

Leading the way

Increasing diversity in the scientific workforce

March 2013



THE
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Leading the way

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This report provides a review of the progress with the Royal Society Diversity Programme key themes: (i) to define and understand the scientific workforce; (ii) to identify barriers to entry and progression within the scientific workforce, with a view to removing them; and (iii) to increase the diversity of the scientific workforce; and a description of activities over the six strands of the programme:

Strand 1

Data gathering

Strand 2

Policy study

Strand 3

Engaging the community

Strand 4

Events, activities, and pilots

Strand 5

Education

Strand 6

Athena SWAN and ASSET

Background

At the end of 2011, the Royal Society Council agreed a new BIS-funded programme of leadership in the scientific community focused on removing barriers to increasing diversity in the scientific workforce. The programme will run over four years with total funding of £700,000 and complements a parallel programme being run by the Royal Academy of Engineering. While the two programmes are separate, there are a number of areas of overlap including comprehensive data gathering, pilot activities, and showcasing role models, and both academies are making the most of opportunities to work together on diversity events when launching research findings and programme activities.

The diversity programme focuses on understanding the character and make-up of the scientific workforce and on the removal of barriers to entry and progression within the workforce so as to lead to an increase in diversity. This includes academia and industry and covers gender, ethnicity, disability, and socio-economic status in the first instance. It is recognised that there is a vast amount of work and expertise already available on diversity across the scientific community, with numerous examples of good practice particularly in supporting and advancing women in science. This programme of work seeks to learn from and build upon this good practice, developing similar mechanisms for encouraging greater diversity in science

and cultivating leadership in the scientific community focused on removing barriers to increasing diversity.

For the purposes of the diversity programme, the scientific workforce is taken to comprise all those for whom their scientific knowledge, training, and skills are necessary for the work that they do, embracing the whole range from full-time scientists, technologists, engineers and medical practitioners to those in careers requiring scientific knowledge, training and skills to some significant degree – such as school teachers, nurses, surveyors, actuaries, economists, programmers, statisticians, technical sales staff, pilots, divers, scientific administrators and journalists, and numerous others.

Within its general commitment to promoting diversity, the programme is particularly focused on individuals making key career transitions, such as between:

- GCSE to further education or the workforce;
- Further education to university or the workforce;
- First degree to further study or the workforce; and
- Progression within the workforce (e.g. progression between levels such as apprentice/craft to technician, to junior professional, to manager, to director)¹.

¹ These are an illustrative example of key career transition points and there may be others identified during the programme.

Programme activity

Work so far has begun to answer questions such as ‘what is the scientific workforce and what does it look like?’ (Theme 1), in turn identifying where the gaps are in terms of diversity, why it is that they exist and what is already happening to overcome barriers and plug these gaps (Theme 2). Themes 1 and 2 combined are highlighting areas within the scientific workforce where existing practices still need to be addressed, in particular those where the Royal Society can usefully take a lead and others where the science community needs to work together to increase its diversity (Theme 3). Activities across these key themes are outlined below:

Strand 1 – data gathering

To date, a significant focus of the programme has been in relation to improving our understanding of the scientific workforce and recognising where gaps exist using existing quantitative data, and carrying out primary qualitative work to identify existing good practice and areas where the Royal Society could add value.

TBR Ltd and the Science Council were commissioned to investigate socio-economic status and diversity within the scientific workforce. The research included a literature review, quantitative data analysis of the Annual Population Survey, and qualitative research (interviews and focus groups) with the scientific community. The findings from this research were presented on 31 October 2012 at the collaborative RAEng/RS Diversity Data Seminar and are now being prepared in

more detail for dissemination at an event at the Royal Society on 30 April.

The same researchers have undertaken a scoping exercise exploring the feasibility of researching connections between socio-economic background and career routes, progression and variations using existing secondary data. Having completed the feasibility study, TBR Ltd have been commissioned to undertake this research into social mobility. The work began in early 2013, with the final report expected by the end of April 2013, and findings to be disseminated as part of the event on 30 April.

In addition, the possibility of an analysis of HESA data to identify at what point people leave academia, and when they do leave, where it is that they go, has been investigated and we propose to commission this research. These data will be analysed for higher education students and staff for all subjects, all STEMM subjects, and individual STEMM subjects, split by gender, ethnicity, disability, socio-economic status, and also UK/non-UK and multiple identities, hopefully over the last five years. It is proposed that this research will commence early in 2013 and be completed soon, with the first results disseminated in April.

Strand 2 – policy study

The policy study to articulate the business case for diversity is in its infancy at the moment. However, several members of the Diversity Programme Steering Group

and members of the Royal Society Equality and Diversity Advisory Network (EDAN) have formed the initial Policy Study Working Group. The policy study will specifically cover the following: (i) the economic case for diversity within the scientific workforce, building on the data in the Royal Society of Edinburgh's report 'Tapping all our Talents'; (ii) primary research to establish the difference diversity makes to science looking at optimum group size and diversity in relation to a range of productivity measures – are diverse teams more productive?; and (iii) bringing together the data and evidence to identify ways of creating diverse teams. This will build on good practice identified as part of the data gathering work and activities set up as part of the diversity programme.

Strand 3 – engaging the community

From the start of the diversity programme a number of consultation events and meetings have taken place, including a key stakeholder engagement conference to discuss the diversity programme themes and areas where the Royal Society can add value. The Royal Society hosts meetings of the Athena Forum, EDAN, and has held a number of meetings with the scientific community and others. A virtual network of professional bodies, learned societies, and research funders has been set up and it is anticipated that this group will meet soon. The Royal Society will host a one-day conference on Diversity at the Royal Society on 30 April 2013. This event will update the community on diversity activities taking place as part

of this programme and the wider diversity work at the Society, launching the results of the data gathering exercise and the diversity hub on the Royal Society website. Engaging the community is a key element of the diversity programme and will continue going forwards.

