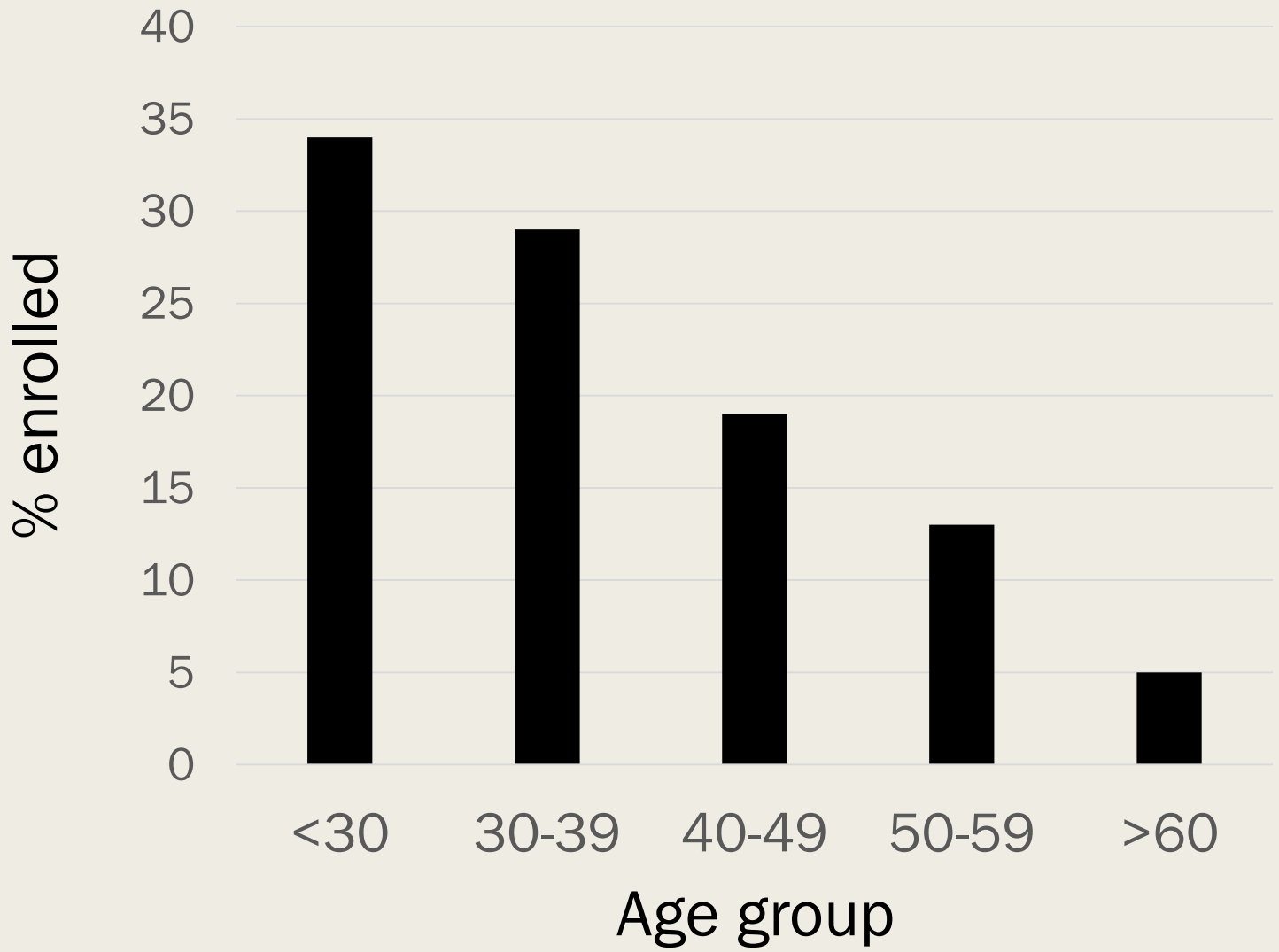
Broad Field of Education	% International
Engineering & related technologies	53
Information Technology	49
Agriculture Environmental & related studies	43
Management & Commerce	40
Natural & Physical Sciences	37
Architecture and building	28
Education	21
Health	20
Society & Culture	19
Creative Arts	10



