The findings of a series of engagement activities exploring

The culture of scientific research in the UK

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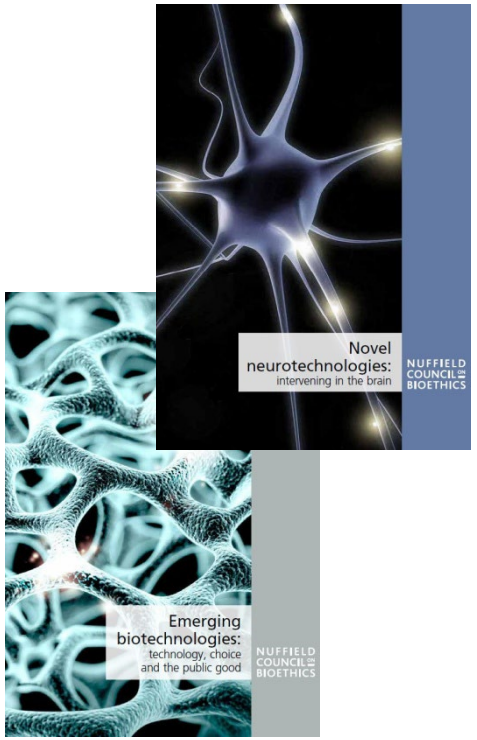
Project origins

- The culture of research must support high quality science
- Concerns about culture surfaced in previous Nuffield Council reports
- High profile cases of research misconduct
- Learned societies shared our concerns



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Project aim

"To foster constructive debate among all those involved in scientific research about the culture of research in the UK and its effect on ethical conduct in science and the quality, value and accessibility of research"

Oct 2013 – Steering Group set up to oversee project and provide connections with the scientific community

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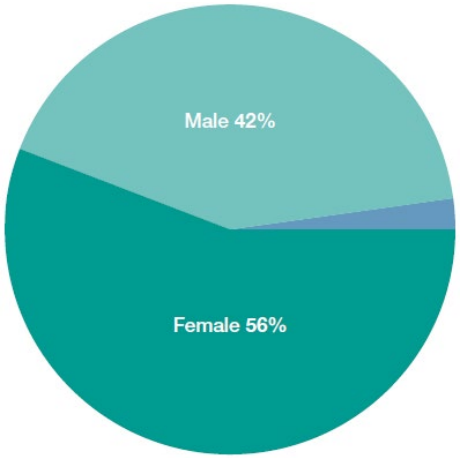
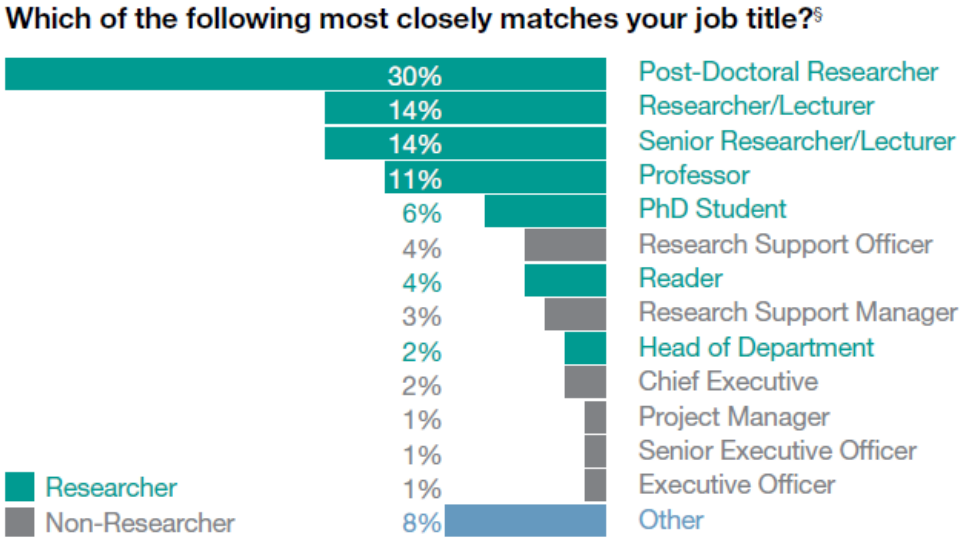
Project activities: Online survey

