



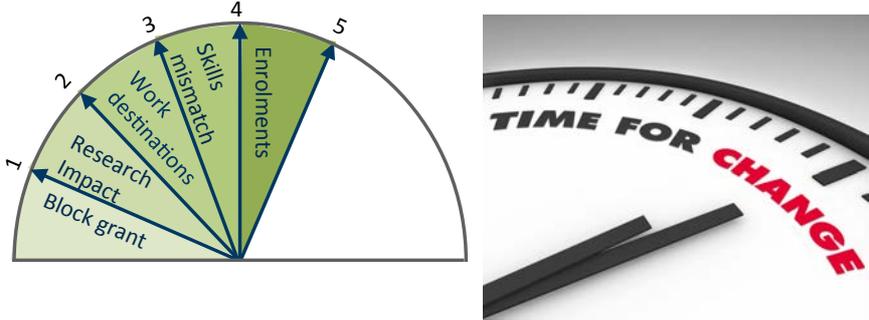
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## WORKING WITH INDUSTRY TO TRANSFORM SCIENCE EDUCATION IN AUSTRALIAN UNIVERSITIES

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### RAMPING UP ENGAGEMENT WITH INDUSTRY



1. New block grant formula (1 Jan 2017)
2. Measuring impact and engagement– trial with ERA
3. Poor initial employment outcomes
4. Mismatch with employer demand
5. Enrolments in Bachelor of Science - 27% increase 2008 - 2012.



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## OUTLINE

1. What do employers want?
2. Employment outcomes for science graduates
3. WIL in Australian universities
4. Bringing industry on board.
5. Why WIL? The value propositions.



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## WHAT DO EMPLOYERS WANT?

## EMPLOYERS WANT

- Active learners
- Critical thinkers
- Problem solvers

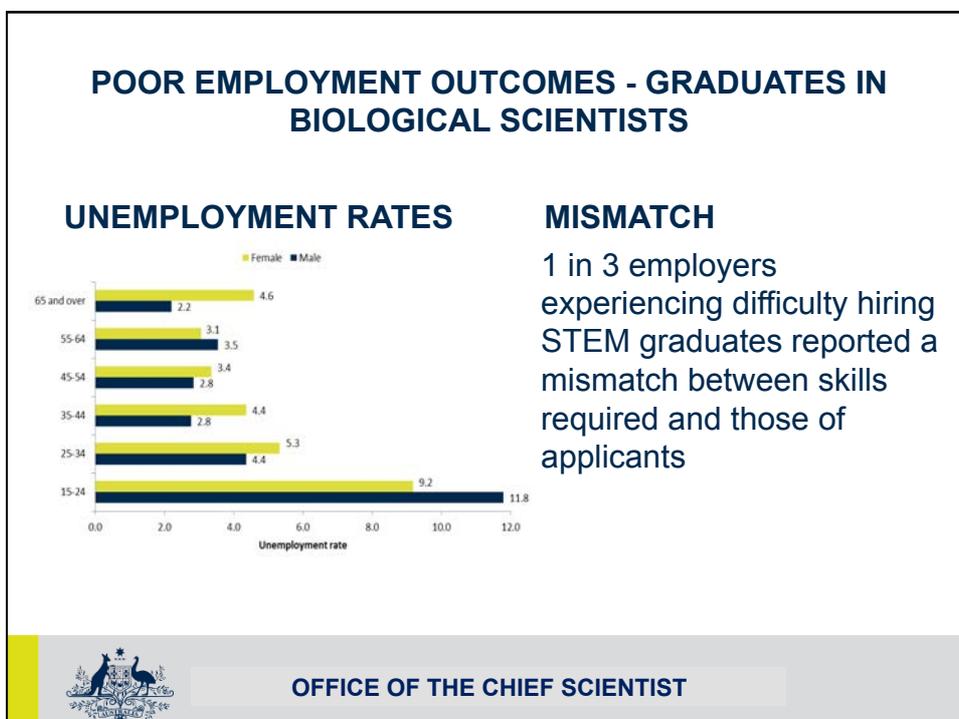
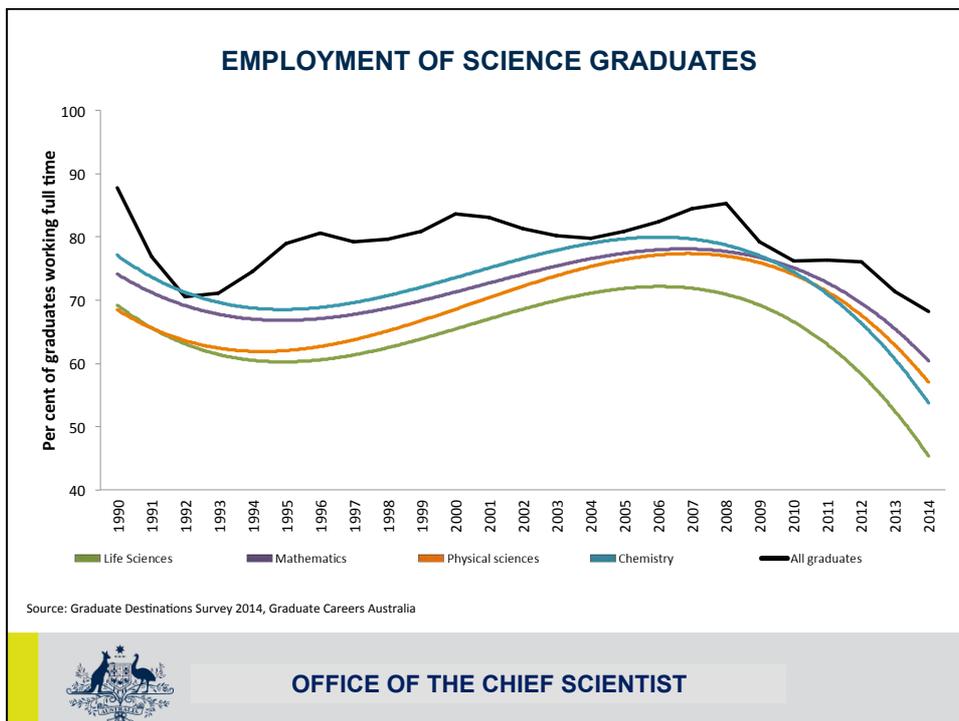


