GENDER EQUALITY TOOLBOX

HOW TO ADDRESS THE PERSISTENT GENDER GAP IN ACADEMIC RESEARCH

A growing body of evidence shows that female researchers face distinct career obstacles that affect their ability to win prestigious grants. These persistent gender gaps can be mitigated as part of the foundation's commitment to diversity, equity, and inclusion, and should inform our grant-making and post-award publication requirements.

Some key facts:

- It is well established that female principal investigators receive less grant funding than their male colleagues.
- Research shows that women are evaluated less favorably as principal investigators when the assessment is based on them as scientists, rather than on the science itself.
- Even when the review is blinded, women receive significantly lower scores that may be due to language choices: men are more likely than women to use broad or self-promoting descriptions in grant-writing.
- Because of anticipatory bias – the advance awareness of reviewer bias and stereotype threat – women may be further deterred from applying for grants and publishing.

What POs should consider before awarding a research grant

- ☑ **Watch for language bias when reviewing proposals.**
  - Research shows that men tend to promise more and deliver less. (Example: male scientists are more likely to use superlatives such as "first" or "novel" when referring to their research. As a result of such self-promotion, papers authored by men receive more attention and garner larger numbers of citations.)
- ☑ **Think about potential biases that can arise from how we value or measure work.**
  - Judge work on its merit and not the publication venue; approach how we value and measure research outputs with the same scrutiny as the research itself.
  - Female scholars may be more likely to showcase their work in less-prestigious book chapters and other outlets as compared to male counterparts.
- ☑ **Be aware that women may have gaps in their CVs if they took time off to have children.**
- ☑ **Be aware that eligible women may not have won as many prestigious grants as comparable men because they are less likely to apply for them.**
  - Using past success in winning grants as a positive signal for subsequent evaluations should be treated with caution.
  - A justified anticipation of bias can deter even the most successful female scholars from engaging in the academic community.

What POs can do once the grant is awarded

- ☑ **Discuss authorship concerns with grantees:**
  - Is there somebody who is affected by this who should be consulted for this paper? (Example, if the study is about women, have we talked to them to ensure there aren't biases that we've overlooked? Exclusion of women from health research has been shown to lead to particularly detrimental effects on women's health.)
  - Is there a diversity of thought in the authorship?
  - Should there be a better gender balance to the authorship? How should authors be listed? (Women are significantly less likely than men to hold prestigious first and last author positions.)
- ☑ **When considering compliance to a policy, gender differences should be reviewed.**
  - Are there gender differences in compliance with foundation publications policies? (Women may be more likely to follow the rules than men.)

A note about Open Access journals

- Open Access publishing refers to scholarly research that is freely available, accessible, and reusable. No paywalls or subscriptions are required. This approach has support from many in the academic and research communities, including key funders, publishers, libraries, and universities.
- However – requiring grant applicants to publish exclusively in OA outlets may unintentionally deter female researchers from applying for funding. Women are less willing or less able to publish in OA journals, which may be viewed as riskier than traditional subscription journals and therefore less attractive to junior and female scholars.
- Having a large number of OA publications on a CV is risky because there is a larger variance in perceptions of quality associated with these journals relative to the subscription-based outlets – even though an increasing number of highly ranked scholarly publications have Open Access options. Funding agencies and foundations that wish to attract more women applicants, while preserving their strict OA publication criteria, should consider using their considerable influence to either change these perceptions or to nudge all prestigious journals to embrace the Open Access model.
- An alternative approach would be to make OA policies more flexible for junior scholars, who are more likely to be female, allowing some share of the publications that come out of a particular grant to appear in prestigious subscription journals.

Checklist for grantees

- ☑ **Before you start your research:**
  - Make sure to give some thought to diversity of experience, looking for ways to include marginalized or overlooked points of view.
- ☑ **As you write your paper:**
  - Give credit where credit is due.
    - » Is there proper attribution of who put in the work and what they did (including acknowledgement of unpaid supportive contributions)? Use this credit taxonomy for tips.
    - » How is authorship determined? When considering authorship positions is there a gender balance?
  - When choosing the publication outlet, review the Grantee Publishing Guide to comply with the foundation's Open Access Policy. If there is a paywall, note that publishing in a more prestigious journal may be important to junior and female scholars.

Checklist for everyone

- ☑ **Recommend women for leadership roles. Review the diversity of a panel, conference, board, and so on before accepting an invitation.**
- ☑ **Encourage women to keep applying despite rejections.**
  - Research shows that women attribute negative feedback to lack of merit and are less likely to compete again after losing an earlier round.
- ☑ **Use your influence to tell prestigious journals that Open Access is a priority.**
  - Funding agencies and foundations that wish to attract more women applicants, while preserving their strict OA publication criteria, should help elevate perceptions of OA journals and nudge all prestigious journals to embrace the Open Access model.
- ☑ **If you believe in fostering diversity, you should say so outright in your mission. Such explicit signaling encourages women to apply for grants.**

The "lost Einstein" effect

The dropout of women from the scientific community means that individuals who could have made highly impactful scientific discoveries never have the opportunity to reach that potential. Funding sources are particularly important to this discussion, and availability of external grant money matters the most in disciplines where gender gaps have been historically the largest (STEM and economics).