

University Research Fellowships 2014

Introduction

Women throughout the world, including in the UK, are currently under-represented within science, technology, engineering, mathematics and medicine. This is not only unacceptable from an equality point of view but it also represents a large loss of potential talent to the UK. The Royal Society is acutely aware of this problem which exists at all stages of involvement with science, from the classroom through to scientific leadership positions in Universities, business and Government and to the Society's Fellowship. The Society is committed to doing what it can to tackle this problem and is paying particular attention to its own fellowship and grants schemes.

On 19 September 2014, the Society announced the appointment of 43 University Research Fellows, of whom 41 were men and two were women, significantly less than in previous years. The President asked three members of Council, Professor Geoffrey Boulton, Professor Andrea Brand and Professor Angela McLean to investigate this outcome with a view to looking at two matters:

- why the number of women appointed was so different to previous years
- what actions the Society should take in light of the findings

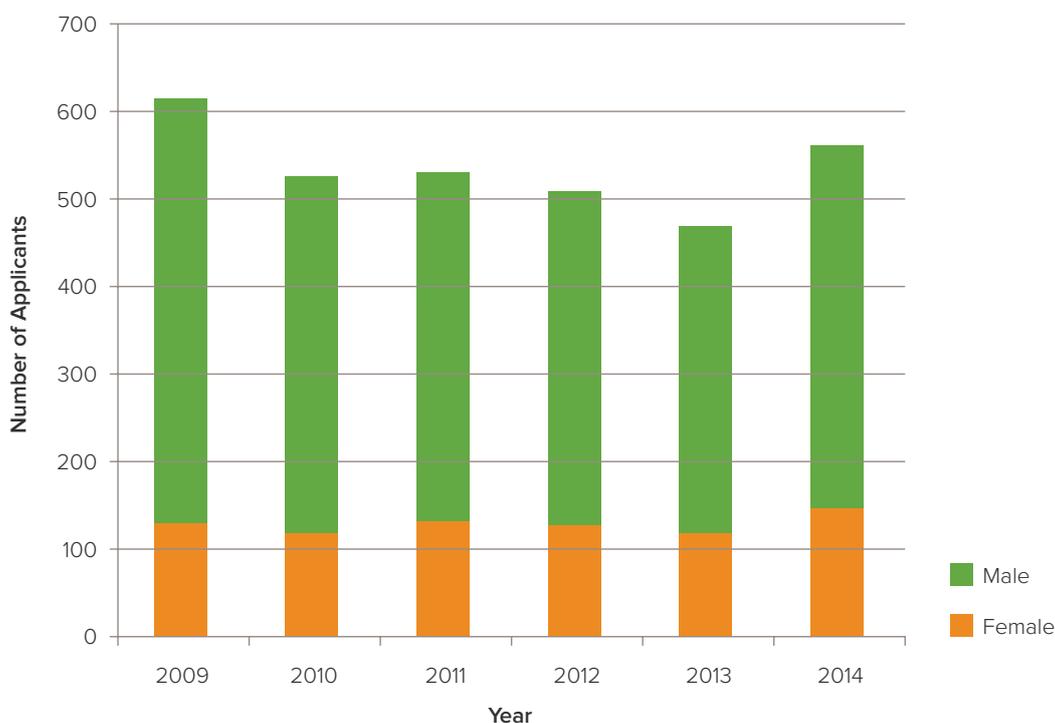
The conclusions of Council having considered the findings of that panel are outlined below along with the actions that Council has decided the Society should take to increase the representation of women in its Fellowship and grants schemes.

Numbers

The panel looked at 2014 in the context of the last five years, over which period 22% (59 out of 267) of URF and Sir Henry Dale Fellowships were awarded to women.

The panel looked at data about University Research Fellowships (URFs) and Sir Henry Dale Fellowships (SHDFs). The latter, which are joint Royal Society/ Wellcome Trust grants for biomedical science, were included as they are identical to URFs but with greater lab resources. Their introduction in 2012 seems to have affected the numbers of applications for URFs with applicants in biomedical science now applying for SHDFs instead of URFs: see Figure 1.