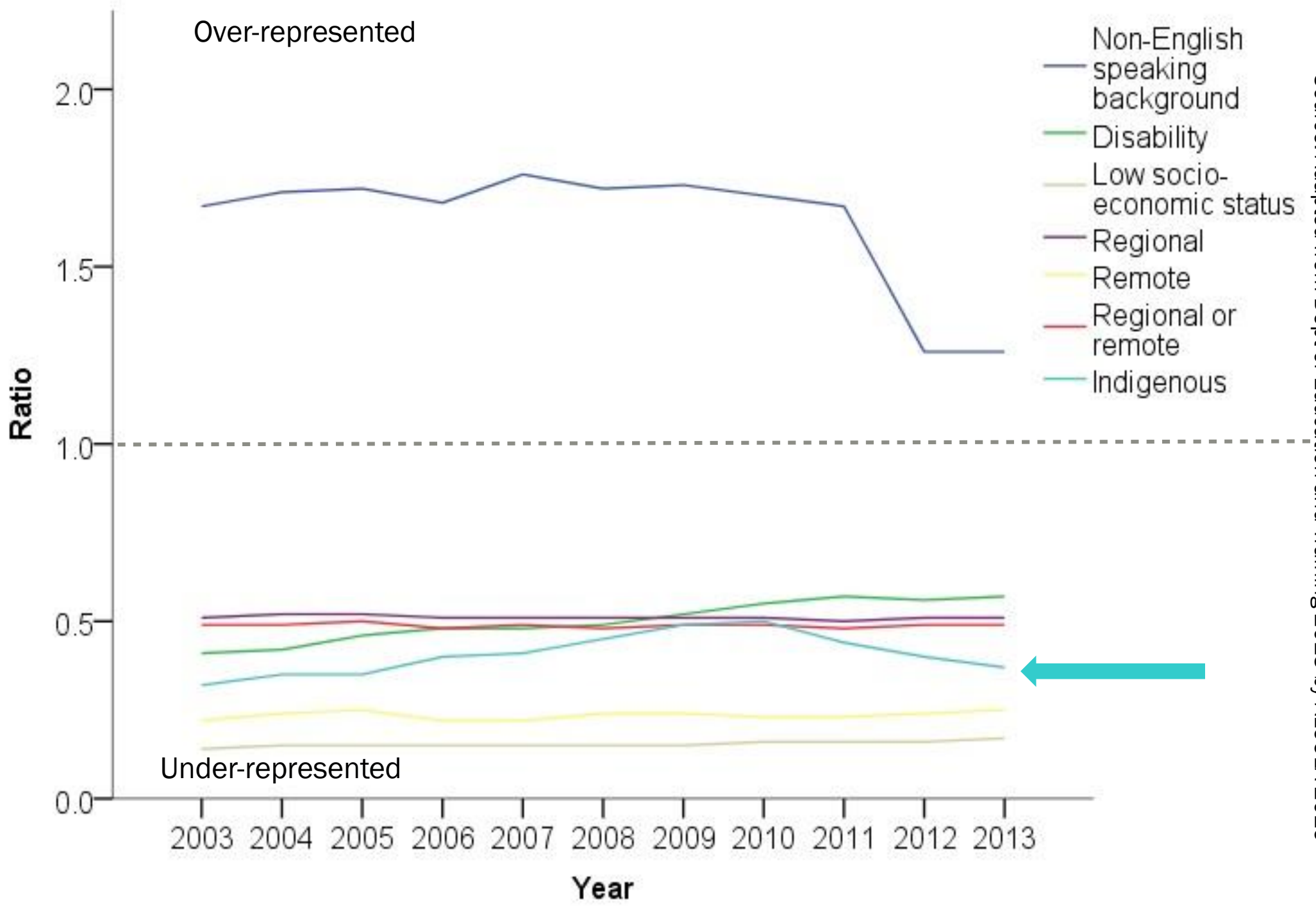
International candidates much more important in some disciplines

Source: Department of Education and Training 2015

2/3 of candidates are over 30



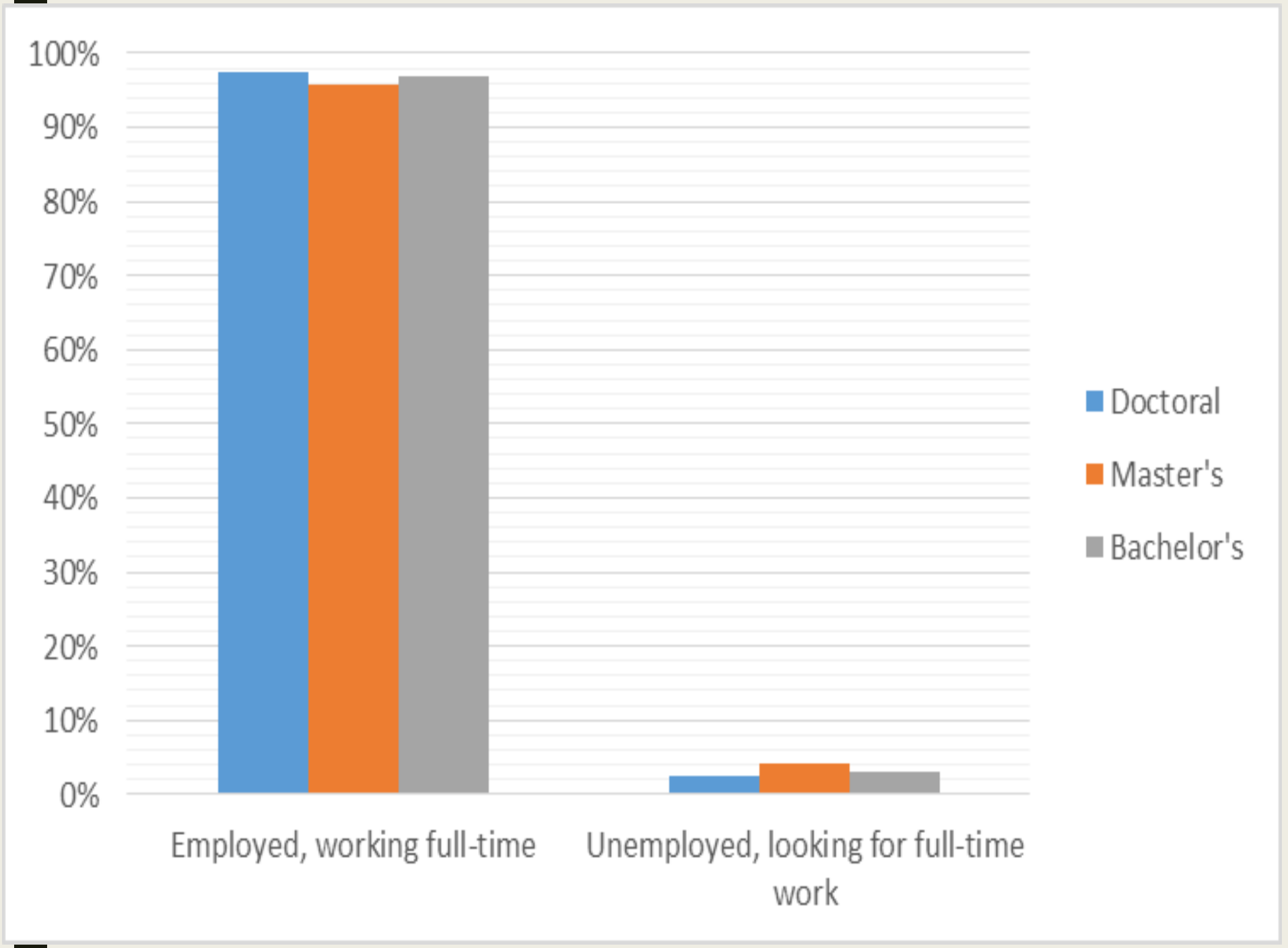
Source: Adapted from Dept of Education and Training 2013



