

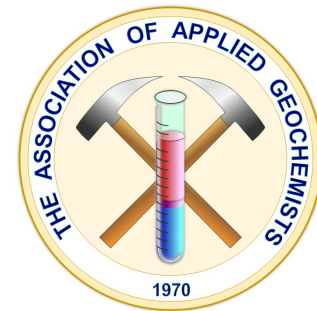
Geoscience in crisis: *How to win back the next generation*

**Australian Geoscience
Council**



Australian Geoscience Council

Peak body of Australian Geoscience Member organisations –
Representing 8000 Earth Scientists



AusIMM



International Association of
Hydrogeologists Australia

<https://www.agc.org.au>



AUSTRALIAN SCIENCE
AUSTRALIA'S FUTURE

SCIENCE 2035
WHERE DO WE WANT TO BE?

Australian science, future workforce

Academy of Science, 2025

To meet National Challenges over the next 10 years considerations with regards to:

Demographic change
Technological transformation
Climate change
Clean energy and decarbonization

<https://www.science.org.au/supporting-science/australian-science-australias-future-science-2035-full>

GAPS IN CAPABILITY AT A GLANCE	Agricultural science	Artificial intelligence	Biotechnology	Climate science	Data science	Epidemiology	Geoscience	Materials science
Year 12 enrolments	👍	👎	👎	👍	👎	👍	👍	👍
Vocational education and training (VET) completions	👍	👎	?	?	👎	👎	?	👍
VET enrolments	👍	👍	?	👎	👍	👍	👎	👍
University graduates	👍	👍	👍	👍	👍	👍	👎	👍
Undergraduate completions	👍	👍	?	👎	👍	👎	👎	👎
Postgraduate completions	👍	👍	?	👎	👍	👍	👍	👍
Undergraduate enrolments (commencing)	👍	👍	?	👎	👍	👍	👍	👎
Postgraduate enrolments (commencing)	👍	👍	?	👍	👍	👍	👍	👍
Current workforce	👍	?	👍	?	👍	?	👎	👍
Projected workforce	👍	?	?	👎	👍	?	👎	👎
R&D expenditure	👍	👍	?	👍	👍	👍	👍	👎
Publications	👍	👍	👍	👍	👍	👍	👍	👍
Patents	👍	👍	👍	👎	👍	👎	👍	👍



