ATHENA FORUM

Report 1

Women's Career Progression and Representation in Science, Technology, Engineering, Mathematics and Medicine (STEMM) in Higher Education.

A Guide to Good Practice for Professional and Learned Societies

FOREWORD

This, the first report by the Athena Forum, outlines what the organisations represented on the Athena Forum are doing to lead, influence and inform action to improve the representation of women in university science, technology, engineering, mathematics and medicine (STEMM) departments. The good practice described in this report is effective, it makes a difference, and in most cases costs little other than the thought, the time and the commitment involved in developing the initiatives, many of which could be adopted by other professional and learned societies.

Work by the Athena Project, the Forum's predecessor, and by the societies represented on the Forum, suggests that, although, there are discipline differences, the ways to improve women's career progression across STEMM are effectively the same. And, importantly, the good practices adopted by the 'best' university departments benefit all: staff and students, men and women alike, benefit from the supportive and inclusive culture such departments develop.

We hope that other UK professional and learned societies will read and discuss this report. As Forum members, we shared the good practice of the societies we represent, and we realised how much we had to learn from each other. We have all made a commitment that the societies, who nominated us, will discuss this at the highest level, and review their policies, practices, and activities in the light of this report.

The Forum will return to this topic early in 2010, when it will widen its discussion to include the work of societies not directly represented on the Forum. Societies who wish their good practice to be included in our 2010 report, should contact athenaforum@royalsociety.org

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INTRODUCTION

The Athena Forum's mission is to provide a strategic oversight of developments that seek to, or have proven to, advance the career progression and representation of women in science, technology, mathematics, and medicine (STEMM) in UK higher education. The Forum explores gaps and challenges, and identifies and commends national and international excellence in supporting women in science. It is the expert voice from within and for the science community. Its members are nominated by the UK's leading scientific professional and learned societies. The Forum is based at and supported by the Royal Society.

The Athena Forum is one of three legacy organisations who continue to build on the achievements of the Athena Project [1]. Work by Athena and its partners clearly showed that bad practice in universities and science departments incrementally prejudices women's career progression, and that good practice is not just about how many women there are in a department, but is about processes that are fair, flexible and transparent to and for all.

Work by the Athena Project, and the Athena SWAN Charter have provided the Forum with a fairly clear view of what is happening in universities and their STEMM departments. However, the Forum did not have a similarly clear view of the wider picture, and what other key stakeholders were doing and planning. So, the first task the Forum set itself was a review of good practice for women and science by the professional and learned societies represented on the Forum. The report describes:

1 The ways societies organise their women and science activities, and demonstrate their commitment to improving the participation, representation and progression of women in science and in society activities

2 The career development opportunities and programmes societies offer their members, fellows, and academic scientists

3 The societies' interactions with university departments

THE WIDER UK PICTURE

Looking across a spectrum of UK professional societies, the Forum identified some features, which had slowed progress/allowed the reinvention of the wheel - the lack of interaction (at staff, and member levels) between societies and disciplines, and the societies' widely differing levels of resource and expertise.

[1] Information on the Athena Project (1999 to 2007) ,copies of its reports and case studies, information on the work of the two other Athena legacy organisations , the Athena Partnership and the Athena SWAN Charter, and the professional and learned societies represented on the Athena Forum are available on www.athenaforum.org.uk

In some societies the issues of women and science still fight for a place alongside other priorities, and for restricted funding. In others, women's groups were likely to be 'tolerated', and left to their own devices, rather than integrated into the societies' organisational structure.

Good work had sometimes resulted from chance, when a Committee Chair/Honorary Officer and a staff member shared an interest in women and science. However, if the consequential workload is not recognised in the staff members' workload, progress can stop when Chairs/Officers move on.

It seemed that societies in disciplines which were female-dominated at undergraduate level, and with higher percentages of women at senior levels, tended to focus on initiatives, such as mentoring, that targeted individual women. For societies in male-dominated disciplines the focus was more on changing the culture and environment of the workplace to support and encourage women's retention and career progression.

It was the Forum's view that initiatives which supported individuals could be valuable, and were often a good starting point, for departments and societies. However, on their own, they could not effect a change in culture. There was a danger that such initiatives in isolation might reinforce the deficit model ('the problem is the women'), fitting the women to the culture, rather than changing the culture.