Source: Adapted from Dept of Education and Training 2013 by ALCOLA 2016

Participation ratios of domestic doctoral candidates from non-traditional backgrounds uneven

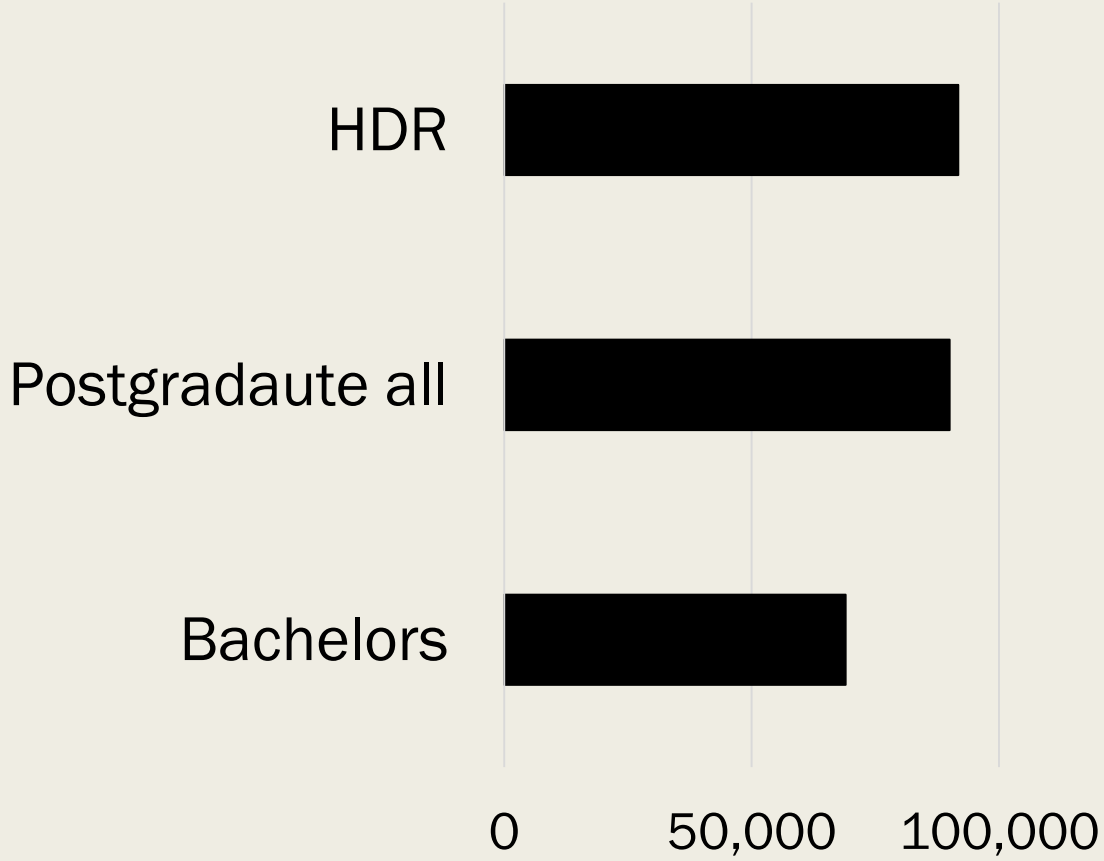
Indigenous participation low and declining



Employment status good but are our doctoral graduates under-utilised?