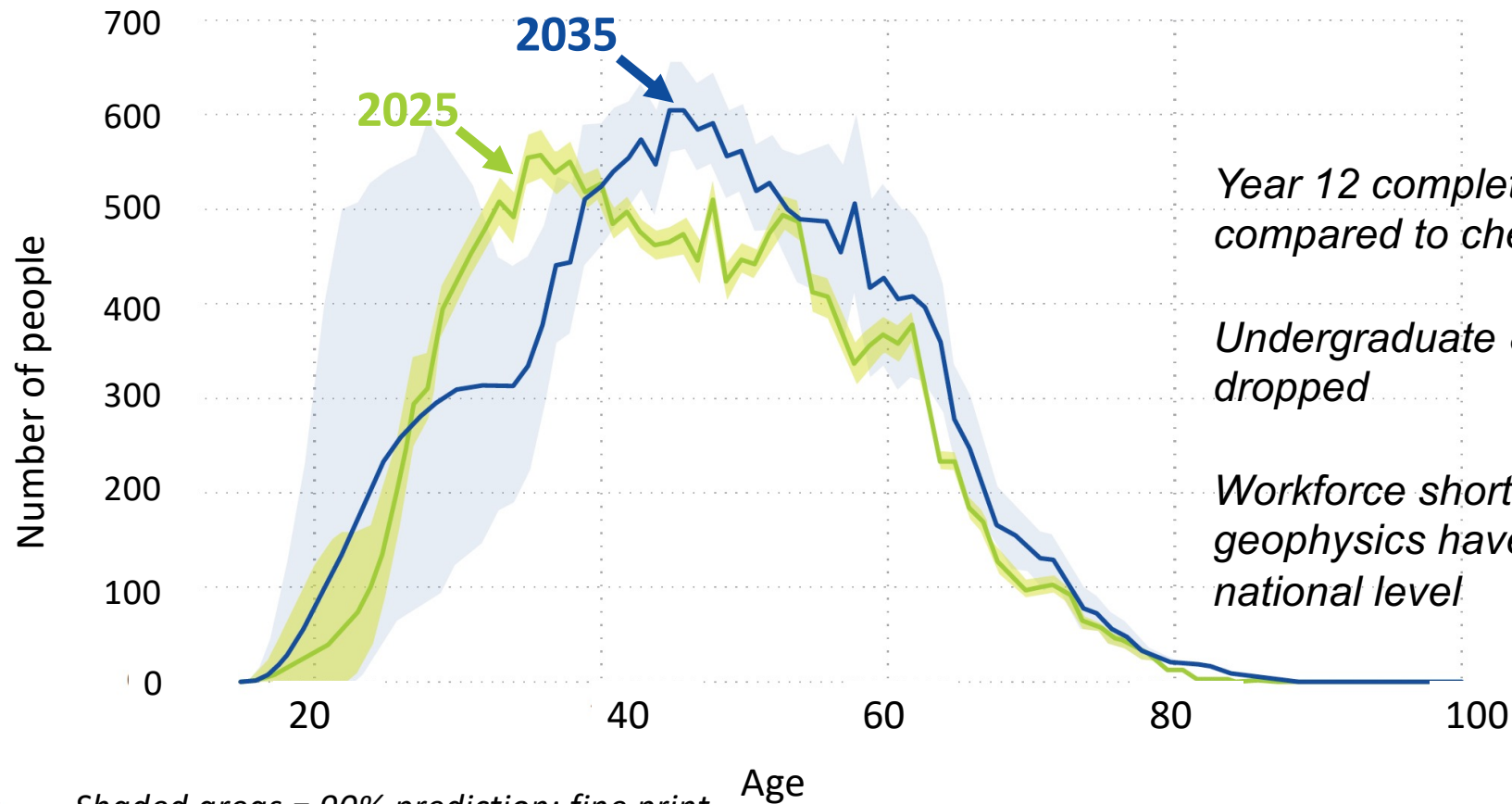
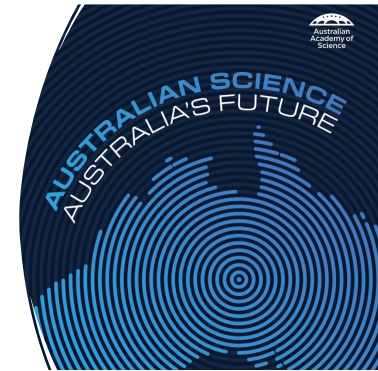
Geosciences

- University graduates & completions down
- Projected workforce numbers low
- Research and Development steady, not rising



Australian Academy of Science, 2025

Geoscience: Age distribution of working population



Year 12 completions low & falling (4,000 compared to chemistry 36,000)

Undergraduate & postgraduate numbers dropped

Workforce shortages in geology & geophysics have been identified at a national level

Australian Academy of Science, 2025





What influences student choices

Fifty-five 5, 2024

Survey of:

- Secondary students, year 11
- Tertiary students, 1st & 3rd year

Historical enrolments of Geosciences in Universities:

Cyclical

Universities struggle to attract students

General decline over 10 years

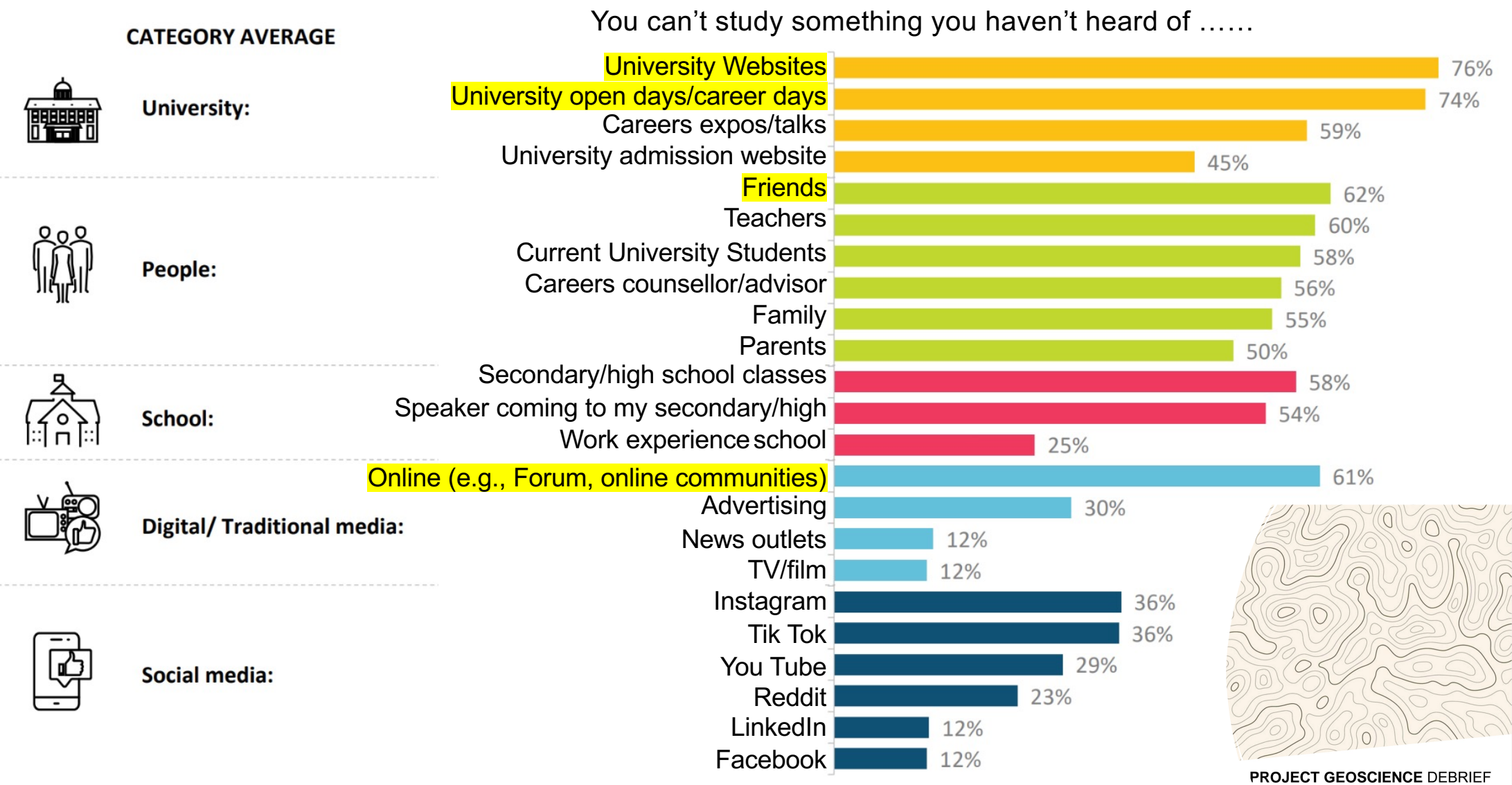
Need to understand school drivers, market forces

<https://www.agc.org.au/wp-content/uploads/2025/02/Fiftyfive5-AGC-Project-Geoscience-SUMMARY-19122024.pdf>

PROJECT GEOSCIENCE DEBRIEF

AUSTRALIAN GEOSCIENCE COUNCIL › NOV 2024

How do students decide what subjects to take?





