

# The Attraction & Retention of Professional Staff – An Australian Perspective

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# Minerals Tertiary Education Council - MTEC

Concerned principally with earth science, mining engineering and metallurgy....

- 
- Increasing the number of graduates
- Increasing quality and relevance of minerals tertiary education
- Improving the viability of minerals tertiary education

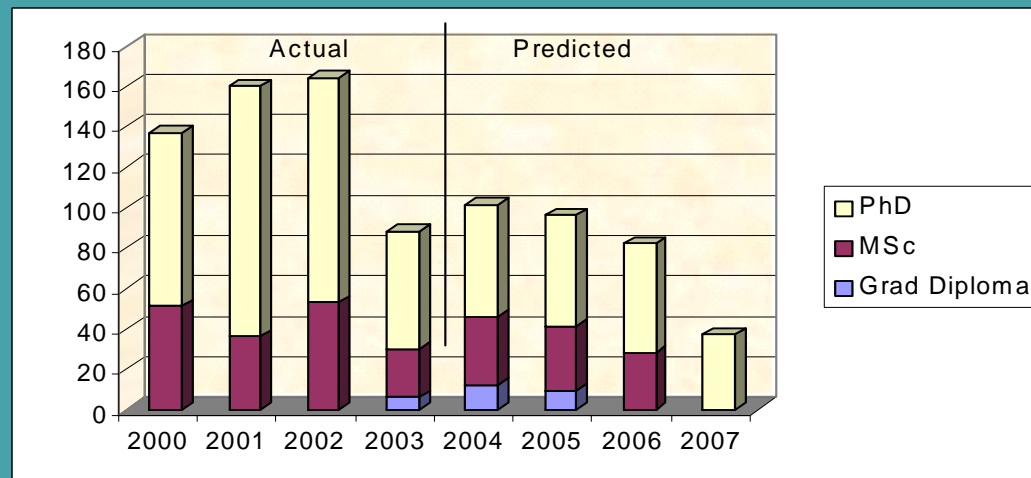
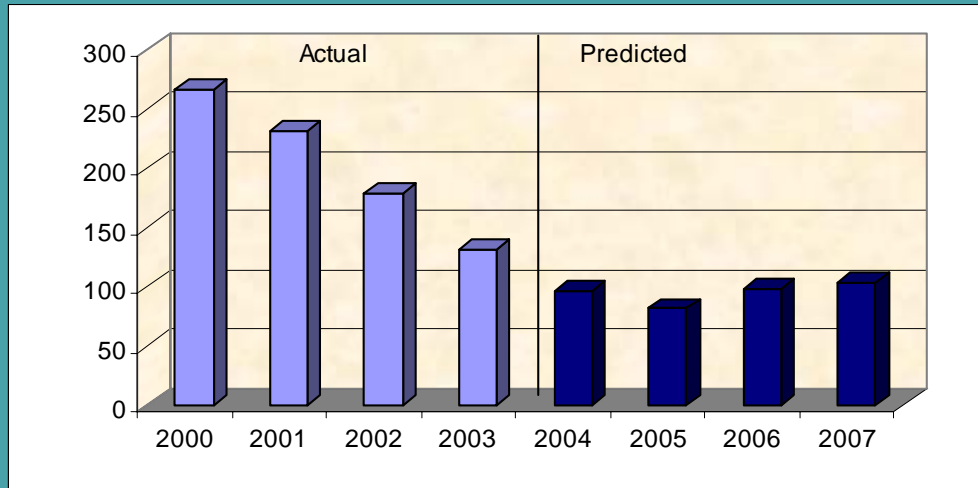
# What does MTEC do?

- Facilitates the shared development and delivery of undergraduate & postgraduate courses & course materials
- Coordinates work experience for undergraduates (IEU program)
- Funds early career academic positions
- Develops and advocates policy