Figure 1 Numbers of applications for URFs and SHDs by gender, 2009 – 2014



Both the offers made (Figure 2a) and the awards accepted (Figure 2b) specifically for the URF scheme were assessed. The former was considered to be the better measure against which to assess the Society's processes as the acceptance of an offer involves other

factors outside the influence of the Society. Figures 2a and 2b show the fluctuations in success rates for male and female URF applicants in the period 2009 – 2013 and specifically show in 2014 a big fall in the rate for women.

Figure 2a Success rate for offers to applicants for URFs by gender, 2009 – 2014



Figure 2b Success rate for awards to applicants for URFs by gender, 2009 – 2014



Processes

The selection processes for the URFs which are outlined below were assessed.

Applications for URFs were assessed in 2014 by the four Society panels:

- Ai Astronomy, cosmology, physics, earth sciences, environmental sciences and geosciences.
- Aii Chemistry and engineering.
- Aiii Pure and applied mathematics, computer science, statistics, mathematical elements of astronomy, astrophysics, cosmology, gravitation, theoretical physics, communications and computer engineering (including software engineering).
- B Molecular and cellular biology, zoology, plant sciences, and physiology.

Prior to 2012 there were two A-side panels and two B-side panels: Women were represented on all four panels. There were 10 female panellists and 48 men. Two of the four panel chairs were women.

In 2014, each URF panel arrived at a selection of candidates to whom URFs should be offered via a three-stage process:

1. Each application was assessed by two panel members, and these assessments were reviewed. The panel then discussed the assessments by email, and the Chair approved a first shortlist that was confirmed by the panel.
2. Each application on the first shortlist was refereed by three individuals who were not panel members (women

accounted for 8% of these referees) and the panel used the referees' reports to determine who should be invited for interview.

3. Candidates were then invited for interview and the panel determined the candidates to whom it thought URFs should be offered and a reserve list.

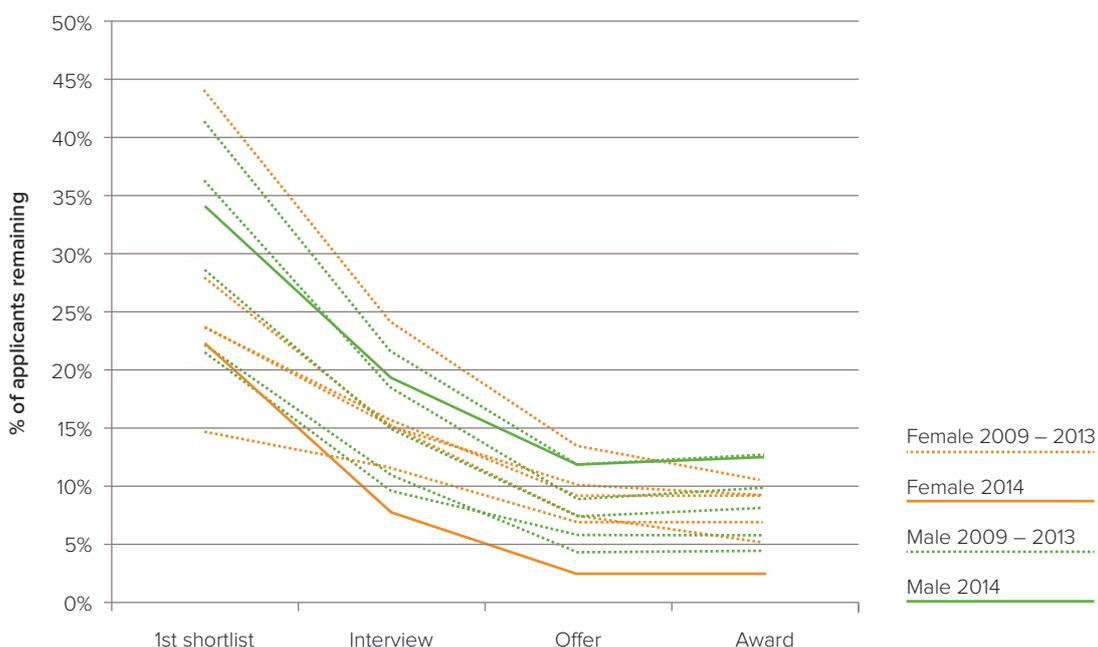
The Chairs of the four panels then met with the Biological Secretary to determine a single set of candidates to be proposed for appointment and a single reserve list. The proposals were then put to two members of the Grants and Awards Committee to determine the candidates to whom URFs should be offered and the ranked list of reserve candidates.

