EPSRC
Engineering and Physical Sciences Research Council

STRATEGIC ADVISORY TEAM

SUMMARY OF 22nd June 2017 SAT MEETING NOTES
Marsh Farm, Royal Wootton Bassett

Attendees:

Members: Dr Veronica Bowman, Defence Science and Technology Laboratory
Professor Ken Brown (Chair), University of Glasgow
Professor Alan Champneys, University of Bristol
Mr Adrian Jonas, Cabinet Office
Professor Anne Juel, The University of Manchester
Professor Paul Linden, University of Cambridge
Professor Graham Niblo, University of Southampton
Professor Lasse Rempe-Gillen, University of Liverpool
Professor Ian Strachan, University of Glasgow
Dr Almut Veraart, Imperial College London
Professor Konstantinos Zografos, Lancaster University

EPSRC: Professor Tom Rodden, Deputy CEO EPSRC (from minute 4)
Dr Philippa Hemmings, Theme Lead, Mathematical Sciences EPSRC
Dr James Dracott, Manager, Building Leadership EPSRC
Dr Michele Erat, Senior Manager, Mathematical Sciences EPSRC
Mr Jan Taylor, Portfolio Manager, Mathematical Sciences EPSRC

Apologies: Professor Michael Singer, University College London
Professor Beatrice Pelloni, Heriot-Watt University

Introduction

The Mathematical Sciences SAT meeting took place at the Marsh Farm in Royal Wootton Basset near Swindon on 22nd June 2017, following an unconscious bias training session on 21st June. The main agenda items included changes to the support for early career academics, studentships and fellowships.

1. Welcome and Apologies

The Chair welcomed everybody to the meeting and asked all attendees to introduce themselves.

Apologies were received from Professor Michael Singer and Professor Beatrice Pelloni.

The Chair welcomed Jan Taylor, who has joined EPSRC as portfolio manager in Pure Mathematics. Anke Davis, previously portfolio manager for Statistics, Applied Probability and OR, has left EPSRC on promotion to the MRC.

The feedback from the unconscious training session for SAT members on the evening before the meeting was very positive. In addition, a video clip from the Royal Society on the subject was recommended: https://royalsociety.org/topics-policy/publications/2015/unconscious-bias/

2. Notes from the Last Meeting

The notes of the last meeting were agreed as an accurate record of the proceedings. All actions are completed or in hand.

3. Update on EPSRC Issues

EPSRC provided a paper briefly highlighting a number of topics of interest to the SAT,. The following points were discussed in more detail:

3.4. Maths and Manufacturing Workshop

The aim of this workshop on 19 July in Birmingham is to capitalise on the momentum created by the Future Manufacturing with Mathematical Sciences Call in 2013 and incentivise future investigator-led research proposals in the area.

The SAT suggested that EPSRC invite a SAT representative with interest in OR or logistics to the workshop.

3.5. Review of Complexity Science

A scoping workshop was held in April and a report, including a set of preliminary recommendations will be published on the EPSRC website. This will be followed by a community consultation over the summer, which will provide input for a community event in November. The final recommendations from the review are expected in early 2018.

Alan Champneys represented the SAT at the workshop. The atmosphere at the workshop was positive. It became soon clear that despite substantial previous investments in the area, big questions that require complexity science approaches remain unresolved. However, the current structure is not fit for purpose, as it perpetuates silos and dis-incentivises cross-disciplinary thinking. In order to tackle these challenges, the scoping group recommended an interdisciplinary approach with inputs from all research councils. UKRI may offer an excellent opportunity to take this forward.

3.10 All SATs Conference

The SAT were reminded of the opportunity to attend the all SATs conference in September. The next CDT call is expected to feature on the agenda.

An initial straw poll indicated a high level of interest from the SAT in attending this event. Members who had attended ptevious events said that had it had been a very useful experience.

4. EPSRC and the Transition to UKRI and Opportunities for the Mathematical Sciences through GCRF

EPSRC's Deputy CEO Tom Rodden updated the SAT on progress towards UKRI. The Higher Education and Research Reform Bill has received Royal Assent, paving the way for the start of UKRI on 1 April 2018. A shadow organisation is currently being established, and key appointments are being made. The Bill includes definitions for names and remits of all current research councils. Changes can't be made without a discussion in parliament.

CEO Mark Walport paid separate visits to research council staff and the EPSRC Council and will be available at a public forum on 4 July.