March-July 2014

26 questions

970 responses





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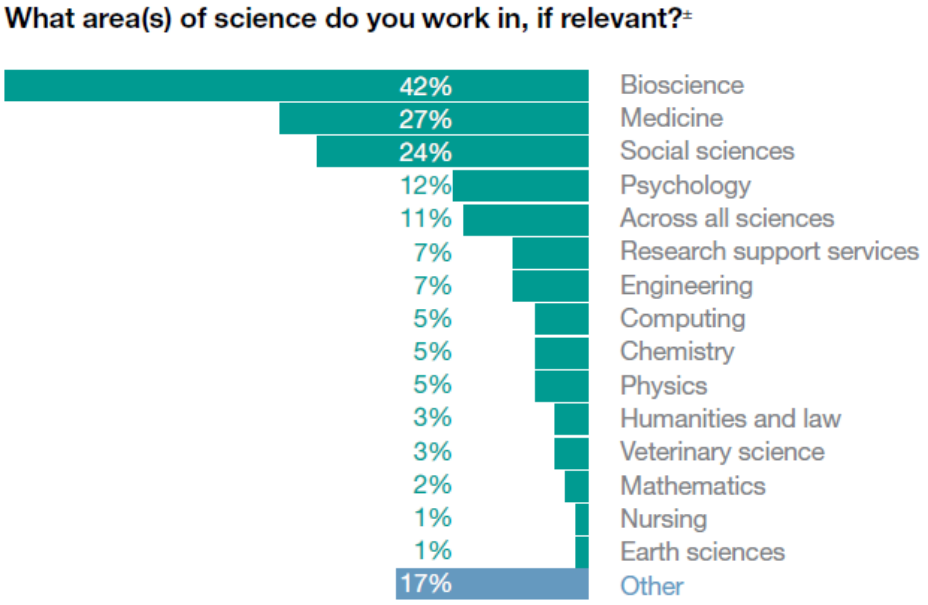
Project activities: Discussion events

15 events
63 speakers
680 registered attendees



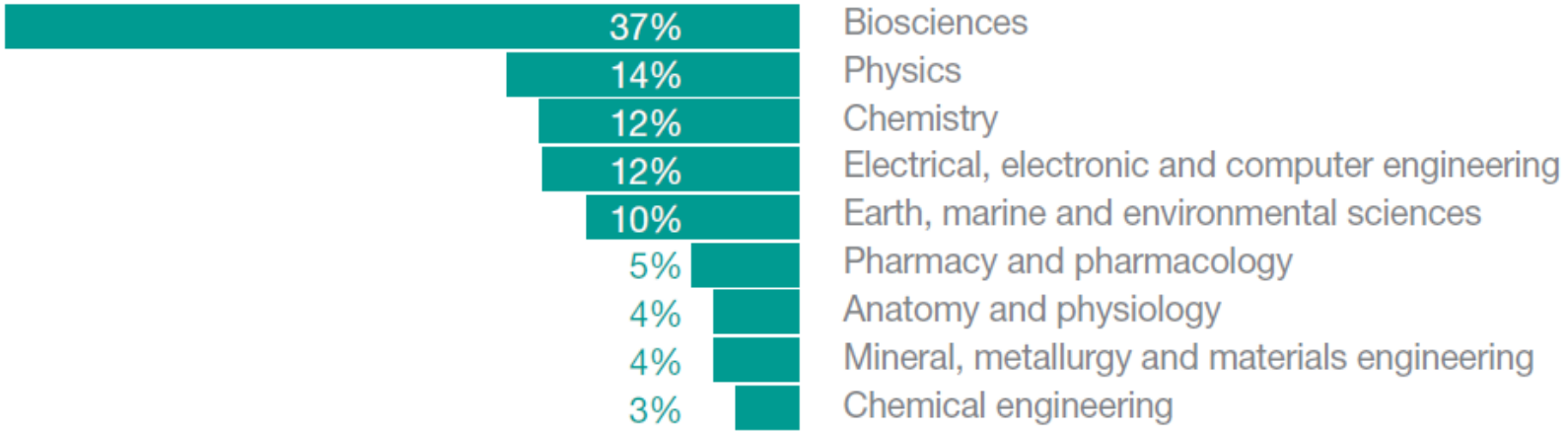
Project activities:
Evidence gathering meetings

1) Funding bodies
2) Publishers and editors
3) Academics from the social sciences

Reporting the data

- Self-selecting participants
- Bias towards researchers working at HEIs
- Large proportion of bioscience/medicine and early career researchers

Percentages of staff employed in research roles in UK HEIs in 2011/12 in selected scientific disciplines[4]



What we heard

What is high quality research?

