

## **Background**

The Academy of Medical Sciences is undertaking a policy project looking at the incentives and disincentives for researchers to participate in large collaborative projects, focusing on how recognition of such contributions can be improved in career-relevant decision making. The full terms of reference and membership of the Working Group are available on the project [webpage](#). The project aims to engage particularly with researchers (especially early career researchers), publishers, funders and employers.

## **Structure of this document**

This document provides an update on the Academy of Medical Sciences' Team Science Working Group policy project. There are two sections: first, a summary of the past, current and future activity of the project, and second, a summary of the views expressed in the written evidence received by the Working Group (not exhaustive). The latter does not necessarily represent the views of the Working Group, nor of the Academy of Medical Sciences.

## **Project timeline: past, current and future activity**

### ***Past activity***

The Working Group launched the project on 15 September 2014, collecting written evidence for eight weeks until 7 November 2014. A wide range of organisations - employers, funders, publishers and others, mostly from the UK, but also Europe, North America, Australasia and elsewhere - were invited to submit evidence into the project. Researchers of all career stages were engaged via a series of local sessions hosted by members of the Working Group (about 6 institutions, 70+ researchers), and researchers were encouraged to submit evidence via the online portal, which was publicised via social media and via an image competition associated with the project. The written evidence questions can be downloaded from the project [webpage](#).

The Working Group received organisational and individual responses alongside local sessions with 70+ researchers. This has provided them with an appreciation of the breadth and depth of the issues from multiple perspectives (see the summary of written evidence below).

### ***Current activity***

In February 2015, the Working Group is holding discussion roundtables focused on three areas: employment, funding and publishing. Each roundtable will comprise a small group of individuals in discussion with the Working Group. These will allow the Working Group to deepen their understanding of the issues and start to outline emerging conclusions and policy recommendations for the project.

### ***Future activity***

There will be discussion of the emerging conclusions and policy recommendations with stakeholders (researchers, employers, funder, publishers and others), potentially in the form of workshops, before finalising the report. The report is expected to be published in spring 2016.

The Working Group continues to expand and extend its engagement with researchers, publishers, funders and employers (and other stakeholders) as the project moves forward. Although the formal call for evidence is closed, we welcome contact from interested parties. If you would like

to engage with this project and/or receive future updates, please send an email to [teamscience@acmedsci.ac.uk](mailto:teamscience@acmedsci.ac.uk).

## **Summary of the written evidence submissions**

This summary represents (although not exhaustively) the views expressed in the written evidence received by the Working Group, which are informing the Working Group as they progress the project. This summary does not necessarily represent the views of the Working Group, nor of the Academy of Medical Sciences.

### **All submissions reported similar incentives/benefits and disincentives/challenges associated with undertaking 'team science'**

#### ***Incentives***

These were usually the same as the 'benefits to science': achieving better funding efficiency; achieving higher research impact; necessity in some cases, such as grand global challenges, clinical trials or translational work; improved innovation through cross-fertilisation; and improved development of new methodologies. Benefits to the researchers included: involvement in more novel research and more impactful research; acquisition of new skills; improved opportunities for networking; and greater sharing of risk.

#### ***Disincentives***

The main barrier/disincentive to participating in team science was overwhelmingly identified, by all categories of respondent, as the lack of individual recognition for one's contributions. The two main concerns expressed were regarding the appraisal of individual's research track records: firstly, a focus on publications to the detriment of other outputs (for example, software and databases); and secondly, a focus on 'author position' when considering publications. It was indicated that both of these are cultural issues, and that tackling them effectively would require action across all stakeholder groups.

An underlying issue was considered to be the desire from funders and employers for researchers to have demonstrable 'leadership' and 'independence' to secure career progression; in particular the interpretation of these terms in a way that is seen to relatively devalue experience gained through collaborative research.

Other barriers mentioned included: inadequate team skills of researchers; effort - in terms of finding, building and maintaining a coherent and functional team; potentially inadequate recognition of one's efforts by peers within one's own discipline; university funding structures that can create barriers between departments and disciplines; the availability and conditions of funding; inadequate support from employers and funders for specialist staff and infrastructure; and loss of control over the research project.

#### ***Researchers' written submissions***

Comments made through written submissions were consistent with those received via local evidence gathering sessions.