Key statements include:

- UKRI will be a coordinating, not a grant awarding body.
- UKRI will provide a strong voice for science into government.
- UKRI is committed to the importance of fundamental science
- UKRI will put an emphasis on strengthening interdisciplinary research and innovation.

Investment in science through the Industrial Strategy Challenge Fund (ISCF) is closely linked to the formation of UKRI. In many areas, research councils are already working closely together in preparation for UKRI, such as in delivering the ISCF, Global Challenges Research Fund (GCRF), as well as the talent and skills funding uplift for the post-Brexit economy through the National Productivity Investment Fund (NPIF). Directors to lead the ISCF and GCRF challenges are being recruited through secondments.

Key UKRI policies and strategies will include the infrastructure requirements of the UK research base, innovative ways to commercialise research outputs, as well as skills and talents. Researchers in the Mathematical Sciences have a strong role to play in fundamental research and discovery as well as in providing the underpinning capability for many other disciplines.

Currently the shadow organisation focuses on making sure that UKRI can deal with day 1 essentials.

The SAT raised concerns around the additional level of administration within UKRI leading to longer communication pathways. The SAT stated the importance of preserving disciplinary diversity and the need for a flexible approach to supporting different scientific disciplines, while understanding the need for an appropriate level of consistency. EPSRC asserted the commitment to the principle of subsidiarity, which will mainly play out at the University level. A further concern for the SAT is the protection of the funding baseline for fundamental research with a longer lead time to measurable impact, which provides the basis for future innovation.

Tom Rodden provided the SAT with an update on GCRF: Sir Adrian Smith from the Council for the Mathematical Sciences (CMS) has written to EPSRC, suggesting a closer involvement of mathematicians and statisticians in GCRF. EPSRC responded by offering to provide funding for a workshop with the Global South to scope out opportunities for the Mathematical Sciences from GCRF. It is important to note that all research funded through GCRF has to comply with Official Development Aid (ODA) rules and the primary beneficiaries have to be countries on the ODA list.

The SAT asserted the commitment of the Mathematical Sciences community to contribute to solutions for the challenges faced by the Global South and views GCRF as an excellent opportunity to showcase the importance of the Mathematical Sciences to solve real world problems. The SAT would like to see future calls being more overtly open to input from a wider range of the scientific community.

5. Early Career Support Update

James Dracott provided some context regarding previous Strategic Advisory Network (SAN) and EPSRC Council discussions on the balance between doctoral and postdoctoral support and resulting changes in the support structure for early career researchers. He noted that Council has tasked EPSRC to look into possibilities to link studentships to large strategic investments.

First Grants were considered problematic by early career researchers in many disciplines. The main reasons were the lack of flexibility, issues around host institution support and the practice of Universities to use first grants as a requirement to pass probation.

EPSRC will replace the First Grants Scheme by New Investigator Awards from July 2017. This scheme will provide more flexible support with eligibility criteria based on a person specification that is open to alternative career paths. The appropriate size of the award should be based on the resource requirements of a first independent research grant for a starting investigator, which may vary depending on the type of research envisioned.

The primary assessment of whether an application is in the spirit of the new scheme will be made by the EPSRC portfolio manager, based on appropriate guidelines for the area. The SAT is invited to provide input. Exemplars of best practice will be developed and are due for discussion at Council in November.

The following clarification was provided:

- New Investigator Awards will be ranked on a separate list at prioritisation panel. Standard and New Investigator Awards have a joint budget as is the case for First Grants.
- Researchers who were named as co-investigator on a previous grant will be eligible to apply for a New Investigator Award.
- It is expected that the host institution will make a significant contribution to the grant, be it in terms of studentships, facility access, career development, mentoring, conference attendance, cash contributions, or whatever is appropriate to accelerate the career of the applicant.

The SAT stated that although the aims of the new scheme seemed sensible, the short timescales for implementation were of concern. The SAT also expressed concern that the removal of the cap for New Investigator Awards will likely lead to a reduction in the number of grants awarded.

6. Doctoral Training Partnerships

EPSRC and the CMS had provided papers and data for discussion, both suggesting a general trend of a decline in studentships funded from the Doctoral Training Partnerships (DTP) in recent years. The following points were raised in discussion.