High quality research:

1. Rigorous
2. Accurate
3. Original
4. Honest
5. Transparent

Scientists motivated by:

1. Improving their knowledge
2. Making discoveries for the benefit of society
3. Satisfying their curiosity

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Themes

Components identified by participants as being important for high quality research:

Collaboration	**Openness**
Multidisciplinarity	**Creativity**

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Competition

- Science is very competitive
- Competition can bring out the best in people (think more men than women)
- But it can also encourage
  - poor quality research practices
  - less collaboration
  - headline chasing

94%

of survey respondents think applying for funding is very competitive

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Funding of research

- Scientists concerned that current trends in the funding system are causing a loss of creativity and innovation
- Specifically funding is seen as: in short supply, narrowly focussed, short-term, risk averse and disproportionately awarded to established research centres
- UK funding bodies provide a wide range of grants but it is hard to determine details and trends over time

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Assessment of research: journal and article metrics

- Strong pressure to publish in high impact factor journals
- Concerns:
  - important research not being published
  - disincentives for multidisciplinary research
  - authorship issues
  - lack of recognition for non-article outputs
  - lack of recognition for collegiality
- DORA is a positive development

Assessment of research: wider activities of researchers

Research impact

Assessment of impact welcomed by some, others say:

- creating a culture of short-termism
- pushing aside curiosity-driven research
- resulting in exaggeration in grant proposals

Professional activities

- 48% think training/supervision is having positive impact
- Institutions should value non-research activities more

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Assessment of research: peer review

71%

of survey respondents believe the peer review system in the UK is having a positive or very positive effect on scientists

Concerns:

- Inappropriate reviewer behaviour
- Shortage of peer reviewers
- Shortage of time to do a good job of peer review

Need:

- A review of peer review
- Peer reviewers to be given training, time and recognition

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Assessment of research: the REF

- 25% think it is having a positive or very positive effect
- 40% think it is having a negative or very negative effect
- There are widespread misperceptions or mistrust among scientists about assessment of research in the REF

Concerns:

- Driving the pressure to publish in particular journals
- Disadvantaging multidisciplinary research

Research governance & integrity

- 26% of respondents have themselves felt tempted or under pressure
- More under-35s reported feeling pressured
- Suggested causes: high competition and pressure to publish

Need:

- Institutions to create conditions for ethical conduct
- Training in good research practice

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Careers & workload

- Concerns about careers & workload were frequently raised (particularly by women)
- Leading to:
  - culture of short-termism
  - stress
  - lack of time to think
  - loss of talented individuals from academia
  - loss of creativity and innovation
  - poor quality research practices

Careers & workload

54%

of survey respondents think the way scientists are assessed for promotion during their career is having a negative or very negative effect on scientists

- Need:
  - Broader assessment criteria for recruitment and promotion
  - Mentoring and career advice
  - Tackle negative attitudes to ‘dropping out’
  - Good employment practices for women

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Widespread agreement

- Competition is a double edged sword
- We are in an era of perceived hyper-competition
- The rules for winning are perceived to be disproportionately focused on a few measures that can incentivise poor research practice
- All the stakeholders view the rules for winning as out of their control
- A key aim of this project is to engage the whole community in acting together to find solutions

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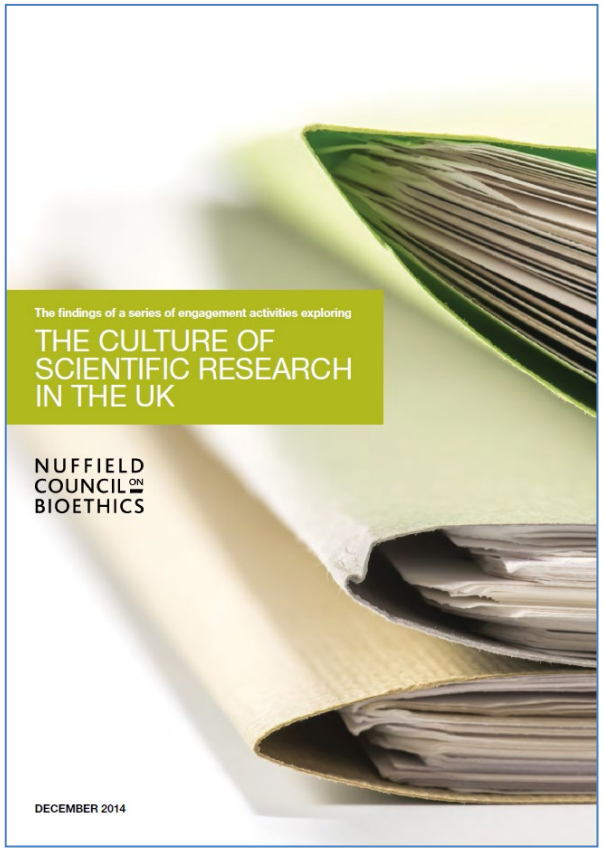
Suggestions for action