# Status report - Australia



# Earth science graduates 2000-2007



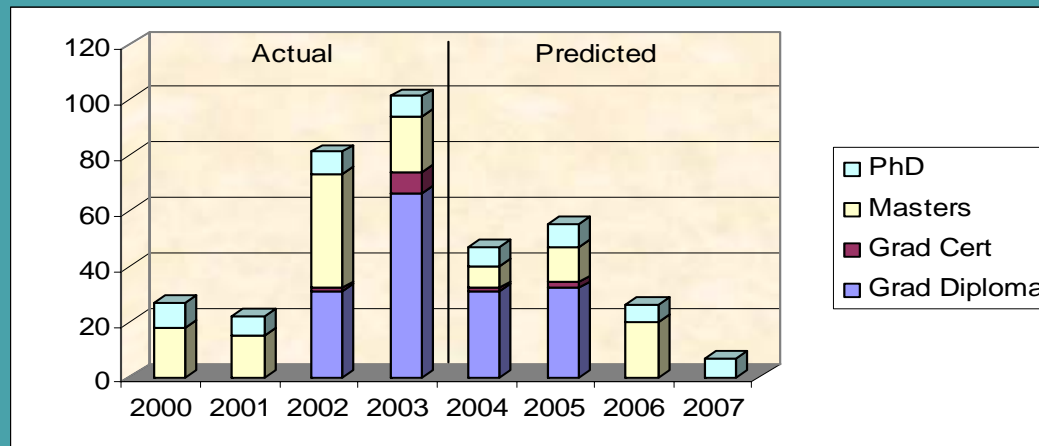
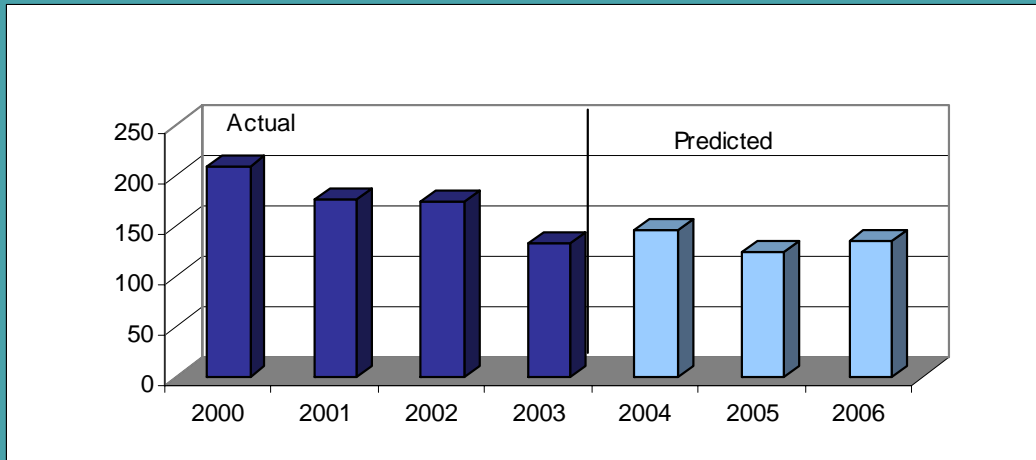
# Supply & demand scorecard

## ● Earth science

- Supply of 4 year-trained graduates will remain at or below 100 pa for next 3 years
- Industry likely to employ 30-40 new graduates pa
- Demand therefore is 30-40% of supply **BUT** historically only 16% of new graduates enter minerals industry

# System can supply, but will graduates want to work in the industry?

# Mining engineering graduates 2000-2007



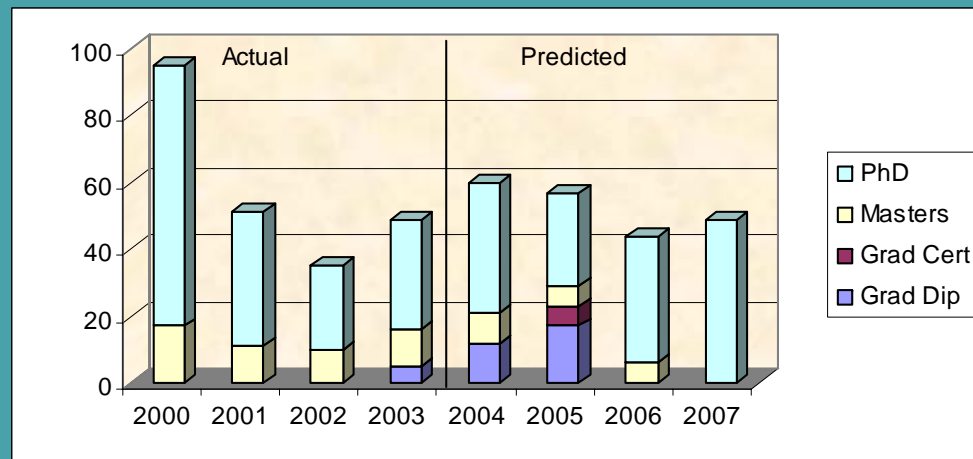
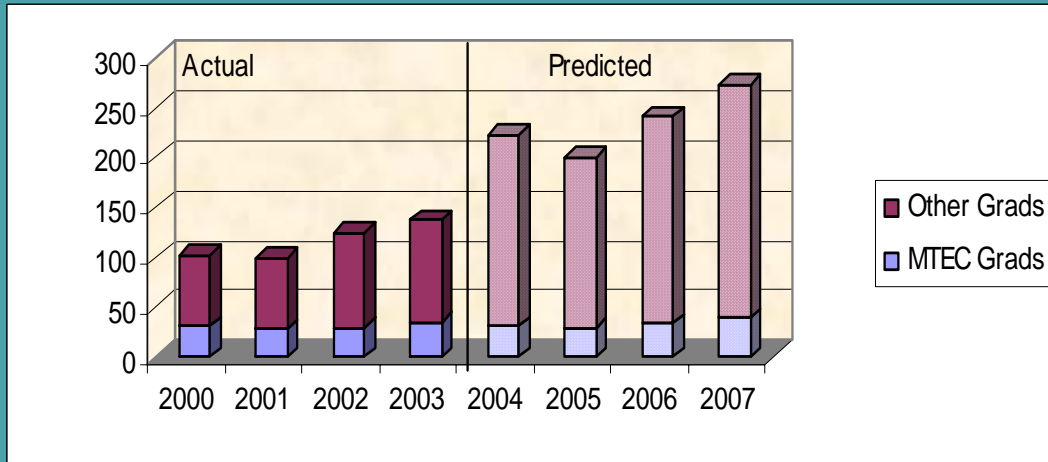
# Supply & demand scorecard

