

Report on Women in Science, Engineering and Technology for Patricia Hewitt

by
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DIRECTOR

The Trust wishes to fund only excellent research in biomedical science. In this respect we aim to fund the best scientific researchers regardless of gender. To ensure that the Trust's research funding systems are equitable and fair we have championed the investigation of the UK's research funding allocation methods and have examined the barriers which women face in achieving success within the UK Higher Education (HE) system. I thought it may be useful to outline this work before answering the specific questions you raised in your letter¹.

The publication in 1993 of the report from the Committee on Women in Science and Engineering, *The Rising Tide*, was the impetus for an attitudes survey by the Wellcome Trust². This report highlighted factors which may dissuade women from entering a scientific career and informed two significant policy developments at the Trust. Firstly in 1994, the Trust launched a Research Career Re-Entry Fellowship scheme. These are 4-year awards aimed at postdoctoral scientists who have recently decided to recommence a scientific career, after a break of normally at least two years. Applicants are provided with the opportunity to return to high-quality research following a previously successful scientific career. Fifteen of the sixteen Re-Entry Fellows are female and all the successful candidates quoted "family" in some way as the reason for their career break. Secondly, the Trust adopted a more flexible approach to the funding of research in relation to all its schemes. For example, the Trust removed age constraints in eligibility criteria for funding, instead, aiming schemes at researchers at a particular stage in their careers. We now consider applications from individuals who have started their career late, taken a career break or worked part-time due to personal or family reasons. In all of its funding schemes, the Trust encourages applications from researchers who wish to work part-time, as we recognise that many biomedical scientists need to balance their family commitments with career progression.

As you know, peer review is the mechanism used by most research funders to inform its decisions about which research applications to fund. In 1997 a Swedish study provided evidence of direct gender discrimination. The study showed that women in Sweden needed to be two and a half times more productive in terms of publications than their male counterparts to get the same rating for scientific competence³.

These findings generated considerable interest in the UK and led the academic community to consider the possibility of gender discrimination in the allocation of research funding. In response to these concerns the Trust, in partnership with the UK Medical Research Council, showed that success rates for women and men were broadly comparable, and there was no evidence of direct discrimination within their funding allocation mechanisms⁴. An additional finding of this study was evidence that women were considerably less likely than their male

¹ This response was sent to Baroness Susan Greenfield on the 30th May 2002, more information on the report being led by Susan Greenfield on women in science, engineering and technology (SET) in the UK may be found on www.celerity.org.uk/

² *Women in Science: Attitudes of university students towards a career in research*. Wellcome Trust, 1994.

³ Wenneras C. and Wold A., 1997, *Nepotism and Sexism in Peer Review*, Nature, vol. 387, pgs. 341-343.

⁴ *Women and Peer Review: An Audit of the Wellcome Trust's Decision Making on Grant*, Wellcome Trust, 1997; Grant J., Burden S. and Breen G., 1997, *No evidence of sexism in peer review*, Nature, vol. 390, pg. 438.

colleagues to apply for research funding, shifting the line of inquiry from the research awarding process to funding application behaviour. In response to interest in this area, the government asked all UK Research Councils to begin to monitor the success rates of female and male scientists applying for research grants and fellowships⁵.

A number of important questions were raised for the Trust as a research funder:

- Why are women in academia less likely to apply for research funding than their male colleagues?
- What are the key structural, organisational and cultural factors which influence propensity to apply for research funding and the ability to secure it?
- What action can funding bodies and HE institutions take to ensure that suitably qualified women and men in academia have equal access to funding opportunities?

It was to address these crucial questions that the Trust formed a consortium with the Research Councils and commissioned the National Centre for Social Research to carry out a survey of academic staff from the UK's Higher Education Institutions, exploring how gender may be a determinant of grant application behaviour. Again this survey, *Who Applies for Research Funding?* found no evidence of direct gender discrimination in the allocation of research funding indicating that the grant and fellowship allocation process is fair⁶. However, the study indicated that deep-rooted factors relating to scientific career structures may affect gender differences in grant application behaviour. The report concludes that a fundamental review of institutional employment practices and career structures may be required in order to ensure a more equal distribution of research funding and that funding bodies may be in a position to encourage best practise in this area.

The Wellcome Trust is very supportive of the promotion of women in science. The Trust is keen to be involved with the current report on *Women in Science Engineering and Technology* and will be attending the working group meetings which have stemmed from the discussion forum. In the accompanying pages I have answered the specific questions in your letter. Please do not hesitate to contact me for further information on any of the issues raised.

Yours sincerely

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DIRECTOR**

Cc. Office of Science and Technology

⁵ Department of Trade and Industry, *Success Rate for Women Scientists to be Monitored*, DTI Press Notice, 27 November 1997

⁶ *Who Applies for Research Funding?* Wellcome Trust, 2001.