- A collective obligation for all stakeholders
- Suggestions for action for:
  - funding bodies
  - research institutions
  - publishers and editors
  - professional bodies
  - individual researchers



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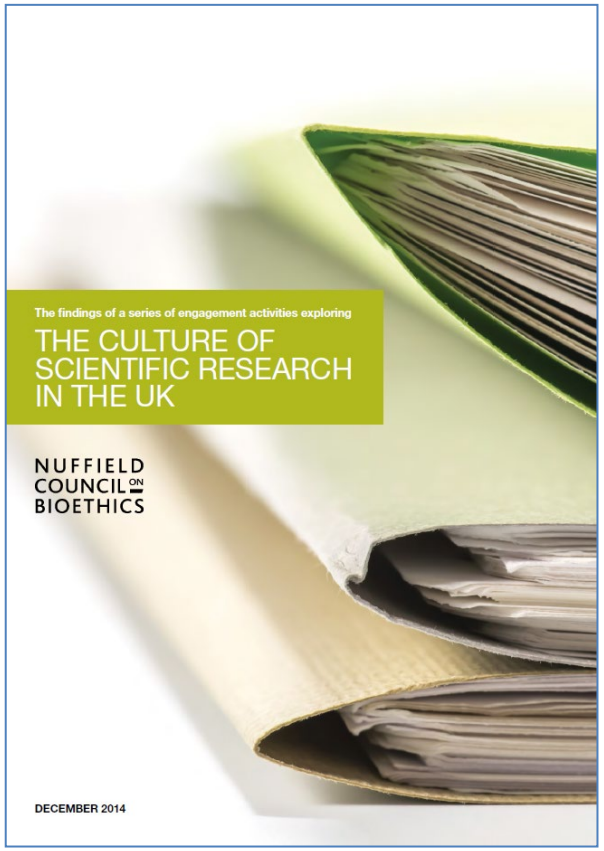
Suggestions for action

- The assessment system
  - use a wide range of assessment criteria
  - clearly communicate and follow the assessment criteria
  - train and recognise assessors
  - communicate the outcomes of assessment process



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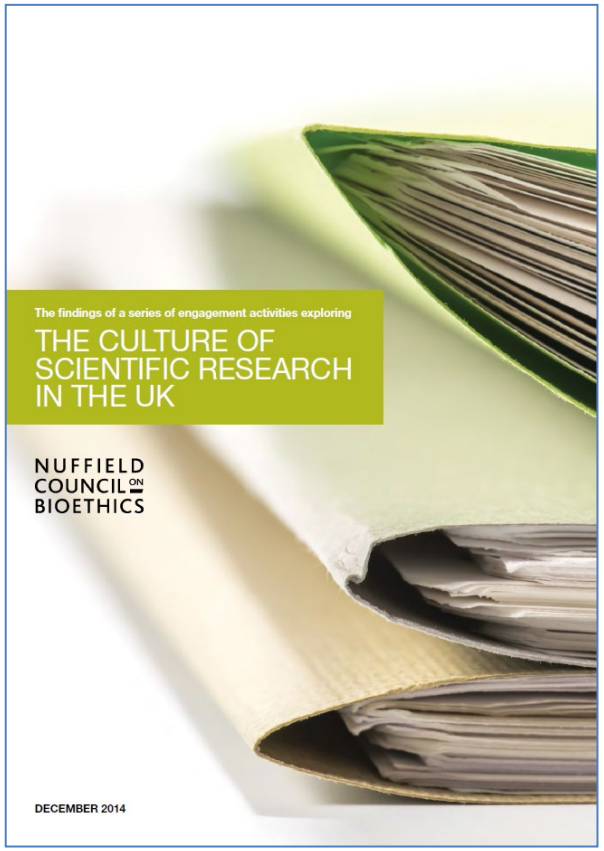
Suggestions for action

- The research environment
  - promote an open and collaborative research culture
  - embed research ethics
  - provide mentoring and career advice for researchers
  - promote an ethos of collective responsibility



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