PUJIANG
INNOVATION
FORUM
浦江创新论坛

共享创新 共塑未来：构建科技创新开放环境
Sharing Innovation and Shaping the Future: Towards an Open Environment for Scientific and Technological Innovation

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Abstract

Britain has a rich industrial and scientific heritage, with an established and diverse research culture anchored within a world-leading University sector. Successfully sustaining and building on the reputation of British research means addressing the challenges and criticisms of how research culture has developed in the 21st century. I will review some of these challenges - hypercompetition and excessive workload, employment precarity, perverse metrics, unfortunate publishing practices, lack of transparency, irreproducibility of findings and threats to international collaboration - and suggest ways forward.

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RoR RESEARCH ON RESEARCH INSTITUTE

Senior Research Fellow
Research on Research Institute

UKRN UK Reproducibility Network

Chair, UKRN
Institutional Leads Group

tomstafford.github.io

The British University Model

- autonomous (“amateur”?)

- collegial competition

- hybrid (research AND teaching)

Image: Trinity College, Cambridge By Andrew Dunn
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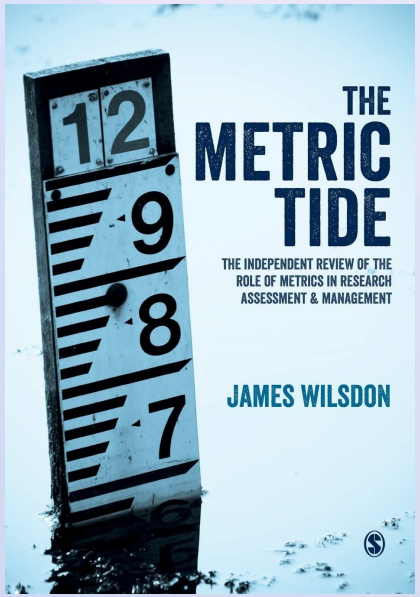
Challenges for UK research culture

Under-funding
Employment Precarity
Perverse Metrics
Profiteering in publishing
Low standards of rigour
Marketisation
Nationalism
Hypercompetition
Workload
Career progression
Threats to public trust
Diversity and inclusion

…and Responses

1. Responsible Metrics
2. Changes to national research assessment
3. Increases in reproducibiilty practices
4. Open Research
5. Valuing process rather than outputs
6. Metascience

Responsible Metrics



Box 1: A revised framework for responsible metrics (new additions in **bold**):

Responsible metrics are founded on the principle that the qualities of research reside both in the outputs and impacts of research work, and in the way it is conducted. They have the following dimensions:

- **Robustness:** basing metrics on the best possible data in terms of accuracy and scope;
- **Humility:** recognising that quantitative **indicators should not supplant qualitative, expert assessment, but should be used where appropriate to strengthen or complement peer review**;
- **Transparency:** opening up data collection and analytical processes, so those being evaluated are **included in the design of the evaluations** and can test and verify the results;
- **Diversity:** accounting for variation by field, and using a range of indicators to reflect and support a plurality of research, of **research and research-enabling**[3] **staff characteristics**, and researcher career paths across the system;
- **Reflexivity:** recognising and anticipating the systemic and potential effects of indicators, and updating them in response.

https://rori.figshare.com/articles/report/Harnessing_the_Metric_Tide/21701624?file=38515103

Research Assessment:

REF 2029

Research Excellence Framework

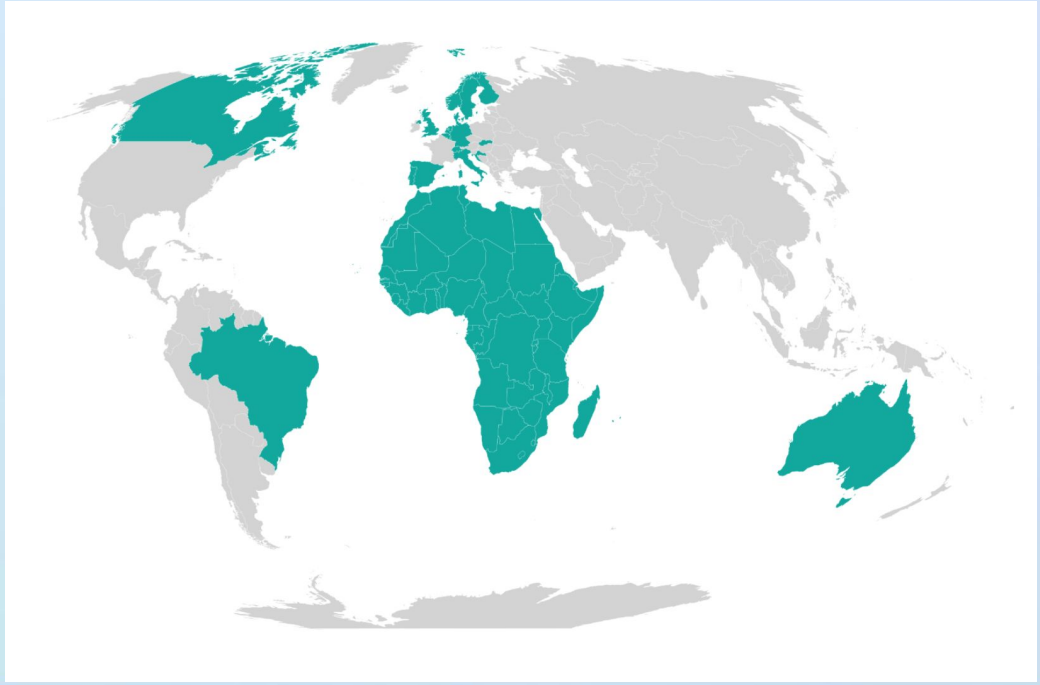
https://www.ukri.org/blog/voices-people-culture-and-environment-are-at-heart-of-research/

