



NHS R&D Forum

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Research integrity: Isn't it obvious?

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- Growing questions about the reliability of research – and of researchers
- An issue for every country and every discipline
- **All** countries/ jurisdictions rely on self-regulation by researchers. What varies are the structures set up to oversee this.
- In the UK: self-regulation approach broadly well-received.
- Challenges: changes in how we do research; issue of showing that research integrity is relevant to all researchers.

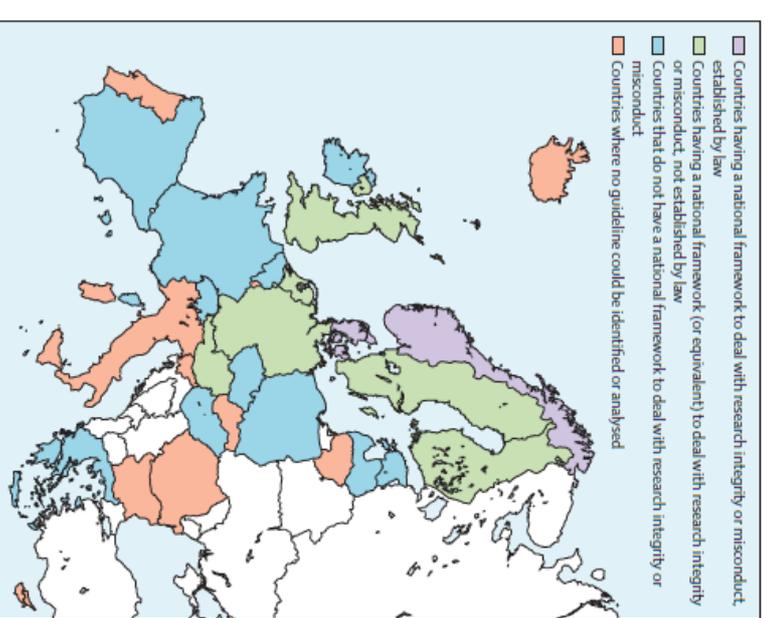


Figure: Classification of countries belonging to the European Union and European Free Trade Association according to some broad categories defined by how they deal with scientific integrity
Adapted from http://europa.eu/rapid/press_releases_freedom_of_information_en.htm

Guidance on research integrity: no union in Europe. S Godecharle, B Nemery, K Dierickx. The Lancet. 2013 Mar 30; 381(9872):1097-8. DOI: 10.1016/S0140-6736(13)60759-X

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Increasing requirements and guidance for researchers

The concordat to support research integrity



- High level policy statement on research integrity for all disciplines of research
- Sets out five key ‘commitments’ for funders, employers and researchers
- RCUK, NIHR, the Wellcome Trust and other have made compliance with the Concordat a condition of their grants



1. Problems are rare?

- Fanelli, D., 2009. *How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data:*
 - 21 misconduct surveys included in systematic review, 18 in meta-analysis.
 - On average, 1.97% of respondents admitted to have fabricated, falsified or modified data or results at least once.
 - Up to 33.7% admitted to questionable research practices.
 - In surveys asking about the behaviour of colleagues, 14.12% knew of falsification and up to 72% knew of other questionable research practices.

PLOS ONE 4(5): e5738. doi:10.1371/journal.pone.0005738



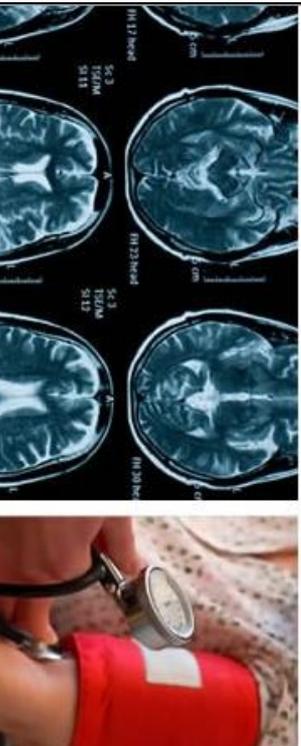
2. Does self-regulation work?

- **Professor Diederik Stapel, social psychologist**
 - ‘The Committees encountered a total of fifty-five publications in which fraud has been established’

Levelt Committee, Noort Committee, Drenth Committee, 2012: *Flawed science: The fraudulent research practices of social psychologist Diederik Stapel*

- Fraud also found in 10 PhD dissertations which used his data
- ‘His lifelong obsession with elegance and order, Stapel says, led him to concoct sexy results that journals found attractive: *“It was a quest for aesthetics, for beauty – instead of the truth.”*’

The New York Times Magazine, April, 2013: *The Mind of a Con Man*



Main Menu

Welcome to your training on good research practice in MRC-funded research. This course will take 50 minutes to complete, followed by a 10 question assessment. The first topic will take 7 minutes, the second topic will take 3 minutes and the third topic will take 40 minutes to complete.

Introduction

Not Attempted

Principles for good research practice

Not Attempted

Guidelines and standards

Not Attempted

Assessment

Not Attempted



The work of UKRIO

- UKRIO created in 2006 to promote good research practice and robust methods to address alleged misconduct, helping researchers and employers to fulfil their responsibilities for research integrity.
- Funded by subscriptions from over 70 universities and other research organisations.
- An advisory body, not a regulator, covering all subject areas.
- Independent and expert guidance, not burdensome and bureaucratic.



Recurring themes from UKRIO's advisory service 2006-2017

1. Focusing on major cases of research misconduct counterproductive.
2. The '*there is no problem*' problem: research integrity, ethics, governance and misconduct often not seen as relevant by researchers.
3. Standards for research practice perceived as obvious but in practice they can be challenging to meet.
4. Don't be heavy-handed or micro-manage. Priority: culture/ leadership.