Some offers were turned down and award numbers reflect the final numbers appointed due to offers being declined and additional awards becoming available due to resignations.

The minutes of the various decision meetings record that the gender imbalance was noted but no further action was taken as the panels remained confident that all candidates had been selected on the basis of excellence.

Figure 3 shows success rates at the ends of each of the three stages described above (1st shortlist, Interview and Offer) and the final stage (Award) for men and for women in 2014 and for the five years 2009 – 2013.

Figure 3 Percentage of applicants remaining at each stage of the URF competition by gender for 2014 and 2009 – 2013



Council also considered the comparative levels of experience of male and female candidates and found that a greater percentage of female applicants for the B-side panel had less than 5 years post PhD experience but that no overall pattern could explain the 2014 outcome.

A review of the ten institutions with the most successful candidates showed great variety in the approaches taken by the institutions in relation to how they managed applications so again no clear pattern could be discerned to explain the 2014 outcome.

The investigation was based on the records compiled by the Grants section to track what happened to individual female applicants in 2014. No clear evidence of a general pattern that might have explained the unusual outcome was found.

The success rate on the A-side and on the B-side (Figure 4) was also assessed.

Having assessed the available evidence the panel concluded that it could not identify any factor or combination of factors to explain why the outcome in 2014 was so extreme. But they and Council shared the view that the outcome is unacceptable and that the Society must take what actions it can to ensure that it attracts women to apply and judges their applications on a par with those by men.

Figure 4 success rates for URFs by gender and A/B-side, 2009 – 2014



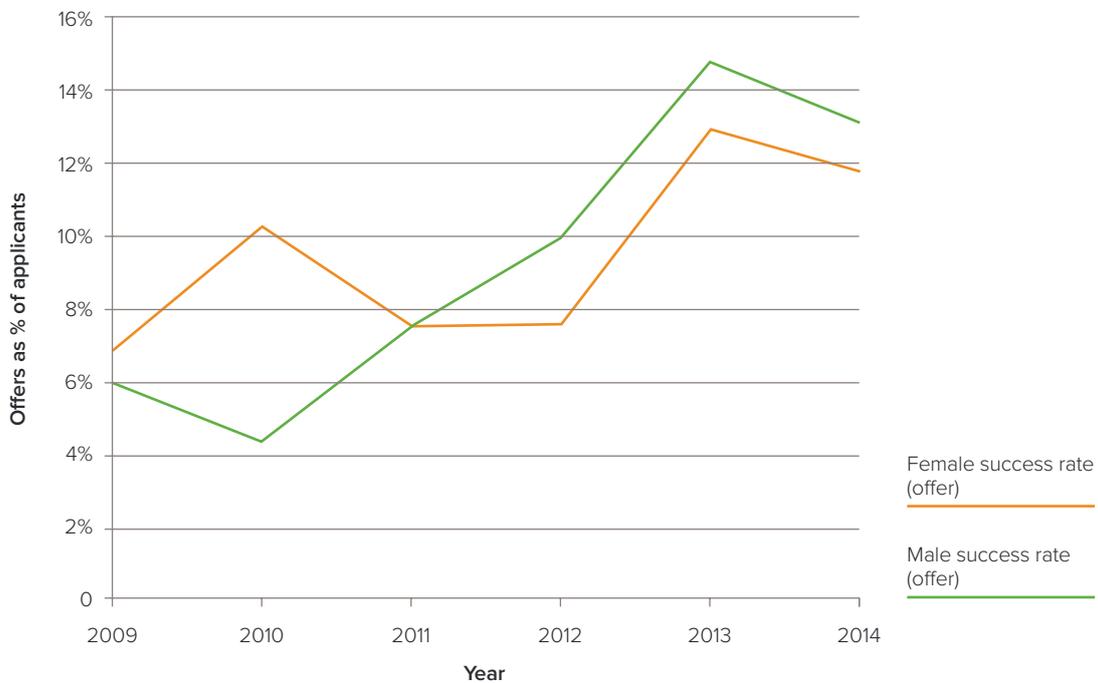
Wider context of Royal Society early career schemes