WORK BY SOCIETIES REPRESENTED ON THE FORUM

The societies vary, in their size, history, culture, and resources. Several actively promote external HE initiatives, notably the Athena SWAN Charter and SWAN Recognition Awards. Some are developing their own schemes to encourage, recognise and benchmark good practice; schemes which tie in with Athena SWAN. Generally, they focus their activities on what they have identified as the key career points where well qualified women scientists in their disciplines 'give up' on academic careers.

The societies all undertake research, to inform policy makers and research funders. However, some of this potentially valuable research does not get published, publicised to their membership, or disseminated beyond the organisation, although it would be of interest to a wider audience. More resource goes into researching and understanding issues, and identifying problems, than into the identification, encouragement and dissemination of good practice. 'Hidden' within such work, there are often examples of good practice, which could be useful, but which don't reach those who could make use of them. So, no one organisation has yet got it all right [2], but they can and are learning from each other. The Forum hopes that this report will help spread the word about the different approaches and successful initiatives amongst key professional bodies, and so further the dissemination of good practice.

[2] Where the activity described below is common to several societies, they are not individually named. Where one or more have broken new ground/ are developing structured approaches which other societies might wish to emulate, they are named

SOCIETIES' ORGANISATION AND DEMONSTRATION OF COMMITMENT

COUNCILS, PRESIDENTS, AND CHIEF EXECUTIVES

Some societies included diversity as a top priority, and include it in their strategic plan, and their Presidents make clear their expectations that:

> The society will measure and report the effectiveness of what they do
> Honorary Officers and senior Council members will be actively engaged
> Senior management will both engage with, and be held accountable for planned action

Society chief executives can make a make difference and one that can last, for example by naming rooms in new buildings after women scientists. However something that has proved more problematic to overcome is the 'portrait gallery.' Societies tend to have large and imposing oil paintings of men, long dead, painted by distinguished artists, which dominate their Council Rooms and large public spaces, while small photographs of more recent women, and men, occupy narrower corridors and smaller spaces and so are largely invisible.

LONDON MATHEMATICAL SOCIETY COUNCIL STATEMENT ON WOMEN AND MATHEMATICS

Forum members particularly commended the London Mathematical Society Council for their statement, published in 2008, which clearly articulates the situation in mathematics, and the society's commitment to a number of simple actions, none of which had significant resource implications for the society:

> *The London Mathematical Society is concerned about the loss of women from mathematics, particularly at the higher levels of research and teaching, and at the disadvantages and missed opportunities that this represents for the advancement of mathematics. This can occur for several reasons:*
>
> > *Women are more likely to have had broken career patterns or worked part-time on account of child-rearing and family responsibilities*
> >
> > *The fact that there are fewer women in the mathematics community means that they are often overlooked when names are sought, for speakers or for prizes, for instance*
> >
> > *Those few women who reach the higher levels are disproportionately called on to sit on committees etc., to the detriment of their own careers*
> >
> > *Women are often called on to take part in 'people-based' activities rather than 'research-based' activities, to the detriment of their own careers*
> >
> > *Compared with men, women tend not to press their case but to understate their skills*

The Society recognises the need to give active consideration to ensuring that men and women are treated equally in their prospects, recognition and progression. Such disadvantages as do occur are often the unintentional outcome of the formulation of regulations and procedures which do not give adequate attention to the needs of people in such positions. Accordingly, the Society will:

be aware of and seek to ensure an appropriate gender balance on its committees and working groups, and encourage the Nominating Committee to give similar attention in its proposals for election
keep under review the regulations governing its membership, prizes, awards and grants to ensure that they do not inadvertently deter or fail to recognize people with non-standard career patterns
actively encourage and facilitate the nomination of women for its prizes and awards, and ensure that it considers women when it is proposing nominees for external prizes and positions
actively seek to include women speakers in its meetings and workshops
expect that the organisers of conferences and activities who are seeking grants from the Society will: invite both male and female speakers, or explain why this is not appropriate or possible; and give consideration to the provision of mechanisms to enable participation by people with children or family responsibilities
collect data and thereby monitor trends in the above.

Forum members believe this provides an excellent set of statements and aims which other societies might like to consider adopting.