It is relevant to you and your research 1/2

- Protection re. liability and institutional insurance constraints
- Enhancing awareness of legal issues (e.g. consent)
- Assurance of continuing opportunities to seek funding
- Strengthening case for research funding
- Gaining public confidence
- Facilitating recruitment willingness in participants
- Helping research students understand the issues
- Bringing on next generation of scientists with integrity
- Encouraging collegiality around standards
- Collaborative research: 'making sure you're all on the same page' – with different teams, organisations, countries, etc.



It is relevant to you and your research 2/2

- Halting ethical 'drift' and keeping up with developments in ethics
- Supporting reasoning around new challenges/ methods/ topics
- Protecting academic freedom in institutions
- The moral case
- Borderline between some questionable practices and normal / sloppy practice can be fine ... so even honest researchers need training and a good understanding to avoid problems
- Conventions for research often set by others – e.g. regulators, funders and journals –so researchers need to be taught the 'rules' and can't necessarily work them out for themselves
- **Sustaining and enhancing quality and ethical standards: research must not only be honest but must be seen to be honest**



Key ongoing challenge: authorship

sity of Memphis to SBF and JAK. All authors contributed equally to this paper so the order of authorship was determined by rock, paper, scissors.

Kupfera, J., Webbeking, A. and Franklin S. B. (2004), *Forest fragmentation affects early successional patterns on shifting cultivation fields near Indian Church, Belize*. Agriculture, Ecosystems & Environment, 103.

¹ Manuscript received 7 December 1990; revised 13 June 1991; accepted 28 June 1991.

² Order of authorship determined by brownie bake-off.

Young, H. J. and Young, T. P. (1992), *Alternative Outcomes of Natural and Experimental High Pollen Loads*. Ecology, 73.



Emerging challenges

- Internet-mediated Research (particularly social media)
- Big Data and Data Ownership
- Dropbox and cloud computing
- Navigating integrity in international collaborations
- Integrity of public engagement
- Crowdfunding / crowdsourcing of research
- **Research governance/ ethics/integrity staff: lack of time & resources**



Closing thoughts

- A recurring theme from UKRIO: problems occurring due to overconfidence, bad habits or a failure to get help.
- Researchers need to be encouraged to be self-critical. There should be no stigma attached to asking for help.
- Organisations need to provide effective support while avoiding burdens and bureaucracy.
- Challenges: relevancy, emerging fields of research, pressures of so-called 'publish or perish' research culture



Acknowledgements/ further reading

- Fanelli, D., 2009. *How Many Scientists Fabricate and Falsify Research? A Systematic Review and Meta-Analysis of Survey Data*. PLOS ONE 4(5): e5738. doi:10.1371/journal.pone.0005738 [online]. Available from: <http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0005738>
- Fang, F. C., Steen, R. G. & Casadevall, A. *Misconduct accounts for the majority of retracted scientific publications*. Proc. Natl Acad. Sci. USA (2012) doi: 10.1073/pnas.1220649110 [online]. Available from: <http://www.pnas.org/content/early/2012/09/27/1212247109.abstract>
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- 2nd World Conference on Research Integrity, 2010. *The Singapore Statement on Research Integrity* [online]. Available from: <http://www.singaporestatement.org/statement.html>
- **Case studies from the UK Research Integrity Office for researchers at UKRIO subscriber institutions available on request – contact us via www.ukrio.org**

Additional material provided by Prof. Michael Farthing, Prof. Ron Laskey and Prof. Nick Steneck, UKRIO.



Case study 1

Dr Richard Smith, former editor-in-chief, *BMJ*

Six of you have worked on a paper together. **Who should be an author?**

- Abby had the idea but took no part in data collection or writing the paper.
- Billy collected data but had nothing to do with the analysis or the writing.
- Carol designed the study, analysed but didn't collect the data, and read the draft paper critically.
- David wrote the paper but had nothing to do with anything else.
- Edith, the head of department, didn't work on the study but did read the paper critically before publication.
- Frank looked after the participants included in the study.
- Gladys, who works for the company that funded the study, analysed the data and read the paper critically before publication.



Case study 2

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- You are a successful researcher employed on a fixed-term contract that is coming up for renewal. The decision on your contract extension will be made by a panel of senior colleagues, including your Head of Department.
- Your Department is rapidly gaining a reputation as an exceptional place to work, not least because of the research of a colleague, 'X'. The protégé of the Head of Department, X has published a series of papers in high profile journals which have attracted a great deal of interest from the research community.
- Emily, a PhD student on your research team, shows you compelling evidence that X may have deliberately fabricated or falsified information in one or more published articles... **What do you do?**



Case study 3

Dr Elizabeth Wager, UKRIO and Sideview

- A colleague tells you about a fascinating new technique that could be really useful for your research.
- When you ask for more details, you discover that the colleague read about the technique in a paper she is reviewing for a prestigious journal with a 12-month delay between acceptance and publication.
- She tells you that she plans to submit her reviewer's report to the journal next week and will recommend accepting the paper but won't know what the other reviewers recommend.
- Your colleague does not know who the authors of the paper are. **What do you do?**



Case study 4

Dr Andrew Rawnsley, UKRIO and Teesside University

- You are a PhD student.
- In your viva, your external examiner asks you the following:
 - “How did you approach the design and conducting of your PhD study to take account of ethical issues?”
 - “When analysing your data, how did you ensure the integrity of your data?”
 - “If you plan on publishing your research, how would you go about demonstrating to a journal editor that your work was conducted to the standards of integrity that are expected?”
- **How do you respond? If you supervise students, how would you advise them to respond?**