## ● Mining engineering

- Industry likely to employ 120+ new grads pa
- Supply will remain at ~ 120 pa for next 3 years
- Demand therefore is 100% of supply, **BUT** historically only 60-80% of new grads enter minerals industry

# System cannot supply enough mining engineers to meet the expected demand

# Metallurgy graduates 2000-2007



# Supply & demand scorecard

## ● Metallurgy

- Industry likely to employ 40-50 new graduates pa
- Supply of 4 year-trained metallurgy-only graduates will remain at or below 30 for next 3 years, **BUT** supply of chem eng graduates will > 200 pa for next 3 years

# Combined supply of metallurgy & chem eng graduates is sufficient to meet demand, if industry is happy with chem eng graduates?

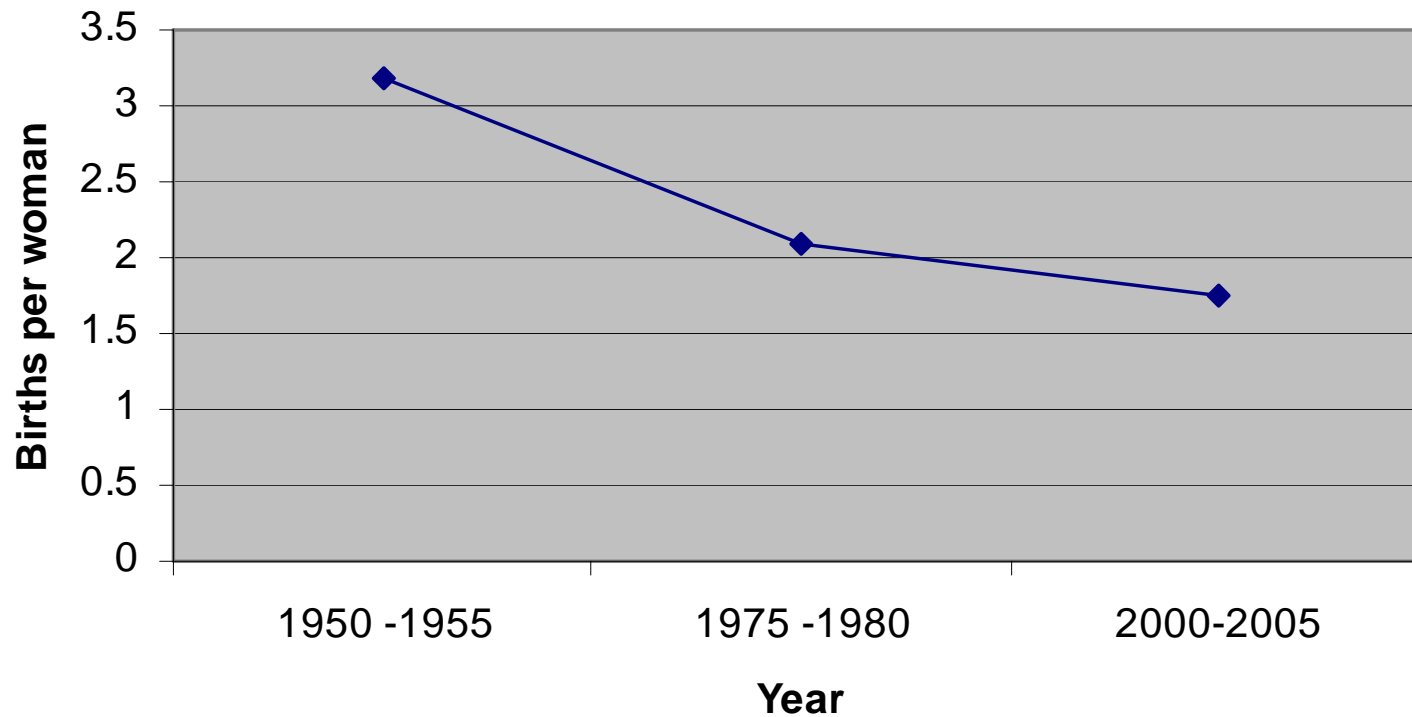
# Attraction

1. Influencing school leavers to study science and engineering
2. Influencing students in science & engineering degree programs to consider careers in the minerals industry, and
3. Creating opportunities for professionals to change career direction