Strand 4 – events, activities, and pilots

Following the Steering Group meeting held at the end of September 2012, a number of possible pilot project areas are being scoped out. Those currently being taken forward include:

- Primary research into the recruitment practices of STEMM employers to identify good practice in recruitment, the value of apprenticeships, targeted recruitment, the role of work experience and internships, etc. and ways of disseminating good practice and sharing experiences across academia and industry.
- Research and practical activities exploring alternative access to STEMM education and on into STEMM careers, in relation to FE colleges, academies, and UTCs, and looking at the role of access courses, apprenticeships, and other vocational qualifications, as well as returning to STEMM careers and changing career paths/retraining in STEMM.
- The role of professional institutions in supporting diversity in the STEMM workforce, including providing role models, mentoring, and networking opportunities cross-institution.

- Providing the Secretariat to the STEM-Disability Committee and working collaboratively with other members to deliver a number of projects relating to supporting students and staff with disabilities.

Specific activities that have happened:

- A pilot project with Athena SWAN has been established to look at the compatibility of the current Athena SWAN framework with research institutes, and the Royal Society is working with Equality Challenge Unit and Athena SWAN to develop this;
- A very successful Wikipedia 'edit-a-thon' focusing on improving the online records of women in science using the Royal Society archives and library followed by a panel session on this topic was held on 19 October 2012. This event received a lot of press coverage and calls to hold more events like this;
- Research investigating the impact of the Athena Project and its related activities within STEMM higher education has been commissioned, with a report to be provided during the first half of 2013; interim findings were presented to the Athena Forum in 26 February;
- A number of meetings have been held to investigate apprenticeships, including meeting City and Islington College and the CBI to discuss their work on apprenticeships and vocational qualifications;
- An oral history project focusing in the first instance on scientists from different ethnic groups has been commissioned, with interviews, videos and dissemination scheduled to take place between January and May 2013. Depending on the experience of this project, it is hoped to expand the methodology to include gender and disability.
- The Royal Society, along with the rest of the STEM-Disability Committee, organised the STEM-DC Spring Conference to be held on the 28 February 2013 at the Society. The highly successful conference focused on supporting STEM students with disabilities and included sessions on reasonable adjustments to labs and facilities, assistive technologies, fieldwork and placements, maths and reading equations (Braille), and mental health awareness.
- A redesign of the Royal Society webpages on diversity to become a central hub that provides a portal for STEMM careers information, examples of good practice, case studies and role models showcasing diversity in STEMM, etc. This will also include a diversity blog that will link to other blogs as well as host blog posts on diversity;
- A Royal Society Pictures Working Group has been set up through EDAN that has reviewed the pictures on display at the Society and has put forward recommendations to Council for better representation of the diversity within

science and at the Royal Society. The proposal will include among other things, a public competition, artists in residence in STEM departments, rehanging existing artworks, and using our community to create art for display.

Strand 5 – education

The Royal Society is also carrying out another policy study looking at science education in which diversity features. The two programmes will work together to consider diversity in relation to key transition points (for example school, university, the workplace). At this point a final decision has not been taken as to the area of focus under this strand, although a number of proposals are being investigated, including looking at science education and attainment in different types of schools, including (but not limited to) single-sex schools, faith schools, fee-paying, and special schools. TBR Ltd have also looked into the possibility of using the British Household Panel Survey and Understanding Society survey to investigate trends in educational choices, types of school attended, attainment, and career profile. These proposals and others are currently being considered, with possible commissioning early in the 2013/14 financial year.

Strand 6 – Athena SWAN and ASSET

The Royal Society provides £20k of funding per year to Athena SWAN to contribute to the running of the Charter but also the pilot study with research institutes. Representatives from the Society are heavily involved in the formal evaluation of the

Athena SWAN Charter, the Athena SWAN Charter Steering Committee, and the Athena SWAN Charter research institutes pilot.

The Society's programme did not begin until the end of the first year of the four-year funding period, so as we approach the end of the first full year of activity, we have:

- An emerging picture of a complex landscape in the scientific workforce in terms of diversity
- Studies underway that will soon begin to explain how that complex picture came about
- A framework to deliver a policy study generating an evidence base on the most effective ways forward
- Engagement from a wide range of stakeholders including academia, private industry, SMEs, learned societies and others including specific mechanisms for working together
- A series of activities and pilots designed to test what might work on a larger scale and to increase the visibility of the importance of diversity issues
- A pilot on expanding the successful Athena SWAN brand beyond academia

Over the next two years, we will build this work into a fuller understanding of the landscape, a strong evidence base for action, a credible set of potential recommendations for the future and wide engagement with the process across a range of scientific sectors.

The Royal Society

The Royal Society is a self-governing Fellowship of many of the world's most distinguished scientists drawn from all areas of science, engineering, and medicine. The Society's fundamental purpose, reflected in its founding Charters of the 1660s, is to recognise, promote, and support excellence in science and to encourage the development and use of science for the benefit of humanity.

The Society's strategic priorities are:

- Promoting science and its benefits
- Recognising excellence in science
- Supporting outstanding science
- Providing scientific advice for policy
- Fostering international and global cooperation
- Education and public engagement



Founded in 1660, the Royal Society is the independent scientific academy of the UK, dedicated to promoting excellence in science

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