



Gender parity in astronomy 'impossible without intervention'

Australian astrophysicist adapts galaxy modelling techniques to track path of current employment practices

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Women will remain minority contributors to Australian astronomy for at least a quarter of a century, even if they are recruited at the same rate as men, and the discipline will never achieve gender parity without hiring quotas, modelling suggests.



Source: Nasa

Research by Australian National University (<https://www.timeshighereducation.com/world-university-rankings/australian-national-university>) astrophysicist Lisa Kewley has found that many of the affirmative actions tried so far – such as extending postdoctoral contracts, supporting part-time working and helping women return from career breaks – are not enough to close the gender gap.

Even if equitable recruitment becomes entrenched, women will not achieve a 33 per cent share of the workforce – the target outlined in a 2016 decadal plan (<https://www.science.org.au/supporting-science/science-sector-analysis/reports-and-publications/decadal-plan-australian-astronomy-2016-25>) – for 25 years.

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And under current patterns of hiring, promotion and departure, women will continue to be outnumbered more than two to one for at least 60 years – and probably “indefinitely”.

The study, published (<https://dx.doi.org/10.1038/s41550-021-01341-z>) in the journal *Nature Astronomy*, analysed data gathered as part of the mid-term review (<https://www.science.org.au/files/userfiles/support/reports-and-plans/2020/astronomy-decadal-plan-mid-term-review-2020.pdf>) of the decadal plan. It found that women’s low representation in the discipline was caused as much by high dropout rates as it was by inequitable recruitment and sluggish promotion.

The study identified two critical points of “pipeline stress” where women were lost to the discipline, with 62 per cent – compared with 17 per cent of men – leaving before they made the career leap from postdoctoral researcher to lecturer.

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And 50 per cent more women than men disappeared at senior lecturer level. Professor Kewley blamed a “clogged” rather than a “leaky” pipeline, as job openings became scarce further up the ladder – and men dominated the appointments.

“They’re the specific transition points in careers where women are on more fixed-term positions than men, needing to make a choice about whether they apply for additional jobs in academia and whether they apply overseas,” she said.

The study found that a combination of measures – “balanced” retention, 50:50 hiring practices at lower levels and preferential hiring of women at senior levels – would meet the 33 per cent target in 11 years, with equal representation by 2045.

Professor Kewley said preferential targets at higher levels of seniority were vital for retention as well as for recruitment. “If younger women only see one or two senior women, they’re going to feel like it’s not a viable



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career path for them," she said, adding that women in senior positions inherited "significant" selection committee and mentoring commitments.

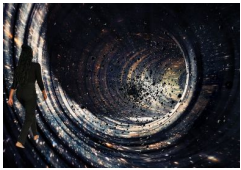
The study is thought to be the first to apply "forward modelling" to track the likely impacts of current employment practices – an approach Professor Kewley derived from her discipline. "We do forward modelling of galaxies to predict how they are going to look in the future. Modelling a workforce is not dissimilar to modelling galaxies. You've got inflows; you've got outflows; you've got evolution of the things in the galaxy.

"Looking at the data in this way is a powerful technique, and it gives organisations incentives to really make changes. There tends to be this sense of demographic inertia – the [idea] that if you've got 40 or 50 per cent of women at lower levels, that will seep up to the higher levels over time. [As] my models show, that assumption is not correct."

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