Source: ABS census data 2011

Don’t do a doctorate for the $$$$



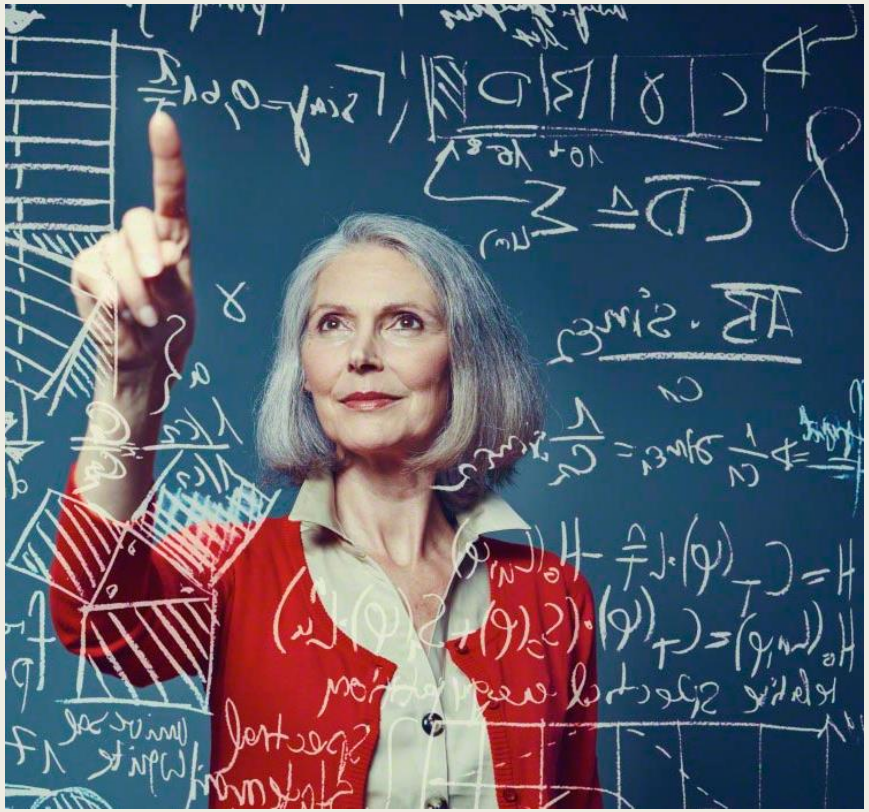
Median salary graduates in F-T employment
3 years post graduation

Source: Adapted from survey and custom data requested by ACOLA from Graduate Careers Australia

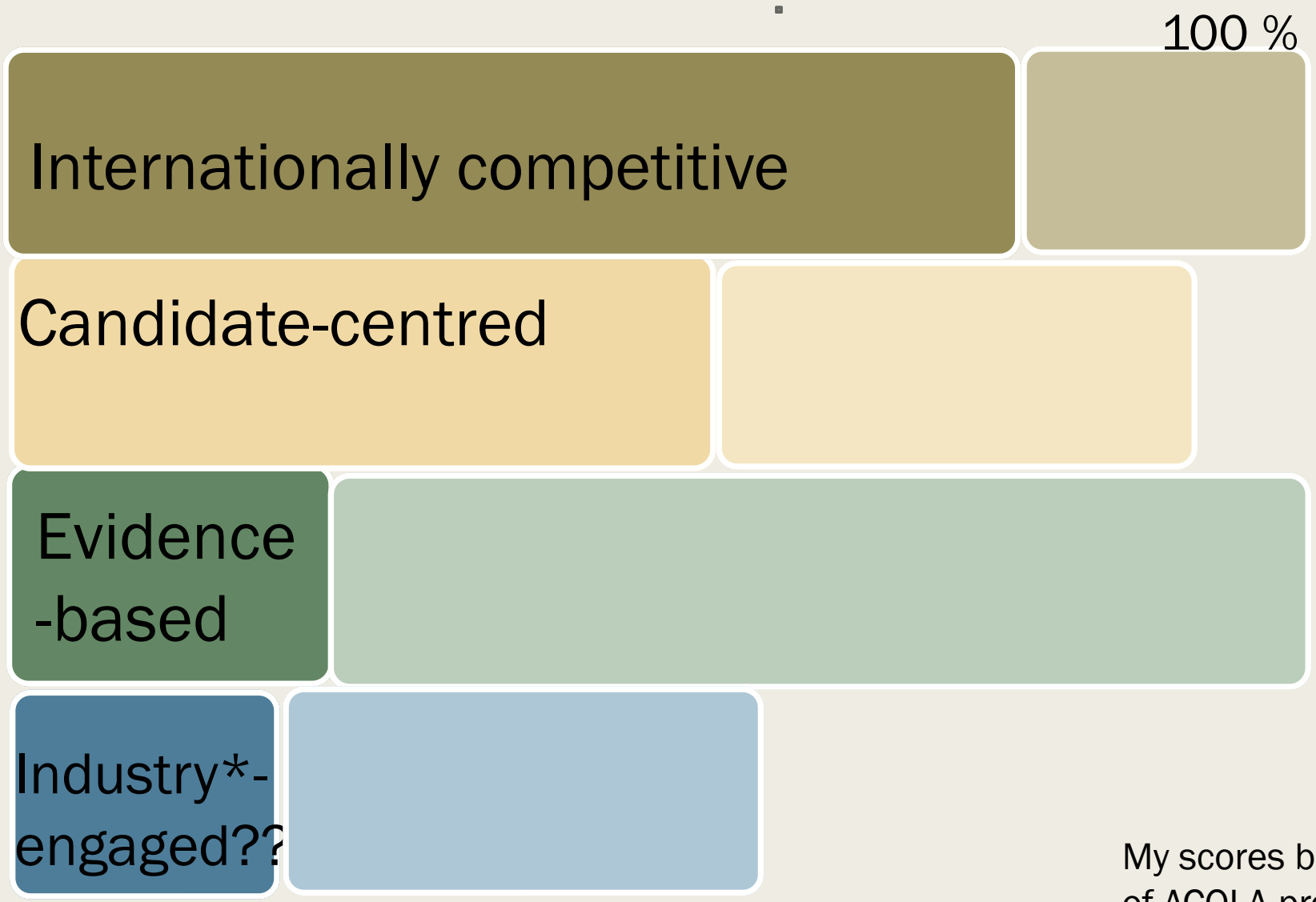
Most doctoral graduates did not report occupation as tertiary teachers in 2011 (Australian census)

