ROYAL STATISTICAL SOCIETY

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RSS Response to Sir Adrian Smith's call for evidence on
'Future Frameworks for International Collaboration on Research and Innovation'
24th May 2019

This submission was written by the Academic Affairs Advisory Group on behalf of the Royal Statistical Society. The RSS is learned and professional body for statisticians and data analysts. We have around 10,000 members worldwide, but the majority of our membership is UK-based.

We do not require this submission to remain confidential.

The main point of contact for this submission will be the Policy and Public Affairs Officer (policy@rss.org.uk).

1. **Methods by which new funding arrangement can:**
   - **Support research discovery of outstanding quality in all disciplines through international partnerships;**

The cost-effective "small grant" concept seems to have fallen by the wayside, particularly as a UKRI funding route. Other small grant programmes that remain are often constrained, perhaps bureaucratic and some take a relatively long time to be processed given that they are small. For example, one useful UK scheme, provides support for entirely new collaborations only, releases funding decisions four months after application even for small amounts such as £3000, and also requires statements from the head of the applicant's institute and from the head of the collaborating institution. This will all be in addition to extra paperwork, such as financial costings for the participating institutions.

Some "small grant" funding is available internally to researchers via their own institutions, but the bureaucracy associated with of these is often onerous. For example, a research student exchange programme in a `Top 10' university whose application paperwork for £2k was longer than the eight pages required for a standard EPSRC grant, which could be worth hundreds of thousands of pounds!

Dedicated UK funds for researchers to attend and participate in conferences seem to be almost non-existent and hard to obtain from one's own institution. It seems perverse to deny UK-based researchers funding for this important and well-established means for progressing research.

It is difficult to understand why funders are less keen on conference participation. International conferences have many benefits. Unlike two/three-way meetings, a conference encourages meaningful interaction between diverse and numerous groups, enabling serendipitous contacts, exchanging of new concepts/ideas/paradigms in the field, networking with international colleagues and to receive feedback and professional development advice. Conferences lead to new research ideas, new collaborations and student exchanges, for example, and valued can be added by side visits to institutions/labs that might not justify an exclusive visit.

Further, it seems curious that almost all research students, whether UKRI-funded or not, usually have access to some kind of RTSG (Research Training and Support Grant) and hence easy access to conference/exchange funding, as, presumably, such activities are seen as a "good thing", whereas only researchers with access to (infrequently awarded and rare) larger research grants can easily undertake these activities (but even then are asked to justify in advance which conferences they might go to over the next two or three years, which seems unrealistic). There should be greater availability and spread of such flexible funding.

A Small Grants Proposal

We would be keen on the reinstatement of an investigator-led small grants programme explicitly for international cooperation, exchanges and conference participation. From the investigator point of view it would be desirable for such a programme to have fast decision times, simple and quick application form, and be relatively permissive in what it allows. Application reviewing should be light touch and commensurate with small grant maxima. Maybe a cap of £5k per application, but smaller amounts could be asked for, if justified?

We believe that a healthy small grants operation would enable a step-change increase in the number of international collaborations and often lead to bigger things. In turn, this will enable more international researchers to come to the UK and get to know our research environment, culture and, hence, increase opportunities for recruiting the best. Here, researcher means both academics, but also researchers from high-tech industries.

Small Grants Methods of Operation

One explanation for the demise of small grants is that research councils find administration of many small grants inefficient and, perhaps, give the impression of lack of control/oversight. It is cheaper to award fewer large grants, but this might not be the best way to support a research community. Smaller grants need less paperwork, faster decisions made by fewer people (or even no people).

Some suggestions for how to reinstate a small grants scheme:

a. distribute via universities. Research Councils already do this for some programmes. For example, EPSRC's DTP gives a block grant to each university for PhD studentships and tells them to spend it strategically. A university block grant could be given for small grants, with advice on fast and efficient processes to apply for, award and evaluate such awards. Many universities already run their own schemes, which a block grant could feed into (but told to keep simple).

b. distribute via trusted institutes aligned to national strategic priorities. For example, in data science, it could the Alan Turing Institute, or other institutes for other areas, such as the Royce or Crick.

c. distribute via national learned societies/charities. For example, strengthen and expand existing programmes such as the Royal Society, Leverhulme or Wellcome and permit them to be less constrained. Alternatively, consider more discipline-focused societies. For example, the Royal Statistical Society (RSS). In the latter case, you might expect the learned body to have to apply for a larger grant from UKRI with a plan of how to foster and support international cooperation and collaboration in their area and how they will evaluate that support. Hence, UKRI would retain oversight, but local decisions be able to be made professionally and rapidly. A benefit of operating through disciplinary societies is that they already have strong communication and joint-working links with international sibling societies. For example, the RSS already has joint ventures with the American Statistical Association, the Institute for Mathematical Statistics, the Federation of European National Statistical Societies and could do more.

Of course, not all disciplines have an "attached" national institute, nor learned society, so perhaps b. and c. could be seen as valued-added extensions of a.

Centrally Supported Online Tools

Most researchers have access to basic video conferencing facilities (such as Skype). However, there is confusing variety of systems for conferencing larger groups. Different institutions are coalescing around different incompatible systems, and even some research intensive institutions have not yet rolled out the bigger and better systems. Maybe a particularly useful cost-effective method would be for UK Research to standardise, e.g. via JISC. In the same way that eduroam provides seamless network access for academics across UK (and wider) institutions, is there a system to enable international interoperability of video conferencing to make it easy and simply for any researcher? Looking further into the future would it be possible to build full-scale conference labs, such as the impressive Automated Lecture Capture system at the Banff International Research Station, Canada.

