FAIRS report 1

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## Summary of FAIRS Survey, round 1

This is a brief document to provide feedback to panelists from Round 1 of the FAIRS survey. For background to the survey, please see the protocol here: <https://osf.io/mzjsh/>.

37 panelists signed up to take part in the survey, and completed surveys were received from 37 of them. Those taking part were asked to self-identify into one of three groups, and the distribution of respondents was as follows:

| Var1 | Freq |
| --- | --- |
| 1\_S | 17 |
| 2\_R | 11 |
| 3\_O | 9 |

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The gender distribution was as follows:

| Var1 | Freq |
| --- | --- |
| Man | 25 |
| Woman | 12 |

The bulk of respondents were from Europe or N America:

| Var1 | Freq |
| --- | --- |
| Africa | 2 |
| Australasia | 1 |
| Europe | 24 |
| N. America | 8 |
| S. America | 2 |

And the distribution of email domains was as follows:

| countrylist | Freq |
| --- | --- |
| au | 1 |
| be | 1 |
| br | 2 |
| ca | 2 |
| ch | 2 |
| com | 8 |
| edu | 4 |
| fr | 1 |
| it | 1 |
| lt | 1 |
| net | 1 |
| nl | 1 |
| se | 1 |
| si | 1 |
| uk | 10 |

For each item in the survey, we show the number of people selecting each response type, prorated to give equal group sizes. Free text comments are also shown.

## Priorities

### Item 1

Which of these should be a primary focus for discussion? (1 for low priority, 3 for high priority). Try to avoid selecting the same response for all options, so that we can identify their relative importance.  
- A. What constitutes serious research misconduct?  
- B. How allegations of serious research misconduct are handled  
- C. Sanctions for serious research misconduct

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| What constitutes serious research misconduct? | 1.82 (0.88) | 2.4 (0.7) | 2.11 (1.05) |
| How allegations of serious research misconduct are handled | 2.06 (0.9) | 1.36 (0.67) | 2.22 (0.67) |
| Sanctions for serious research misconduct | 2.29 (0.69) | 2.09 (0.83) | 2 (0.71) |

## Burdens of serious research misconduct

### Item 2

How common is the problem of serious research misconduct? (select one)

* A. Serious research misconduct is rare relative to the amount of published research literature
* B. Serious research misconduct is becoming more prevalent and starting to pose a threat to the research literature
* C. Serious research misconduct is already common enough to pose a major threat to the research literature

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Rare | 1.41 (0.8) | 2.18 (0.75) | 2.22 (0.83) |

### Item 3

How harmful are the impacts of serious research misconduct to different segments of society? Please code as 1 (low harm) to 5 (strong harm)

* A. Consumers of research findings, e.g. patients whose treatment is informed by medical research or policy-makers who depend on research findings
* B. Other researchers who try to build on fraudulent findings
* C. Funders, whose funds are wasted
* D. Institutions, whose resources are diverted to tackling misconduct
* E. Society, when public trust in research is eroded

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Consumers of research findings | 4.24 (1.15) | 4.27 (1.27) | 4.22 (1.39) |
| Other researchers who try to build on fraudulent findings | 4.12 (1.05) | 4.27 (0.9) | 4.11 (0.78) |
| Funders, whose funds are wasted | 4 (0.94) | 3.36 (1.21) | 4 (0.71) |
| Institutions whose resources are diverted to tackling misconduct | 2.59 (1.23) | 2.45 (1.37) | 3.11 (0.93) |
| Society when public trust in research is eroded | 3.29 (1.53) | 3.73 (1.42) | 4.22 (1.3) |

## Goals of those responding to serious research misconduct

### Item 4

In responding to serious research misconduct, several goals may be considered. Please rate how important each of these is, from 1 (unimportant) to 4 (very important)

* A. To maintain academic integrity, including to correct the academic record
* B. To punish offenders
* C. To deter others from committing fraud
* D. To maintain trust and rigour in research

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| To maintain academic integrity, including to correct the academic record | 3.41 (1.06) | 3.27 (1.19) | 3.56 (0.73) |
| To punish offenders | 2.53 (0.94) | 1.91 (0.94) | 2.44 (0.88) |
| To deter others from committing fraud | 3.06 (0.75) | 2.55 (0.82) | 3.33 (0.71) |
| To maintain trust and rigour in research | 3 (1.17) | 3.55 (1.04) | 3.78 (0.44) |

## Factors hindering academic institutions’ response to serious research misconduct

### Item 5

Various factors may hinder academic institutions’ response to serious research misconduct. Please rate the following from 1 (not much of a hindrance) to 5 (substantial hindrance)