Question 1:

What steps, if any have you taken since the RC-Wellcome report to encourage more women to apply for research funding? And what has been the impact, i.e. has there been any change in the number of applications and success rate for all or any of your schemes or programmes?

1. The findings of the *Who Applies for Research Funding?*⁵ study show that this is a complex issue which may not be solved by simply encouraging more applications from women. Factors such as women leaving scientific careers or being ineligible for funding also need to be considered. We monitor the gender of applicants for Trust awards and recent data relating to numbers of applications compared to success rates for certain Trust schemes is supplied in Appendix A. This includes some data on success rates from preliminary applications to the Trust through to award, for two fellowship schemes. The number of women applying for Trust funding decreases with the seniority required to be eligible to apply (59% of Trust PhD studentships are awarded to female applicants). It should be noted that only about 10% of those in professorial positions in UK Universities are female and that women leave academic careers at a higher rate than their male counterparts⁶.

Question 2:

What other measures do you have in place to address equality and diversity among your research community and scientific staff and how do you report on progress?

2. Gender and ethnicity are monitored by an Equal Opportunity Monitoring form, sent to all applicants for Trust funding and also to Wellcome Trust staff. The findings from these forms are reported annually to the Trust's Executive Board.

Question 3:

How do you select people for your peer review process and other committees and please could you outline the process and progress that has been made to achieve a better gender balance. For example – how do you set up a committee (or replace members) and is it done in an open and transparent manner? If you use merit as a key criterion how do you define merit?

3. Membership of Panels and Advisory Boards across all areas funded by the Trust, (which also includes biomedical ethics, history of medicine and the medicine in society programme), are chosen by a combination of staff, Governors and recommendations from existing Panel members. This is effectively a form of 'peer' approval. Membership of Panels and Committees is on a three-year basis. Lists of members are publicised (on our website, www.wellcome.ac.uk/en/1/biosfg.html and in the Wellcome Trust Annual Review, available on request).
4. The membership of Trust Panels is primarily guided by the requirement for scientific excellence and expertise. The Trust is conscious of the gender-balance of Panels and advisory bodies and endeavours (where possible) to ensure membership of the Panels is balanced, not only by gender but also so there is a spread of expertise by subject area, geographically, by university and by seniority.
5. The Trust also appreciates that there is an imbalance regarding appropriately qualified women in senior academic positions who make up the pool of potential appointees for such positions, making these individuals are highly sought after as Panel members. In addition such women are sometimes clustered in certain institutes and, as the Trust excludes from discussion all Panel members who may have a conflict of interest, we

⁶ *Science policies in the European Union: Promoting Excellence through mainstreaming gender equality*. A report from the ETAN Expert Working Group on Women and Science, 2000.

generally try to avoid having more than one representative from any institute on any one of our Panels.

Question 4:

Have the criteria that you use been tested with men and women to see if there is any unintended bias?

6. As we do not have a formal set of criteria for appointing these individuals, we do not formally check for unintended bias. However, our award rates are broadly equal for men and women (as seen in the report *Who Applies for Research Funding* and also in Appendix A), indicating that there is no in-built bias in our Panel process.

Question 5:

What is the council's policy on maternity pay and leave for grant holders?

7. The Trust's policy on maternity pay or leave for grant holders is recognised to be generous (see the Trust web page *Opportunities for flexibility in career development* www.wellcome.ac.uk/en/1/awtvispolwmmnflx.html). When an individual takes maternity leave during a grant or fellowship, the awarded is supplemented with 18-weeks maternity pay and may be held in abeyance for the duration of the maternity leave period. We also support part-time working on all our Fellowship schemes and grants, providing it is still feasible to carry out the scientific research. This is on a full-time equivalent basis, so Fellowships are extended commensurate with the percentage of time worked. We treat late-starters sympathetically and we have no age limits on any of our schemes.

Question 6:

If the Council employs its own staff – have you undertaken a gender-pay audit and if there is a gender pay gap what steps are being taken to eliminate it and monitor it in the future?

8. The Trust does not directly employ its own research staff but currently employs almost 600 administrative staff in London. The Trust introduced routine monitoring of its workforce several years ago. The grade structure is analysed by gender and ethnicity but the Trust has not carried out a specific gender-pay evaluation. A similar number of staff is employed at the Wellcome Trust Sanger Institute, by a wholly owned subsidiary of the Trust, Genome Research Limited (GRL). Data on Trust staff are included at Appendix B and information regarding GRL employees at included at Appendix C.
9. In addition, although the Trust does not directly employ researchers in universities, the Trust appoints Fellows to its own salary scales, that are on average 30% above the equivalent University pay scale. Trust fellowship salary scales are not influenced by gender, but are influenced by applicant's salary at the time of application.

