Call for evidence

The Royal Society of Edinburgh, with the involvement of the Chief Scientific Adviser for Scotland, is addressing the challenge of developing a cohesive and comprehensive strategy for Scotland to tackle the under-representation of women in science, technology, engineering and mathematics (STEM). The principal aims are to identify factors that appear to limit the proportion of women in the STEM workforce, and to seek to introduce measures that may increase the number who rise to senior positions in universities, institutes, public and professional bodies, business and industry.

The Working Group, led by Professor Dame Jocelyn Bell Burnell, has launched a call for evidence and we are seeking input from academia, business, industry, Government, interest groups and members of the public to inform this important project. Please circulate this document to other interested parties. We welcome submissions as soon as possible, and before 19 August.

Submissions

We prefer to receive submissions by email to cwallace@royalsoced.org.uk. If you would like to make a postal submission, please send to: Dr Caroline Wallace, The Royal Society of Edinburgh, 22-26 George Street, Edinburgh EH2 2PQ. For either type of submission please attach/enclose the respondent form included at the end of this document.

Please keep submissions to a maximum of six pages.

Background

The imperative

There is widespread agreement that science underpins key sectors of the Scottish economy and is a vital component in the creation of economic growth. But in order to achieve sustainable economic growth we must make best use of the skills of our people to boost productivity, and support the flow of knowledge from our universities and colleges into wealth creation. The Royal Society of Edinburgh believes change is necessary to ensure Scotland makes full use of its available talent by tackling the under-representation of women in the science, technology, engineering, and mathematics (STEM) workforce.

The under-representation of women in STEM is of particular concern when the strategic importance of this field is considered: economic growth relies heavily on innovation and knowledge, especially in science and technology. It has been estimated that increasing the participation of women in the UK labour market could be worth between £15 billion and £23 billion (1.3-2.0% GDP), with STEM accounting for at least £2 billion.

Although recent years have seen significant increases in the number of female STEM graduates and postgraduates, the numbers who proceed to take up senior positions in universities, research, business and industry remain proportionately much smaller than in the case of their male counterparts. In a straitened economy where education is free, the failure to provide a
place where skilled individuals – whether male or female – can progress and thrive is a wasted investment in human capital and represents a serious loss of potential for Scotland.

**Women in the STEM workforce**

In Scotland there are over 60,000 female STEM graduates of working age. However, only 29% of these are using their qualifications to work in SET occupations compared with 52% of men. Women who do go on to pursue careers in SET are more likely to have STEM graduate level qualifications than their male colleagues. Male graduates who enter SET occupations are much more likely to enter at higher levels than female graduates and are more likely to take up management positions. At the UK level, nearly 100,000 female STEM graduates were either unemployed or economically inactive in 2010. The apparent lack of part-time or job-sharing opportunities in SET may contribute to these figures.

There is a growing body of evidence demonstrating that the inclusion of women in workplace teams and on company boards significantly increases organisational performance and profitability, and improves corporate governance. Despite this evidence, the Davies report ‘Women on Boards’ (2011) found: women account for only 10.7% of the directorships in SET FTSE 100 companies compared to 14.7% for the non-SET companies; almost 30% of the SET companies in the FTSE 100 have no female directors on their boards at all, compared to 9% of the non-SET companies.

Women outside business and industry fare no better, making up only 11.6% of the highest paid category of STEM academic staff and 23.7% of all members of SET public bodies in 2008. Additionally, the ratio of full-time to part-time academics, at all levels, showed that proportionally more women than men work part-time.

**Scope**

The strategy will address the vertical segregation of women in the science, technology, engineering and mathematics (STEM) workforce from postgraduate level to senior positions in universities, institutes, public and professional bodies, business and industry. It will also consider the support for women in entrepreneurship.

**Inquiry process**

Attracting and retaining more women in the STEM workforce to boost economic growth is a public policy challenge which demands public, private and third sector solutions.

