

**House of Commons Science and Technology Committee Inquiry into Research Integrity:
Response of the University of Glasgow
1 March 2017**

The UK has a strong international reputation for the quality of its research and, as the POSTnote has highlighted, any matter that erodes the confidence in this activity is a cause for concern. The number of reported instances of research misconduct is rising and many of these cases are becoming progressively more legalised as the career implications of the outcomes of these investigations become more serious. However, the extent of any justifiable concern with the integrity of UK research is unknown: high profile cases of fraud or misconduct have indeed damaged public trust in research, and, in parallel to this, irreproducible results have heightened an awareness of careless practice. But the number of instances of reported research misconduct is not a reliable marker of the integrity of UK research: more relevant to the potential undermining of research are questionable research practices, which can be addressed by training and championing good practice.

In recent years, UK HEIs have introduced policies and procedures to uphold the highest standards of research integrity. They have been guided in this by sector developments that support good practice. Since its publication in 2012, the Universities UK Concordat to Support Research Integrity¹ has provided a reliable framework for raising the profile of research integrity to the academic community and to university senior management, and has afforded HEIs the flexibility to implement policies that are in harmony with the structures of their institutions. Compliance with the more recently published Concordat on Open Research Data (2016)² will drive good practice further by focusing attention on making data available for reuse and for scrutiny.

The continued progress of HEIs in conforming to government expectations will depend not on HEIs working harder but on the coordination of activities between the key relevant parties, namely government, funders, publishers and research institutions. The potential of HEI investment in promoting research practices will be limited if the same values are not also supported by practical measures taken by sector partners. Below we outline the actions that should be taken consistently by each of these parties to support a collective environment in which rigour, honesty, transparency, and open communication become the norm for UK research.

What can HEIs do?

HEIs can develop a conducive environment for good-quality research by aligning all relevant policies, from communicating what is meant by research integrity to the way we recruit and promote staff. Many HEIs, including the University of Glasgow, have made considerable progress in developing the areas below, but each initiative requires ongoing monitoring and innovation to ensure they remain current. HEIs can:

- Raise awareness among colleagues of the importance of good research practice by increasing an understanding of integrity among students and staff. This could include processes such as:
 - o Embedding research integrity in the institutional strategy;
 - o Identifying and training named contacts who can provide experienced advice and support;
 - o Providing easy access to clear and up-to-date information and resources.

- Provide appropriate training that:

¹ <http://www.universitiesuk.ac.uk/policy-and-analysis/reports/Documents/2012/the-concordat-to-support-research-integrity.pdf>

² <http://www.rcuk.ac.uk/documents/documents/concordatonopenresearchdata-pdf/>

- Is delivered to all career stages, including postgraduate researchers, postgraduate supervisors, and early career researchers (ECRs), as well as relevant administrative staff;
 - Acknowledges the priorities of different disciplines;
 - Is appropriate for different staff and student working patterns, location, and learning styles;
 - Assists PIs/corresponding authors in detecting any irregularity in data supplied for a publication by co-authors.
- Invest in support across the areas of expertise that foster good research practice. This should include support for:
 - Research data management;
 - Open scholarship, study design (e.g. statistical or bioinformatics expertise), data protection, collaboration agreements, and ethical review;
 - Tools that help to detect misconduct (e.g. plagiarism-detection or image-analysis software).
 - Review our pattern of incentives and rewards:
 - Ensure that hiring, promotion and reward practices strike the right balance between driving ambition and upholding quality; for example, by valuing the quality of publications over their number;
 - Supporting the fulfilment of the ambitions that we promote, e.g. by instating peer-review systems, or introducing rewards for openness/sharing of data, support for recognising and generating good-quality publications, and promoting the importance of scholarly communications (e.g. pre-print publications, subject-specific data repositories).
 - Share good practice: commit to participating in sector interactions in which policies, and approaches for monitoring their effectiveness, are shared.
 - Monitoring and oversight: develop a 5-year action plan for the implementation of areas above, and agree to monitoring the effectiveness of integrity enhancing initiatives, and reporting progress externally (e.g. through REF and funder Outcome Agreements).
 - Create specialist support posts to handle investigations into alleged research misconduct.