Occupation type	%
Tertiary Education Teachers	25
Natural and Physical Science Professionals	17
Professionals not further defined	7
Social and Welfare Professionals	5
Medical Practitioners	4
Information and Organisation Professionals	4
Engineering Professionals	3
Business Administration Managers	3
All other occupations	32

Several indicators demonstrate poor knowledge transfer between university research & industry in Australia



Present situation (left boxes) and vision



*inclusive definition

My scores based on experience of ACOLA process

Increase international–competitiveness with new pathway degree

- Current arrangements limit internationally recognised entry pathways to research education
- Bologna cycles 3+ 2+ 3
- Australia 4+ 3…

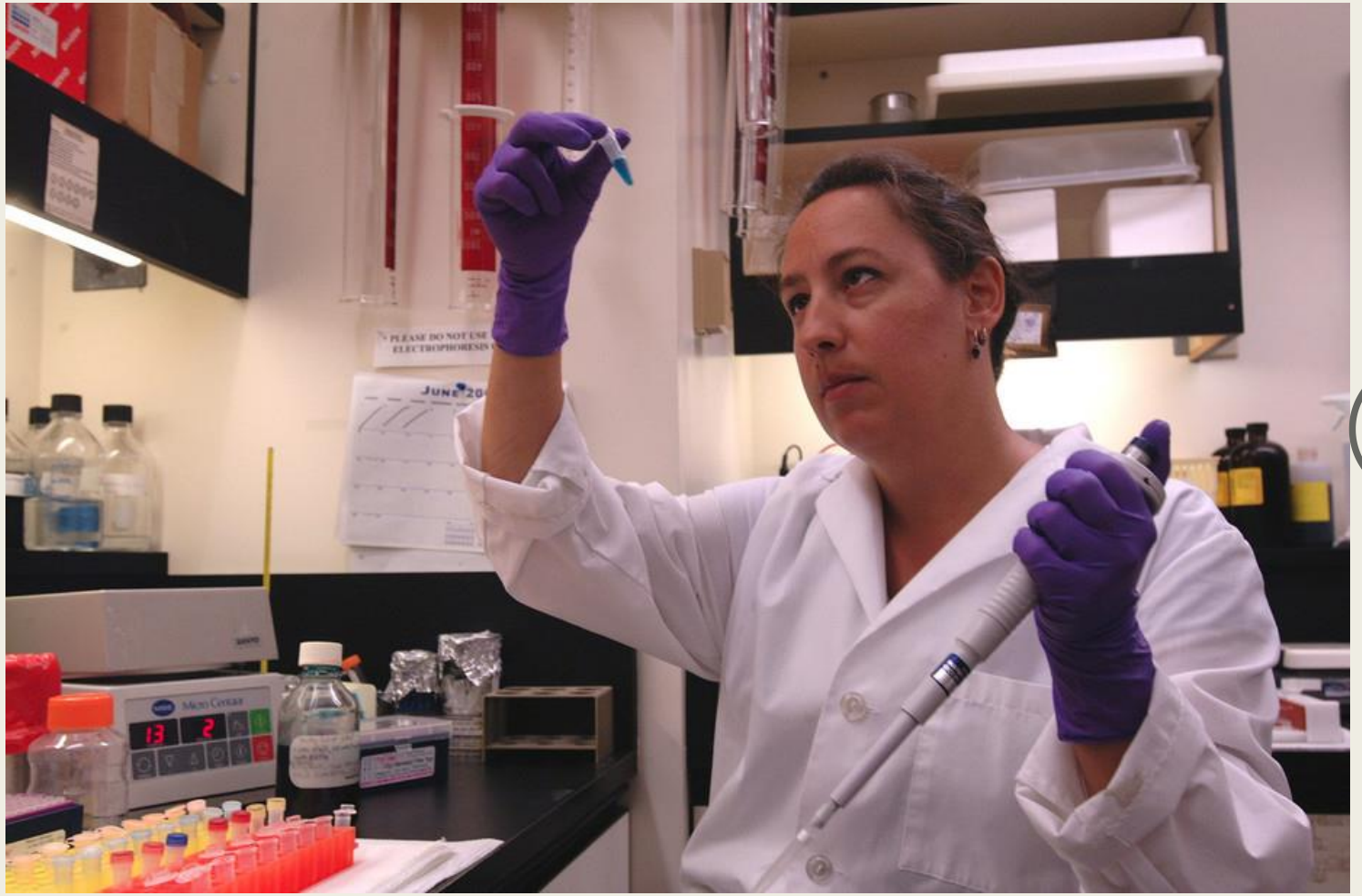
People who made submissions to ACOLA supported research training coursework Masters degree