Australia's National
Science Agency

Australian attitudes toward mining

Citizen survey: 2024 results

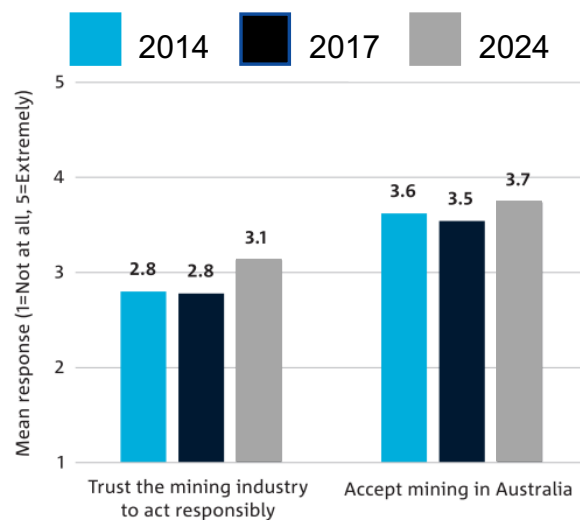


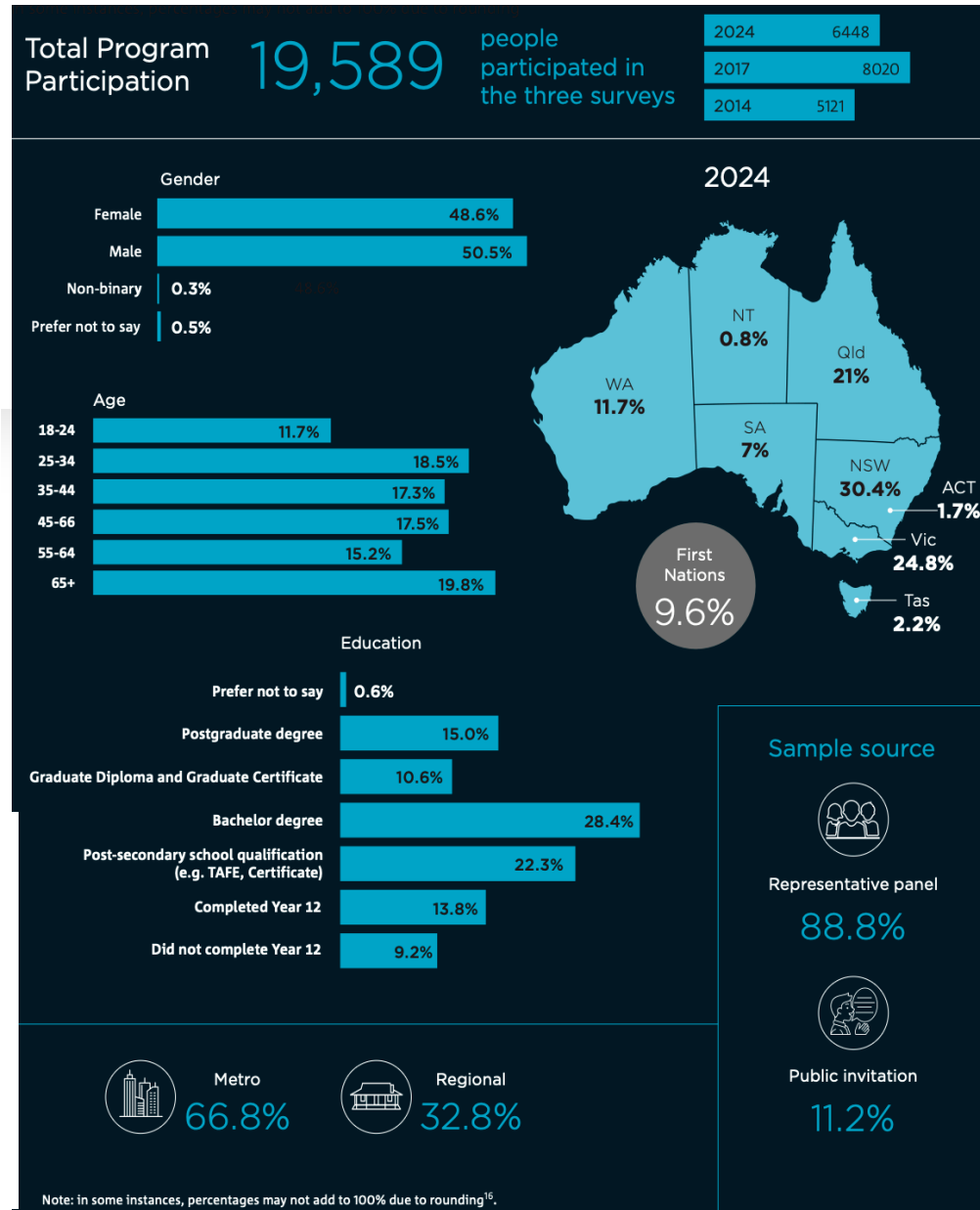
Figure 1: Trust and acceptance over time

Public trust in the mining industry has improved in 2024:

- **73% respondents** acknowledge access to critical minerals is essential for achieving net zero emissions
- **72% think mining will** support Australia's future prosperity

Despite this in 2024:

- **61% agree** that mining has negative environmental impacts
- **32% think** Australia should reduce mining activity, even if it delays the transition to net zero emissions





AUSTRALIAN
EARTH
SCIENCE
EDUCATION



Groups working into schools

- Variably aligned with State Curriculum's
- Limited reach
- Effective translation into Secondary subjects or University
- Limited tracking of progress
- Geoscience Member Organisations – separate efforts
- Tenuous funding models: Mix of paid staff & volunteers