The aim of the initiatives listed above is to make research that is executed to the highest standards of professional practice the norm of behaviour in our institutions and collaborations.

What can publishers do?

- Issue guidelines that are more precise regarding acceptable study design (e.g. sample sizes), and ensure transparency in the presentation and availability of data or results.
- Deploy specialist reviewers to evaluate new designs or novel/cross disciplinary work.
- Provide venues for the publication of negative results.
- Encourage the pre-registration of research methodologies.
- As some journals already do, make mandatory:
 - a declaration of author contributions to any co-authored paper;
 - a declaration from the corresponding or lead author in taking full responsibility for the integrity of the data presented in the paper;
 - the archiving of supporting data in their raw form and ensure that this data are publicly accessible and tied to the publication.

What can government do?

- Support the publication of Concordats and sector reviews, and endorse open data, open access, as well as appreciate the nuances of developments in research methods and the efforts to improve practice.

- Use REF to set and raise expectations of research conduct and how it is incentivized and supported by institutions.
 - Reward instances of good practice, e.g. by awarding high-profile national prizes.
 - Encourage mechanisms that allow the sharing across institutions of successful activities, and the mechanisms for monitoring good practice.
 - Investigate the career structure and contract durations of postdoctoral researchers, to ensure sufficient opportunities exist to complete research projects.
 - Support UK researchers to act as advocates for good practice around the world, e.g. by funding participation in the World Conference on Research Integrity.
 - Continue to support the valuable advisory role provided by UKRIO, and its role in promoting practice sharing in the community, e.g. through its annual conference.
- Additional support would allow UKRIO to provide:
- o Legal support to HEIs engaged in integrity investigations;
 - o Listings of identified experts for research areas that are frequently the subject of investigations into possible research misconduct (e.g. statistical analysis and image manipulation).
- Encourage the development of policies for international collaborations. Research is increasingly occurring on a global scale, involving researchers operating under different policies. Researchers need guidance on how to initiate such collaborations and how to behave when things go wrong.

What can funders do?

- Ensure that reviewers have the necessary expertise to critique the design and goals of proposed research, deploying additional specialist reviewers where required.
- Use the structure of funding applications to instill (even if initially only on a voluntary basis) the importance of rigorous study design and data management plans.
- Set expectations of good practice in the course of the research and its reporting, e.g. with respect to open research data.
- Agree a common policy as to when and to what level of detail funders should be informed when investigations into possible research misconduct are investigated.
- Set expectations on HEIs for the training of postgraduate researchers and ECRs, and fund expert staff posts to provide such training and deliver on the integrity agenda. For example, since its 2013 vision to support robust approaches to research integrity³, the EU has set such expectations to good effect.

Dealing with misconduct

Each of the partners should undertake a review of the penalties available for those engaging in misconduct, whether the behaviour be motivated by a deliberate intention to mislead, or by a disregard for rigorous practice. The commitment by many HEI to publish an annual statement of investigations undertaken by that institution is a useful starting point to highlight the existence of misconduct, but disincentives could be more robust and applied in a more coordinated fashion across the sector.

Conclusion

In summary, we believe that the UK is not only at the forefront of good quality research but also in its innovations that support good practice.

Research is being conducted in a changing and increasingly complex landscape in which collaborative work that crosses disciplinary, national and cultural boundaries, within and outside academia, is more frequent and indeed is encouraged through the priorities of public research funders and REF. The UK's world-leading research is conducted in such a complex environment: this leads to exciting advances but also presents challenges. The current standards of research in the UK are equipped to deal with these challenges, but sustained progress will depend on all parties aligning their efforts in this endeavour.

³ <http://www.scienceeurope.org/policy/working-groups/research-integrity/> and http://www.scienceeurope.org/wp-content/uploads/2014/05/ScienceEurope_Roadmap.pdf