Source: ACOLA Research Training Review 2016

International benchmarking at disciplinary level could improve international competitiveness

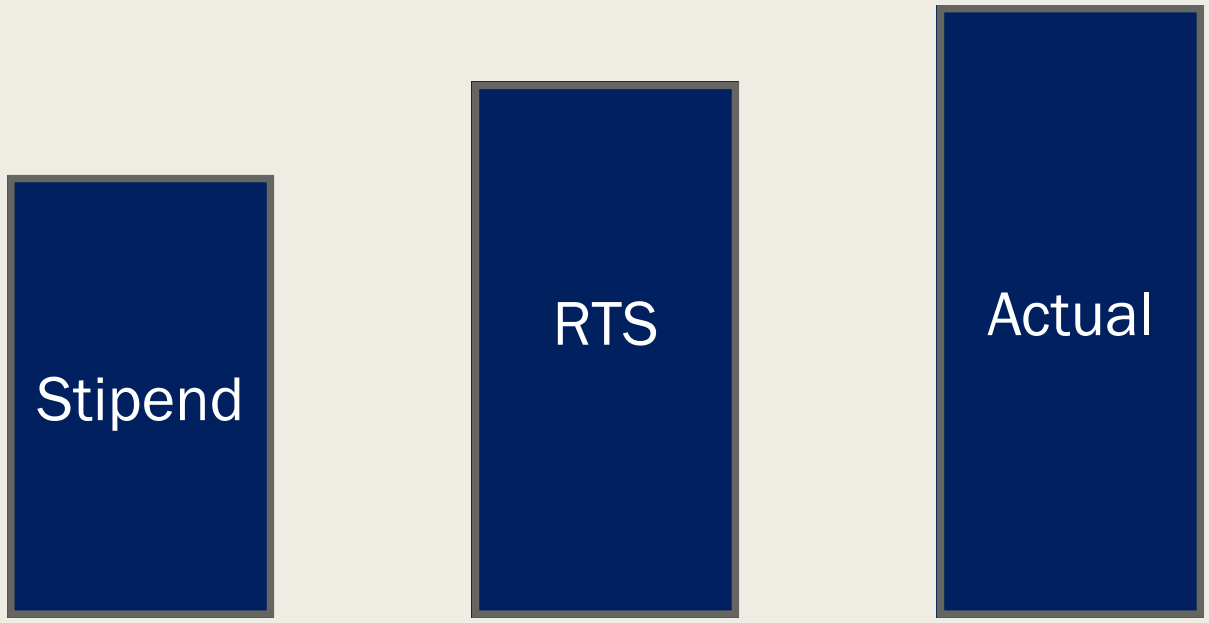
To be truly world class Australian PhDs in Marine Science need to include advanced training in skills to manage big data

Increase candidate focus: be upfront about career prospects



Thanks academia, soon I will join a generation of jobless PhDs

Deregulation of Government scholarships from 2017 designed to enable universities to better align candidate needs with candidature realities



Improve transferable skills training

Increase emphasis on career development

What doors can open beyond academia?

Need accessible evidence of transferable skills

Professionalise supervision

Good supervision is the most important contributor to HDR success

"cloning" & treating doctoral candidates as cheap labour are not professional practices