* A.Lack of co-ordination between relevant research actors, such as institutions, funders and publishers
* B. Conflict of interest for institutions investigating their own researchers
* C. Lack of resources
* D. Lack of expertise
* E. Concern about legal repercussions
* F. Large number of vexatious/trivial accusations of misconduct
* G. Bureaucratic delays or inefficiencies in the investigation process
* H. Complexity of cases
* I. Due process concerns to ensure fairness to all involved in the case

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Lack of co-ordination between relevant research actors, such as institutions, funders and publishers | 3.41 (1.54) | 2.7 (1.25) | 3.89 (1.05) |
| Conflict of interest for institutions investigating their own researchers | 4.76 (0.44) | 2.45 (1.37) | 4.22 (0.83) |
| Lack of resources | 2.88 (1.45) | 3.45 (1.51) | 3 (1.58) |
| Lack of expertise | 3.18 (1.24) | 2.82 (1.47) | 3.44 (1.33) |
| Concern about legal repercussions | 3.5 (1.03) | 2.73 (1.56) | 4.44 (1.01) |
| Large number of vexatious/trivial accusations of misconduct | 2.06 (1.14) | 2.2 (1.03) | 2.33 (0.87) |
| Bureaucratic delays or inefficiencies in the investigation process | 3.47 (1.23) | 2.91 (0.94) | 3.89 (1.05) |
| Complexity of cases | 3 (0.87) | 2.91 (1.51) | 3.67 (1) |
| Due process concerns to ensure fairness to all involved in the case | 3.29 (1.05) | 3.18 (1.08) | 3.11 (0.93) |

## Factors driving serious research misconduct

### Item 6

What is the impact of these factors in encouraging researchers to commit serious research misconduct? Please rate from 1 (little impact) to 5 (large impact)

* A. Low probability of being detected and/or reported
* B. Low probability of being punished if detected and/or reported
* C. ‘Publish or perish’ culture and incentive structure in research (e.g. progression, promotion, recognition)
* D. Fear of losing one’s job if not sufficiently productive in publishing in prestigious journals

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Low probability of being detected and/or reported | 4.12 (1.11) | 2.91 (1.38) | 4.33 (0.5) |
| Low probability of being punished if detected and/or reported | 3.94 (1.03) | 2.73 (1.42) | 3.67 (1.12) |
| ‘Publish or perish’ culture and incentive structure in research (e.g. progression, promotion, recognition) | 4.35 (0.93) | 4 (1.41) | 4.44 (1.13) |
|  | 3.65 (1.27) | 3.82 (1.17) | 3.78 (1.2) |

## Role of social media

### Item 7

On balance, the role of social media in detecting and reporting serious research misconduct has been: (select one)  
- A. predominantly negative - it makes it too easy for vexatious individuals to raise unwarranted complaints, often under the guise of anonymity  
- B. neither positive nor negative on balance  
- C. positive - it provides a route for speedy commentary when concerns are discovered

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| negative | 1.71 (0.47) | 2.45 (0.82) | 1.89 (0.78) |

## Reporting serious research misconduct

### Item 8

Official channels for reporting misconduct are often slow and obstructive (select one option).  
- A. Strongly agree  
- B. Moderately agree  
- C. Neither agree nor disagree  
- D. Moderately disagree  
- E. Strongly disagree

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| strong agree | 2.41 (0.94) | 1.55 (0.82) | 1.78 (0.97) |

## Models for addressing serious research misconduct

### Item 9

In an ideal world where resources are not an issue, which is the most suitable model/system for addressing serious research misconduct?

* A. Self-regulation approach, where academic institutions are responsible for conducting investigations and determining sanctions when one of their staff is accused
* B. National governance approach, where government regulatory agency is set up for this purpose
* C. National guidelines approach; for example, UK’s Committee for Research Integrity, which does not have a regulatory role, but aims to ensure all institutions work to a common framework
* D. Regulatory agency independent of Government

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Self-regulation | 2.88 (1.27) | 3.73 (0.47) | 2.56 (1.13) |
| National governance | 2.47 (1.18) | 2.09 (0.94) | 2.22 (0.83) |
| National guidelines | 2.71 (0.85) | 2.55 (1.29) | 2.67 (1.41) |
| Regulatory agency | 2.24 (1.3) | 2.09 (1.14) | 2.67 (1.12) |

## Role of employers

### Item 10

Prospective employers should undertake rigorous due diligence and, as far as possible, check with previous employers to ask if there have been any investigations into serious research misconduct. - A. Agree - B. Neutral - C. Disagree

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| agree | 1.35 (0.7) | 1.45 (0.82) | 1.33 (0.71) |

### Item 11

Employers, funders and publishers of research should be legally required to share information to support investigations of serious research misconduct. - A. Agree - B. Neutral - C. Disagree

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| agree | 1.29 (0.47) | 1.18 (0.4) | 1.11 (0.33) |

## Solutions to serious research misconduct

### Item 12

Given that we have finite resources, which solutions to serious research misconduct should be prioritised in funding? Rate the following options from 1 = most preferred, to 5 = least preferred

