



Engineering and Physical Sciences
Research Council

STRATEGIC ADVISORY TEAM

SUMMARY OF 9th March 2017 SAT MEETING NOTES *Grange Fitzrovia Hotel, London*

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 Beatrice Pelloni, Heriot-Watt University
Professor Lasse Rempe-Gillen, University of Liverpool
Professor Ian Strachan, University of Glasgow
Dr Almut Veraart, Imperial College London

EPSRC: Dr Philippa Hemmings, Theme Lead, Mathematical Sciences EPSRC
Dr Derek Craig, Portfolio Manager, Mathematical Sciences EPSRC
Dr Anke Davis, Portfolio Manager, Mathematical Sciences EPSRC
Dr Michele Erat, Senior Manager, Mathematical Sciences EPSRC
Dr Katharine Moore, Portfolio Manager, Mathematical Sciences EPSRC
Dr Michael Ward, Portfolio Manager, Mathematical Sciences EPSRC
Mr Mohammad Mehdinejad, Year in Industry Student, EPSRC

Apologies: Professor Michael Singer, University College London
Professor Konstantinos Zografos, Lancaster University

Introduction

The Mathematical Sciences SAT meeting took place at the Grange Fitzrovia Hotel in London on 9th March 2017. The main agenda items encompassed EPSRC fellowship priorities for the mathematical sciences, the UK data science landscape, a reflection on the CDT model of doctoral training for the mathematical sciences and a discussion about the role of the mathematical sciences for the UK government's industrial strategy.

1. Welcome and Apologies

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

Apologies were received from Professor Michael Singer and Professor Konstantinos Zografos.

2. Notes from the Last Meeting

The notes of the last meeting were agreed as an accurate record of the proceedings.

EPSRC provided an update on the following items:

- *First Grants*: The paper that was discussed at the last SAT meeting was presented to the EPSRC Council in December 2016. Council concluded that more work was needed to understand the role of First Grants and other dedicated support mechanisms for early career researchers. The SAT emphasised their previously stated strong preference for retaining the First Grant Scheme albeit with a modified funding cap. The SAT would like to have a chance to input on any proposed changes to the scheme.
- *UKRI*: Philippa Hemmings clarified that the Higher Education and Research Bill stipulates that the QR part of HEFCE will be part of UKRI as “Research England”, but that the funding councils of the devolved nations will remain outside the umbrella structure of UKRI.

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:

3.1 Balancing Capability

EPSRC had published their new Balancing Capability Strategy on 15 February 2017. The SAT noted that the process has been smooth and transparent, but had involved a lot of work over an extended period. The important role of the SAT in developing the strategy was acknowledged. Media coverage and reactions from the community had been broadly positive. Several researchers had written blogs for EPSRC on the topic, including Professor Andreas Kyprianou from the Department of Mathematical Sciences at the University of Bath. EPSRC is currently developing strategies for monitoring the balance of the portfolio on an ongoing basis in order to have a better evidence base upfront prior to the next refresh. Neither EPSRC or the SAT is aware of negative reactions to the decision to reduce the relative funding for Complexity Science. The SAT noted a lack of awareness among some parts of the community of the Balancing Capability strategies and the need to publicise the new growth area of Continuum Mechanics.

3.2 Global Challenges Research Fund

Anke Davis provided an update for the SAT regarding the next EPSRC GCRF call. It was shared that the topics for the call in Healthcare Technologies have been agreed with input from the Healthcare Technologies SAT. The next EPSRC GCRF call will be in the thematic area of Energy. EPSRC presented a slide with a list of challenges that had been identified by RCUK as possible areas for future focused activities and invited the SAT to think about how the Mathematical Sciences could contribute alongside other disciplines. The SAT stated that “Maths and ...” calls were seen as a successful means to engage the community and requested that this be discussed further at a future meeting.

The SAT commented that until now, the Mathematical Sciences had not been able to engage sufficiently with GCRF for a variety of reasons including that it was often difficult for mathematicians to see an opportunity in these very impact focused activities and a risk averse attitude in Universities and research councils with regards to ODA compliance and the involvement of a broad range of disciplines. On the other hand, it is clear that mathematicians, statisticians and operational researchers are involved in many projects relevant to development aid and their contribution should be highlighted and ideally built on. It was agreed that a subgroup, building on the outputs from their earlier teleconference would draft a letter to the EPSRC Executive setting out the significant contribution that mathematical sciences could make to the GCRF and the importance of engaging with mathematicians.

3.3 Review of Knowledge Exchange

Mike Ward reported on the progress of the review, which has now started a process of collecting evidence. A note informing the wider community and asking for their support and engagement will be published on the EPSRC website shortly. The review is chaired by Philip Bond and supported by both EPSRC and the KTN. The membership of the review committee and oversight board will also be in the public domain very soon. There had been a delay in external communication, mostly due to issues

outside their control. An update on the review will also feature in the April edition of the EPSRC Mathematical Sciences newsletter. A meeting at the ICMS in September will present a further opportunity to engage with the review. The review is due to be launched in early 2018. The SAT noted the close link between this activity and the UK government's Industrial Strategy. It was agreed that the SAT would have an opportunity to discuss the review and emerging findings at the next meeting.

