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One way to increase female representation in scientific fields is to use affirmative actions in hiring, such that only women are eligible to apply.

HOW WE BOOSTED OUR NUMBERS OF FEMALE FACULTY MEMBERS

Three researchers in Australia offer lessons from an affirmative-recruitment initiative for women. **By Marilys Guillemin, Elaine Wong & Georgina Such**

Twenty years ago, when one of us (E.W.) joined the Faculty of Engineering and Information Technology at the University of Melbourne, Australia, women represented only 13% of the academic staff. By the end of 2017, the figure was still only 16%, despite efforts to bridge the gender gap. For years, women were told by those working in the field that they simply had to be patient as the science, technology, engineering and mathematics (STEM) workforce caught up with social movements, and that a new generation of young female engineering and science graduates was coming through. But that hasn't happened. Despite a small increase in the number of women studying STEM subjects as undergraduates or postgraduates in Australia,

female enrolment in these fields was only 36% of the total in 2019. Female representation in science and engineering, especially at the senior level, is still appallingly low.

As three women who work in STEM at the University of Melbourne, and who have leadership positions in gender equity, diversity and inclusion, we aim to address the underrepresentation of women in our disciplines. Recruitment is a crucial part of our remit. Open recruitment (for all genders) in STEM had been implemented in the past, but the proportion of female applicants had been strikingly low, with research showing systemic bias in recruitment practices. A new strategy was required.

In 2016, Aleks Owczarek, who was then head of the School of Mathematics and Statistics,

undertook an affirmative-action strategy (also known as positive discrimination) to recruit women as faculty members. This was a controversial move, but it was prompted by a clear lack of diversity in the school. The strategy was designed as a catalyst for change. It aimed specifically to increase the number of women in faculty positions; improve the professorial pipeline; and provide female role models for students. Only women were eligible to apply for positions in areas in which women were under-represented. It ran for one recruitment round in the school, but had beneficial secondary effects.

The approach had three features. First, it was designed to attract a broad cross-section of female applicants, rather than just those

in particular sub-disciplines. Second, the positions advertised were ongoing teaching and research roles (rather than limited fixed-term contracts), to ensure career continuity. Third, the strategy was not intended to be undertaken on a continuing basis, or for every hiring round in those STEM disciplines.

But was it legal? Yes. In the state of Victoria, where the university is based, the law allows a special measure for promoting equality. However, we strongly advise that recruiters check the relevant legal sanctions before embarking on something similar.

On an upward curve

The strategy has been highly successful in attracting outstanding female applicants, both from home and abroad, to the School of Mathematics and Statistics. The calibre was so high that five appointments were made – two more than originally advertised. Thanks to this programme, the proportion of female staff in continuing (rather than fixed-term) roles jumped from 18% in 2016 to 23% in 2017. This momentum has continued; for example, in 2021, the proportion of continuing female academics in maths and statistics stood at 27%.

The schools of chemistry and physics in the Faculty of Science launched their own affirmative-action strategies, in 2018 and 2019, respectively. Over the one-year recruitment period, the proportion of female staff grew from 19% to 23% in chemistry, and from 23% to 31% in physics; this was in comparison to zero or negative growth in the preceding two years. Data from the Faculty of Engineering and Information Technology show that in the 16 years before its 2018 affirmative-recruitment initiative, female representation had risen by only 4%. Within a year of the recruitment drive, that had risen to 20%. Female representation has since lifted to 24% – the highest ever in the faculty.

Many of the successful applicants reported that they would not have applied had recruitment been open to both men and women, suggesting a perceived bias against female candidates in open recruitment. This strategy sent a strong signal to future applicants that the university supports gender equity, diversity and inclusion, and in turn encouraged more women to apply and succeed in open roles. These recruits not only added to the diversity of the faculty – they also brought their professional relationships and disciplinary networks. New collaborations were forged, leading to successful research partnerships.

When the idea of targeted recruitment was initially floated, there was pushback from some quarters – not because these people didn't believe in the benefits of a more diverse workforce, but for the following reasons. First,

the way in which we were addressing gender imbalance through affirmative recruitment seemed unfair, or was seen as a form of 'reverse discrimination', especially by junior male colleagues. Second, there was a perception that the quality of applicants would be compromised. And third, concerns arose about how the successful applicants would be treated by their colleagues.

All these misgivings were valid, and came from both male and female colleagues. But, uncomfortable as these discussions were, the continued engagement and conversations provided an opportunity to discuss women's generational and entrenched under-representation in STEM – and, more importantly, the painfully slow pace at which we were making progress. Providing sound data was paramount in addressing these concerns, and clearly demonstrated the rationale for this and other gender-equity initiatives.

Throughout the recruitment, it was essential that the campaign received an overt demonstration of support from the dean and senior leadership (see 'Affirmative-action recruitment tips'). It was also important to communicate that the targeted recruitment would not be repeated each year, but rather was intended as a jump-start to transform the faculty's workforce into a more diverse one.

Creating the right culture

Although the strategy helped to increase faculty diversity, we needed to create an inclusive culture so that these new female recruits would succeed. We were also conscious not to exclude and disengage male staff, and invited them to work with us to develop and drive other inclusion efforts. Different faculties established their own programmes. These included mentoring for female faculty members, career-support grants (for junior staff, both male and female) and training for panel members involved in recruitment and promotion, to help them recognize implicit bias. We also developed a support scheme acknowledging the importance of parental leave in retaining female staff. This gave those on parental leave a grant to fund resources for their research during or after this period, so that they could maintain their career momentum. Importantly, we needed to ensure that women who had been newly recruited to faculty positions were not made to feel 'tokenized', and we maintained a strong focus on nurturing all new staff.

We understand that there is still some way to go before we have gender equity across all academic levels, but we think that our strategy is a useful addition. Our sights are firmly set on sponsoring female junior faculty members to

Affirmative-action recruitment tips

For those considering recruitment initiatives with an element of affirmative action, we offer some important lessons.

- Always consult senior faculty members beforehand, to ensure that they buy in to your proposals. In our case, senior leaders were able to lend their support and set the tone, particularly with regard to junior male academics who questioned the strategy.
- Ensure you have a strong evidence-based rationale, coupled with rigorous organizational data.
- Be transparent about your rationale, and ready to have an open discussion about a merit-based approach with existing faculty members and prospective applicants.
- Check your legal standing before embarking on an affirmative-action plan.
- Don't be too specific about sub-disciplines. Keep your selection criteria broad to widen the pool of female applicants.
- Make sure that your initiative is part of a suite of complementary strategies designed to build an inclusive culture and enable all faculty members to progress in their careers. We suggest involving junior members who are male and who might otherwise feel disenfranchised.

progress through the academic levels, so that parity can be achieved at senior levels in the near future.

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