The Working Group will take evidence from experts in the field, STEM practitioners and employers, and engage with stakeholders during the process through specific discussion fora. A formal written consultation will take place during the summer with a final consultation event in October, arranged with the Foundation for Science & Technology. This will review the evidence and recommendations in the RSE report and will involve experts familiar with relevant evidence; representatives of the STEM base and those with executive responsibility in business, institutes, universities and colleges that employ STEM graduates. The Working Group will publish its final report in November which will provide reasoned recommendations to those who have a key interest in STEM such that the full potential of women in science can be harnessed more effectively.

The project is being led by Professor Dame Jocelyn Bell Burnell FRS FRSE (Visiting Professor of Astrophysics at the University of Oxford) and draws on the expertise of a high-level Working Group comprised of:
CALL FOR EVIDENCE

- Professor Alice Brown FRSE (Deputy Chair), Former Vice-Principal, University of Edinburgh
- Professor Geoffrey Boulton FRS FRSE, Regius Professor of Geology Emeritus, University of Edinburgh
- Professor Anne Glover FRSE, Chief Scientific Adviser for Scotland, Scottish Government
- Professor Rebecca Lunn, Professor of Civil Engineering, University of Strathclyde
- Mr Jim McColl FRSE, Chairman and Chief Executive, Clyde Blowers Ltd
- Professor Teresa Rees AcSS (Special Adviser), Professor of Social Sciences, University of Cardiff
- Dr Susan Rice FRSE, Managing Director, Lloyds Banking Group Scotland
- Professor Wilson Sibbett FRS FRSE, Professor of Physics, University of St Andrews
- Ms Linda Somerville, Director, Scottish Resource Centre for Women in SET
- Professor Bonnie Webber FRSE, Professor of Intelligent Systems, University of Edinburgh

Key questions

This call for evidence seeks input in the form of ideas, evidence and suggestions from all organisations and individuals with an interest in science, technology, engineering and mathematics.

Some topics that you may wish to comment on are listed below. These are by no means exhaustive, and we welcome comments on other issues that you believe should be considered:

1. What do you see as the opportunities and challenges facing the STEM workforce in Scotland today?

2. What do you see as the current barriers to the recruitment, retention and progression of women in the STEM workforce?

3. What steps are being taken within your organisation and/or sector to enhance the career options and progression routes for female staff members?

4. What further steps could/should be taken within your organisation and/or sector, including any specific policies and practices?

5. More generally, how could the potential of women in the STEM workforce be more effectively and efficiently realised? Who would be responsible for implementation and what support would be required?

6. Do you think there needs to be any changes to existing employment law? If so, in what areas?

7. Are you aware of any existing resource that is effective in addressing the under-representation of women in STEM?

The Royal Society of Edinburgh (RSE) is Scotland’s National Academy. It is an independent body with a multidisciplinary fellowship of men and women of international standing which makes it uniquely placed to offer informed, independent comment on matters of national interest.

The Royal Society of Edinburgh, Scotland’s National Academy, is Scottish Charity No. SC000470
CALL FOR EVIDENCE

LIFTING BARRIERS TO WOMEN IN SCIENCE, TECHNOLOGY, ENGINEERING AND MATHEMATICS: A STRATEGY FOR SCOTLAND

Respondent Form (word version here)

Your details

Name including title:

Position and Organisation (if applicable):

Email address:

Postal address:

Telephone:

About your response

Are you responding independently or on behalf of an organisation?

☐ Independent  ☐ Organisation

May we include your name/your organisation’s name in the list of respondents that will be published in the final report?

☐ Yes  ☐ No, I/we would prefer to be anonymous

If you have answered yes, please give your name or your organisation’s name as it should appear in print:

May we quote your response in the report and make it available on the RSE website when the report is published?

☐ Yes  ☐ No

☐ Yes, anonymously*

*If you select this option, please note that your response will be published in full (but excluding this form), and if you wish to be anonymous you should ensure that your name does not appear in the main text of your response. The Royal Society of Edinburgh cannot take responsibility for anonymising responses in which the individual or organisation is identifiable from the content of their response.