UKRN

UK Reproducibility Network

“The UK Reproducibility Network (UKRN) is a national peer-led consortium that aims to ensure the UK retains its place as a centre for world-leading research”

a growing global network



https://www.ukrn.org

Open Research

https://www.ukrn.org/open-research-programme/

Open Research creates a platform for innovation

Supports

… rigour

… learning

… sharing

… re-use

… adaption

& translation

… scaling

A difference in focus:

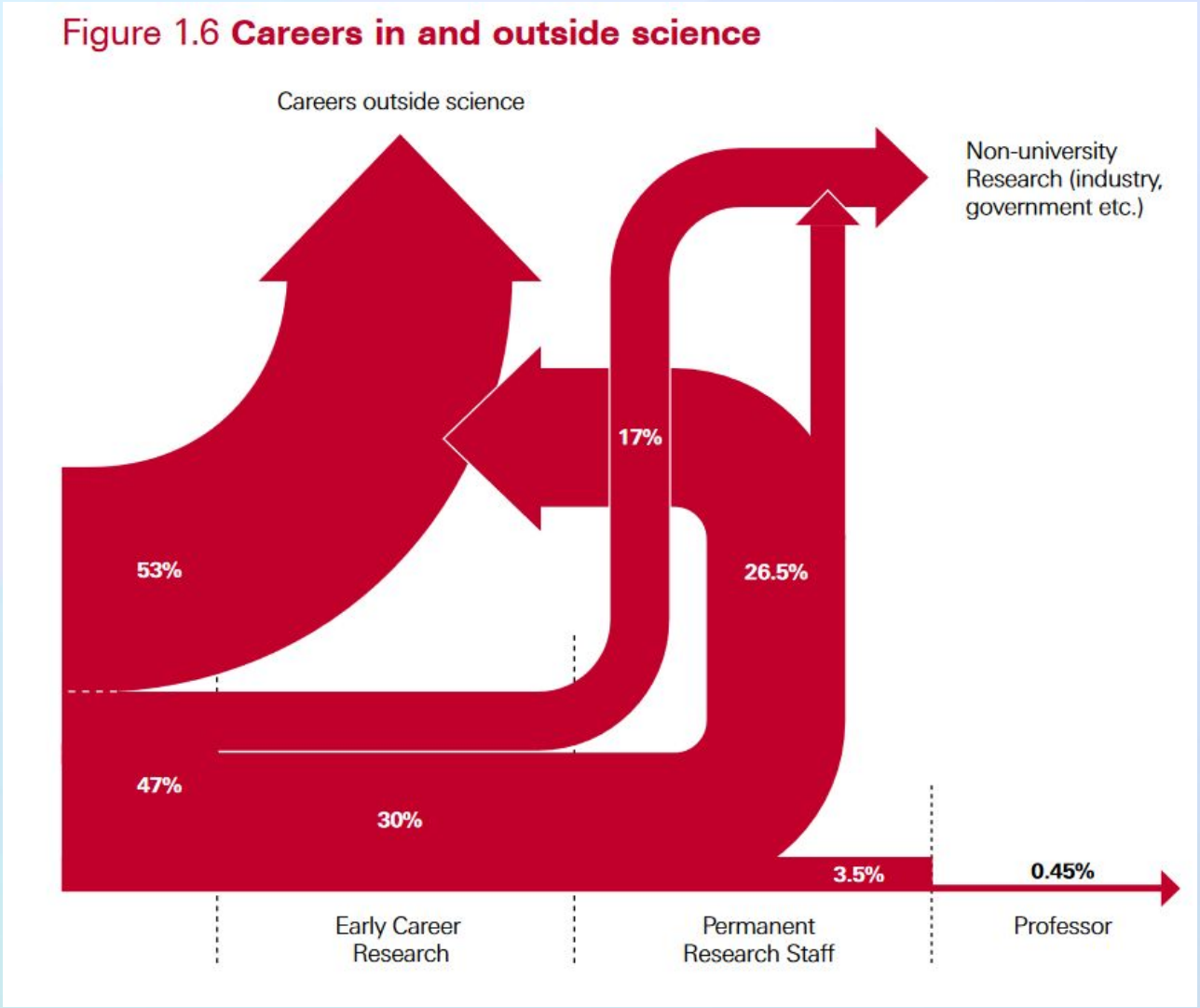
Process > Output

- Rigour
- Teamwork
- Transparency
- Skill Development

Researcher > Research

Image: Steve Jurvetson
Vertical Scrum, 2008 CC-BY

Universities produce scientists as well as science



[The Scientific Century securing our future prosperity](). Royal Society (2010)

Metascience

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NATURE INDEX | 07 August 2024

The UK launched a metascience unit. Will other countries follow suit?

Tasked with finding better ways to conduct, distribute and fund research, the unit could set the standard for government-led 'science of science' initiatives.

By Dalmeet Singh Chawla

https://www.nature.com/articles/d41586-024-02469-4

metascience.info

tomstafford.github.io

END

(reserve slides follow)

Funding reform

Advanced Research + Invention Agency ARIA

Ongoing tension between strategic and infrastructural investments vs bottom up research prioritisation (e.g. QR)