

Rick Trainor- Good Research Conduct Conference, Keele University, 15 & 16 April.

Good morning everyone. It's a pleasure to be able to take part in the second day of discussion on this important and stimulating issue. Unfortunately I was unable to join you yesterday, though I understand that discussions were constructive and fruitful.

Thank you also to Janet and colleagues at Keele for hosting this useful event.

It is now widely accepted that the new knowledge gained through research, from the 'hard' sciences through to the social sciences and arts and humanities, is important to our economic, social and cultural well being. UK Higher education plays a key role in creating and translating this knowledge. It is well known but worth repeating that the UK remains the second most important producer of scientific and scholarly research in the world in almost all disciplines.

The UK government recognises the importance of research and innovation. It has aligned public policy and prioritised investment to help ensure that the UK remains at the forefront of knowledge generation. This is evidenced in the 10-year Science and Innovation Framework and more recently in the government's Innovation White Paper.

The enhanced role of research and innovation - and of the institutions where this takes place - in our economic, social and cultural life, brings with it a series of enhanced challenges. Sometimes there is understandable public unease about the direction of new research, the way in which it is conducted and its applications. We need to be open to new ways of extending knowledge and reaping the benefits, but at the same time we must continue to ensure that we inspire confidence.

Part of the strategy to address these challenges is to improve public engagement with, and understanding of, research and its applications. This is a long-term project, but significant inroads are being made by the government, universities and organisations such as the learned and professional societies. Effective engagement and communication are not, however, enough when it comes to the question of confidence. These need to go hand in hand with the promotion of high standards and good conduct, and appropriate governance mechanisms.

This is of course, not a new challenge and in the UK action has already been taken. A good example is the Research Integrity Office, established within Universities UK. This is providing independent support to the health and

biomedicine research community to establish and demonstrate effective systems for research integrity, and facilitate the sharing of good practice.

Are this and other measures sufficient?

Misconduct in research is typically defined as falsification or fabrication of data, or plagiarism. The extent of misconduct is difficult to measure, though we have seen from survey data from the US and from reported cases in Europe that there are those who do not abide by the principles and standards for research conduct. There is also the prevalence of a range of what has been termed 'questionable behaviour' in research, which is a concern to all involved.

The data from the US reported by Nick Steneck, from the US Research Integrity Office, suggest that between 0.1 and 1.0% of researchers admit to such behaviours such as falsification or fabrication of data. As many as 25% of National Institute of Health funded researchers self report behaviours termed 'questionable research practice'. These include changing design methodology or results of a study in response to pressure from a funder and dropping observations that they feel are wrong.

Some may suggest that 'this is not a problem', 'that there are always bad apples in the barrel', and that 'we have sufficient mechanisms in place to deal with it'. I would suggest it is important that we are not complacent. The numbers admitting to such behaviours are perhaps too high for us to ignore. When misconduct does occur, the damage to science and the way it is perceived can be severe. We should take this - and our responsibilities to ensure we can prevent and deal with misconduct - seriously.

Research is international and misconduct, when it occurs, does not respect national boundaries. International bodies such as the OECD Global Science Forum, the European Science Foundation and the EC are looking into ways to promote high standards of conduct in international research and are developing templates for international agreements to facilitate investigations of allegations on cross boundary projects.

These developments give us an opportunity to look at what we might need to do in the UK. There are of course a range of issues that need to be worked through. Firstly we need better data on the instances of misconduct. In responding, we need to balance academic freedom against regulation, whilst maintaining a system that has the confidence of the academic community and the public. That is not easy. We need to decide who has responsibility for particular actions. It is not unfair of the government, in the public interest, to ask us if our house is in

order, but I expect you would agree that it is more appropriate for us collectively - universities, research funders, learned and professional societies and the publishing community - to lead the way. That is why we are here today.

In addressing these questions I believe there are some key dimensions that should underpin our discussions. These are prevention, proportionality, and clarity and consistency.

Clearly, it is better to prevent someone taking inappropriate steps than to find out that they have. Evidence tells us that the promoting good conduct is most effective if it is reinforced throughout a researcher's career, through mentoring, continuing education and training. One-off courses do not appear to work. We need to explore how we can get better at embedding good practice at all stages of a research career.

There are a range of behaviours that undermine research. Any response needs to be proportionate to the frequency and impact, and be risk based. This is important, both in terms of the credibility of the research record, and the trust all parties need to have in the way research is carried out and results reported. Initiatives to prevent or monitor one form of misconduct in research should address all forms of poor conduct and also serve to raise standards generally.

Clarity of rules, standards and principles for research are also important. A simple internet search reveals a plethora of requirements and codes of practice. Employers and funders of research should agree the basic definitions for misconduct, which can lead to a standard approach for investigating allegations. The UK Panel for Research Integrity has put forward a Procedure for such investigations which could form the basis of a national standard for university employers and researchers.

Consistent approaches for the management of research should include regular monitoring and there needs to be a discussion about how this could be audited. This would demonstrate that the UK has its research house in order.

Such a mechanism should protect those who raise concerns over the conduct of research, but also protect the innocent against mistaken, malicious and frivolous allegations. Standards for research will need to be reinforced at all stages of a research project with all those involved. Equally, those involved in peer review and other forms of evaluation need to be alert.

In stating the standards and principles and following them overtly UK research will strengthen its global position. We need an open and inclusive debate on

these issues as we move forward, and most importantly we need to move forward jointly. This conference provides a valuable opportunity to make those steps.

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