# 1. Influencing school leavers..

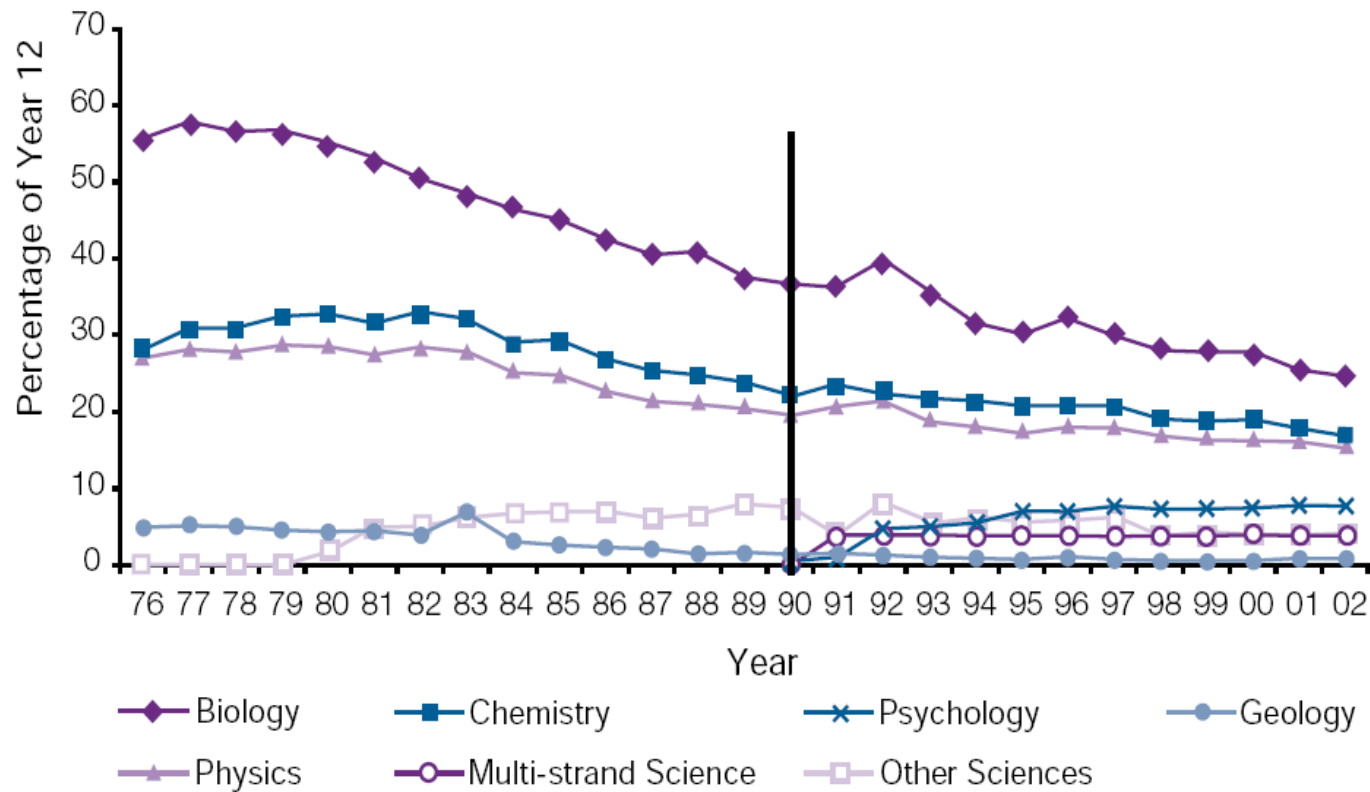
- Decreasing pool of potential students:
  - Meeting students' expectations of keeping study and career options open
- Competition from other careers and perceived lifestyles

# Declining birthrate



Source: Australian Bureau of Statistics 2005

# Year 12 Science Participation 1976-2002



Source: J Ainley and C Underwood, *Australia's Teachers: Australia's Future*, Volume 3, 'Background data analysis', Review of Teaching and Teacher Education, DEST, Canberra, 2003.