WOMEN AND SCIENCE GROUPS

Several societies have well established women and science member groups (some including men), whose contributions are recognised and valued. The groups have a track record in delivering effective action programmes. Others have women and science/diversity committees, which include the chief executive, staff at director level, and council members. They have a budget, report direct to Council and have a clear role/remit, for example:

Advising and supporting the senior staff responsible for diversity/women and science
Reviewing/flagging issues on which the Council/ President could take action/make representations to science/HE funders /Government bodies
Influencing the society's policy and action
Recommending action to improve women's representation, participation and progression
Monitoring both the society activities and decision making and university staff and student profiles
Organising/fronting/hosting women and science events
Advising and supporting STEMM departments in the development of good practice

REPRESENTATION AND PARTICIPATION OF WOMEN IN SOCIETIES

The societies all recognised the importance of collecting and analysing statistics on their own activities. However, some only had informal mechanisms for monitoring, reporting, and taking action on the results of monitoring, and their mechanisms did not, for example, include the individuals they nominated to serve on, or represent them on external bodies.

Monitoring included:

- The M/F balance of those nominated for and elected to fellowship, to council, and as committee chairs, honorary officers, editorial board members
- The M/F distribution of winners and nominees for society prizes and medals, and holders of society awards/grants holders
- The M/F balance of representatives nominated to serve on national/governmental boards, panels, advisory committees
- The M/F balance of speakers at society events/lecture series/conferences
- The M/F representation on society funded schemes

London Mathematical Society

The LMS expects organisers of event/conferences, who seek grants, to invite both male and female speakers, or to explain why this is not appropriate/possible. It has changed its regulations for prizes, and membership, and replaced age restrictions with clear requirements on career stage and the number of years worked at full-time equivalent. It decided against quotas on women members of committees on the basis that the relatively few women active on committees should not find themselves compromising their careers with too many additional calls on their time. It reimburses additional childcare costs incurred by individuals carrying out LMS business.

The Royal Society

The RS monitors its programmes and activities for inclusivity. Individuals attending public events are asked to complete a voluntary registration form. Figures for 2006 showed that 42 % of audiences at public events were female, 14 % from the ethnic minorities, 2 % were registered disabled, overall 44 % were under 40, and 51 % had not previously attended an RS event.

CAREER DEVELOPMENT OPPORTUNITIES AND PROGRAMMES

Forum members recognised that if women, or indeed men, failed to understand their personal responsibility for their own career progression there would be a limit to the success of any opportunities offered. Individuals' responsibilities were seen to include their making sure that:

> They knew what was on offer from their societies, their departments/universities, and knew about internal and external research fellowship opportunities
>
> They picked up on opportunities for career development, for improving their professional visibility, internally and externally, for networking and for developing transferable skills

RESEARCH FELLOWSHIPS

The Royal Academy of Engineering and Royal Society

The RAEng and the RS both run fellowship and grant schemes. The provisions which holders are encouraged to take up include for example media training, communication skills, career guidance, mentoring, innovation skills, personal development training. They also make clear their expectations that employers will make time available for holders to participate in appropriate development activities. Travel costs and additional childcare costs are usually offered.

The Royal Society

The RS established the Dorothy Hodgkin Fellowship scheme in 1995. It supports excellent scientists and engineers, at an early stage of their career, and offers a flexibility that is particularly useful to women. The scheme's aim is to retain excellent scientists and engineers in research careers, who might leave research without the option of flexibility. The flexibility offered by this scheme is now built into all RS funding programmes. Their Flagship University Research Fellowship scheme shows a steady increase in the diversity of applicants and holders. Women are now some 25 % of those appointed.

The Academy of Medical Sciences

The AMS/Health Foundation Clinician Scientist Scheme provides integrated career development support, targets areas of medicine that are not well supported by traditional funding schemes and has appointed >30 % women.

NETWORKS AND SUPPORT FOR MEMBERS

Most societies support women members networks, and encourage role model activity, for example including a women's network event in the programme of their annual meeting/conference and offering specific events which:

- Encourage women to network and to meet others in their own area of work, or who are facing similar issues
- Raise women's awareness of the activities which are important in helping individuals to raise their professional visibility/profile
- Allow women to share their research and celebrate their research success
- Offer the opportunity for women to share each others' career progression experiences

Some societies also offer bespoke careers advice and Continuing Professional Development to all members

The Royal Society

The RS recently established regional Research Fellows' Networks for University Research and Dorothy Hodgkin Fellowship holders. They meet yearly and give research fellows the opportunity to discuss fellowship issues in an informal setting and to exchange experiences of career progression in different departments/universities.