3.4. CMS Survey of the impact of changes in EPSRC's Doctoral Training Partnership Allocation Process for the Mathematical Sciences

The Chair briefly summarised the history of changes to DTP allocations for the new SAT members and presented a verbal update on the CMS survey, which confirmed previous preliminary results. EPSRC will present an analysis of student data at the SAT meeting in June and the response from the Executive. It would be helpful to also share the data from the second CMS survey.

The SAT stated that a process that allows Universities to allocate students based on grant income is detrimental to the mathematical sciences, where the monetary income is less reflective of research success than in other subjects. The SAT was reminded that Universities were not required to allocate DTP funding according to the algorithm and the purpose of the Statement of Intent was to set out the strategy for distributing DTP funding within their institution.

3.5 CDT mid-term review:

CDTs that are invited for interview have been notified. All CDTs will be provided with individual feedback by the end of March. EPSRC was not in a position to share the outcomes from the review panel with the SAT at this stage.

4. EPSRC Fellowship Priorities

Katharine Moore presented an overview of the Fellowship priority area refresh process and the current timeline for review of the current areas. A paper was tabled which set out the background and previous SAT discussions around fellowships. The SAT was asked to discuss a number of proposals for a fellowship refresh.

The SAT recommended

- to close the postdoctoral fellowship priority in complexity science, as demand has been limited and the strategic focus for the research area going forward is not in line with a distinct priority in this area.
- to open a postdoctoral fellowship priority in continuum mechanics, the new growth area in mathematical sciences. The definition should align with the strategic focus of the research area.
- not to make any further changes at this point, but to resume the discussion around career stages and other priority areas at the next SAT meeting.

5. The Role of the Mathematical Sciences in Data Science

Philippa Hemmings provided an overview of EPSRC's activity in the field of Data Sciences, including the Alan Turing Institute. The SAT discussed a paper provided by EPSRC on the role of the Mathematical Sciences in Data Science, which has seen major investment over the past few years, including £42M for the Alan Turing Institute. The SAT stressed that mathematics and statistics are fundamentally important to underpin advances in data science. The SAT would be interested in better understanding how the Alan Turing Institute will ensure it draws upon the full range of relevant expertise to successfully deliver progress in Data Science. The SAT decided that it would wish to take a more proactive role going forward and produce a position paper and a subset of SAT members would progress this and advise when a follow on discussion would be appropriate.

6. CDTs for the Mathematical Sciences

Anke Davis provided an introduction to this topic, including an overview of the current mathematical sciences CDTs and a timeline for EPSRC's future plans following on from the current mid-term review. The SAT was invited to discuss the successes and challenges of the current model and any preferences going forward. The outputs from the session will be written up separately and will inform EPSRC's thinking in the coming months. Major points of consensus included the preference for a more flexible approach to cohort size and choice of site(s) to make the best academics available as CDT supervisors. It was also noted that care should be taken to incentivise more cooperation and less competition amongst Universities. The topic will be revisited at the next SAT meeting.

7. Engaging the Community in the Industrial Strategy

The purpose of this session was to provide an update on developments around the Industrial Strategy and the implications for research and innovation, to explore the opportunities for the mathematical sciences to contribute to the proposed challenges for the Industrial Strategy Challenge Fund and to identify any potential barriers and enablers to the mathematical sciences community engaging with the Industrial Strategy.

Mike Ward provided an overview of the Industrial Strategy with a particular focus on emerging developments around the Industrial Strategy Challenge Fund and invited the SAT to highlight any input they may have had into the Industrial Strategy, either through contributing to responses to the Industrial Strategy green paper or through attendance at the Industrial Strategy Challenge Fund workshops held in January 2017. Alan Champneys highlighted a response to the Industrial Strategy green paper which is being prepared by the industrial mathematics community in co-ordination with the Knowledge Transfer Network. A facilitated session offered the opportunity to the SAT to think about the unique contributions the mathematical sciences could make to the proposed Industrial Strategy challenges and how these contributions might align with the EPSRC Prosperity Outcomes. Finally, the SAT briefly discussed any potential barriers to engagement with the Industrial Strategy.

8. AOB

This was Derek Craig's last SAT meeting as portfolio manager for Pure Mathematics. Derek has been promoted to senior manager in the Energy Theme. The Chair thanked Derek for his hard work and wished him all the best in his future role.

Adrian Jonas made the SAT aware of the new select committee in "algorithms in decision making".

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

Date of Next Meeting

The next meeting will be held in Swindon on 22 June, with an afternoon session and evening dinner the previous day..