# All this means....

- Less school students exposed to science and therefore less likely to be motivated towards a career in science and/or engineering, and
- Less students qualified for entry to science and/or engineering degree programs at universities

# 1. Influencing school leavers...

- Decreasing pool of potential students:
  - Declining science literacy
  - Declining birth rate
- 
- Meeting students' expectations of keeping study and career options open
- Competition from other careers and perceived lifestyles

# Generation Y (born 1980-)

- Keep options open - maintain flexibility
- Looking for a balanced lifestyle and lifelong learning opportunities
- Seek the “right” product (only the best)
- Expect to succeed at everything they do
- Make quick consumer decisions
- View life through a prism of self interest
- Little interest in theories – demonstrate relevance
- Expect to be treated as equals – Baby boomer parents taught them to negotiate, negotiate

# The quest for a double degree

## ➤ Career indecision

BSc-BA (3 yrs Science + 2 yrs Arts)

## ➤ A balanced and broad education

BEng- BCom (3 Yrs Engineering + 2 yrs  
Commerce)

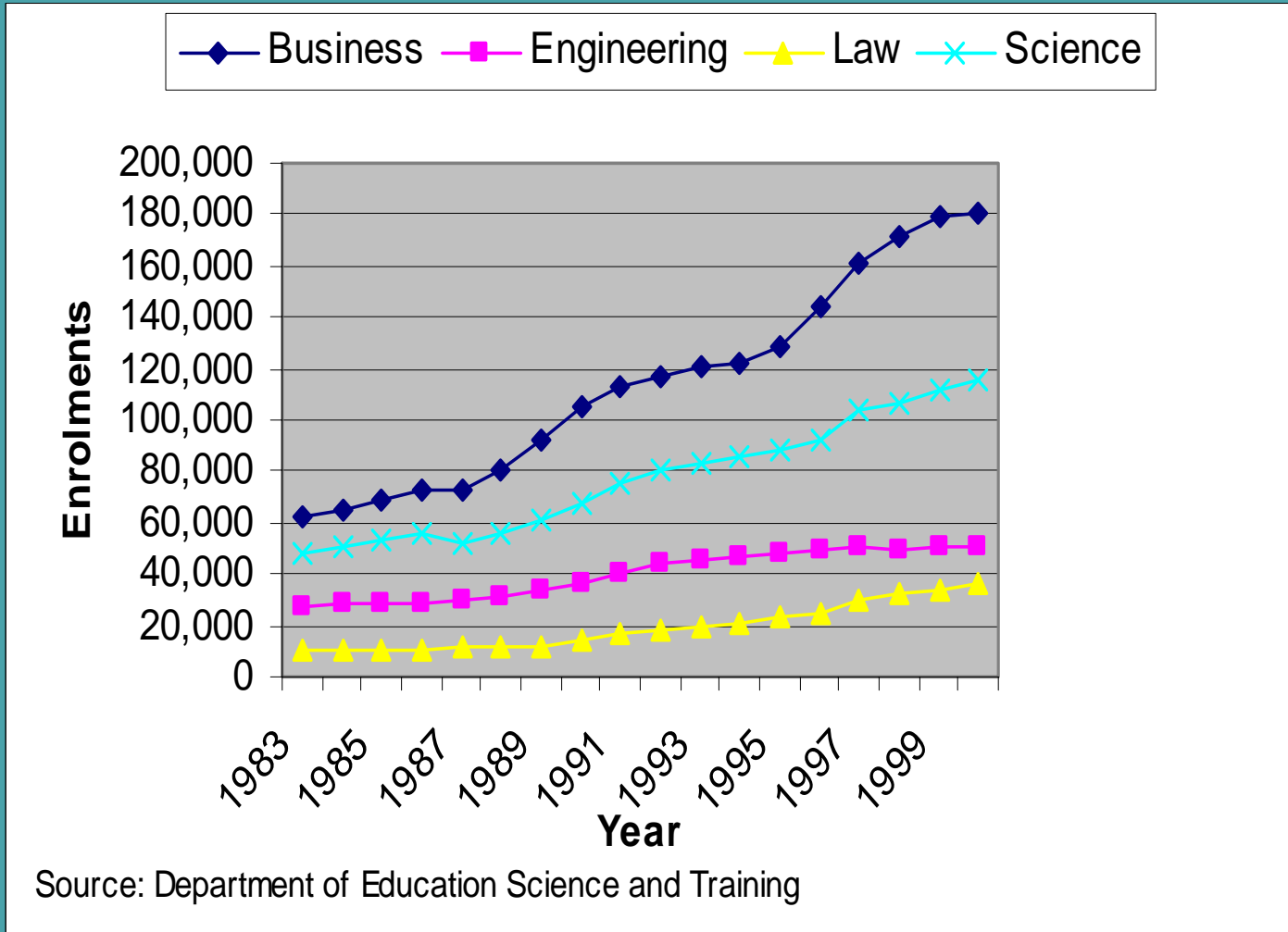
## ➤ Employment marketability

BSc-BChemEng (2 yrs Science+ 3 yrs Chem Eng)

# 1. Influencing school leavers...

- Decreasing pool of potential students:
  - Declining science literacy
  - Declining birth rate
- Meeting students' expectations of keeping study and career options open
- Competition from other careers and perceived lifestyles