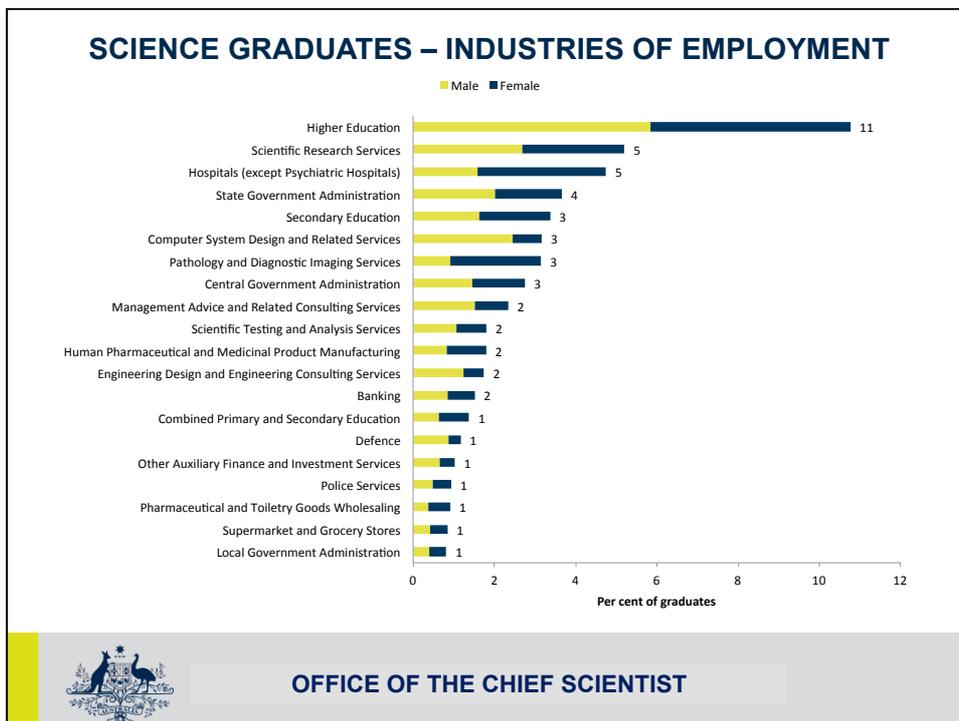
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## EMPLOYMENT OUTCOMES FOR SCIENCE GRADUATES