1) The concerns raised by CMS had given additional impetus for EPSRC to collect and analyse studentship data in a timely manner, providing a good basis for monitoring changes and possible interventions.
2) The decrease in studentships for the Mathematical Sciences overall is of concern, especially given the importance of the people pipeline for the Mathematical Sciences.
3) Due to the large number of interacting factors, it is difficult to assess the contribution of any individual change in process and circumstances to this overall effect.
4) In a first instance, the EPSRC executive should write to Universities and discuss the observations from the student data, reiterating that the total amount of grant funding is not necessarily a good measure for the studentship requirements of a particular discipline and that EPSRC does not expect the universities to use a purely mechanistic approach to allocating DTP funds within their institution.
5) EPSRC and the SAT should also liaise with Heads of Departments and other influencial members of the community to investigate possibilities to raise the profile of the Mathematical Sciences within Universities and stress the importance of appropriate levels of PhD funding.
6) EPSRC should keep monitoring the balance of studentship allocations, particularly in the light of extra studentships linked to the Industrial Strategy.
7) EPSRC should share the concerns expressed by the Mathematical Sciences SAT regarding the changes to the DTP algorithm with EPSRC Council.
8) In one year from now, the studentship data should be brought back to the SAT to discuss the effects of the interventions to date and if appropriate consider further action.

7. Knowledge Exchange Review

Matt Butchers from the Knowledge Transfer Network (KTN) provided an update of the Review of Knowledge Exchange in the Mathematical Sciences, which is being supported by EPSRC and the KTN, and took on board suggestions for changes to the questions in the Call for Evidence, which is soon to be published. The SAT was invited to register their interest in participating in an event in London in September to provide input to the review.

8. CDT Priorities

EPSRC invited the SAT to think about possible priority areas for a next CDT call in the Mathematical Sciences. These preliminary ideas will feed into further discussions at the all SATs conference in September, as well as work to be done at SAN and Council. The exact details of the call are still work in progress, but is is likely that the CDTs will again be funded through the central EPSRC budget.

The SAT worked in groups to discuss possible priority areas and a number of initial topics were identified.

In a subsequent discussion, the following main points were raised:

- The SAT is in favour of more flexibility in terms of cohort size and geographical spread of CDTs.
- Access for students to the best possible talent pool is a key feature of a positive student experience.
- The SAT would like EPSRC to engage with Universities to try and find solutions for issues around overheads for multi-site CDTs.
- The SAT suggested that priority areas should not be too narrowly focused.
- Initial priorities with broad support among SAT members include:
    - Continuum Mechanics and Advanced Materials
    - Statistics and Applied Probability – core and at the interface with data science and machine learning
    - Data and Decision Making
    - Core Mathematics and its Interfaces
    - Mathematics at the Life Sciences Interface

9. Fellowship Priorities

Philippa Hemmings introduced the paper on fellowship priorities, and invited the SAT to discuss the proposals.

In accordance with previous advice from the SAT, Complexity Science will close as a priority area at the postdoctoral career stage from September 2017.

The SAT welcomed the proposal to open a priority area in the broad space of continuum mechanics. The description put forward for the priority area covered the skills needs in the area well, but the title should be changed to Continuum Mathematics and Advanced Materials. “Physical matter” should be changed to “matter” in the description of the area.

The data provided to inform the SAT of the added value of fellowships at the established career stage was not that informative in adressing the previous questions raised around the value of fellowship funding . It was also argued, that in the light of the uncertain future of the relationship between the UK and the ERC, it would not be timely to seek to make major changes to EPSRC fellowship provision.

One concern that was expressed, is that the current scheme perpetuates existing inequalities in career prospects between genders. It was argued that researchers with caring responsibilities would benefit from a fellowship at a time of competing pressures of research-, teaching- and caring responsibilities. The SAT agreed to look further into possibilities to address this issue

In conclusion, the SAT gave the following advice:

1) Open a new prioritiy area in Continuum Mechanics and Advanced Materials at the postdoctoral and early career stages.
2) Do not close fellowships at the established career stage at this moment in time, but return to the issue of value for money at a later date.

3) Discuss issues and concrete positive actions regarding equality, diversity and inclusion at the next SAT meeting.

10. AOB

Veronica Bowman and Almut Veraart had drafted a letter from the SAT to the Alan Turing Institute and had collected a list of mathematicians at the institute for the information of the SAT. Both documents are available on DocNet. The SAT agreed to discuss the content of the letter after publication of the annual report from the Alan Turing Institute, which is due in July.

Adrian Jonas made the SAT aware that he is leading a cross-government action on diversity and inclusion in OR.

The Chair thanked everybody for their attendance and declared the meeting closed.

Date of Next Meeting

The next meeting will be held in London on 9th November.