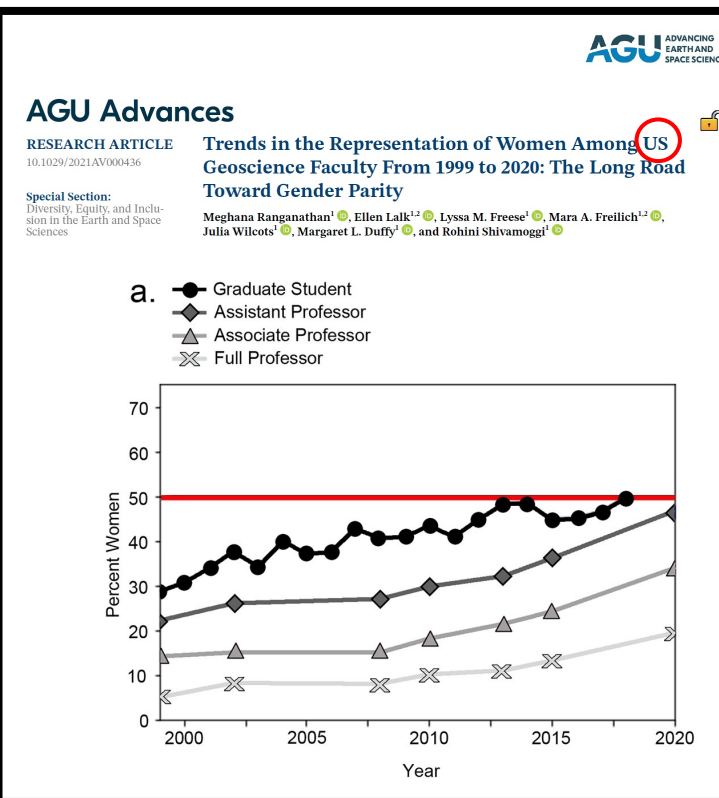
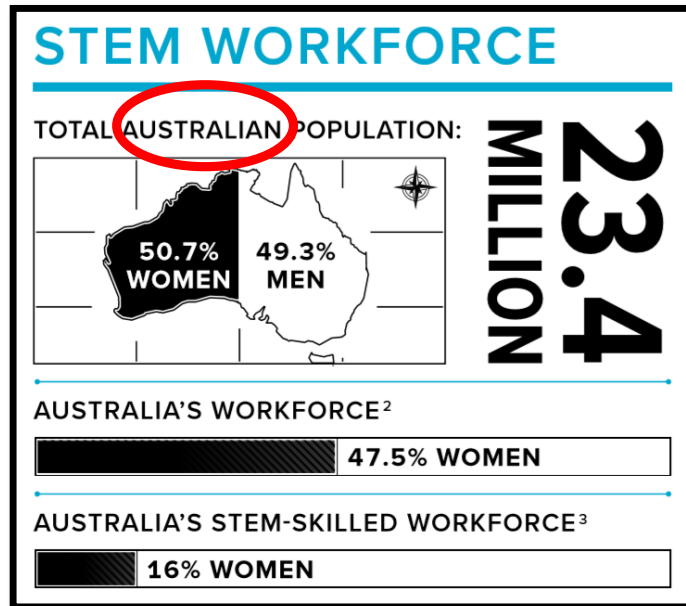


Where are **India's** female STEM graduates?

43% of Indian women students graduate in STEM but only **14%** are employed as researchers in the country



Australian Government **STEM** workforce report 2020



Adv. Geosci., 53, 205–226, 2020
<https://doi.org/10.5194/adgeo-53-205-2020>
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Advances in Geosciences

In Australasia gender is still on the agenda in geosciences

Heather K. Handley^{1,2}, Jess Hillman^{2,3}, Melanie Finch^{2,4}, Teresa Ubide^{2,5}, Sarah Kachovich^{2,6}, Sandra McLaren^{2,7}, Anna Petts^{2,8}, Gemma Purandare^{2,9}, April Foote^{1,2}, and Caroline Tiddy^{2,10}

Opportunity vs Outcome



What can we do now?

- **Swiftly Taylor** our communication- can we coordinate funding and delivery of education into schools, aligned to curriculum – amplify what's already being done, and fill the gaps?
- Excellent first year experience at universities
- Working with the Australian Academy of Science and wider community – **a united front!**
- Improve participation by building new systems & processes in mining, exploration to support a diverse workforce that reflects our multicultural, and very diverse communities

Contact: President@agc.org.au

<https://scripps.ucsd.edu/news/lets-talk-about-science-why-and-how-we-need-do-better>

The Science Communication Feedback Loop