# University enrolment patterns



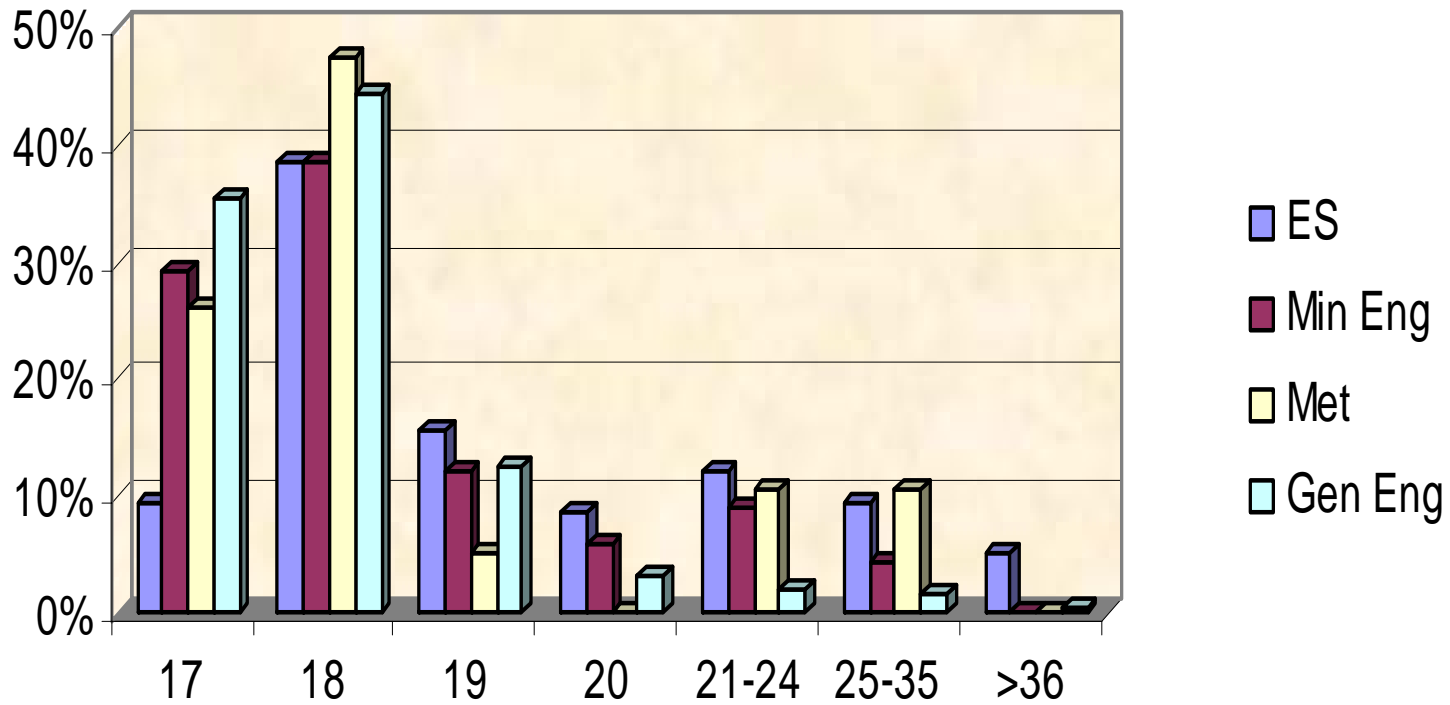
## 2. Influencing science and engineering students...

- Provide students with vacation work & work experience opportunities (and pay them)
- 
- Have an industry presence on campus, and
  - Get engaged with the education process, BUT use early career professionals
- Scholarships may be useful

# 3. Creating opportunities to change career path...

- Universities to develop, market and provide easy and flexible access to coursework-based postgraduate degrees, and
- Companies to support staff seeking access to professional development programs