Researchers are generally enthusiastic about the opportunities and prospects presented by participating in team science. The barriers reported by researchers included:

- Recognition for individual contributions, as outlined above.
- Lack of support/training for developing team skills.
- Undervaluation of team skills as a contribution to the project.

- The difficulty and complexity - and time and effort - of finding, building and maintaining a team.
- Lack of control over those distant from you in the project.
- Issues in funding: the balance between the availability of 'single PI' versus 'collaborative' funding; a desire for more flexibility.

### ***Employers' written submissions***

The employers' submissions often stated: explicit support for 'team science' in institutional strategies; support for, and/or hosting of, real and/or virtual 'team science' institutes; appreciation of the need to develop team skills in researchers; appreciation of the need to support teams via dedicated personnel and infrastructure; and a desire for researchers to demonstrate 'leadership' and 'independence' for career progression - with some stating that this can drive earlier career researchers away from team science.

The submissions also highlighted barriers arising from university funding structures, and from the expense of 'team science' - due to the increased length and scale of the projects, including the need to fund support staff and infrastructure.

There was apparent variation in the request for, use and valuation of team science contributions in promotion and recruitment decision making, and the methods of communication and assistance (e.g. mentorship) to staff for promotion. Although the apparent appetite to collect and use contribution information was variable, many employers expressed an intention to capture it as they undertake revisions of their promotion/appraisal mechanisms. A few submissions stated a desire for a transparent, standardised and robust system for allocating credit to all of a project's contributors, accompanied by nationally-accepted guidelines for its use in recruitment and promotion.

### ***Funders' written submissions***

Funders generally appreciate the potential value of 'team science', and many have funding schemes in place for collaborative projects.

Some concern was expressed about how to ensure that it is an appropriate approach for the project at hand, and how to maintain a balance between 'single PI' and 'team' funding within their funding portfolios. The difficulty in securing appropriate peer review for collaborative grants was a prominent issue: it was indicated that disciplinary breadth and experience of team science can often be difficult to find in reviewers.

A few funders stated that they seek information on individuals' previous 'team science' contributions. No mechanisms were detailed regarding how this information is valued during the appraisal of the application. It was indicated that funders would benefit from more detailed attribution of contributions to projects as they can track the impact of their funding more comprehensively, and potentially more effectively identify peer reviewers.

### ***Publishers' written submissions***

The submissions from publishers indicated variation in whether and how they request author contribution statements. Whilst appreciating potential challenges, there was broad support for development of mechanisms to describe individuals' various contributions to research outputs, with a few references to the relevant 'Project CRediT'.<sup>1</sup>

---

<sup>1</sup> <http://credit.casrai.org/>

### ***Examples of potential actions suggested in the written submissions***

The call for evidence asked for suggestions of what more could be done and by whom, for consideration by the Working Group. Examples of the suggestions are below (not an exhaustive list).

There was consistent mention of the need for a cultural shift in researchers of all levels, as well as employers and funders. It was felt that this will be critical to capturing and valuing individuals' contributions to team science and reviewing 'leadership' and 'independence' requirements for career progression.

Suggestions specifically for researchers included: being more proactive in ensuring credit is shared equitably (particularly PIs, because junior researchers' power is limited in this regard); and articulating the full costs of their time to employers and funders, so that projects are properly costed and valued.

Suggestions specifically for employers included: evolving their recruitment and promotion policies and practices to capture and value applicants' team science contributions; reviewing whether their institutional structures maximally facilitate 'team science'; and promoting and supporting training for researchers in team skills, such as project management and conflict resolution.

Suggestions specifically for funders included: evolving their policies and practices for grant application appraisal to capture and value individuals' team science contributions; review their peer review processes to ensure they obtain adequately broad and experienced peer review for 'team science' grant applications; and review the configuration of team science funding, such as the length of funding and the ability to designate multiple equivalent investigators.

Suggestions specifically for publishers included: supporting the development and implementation of systems for articulating all contributors' input to research outputs; and reviewing their guidelines on thresholds and definitions of both 'authorship' and 'contributorship'.

The views and suggestions expressed in the written evidence are now informing the Working Group as they progress the project.

If you would like to comment on issues raised in this document, engage with this project or receive future updates, please contact [teamscience@acmedsci.ac.uk](mailto:teamscience@acmedsci.ac.uk).