2. **The optimum balance of emphasis for any new funding arrangements in each of the following dimensions**

Existing Programmes

There is need to foster and strengthen existing frameworks for international collaboration, for example the Horizon 2020 and the future Horizon Europe frameworks. For RSS members, it is important that we continue to be able to set the agenda in terms of participating in initiatives that govern calls for innovations in statistics and statistical methodology. In our case, this additionally requires lobbying of the Director Generals of the European Commission, Eurostat and country National Statistical Institutes as they can help set the agenda for future calls. These kinds of frameworks are still very relevant for the UK and form the basis for UK collaborations within Europe and should be strengthened.

European/ODA and Global

Currently, our programmes for European/ODA are strong. The situation may well change after Brexit, but we advocate, in strong terms, for continued membership of European Research and Collaboration Initiatives. It is hard to see these being successfully replaced if we cannot negotiate continued access.

For ODA-related programmes, it might be effective to support initiatives such as the African Institute of Maths, extend this to other disciplines and branch further out into collaborative research, as well as training programmes.

Undoubtedly there is more that the UK can fund and do globally. Funding bodies tend to focus on the `obvious' destinations. Outside of Europe, this typically means the USA and China, but also Singapore. However, we feel much more could be done with a wider range of countries, e.g. Canada, Australia, New Zealand, Israel and India. The UK should revitalize our existing international relationships via the Commonwealth. There is a perception that research relationships in Commonwealth countries could be initiated more rapidly and deeply, given our shared heritage and significant efforts at developing a common understanding over the years. Over time, resources should be devoted to wider global possibilities.

Support for Outstanding Individuals

Our perception is that it is much harder for the UK to recruit internationally than has ever been the case. This is due to a number of reasons, but includes Brexit, the increasingly hostile environment for immigrants and significantly poorer employment conditions in UK universities (poor salaries compared to competitors, declining pensions, excessive managerialism and system overassessment, e.g. REF, TEF and KEF). If the UK cannot recruit the best, which is arguably the

situation we are now in, then this will lead to a rapid weakening of the whole system. This will lead to weakening of interest from external researchers, both from academia and industries of the future, and, ultimately, our future prosperity as a nation.

Some of the factors mentioned above are not in the control of ``UK Research'' and others require large scale system-wide changes, which are not easy to manage, let alone change.

We are less sure of the medium/long-term success of targeted initiatives to bring small numbers of individuals to the UK, such as the Royal Society/Wolfson programme, (also the Canada Research Chairs or Australian Laureate Fellowships). Although these have undoubtedly brought excellent people to the UK, they feel a bit like “sticking plasters”, can be divisive and, perhaps, existence of such programmes themselves unwittingly demonstrate structural weaknesses in the UK system?

However, there are cost-effective actions that could be used to stimulate international recruitment and future interactions/collaborations, especially at the more junior level. We advocate encouraging international PhD and postdoctoral level recruitment as a way of bringing talent to the UK (although the UK visa regime will probably require improvement). Two schemes, no longer in existence, seemed particularly effective in attracting international talent were.

(i) the Overseas Research Scholarships (ORSAS) scheme, which was abolished in 2008. ORSAS provided direct studentship support for overseas students, including part-fees grants (which covered the difference between UK Home student fees and the high overseas fees). ORSAS brought in a number of truly excellent students, some of who are still in the system today. Such a programme needs to be highly selective, but also fund enough people to have an impact and be cost-effective to run.

(ii) subcontracting capacity building/Fellowship-type programmes to Universities/Research Institutes. In 2006, EPSRC ran the capacity building Science and Innovation Awards programme. Three were funded in Statistics in the UK. Arguably, their postdoctoral programmes were extremely successful. The benefits of these, over programmes like the regular EPSRC postdoctoral Fellowship programme, are (i) applicants feel more comfortable applying to known universities for a research fellow position (rather than a research council that they’ve often never heard of), (ii) received quick decisions (a few days to weeks, compared to waiting six months for a Research Council decision), (iii) be attracted by a range of interesting people and strong research environment at the place they were applying to. Regulations of these programmes encouraged strong international recruitment at the point where the applicants had completed their PhDs and were looking for a suitable academic/personal home. A number of these excellent, largely international, people are still working in the UK.

5. Existing evidence on the efficiency and effectiveness of funding for international collaborations.

A common situation is for the community of researchers in a specialist area to be small and widely dispersed across the world. Advancement of research in such areas relies on frequent and close cooperation and only proceeds because of this. In some areas, such diversity is an essential enabling feature of the research (e.g. problems arise due to local conditions, which stimulate local solutions, but then rely on international networks of cooperation to help solve.)

Some, significantly larger, projects can only be tackled and succeed because of international cooperation, e.g. in astronomy, particle physics and epidemiology, for example.

However, our perception is that there are limited opportunities for large network projects, which might be seen as the international extension of Programme Grants (as funded by, e.g. EPSRC). Several of these have operated in various ways under EU research programmes, such as international training networks, or other grants that run projects across three or four EU research institutions. We would advocate that the UK sign partnership agreements with leading research nations to run similar research networks. For example, three or four institutions work on a common research theme and funds are provide to employ people in each institution (postdocs and/or PhDs) and funds are provided to enable mobility and communication between the centres. Common features of such schemes are a single path for grant funding and evaluation (rather than each country performing a separate refereeing process), strong plans for mobility and cooperative working and acting as a hub for other country-specific activities.

Indeed, given the rise of effective video conferencing and, mostly, cheaper travel costs than a few decades ago, it is curious that the best international research agencies have not already come together (apart from the EU, perhaps) to routinely run cross-country international research programmes (apart from the biggest collaborations, such as CERN). We would advocate exploration of `Programme Grant' type programmes, but run internationally.