London Mathematical Society

LMS organises an annual Women in Maths day which is particularly well attended by postgraduates. The morning session of talks, from successful women mathematicians, is followed in the afternoon by shorter talks from early career women. The day offers a friendly environment and a supportive audience and the opportunity over lunch for sharing experiences and asking for advice.

CAREER BREAKS

Institute of Physics

The IOP makes financial support available (subject to criteria) for women, and men, who are on career breaks to attend meetings. It offers reduced membership fees and conference fees for those on career breaks and with reduced incomes. Its booklet *Best Practice in Career Break Management* is available to all.

London Mathematical Society

The LMS' Grace Chisholm Young Fellowships provide support, when a mathematical career has been interrupted by family responsibilities, relocation of a partner, or similar circumstances. The financial support is small, but is sufficient to provide the holder with a position in an academic institution, and thus access to resources, and to other mathematicians, the pre-requisites to remaining current in their subject.

SOCIETIES INTERACTIONS WITH UNIVERSITY DEPARTMENTS

The extent to which societies engage with university departments varies, as does their relationship with their Heads of University Departments committees. Some actively seek to engage them in action on women and science. Societies with limited resources may not have expertise at staff level, and have to rely on their membership to make things happen. However, there is now a significant amount of good practice material from the Athena Project, the Athena SWAN Charter, the Institute of Physics and the Royal Society of Chemistry, which societies could endorse, publicise and recommend to departments.

UNIVERSITY STAFF AND STUDENT DATA

Most societies monitor M/F participation rates, using HESA data, at undergraduate, post graduate, and all staff levels. However, few make their analysis/findings available to university departments or to members generally.

Institute of Physics and Royal Society of Chemistry

IOP and RSC regularly publish reports on undergraduate and post graduate students and staff by grade and gender. This gives them an overview of the gender profile of UK university departments, and attrition rates/patterns, and helps to identify areas where interventions may be useful. They both plan to provide information on an annual basis, specifically for use by heads of university departments.

London Mathematical Society

LMS Women in Mathematics Committee gathered data from the previous RAE showing the proportions of women entered in various disciplines. This raised a number of concerns which were explored in a report which is on the LMS website.

PROGRAMMES WHICH ENGAGE UNIVERSITY DEPARTMENTS

Forum members particularly commended the Institute of Physics and the Royal Society of Chemistry, for their university programmes. The emphasis of both is on celebrating success rather than naming and shaming. Their work is resource intensive and requires expertise. However the tools that they are currently developing are designed to be useful to societies, with more limited resources.

Royal Society of Chemistry

Following work in 2003 on the recruitment and retention of women in academic chemistry, the RSC published its first Guide to Good Practice in 2004. This, a joint initiative with the Athena Project, was based on the work of 25 university chemistry departments. A follow up report, in 2008, covered 38 departments. The Good Practice Benchmarks developed from this work are currently being used to develop a Chemistry Good Practice Benchmarking and Recognition Scheme, which will also act as a ‘feeder’ for Athena SWAN recognition.

The Institute of Physics

Between 2003 and 2005 the IOP undertook a programme of departmental visits. An external panel spent a day investigating each department's gender friendliness, and how welcoming it was to female staff and students. A confidential report, sent to the head of department, highlighted both good practice and less satisfactory issues. A report on the scheme, which includes examples of good practice, is available. Subsequently, the IOP developed its Juno Code of Practice for university physics departments. Juno is complementary to Athena SWAN, and is designed to help departments on the journey to Silver and Gold Athena SWAN recognition

London Mathematical Society

The chair of the LMS Women in Mathematics Committee led a plenary session at the annual meeting of Heads of Departments of Mathematical Sciences (HoDoMs). This focused on the dramatic drop of women mathematicians at each level of seniority. HoDoMs supported the suggestion of a code, similar to the IOP Juno code, for mathematics departments and have worked together with the LMS to set up such a scheme. The scheme will be run by a committee comprising both LMS and HoDoMs members.

The Athena Partnership

The partnership aims to foster good practice in science in higher education, as part of the legacy of the Athena Project. It is working to make the tools developed by the IOP and the RSC available for use by a wider range of professional societies in their work with university departments. Membership of the Athena Partnership would enable other UK societies to support university departments in their respective disciplines.

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