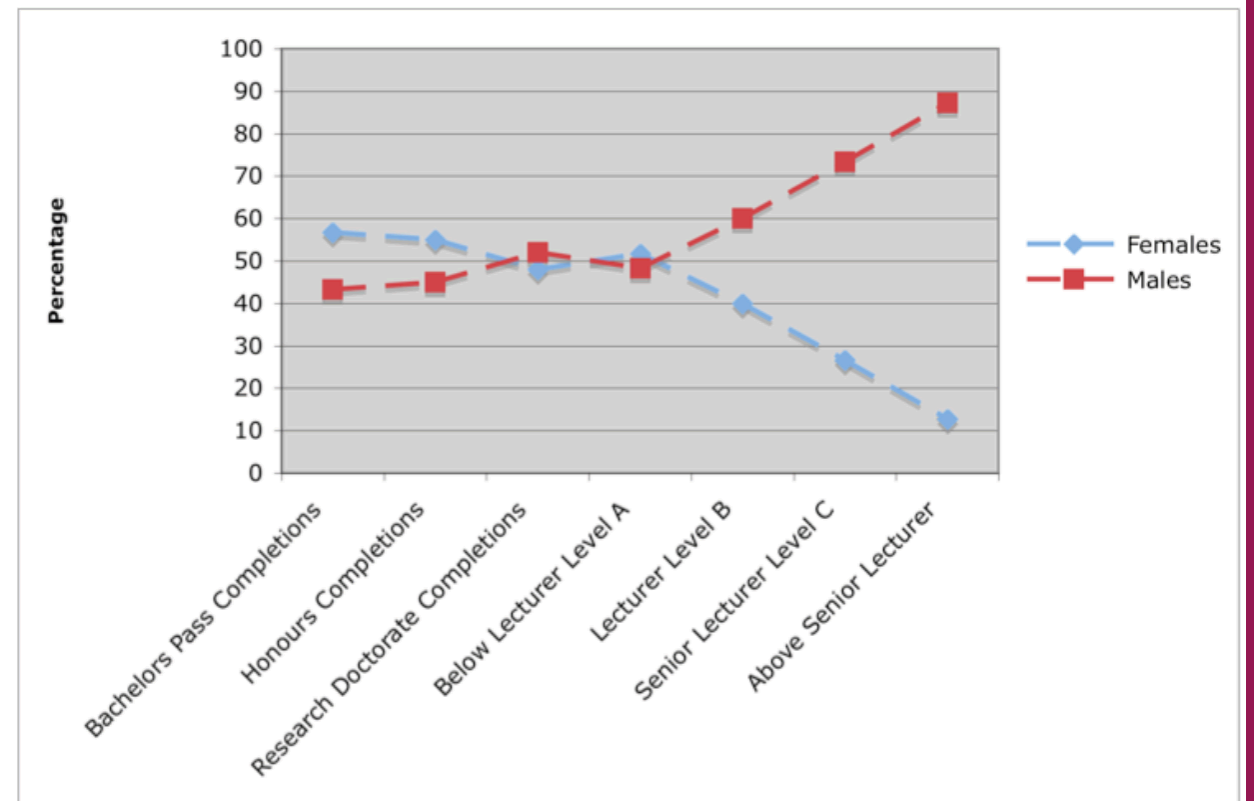


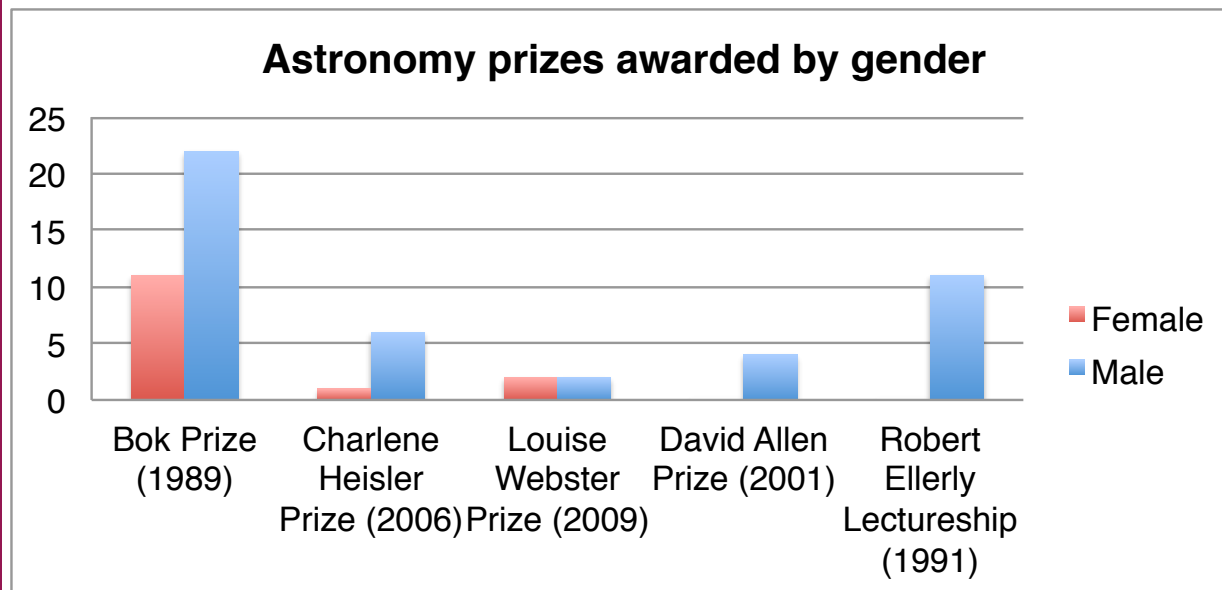
Is there a gender bias in astronomy today?

In Australia today, more women complete science degrees than men, as shown in the figure to the right. But research shows that the further up the academic career ladder you climb, the fewer women you find.

These Australian statistics are mirrored worldwide: 6% of US professors are women (2007 American Physical Society report) and only 15% of IAU members are women.



Source: Profiles by Gender, Natural & Physical Sciences 2007 DEEWR



The year denotes when the prize was first awarded.

Considering the demographics of ASA membership we find that out of 573 members in 2011, only 14 fellows are women (10% of total women), compared to 91 male fellows (21% of total men).