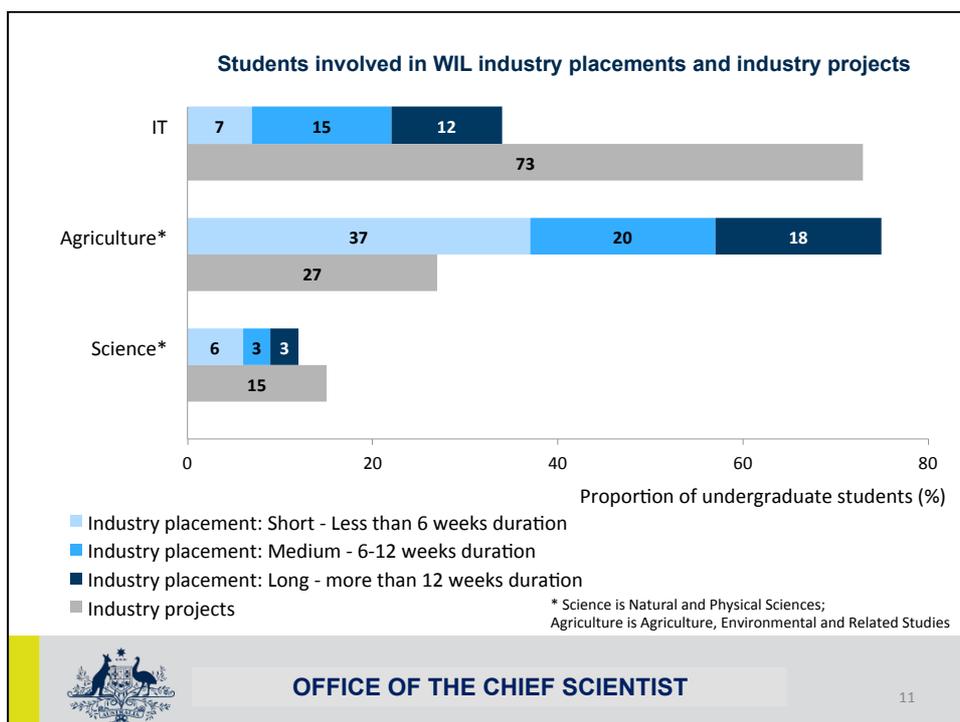






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## WIL IN AUSTRALIAN UNIVERSITIES



## STEM CURRICULUM MODELS PRACTICED IN AUSTRALIA

- The **‘trust transfer will happen’** model
- The **‘bolt it on’** model
- The **‘build it in’** model

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	Administrative infrastructure	Incentives	Curriculum	Student participation in WIL for credit
<b>GOLD</b>	University wide coordination, marketing, & support of WIL activities.  Industry breaking the doors down to get in.	Staff competing to excel in WIL.	WIL embedded in curriculum at all year levels.	Evidence of widespread practice (100% students).
<b>SILVER</b>	WIL supported at faculty level.  Seamless industry engagement.	Staff formally rewarded for participating in WIL.	WIL present in one year of undergraduate degree.	Evidence of significant WIL participation (50% students).
<b>BRONZE</b>	Developing processes to support WIL.  Strategy to engage industry.	WIL incorporated into the KPIs of staff.	Curriculum design that incorporates WIL.	Evidence of some WIL participation (30% students).

## BARRIERS TO UPTAKE BY UNIVERSITIES

- Lack of value
- Resistance to commit to WIL activities
- Lack of processes/infrastructure
- Curriculum not designed for large scale WIL.
- Difficulty attracting enough employers



## BARRIERS TO UPTAKE BY UNIVERSITIES... POOR COUSIN WIL

*To paraphrase one senior academic involved in the project, 'it is relatively well accepted that teaching is seen as the poor cousin to research among academics ... well, I often feel that WIL teachina is the poor cousin of teachina!'*



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## BARRIERS TO INDUSTRY UPTAKE

- Lack of time and resources
- Disruption to the business
- Finding high calibre students
- Timing of placement
- Finding a relevant project
- University bureaucracy, inflexible agreements
- Poor understanding of business needs
- Confidentiality/IP
- OHS issues



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## BRINGING INDUSTRY ON BOARD

### LACK OF COMMUNICATION BETWEEN INDUSTRY AND ACADEMIA

Of those employers with no links with universities:

- 33% had not been approached by a university
- 28% had never considered approaching a university
- 19% said it would take too much time



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## Industry Working Group

- Universities and industry collaborating to get the graduates we need
- Business Council of Australia, AiGroup, Australian Chamber of Commerce and Industry
- Universities Australia, Australian Technology Network, Innovative Research Universities, Regional Universities Network, Australian Collaborative Education Network



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## Creating a virtuous cycle

1. Global businesses invest where the talent exists

**However, ...**

2. rapid changes in technology make it harder for talent to keep up

**We must therefore...**

3. develop a talented and committed workforce through industry-university partnerships

**Leading to a virtuous cycle of talent/skills creation and innovation:**

4. where production goes, innovation inevitably follows
5. industries of the future create the need for more research scientists and better universities, which create more innovations .

PCAST (2014) and Liveris (2011)



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## WHY WIL? THE VALUE PROPOSITIONS

### WHAT IS IN IT FOR STUDENTS?

- Improves transition from study to work by developing discipline specific, general and career skills
- improved student engagement, completion and retention
- Improved student confidence in the workplace
- Industry connections and networks
- Better employment outcomes



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## WHAT IS IN IT FOR UNIVERSITIES?

- competitive advantage.
- improved employment outcomes for students.
- stronger industry-university partnerships – flow on to other benefits.



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## WHAT IS IN IT FOR EMPLOYERS?

- recruitment
- fresh ideas
- resource to undertake business related projects.
- industry-university relationships - allows access ideas and contacts at cutting edge.
- give back to the community and industry - raising brand awareness and goodwill.



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