Question 7:

Regarding the exploitation of the outputs of the research you fund – what is the percentage of women taking part in your activities – is there any gender difference and if so are women being targeted actively to participate?

10. As regards the exploitation of research outputs, Catalyst BioMedica Limited (Catalyst) is a wholly owned subsidiary of the Trust which aims to translate Trust-funded research into health benefit. Development Fund awards are administered by Catalyst to fund applied research either within an institution or in an early-corporate environment. Some data comparing the gender of applicants to this scheme are given in Appendix D. Again, although the scheme does not disadvantage women, fewer enquiries are received from female applicants.

Appendix A

Equal Opportunities monitoring

Wellcome Trust Fellowships and Grants 2000-2001

In the period October 2000 to September 2001, a total of 684 (29%) women and 1564 (66%) men applied to the Trust (with 5% unknown, as some applicants for Trust funding do not state their gender). The overall success rate is higher for women (43%) than for men (38%). Women apply in smaller numbers than men for all grant types except studentships.

Award type	Female Applicants	Male Applicants	Total Applicants
	% success rate (awards)	% success rate (awards)	% success rate (awards)
Studentship	89% (97)	85% (68)	87% (165)
Fellowship	31% (54)	30% (84)	30% (144)
Project grant	29% (84)	32% (253)	31% (356)
Programme Grant	24% (4)	43% (30)	40% (36)
Total awards by number	30%	59%	
Total awards by value	17%	76%	

Research Career Development Fellowships 2000-2001

(3-6 years post doctoral experience)

	Female	Male	% Female
Rejected following preliminary application	24	25	49%
Applications selected to go to Panel	20	39	34%
Applications selected to go for interview	10	17	37%
Awarded	7	9	43%

Senior Fellowships in Basic Biomedical Science 2000-2001

(5-10 years post doctoral experience)

	Female	Male	% Female
Preliminary application	25	87	22%
Applications selected to go to full application	7	25	22%
Applications selected to go for interview	3	12	20%
Awarded	2	6	25%

Appendix B

Wellcome Trust staff – recruitment, gender and salary band

In June 2001 the Trust employed 555 staff; 328 staff (59%) female and 227 staff (41%) male. In terms of the recruitment process for the period October 2000 to September 2001, for female applicants 31 job offers were made from 994 applications, a ratio of approximately 1 offer per 32 applicants. For male candidates, this figure was 1 offer per 47 applicants (21 offers for 986 applications).

	% Female	% Male	% unknown/not recorded
Application made to the Trust	47%	47%	6%
Interviewed by the Trust	52%	40%	8%
Offer made to candidate	60%	40%	-

The grade structure by gender is shown below, for the period October 2000 to September 2001. Please note that there are more female employees at the Wellcome Trust than male.

Personal Grade	number Female	number Male	Total number of staff at this grade
Grade 0	3	0	3
Grade 1	15	32	47
Grade 2	43	19	62
Grade 3	77	21	98
Grade 4	65	32	97
Grade 5	33	39	72
Grade 6	50	34	84
Grade 7	16	20	36
Grade 8	18	9	27
Grade 9	1	4	5
Ungraded	7	17	24
Total	328	227	555

Appendix C

The Wellcome Trust Sanger Institute – recruitment, gender and salary band

During the period March 2001 to March 2002, there were 1,040 applicants for positions, consisting of 406 females and 634 males.

A total of 593 staff are currently employed and the grade structure by gender is as follows:

Personal Grade	number Female	number Male	Total number of staff at this grade
Grade 1	36	27	63
Grade 2	57	41	98
Grade 3	64	49	113
Grade 4	22	20	42
Grade 5	24	38	62
Grade 6	39	31	70
Grade 7	8	33	41
Grade 8	17	41	58
Grade 9	5	16	21
Total	272	296	568

Staff numbers are made up by ungraded PhD students.

Appendix D

Translation of research outputs - Data from Catalyst

30 Development Fund awards have been made during the period Nov 1998 to May 2002.

21 awards have been made to researchers in UK universities during the period. Three of the awards have been made to female scientists, either as principal applicants or co-applicants, and eighteen awards were made to male scientists.

Nine awards have been made to start-up companies rather than specific individuals. Of these, one can be traced back to a female academic, the rest to male academics.

Figures for the numbers of male and female applicants to the Development Fund have not been included, however the balance of male to female applicants is very similar to that of the number of awards, approximately 85 - 90% male compared to 10 - 15% female. There is a staged preliminary and full application procedure that is handled by individual Business Teams.