Change supervisor culture

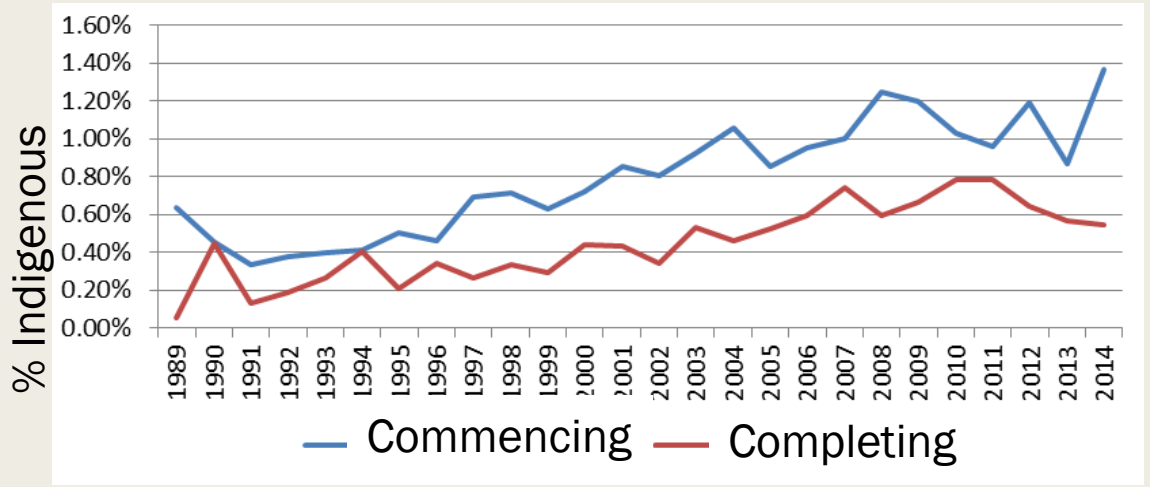
My supervisor does not want me to go to skills workshops

but there are always silverbacks.....

Increase number of and support for Indigenous doctoral candidates

- Indigenous researchers have much to offer
- Targets and increased weighting needed to acknowledge the value of Aboriginal and Torres Strait Islander researchers to universities
- Incentives also needed to increase participation

Universities must do better

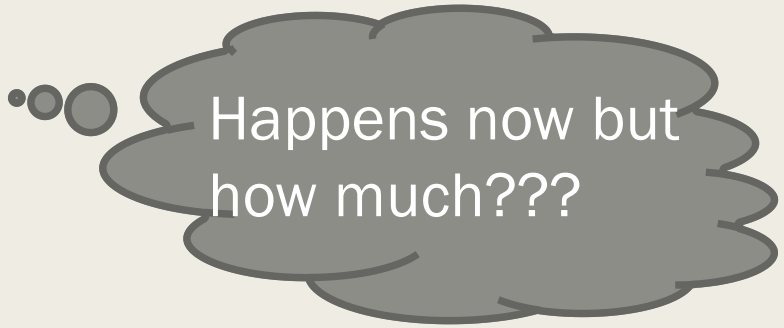


By ensuring:

- positive university experience
- welcoming and supportive environment
- culturally appropriate supervisor training

Improve industry-engagement

- A higher proportion of doctoral education could be:
  - focused on externally-defined research problem
  - take place in external settings; *or*
  - involve an non-academic supervisor
- Funding needed to drive change
- Not just a university problem



THE AUSTRALIAN

Innovation: There's no action without industry at the table

DENISE CUTHBERT THE AUSTRALIAN APRIL 20, 2016 12:00AM

Without industry, government and the sector will have the same old conversation. Illustration: Tom Jellett.

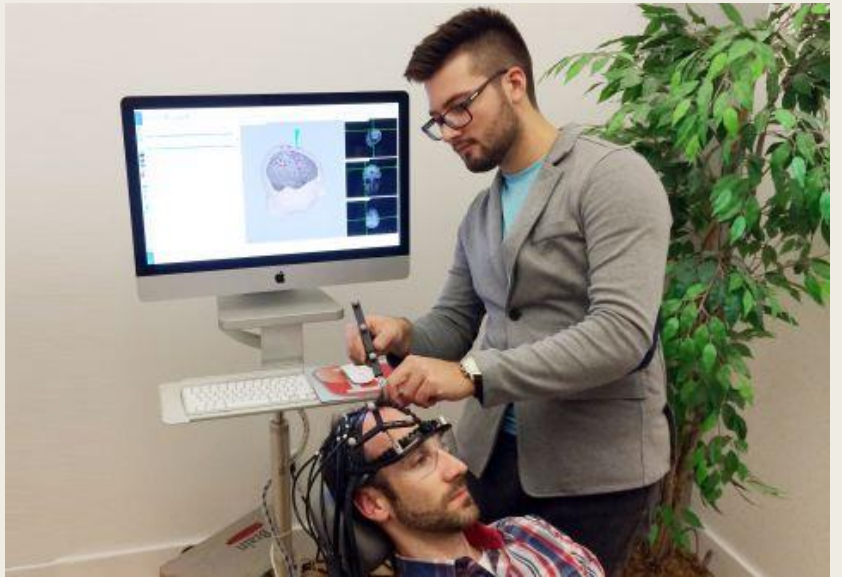
Canadian research candidate ~15 times more likely to do internship than Australian

Australia

- AMSI intern
  ~ 100 placements p.a.
- iPREQ 60 p.a in WA
- Advance Qld 7 in 2015
- Watt Review recommended 700 X 6-month placements per year

Canada (Mitacs)