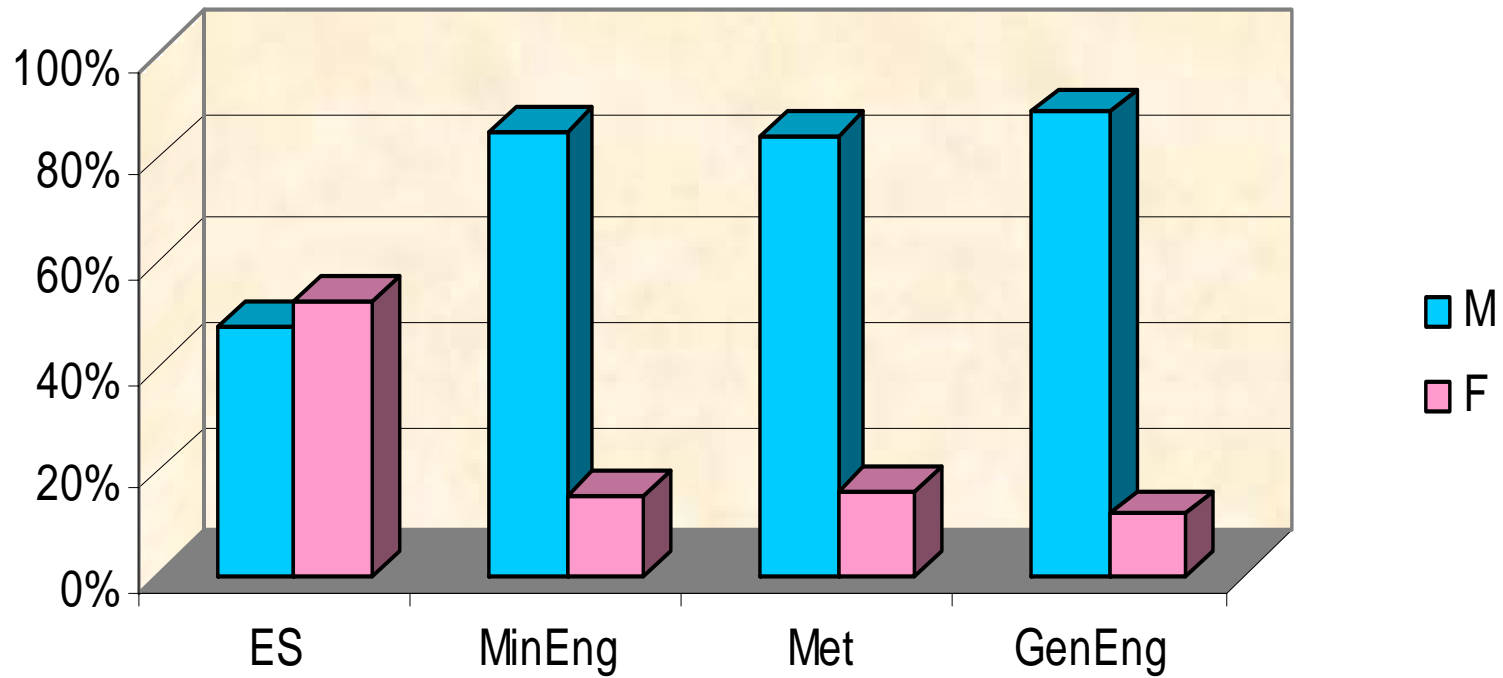
## Ages of first year students



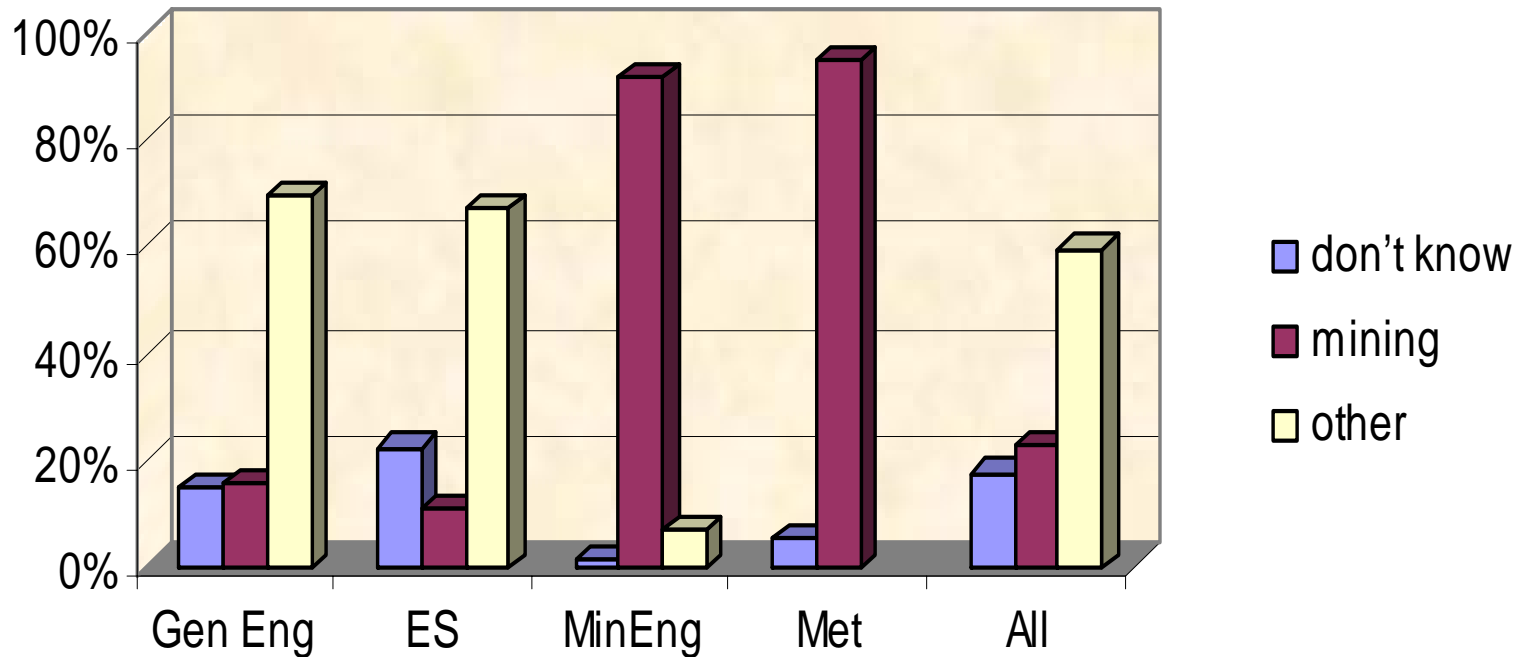
# Other strategies...