Council also considered the results of the 2014 URF offers alongside the results of the joint Royal Society/Wellcome Trust SHDF offers. Since the URF announcement a round of SHDFs has been announced and Council has looked at the success rates for men and women over the entire year of 2014 for related schemes. The success rates for male and female candidates in terms of offers made for the combined URF and SHDF schemes are shown in Figure 5. This covers the last 5 years with the SHDFs

being introduced in 2012. It can be seen that when all the data are pooled together for the entire year the difference between male and female success rates is much reduced.

The Society also has the Dorothy Hodgkin Fellowships which have proven consistently popular among female candidates, with all nine appointments made in 2014 going to women.

Figure 5 Success rates as measured by offers to applicants for the URF (up to 2012) and combined URF/SHDFs (2012 onwards) schemes by gender, 2009 – 2014



Actions

Having considered the panel's report and other data, Council agreed that the Society should take the following actions to seek to improve the representation of women in its URF/SHDF schemes:

- The Society, working with the Wellcome Trust, will review its promotional material and application form for URF/SHDFs and revise them if necessary to remove anything that may be inhibiting women from applying. The Society should also publish profiles of successful candidates, to give examples for potential applicants.
- The Society, working with Fellows, should encourage individual women who would be able to compete in a URF/SHDF selection process to consider applying and should offer to provide other appropriate guidance. Fellows should also encourage suitable current and former URF/SHDFs to promote the URF/SHDF schemes to potential women candidates at their universities.
- The Society, working with Fellows, should engage in discussion in university departments and divisions about the nature of URF/SHDFs in order (i) to enable Council to increase its understanding of the 'demand side' and (ii) to help dispel any misunderstandings there may be about URF/SHDFs. Those discussions should encompass other Society schemes too.
- Council will mandate a programme of action to ensure that all those who serve on URF and other selection panels are aware of differences in how candidates may present themselves, how to recognise bias in oneself and others, how to recognise inappropriate advocacy or unreasoned judgement, how to contribute to a panel as a member, and especially importantly how to be an effective Chair. This programme should draw on the wide range of relevant experience within the Fellowship, including as members of Dorothy Hodgkin Fellowship panels and of panels of other organisations. Consideration will also be given to having observers to provide feedback to panels. A plan on how to deliver this will be prepared.

- Greater consideration needs to be given to the data gathered and analysed by the society in relation to its own activities. The Society should also look at the data available regarding diversity at different career stages to see whether there are gaps that could usefully be addressed through new research or analysis. Council was specifically interested in commissioning, perhaps jointly with other funders, a project to examine the extent to which the distribution of funding for independent postdoctoral research in the UK was characterised by underrepresentation of women among applicants and/or lower success rates for women applicants and whether any gender differences in success rates might be due to subjective factors.
- These recommendations should apply to all the Society's selection panels.

The Society is committed to doing what it can to tackle the problem of underrepresentation of women in science and will be ensuring that it takes a joined up approach to collecting data, analysing it and taking action where any problems are identified in relation to its own schemes. This will be a priority for the Society.