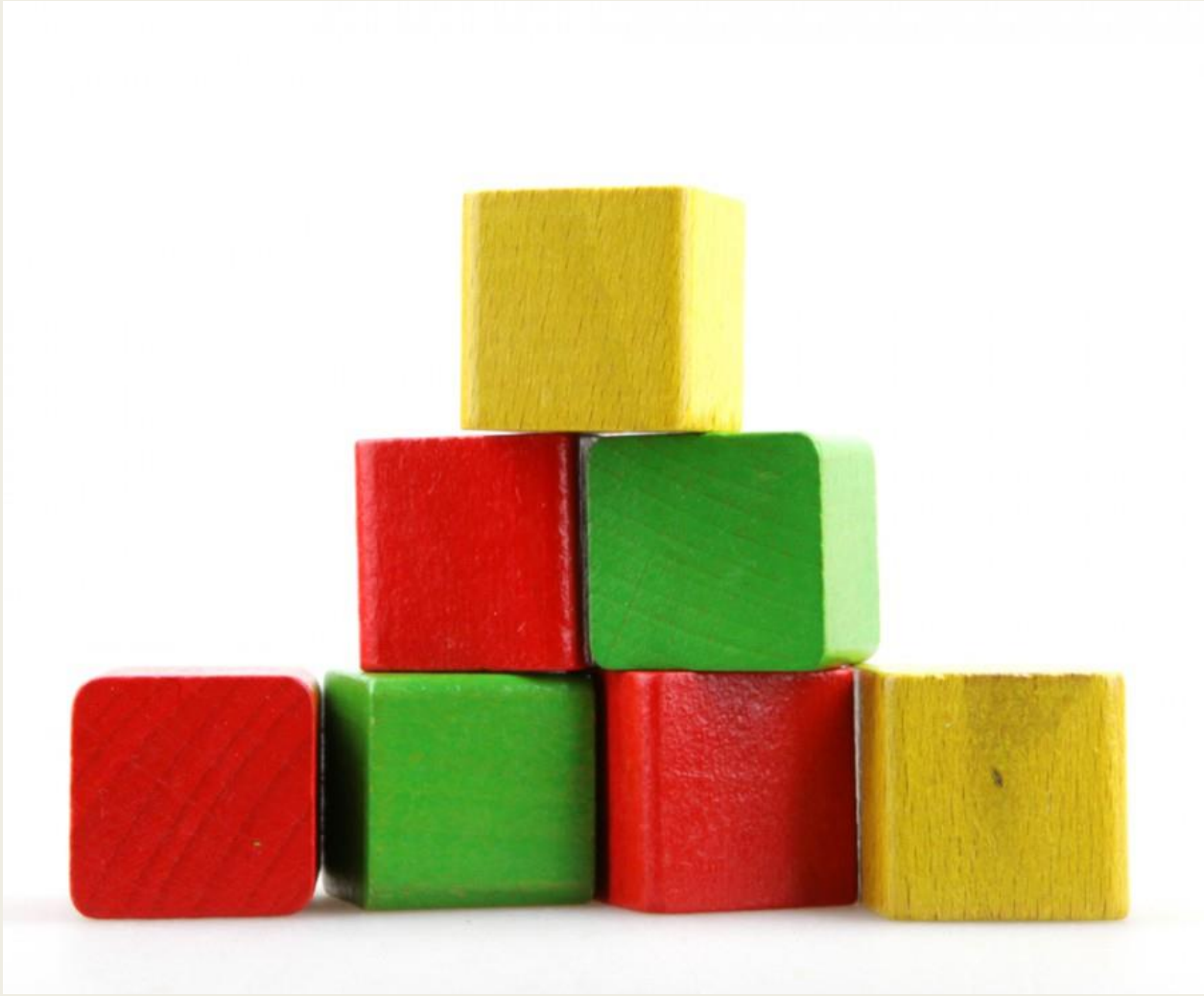
- ~3,200 internships in 2014-15
- Target: 10,000 internships p.a. by 2020
- 79% SMEs



Mitacs basic building block

Academic+ industry collaborator + student+ proposal + referee + 6 weeks=

$C15 k for 4 months internship



Mitacs interns span disciplines (N=3194)

Business	6%
Computer Science	14%
Earth Sciences	10%
Engineering	36%
Life Sciences	21%
Mathematical/Physical Sciences	7%
Social Sciences/Humanities/Arts	6%

Source: Laurence Meadows Mitacs

Source: Mitacs

Improve evidence-base

- Impossible to :
  - estimate return from ~ $1 billion government investment in research education
  - know how best to improve system

- Longitudinal data sets on HDR graduate outcomes:
  - valuable information to drive performance improvements
  - enable prospective HDR candidates to make informed choices

graduate longitudinal study new zealand

An Australian doctorate for the 21st century

100%

Internationally-competitive

Candidate-centred

Evidence-based

Industry-engaged

Our HDR candidates 5 years post-graduation

James: 28
Postdoc
Oxford

Louisa: 45,
Director Indigenous Education
Qld government

Anna: 33
Start up medical device company, Melbourne

Relia: 40
Faculty Bogor Agricultural University

Yasif: 49
Solar energy engineer, multinational Sydney

Doctoral Education: an investment in human capital for the knowledge economy