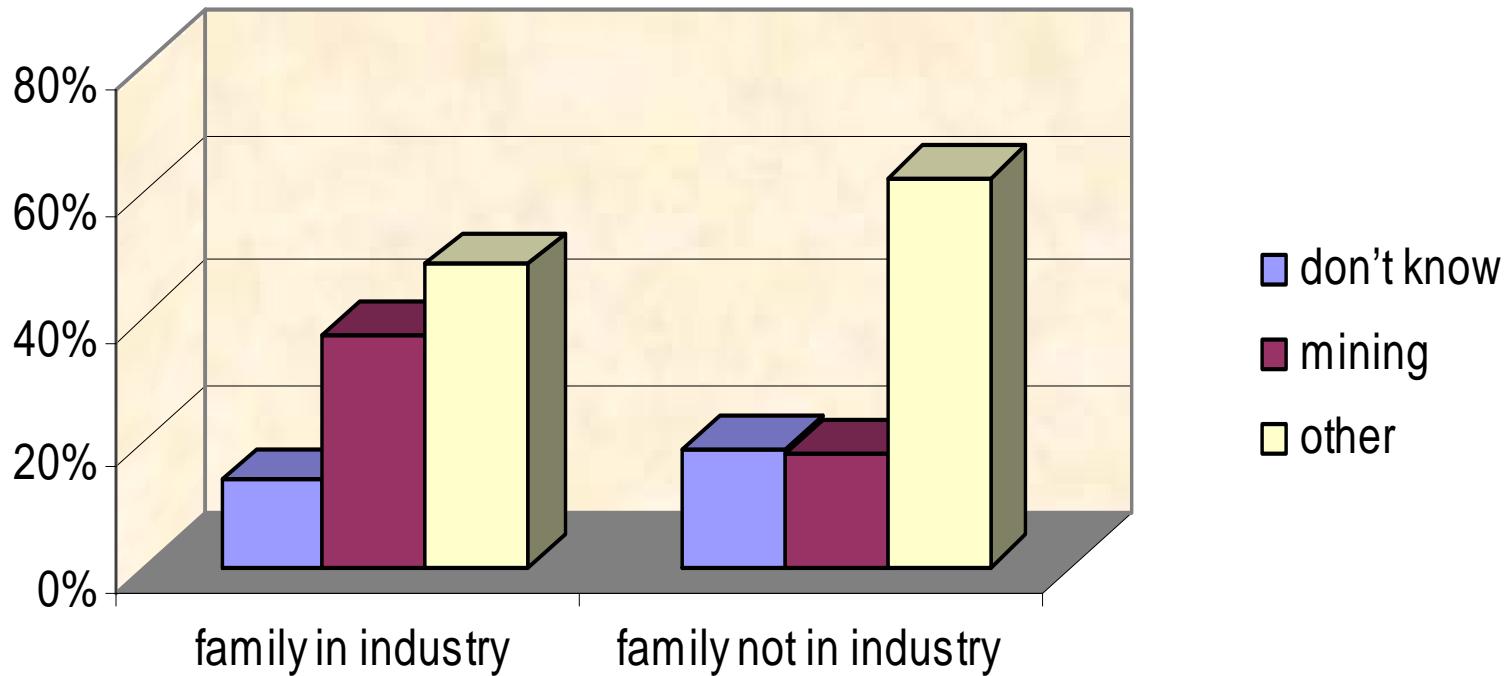
## Gender of first year students



## In what industry do you plan to work?



## Student links to the minerals industry



# Retention

1. Providing challenging career opportunities that are in balance with lifestyle expectations, and
2. Ensuring HR systems reflect the culture of the modern mining industry

# Challenging career opportunities

Be creative – meet the expectations of Generation Y

- Provide and honour a 3-year career development plan (eg “site + city”)?
- Provide real opportunities for professional development

# HR practices

- Ensure alignment of site and head office recruitment practices ■

# Conclusions

- Important differences between disciplines
- Long term supply - unlikely to change significantly
  -
- Aspirations of new graduates - flexibility
- Recognise that the industry has changed
  - Owner/operators → contractors & consultants

There is no silver bullet solution..



# Accept there are things we can't control..



- ..and don't waste effort trying

Recognise the things we can control..



<http://sadik.net/dlaughter>

..AND do  
something  
about them