Our female astronomers also go unrecognised - as seen in the ASA prize statistics on the left. Disappointingly for student prizes (Bok and Heisler) it is typical for only 1 in 5 *nominations* to be for women. More shocking is that the Ellery prize for senior astronomers has never been awarded to a woman.

Why does such a problem still exist?

The statistics provide shocking facts; but how can these still exist, given the change in society's views?

One key reason is **Unconscious bias** - hidden biases in the decisions we make, causing us to choose one group of people over another without realising.

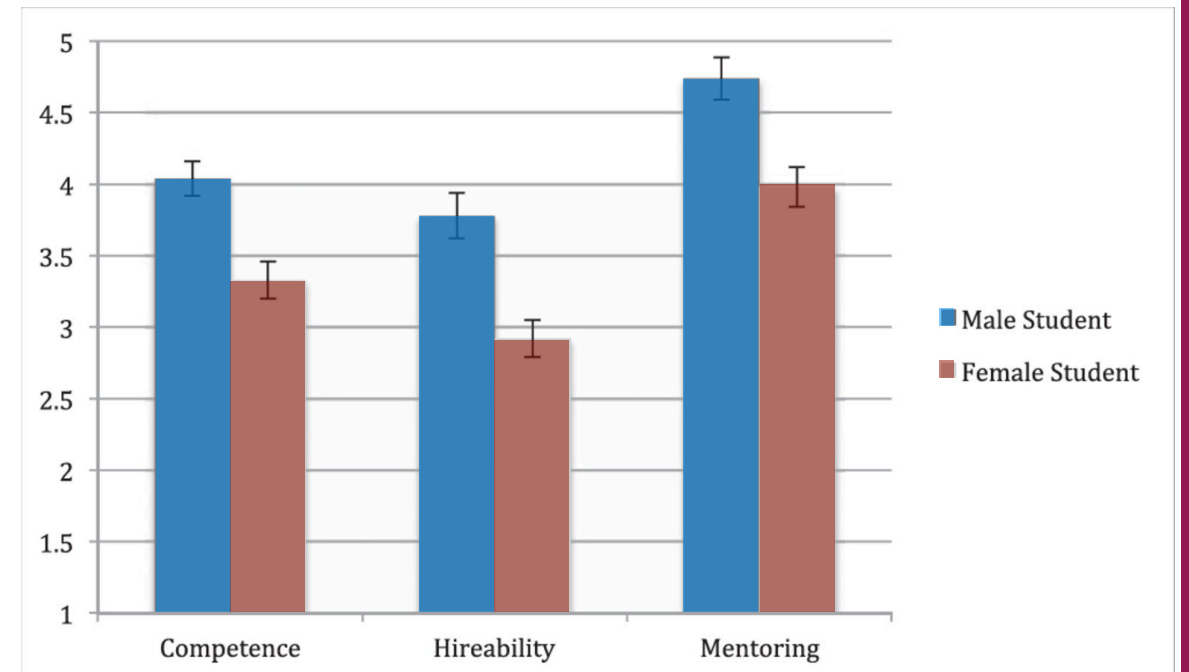
Examples of such biases include:

▶ **Affinity bias** - where we feel more comfortable around people who seem familiar. We then favour these people without realising it was due to their familiarity. *Are we more comfortable with the familiar image of male scientists?*

▶ **Framing Effect** - where we draw different conclusions from the same information, depending on how or by whom the information is presented. *Do we react differently to information delivered by women rather than men? (see figure above)*

▶ **Confirmation bias** - where we look for ways to confirm what we already hold as true. Our minds justify our actions, hiding the underlying belief which caused us to treat others in certain ways. *Are strength and assertiveness the only qualities for leadership? What about building relationships and motivating others?*

▶ **Imposter syndrome** - where we believe that our own success is the result of good luck, timing, or a result of deceiving others, instead of accepting that our achievements were due to skill and hard work.



Potential research employers were asked to assess the quality of several resumes, to which male and female names had been randomly assigned. Females were consistently and significantly ranked lower than males, even when identical resumes were being considered. Source: Science faculty's subtle gender biases favor male students, CA Moss-Racusin, 2012, PNAS

What can individuals do?

These biases can creep into our decision making, and by their nature do so unconsciously. It is important to remind ourselves of these biases and make them part of our conscious. By thinking through each decision with respect to these, we can make sure our decisions do not unfairly bias one group of people over another.

Actions to take:

- ▶ Speak up! Make a vocal contribution of substance in order to be noticed, heard, acknowledged and appreciated.
- ▶ Put yourself forward, and ask for what you want. Sometimes it is important to take risks.
- ▶ Find mentors and be a mentor yourself- everyone needs a cheer squad
- ▶ Challenge the stereotypes of females (nurturing/agreeable) versus males (strong/assertive).
- ▶ If a woman makes a good point during a discussion, acknowledge it. If someone is not being heard, tell others to listen. And notice if someone's point goes unheard but moves forward when raised by someone else. It happens!
- ▶ At conferences, introduce your female postdocs and students to colleagues and initiate conversations.
- ▶ Scrutinise gender balance at all conferences/committees/events, and be appalled by low female/male ratios.
- ▶ Become aware of your own biases and stay informed on gender issues.

What can organisations do?

Similarly, there are plenty of actions that we can support on an organisational level. These sorts of initiatives help to undermine the underlying biases in place, and are the indicators of an organisation really tackling equality issues.

Actions to take:

- ▶ Offer and advertise flexible working conditions.
- ▶ Take into account situations when assessing achievement - a part-time staff member should be assessed differently from someone working full-time.
- ▶ Seek out potential female candidates for jobs.
- ▶ Deal with potential biases on job selection panels. Discuss the problem of unconscious bias before starting, and review at the end.
- ▶ Provide professional development coaching.
- ▶ Encourage staff to participate in mentoring programs.
- ▶ Re-engineer work practices around core hours, such as during school hours.
- ▶ Offer return-to-work scholarships for primary carers.
- ▶ Nominate women for awards/prizes/opportunities. Actively nominating staff members for opportunities will help grow their career as well as an institution's profile.

Check out the Women in Astronomy website for more details:

www.asawomeninastronomy.org