* A. Changing criteria for hiring/promotion/funding away from publish/perish model, so that researchers won’t be motivated to commit fraud
* B. Research ethics training for all researchers
* C. Funding/training of research integrity officers
* D. Infrastructure to collect and report on serious research misconduct nationally
* E. Support for individuals/organisations who have expertise in detection of serious research misconduct

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
|  | 2.94 (1.52) | 3.64 (1.8) | 2.56 (1.74) |
|  | 3.53 (1.59) | 2 (1.48) | 3.89 (1.36) |
|  | 3.12 (1.05) | 2.36 (1.43) | 3.22 (1.09) |
|  | 2.59 (1.12) | 3 (1.18) | 2.78 (1.2) |
|  | 2.53 (1.46) | 2.73 (1.62) | 2.89 (1.45) |

## Role of publishers

### Item 13

It is not the responsibility of publishers or journal editors to determine whether serious research misconduct has occurred, but they are responsible for ensuring the literature is decontaminated from erroneous work promptly. Please rate the following statements in accordance with your views on how this should work, from 1 = strongly disagree to 5 = strongly agree.

* A. Articles that contain serious errors that undermine confidence in the findings should be retracted promptly, without waiting for an institutional investigation
* B. Publishers and institutions should work together to facilitate sharing of key information when serious research misconduct is suspected
* C. If conditions for retraction are not met, an expression of concern may be added to an article while an institution conducts an investigation
* D. When an institutional investigation is completed, the institution should directly approach the publisher of articles affected by severe research misconduct and request retraction
* E. When a publisher finds the same author repeatedly flagged for erroneous material, they should communicate this to research integrity officer at the author’s institution
* F. When a publisher or institution finds the same researcher repeatedly flagged for erroneous material, their name should be added to a database. (NB. If there is sufficient endorsement of this statement, there would need to be discussion of how this works in terms of legal, practical and ethical aspects.)

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Publishers and institutions share information | 4.47 (1.18) | 3.45 (1.37) | 4.22 (1.3) |
| Expression of concern if conditions for retraction not met | 4.31 (1.2) | 4 (1.55) | 4.44 (0.73) |
| Institution report to publisher | 4.29 (0.85) | 3.45 (1.51) | 3.89 (1.05) |
| Publisher reports repeat offenders to institution | 4.29 (1.31) | 4.45 (1.21) | 4 (1) |
| Database for repeat offenders | 4.47 (1.07) | 4.36 (1.21) | 4.33 (1.12) |
|  | 3.59 (1.33) | 3.82 (1.08) | 3.89 (1.27) |

## Whistleblowers and bystanders

### Item 14

Please rate your agreement with the following statements about whistleblowers from 1 = strongly disagree to 5 = strongly agree

* A. There are disincentives for researchers to report serious research misconduct
* B. Usually there is insufficient protection for whistleblowers who report serious research misconduct
* C. It is important to be aware of and mitigate collateral damage that may be caused to other members of a research group if one member is found to have committed serious research misconduct
* D. Whistleblowers should have their identities protected, with confidential channels for reporting suspected serious research misconduct

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| There are disincentives for researchers to report serious research misconduct | 4.53 (0.72) | 3.82 (1.54) | 3.56 (1.13) |
| Usually there is insufficient protection for whistleblowers who report serious research misconduct | 4.06 (1.2) | 3.27 (1.1) | 3.67 (1.12) |
| It is important to be aware of and mitigate collateral damage | 3.88 (0.99) | 3.91 (0.83) | 4.56 (0.53) |
| Whistleblowers should have their identities protected | 4.24 (0.83) | 3.45 (1.44) | 4.11 (1.36) |

## When serious research misconduct is confirmed

### Item 15

Which of these practices should be options for institutions when serious research misconduct is confirmed. Please give your rating from 1 = strongly disagree to 5 = strongly agree.\*

* A. Educational retraining for researchers who have been found to commit serious research misconduct
* B. Restorative justice approaches; e.g. requirement to meet those affected by the misconduct to discuss its impact
* C. Sanctions such as demotion or dismissal
* D. Report on the investigation made public, with identities of those found to have committed serious research misconduct disclosed

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| Educational retraining | 2.41 (1.37) | 3.73 (1.19) | 3.11 (1.45) |
| Restorative justice | 2.71 (1.57) | 3.27 (1.62) | 3.44 (1.13) |
| Sanctions | 4.65 (0.61) | 3.64 (1.43) | 4.22 (1.3) |
| Report made public | 4.47 (0.8) | 3.64 (1.36) | 4.11 (1.54) |

## Unintended consequences/barriers to progress

### Item 16

Please rate your agreement with the following statements about unintended consequences/barriers to progress from 1 = strongly disagree to 5 = strongly agree

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
|  | 4.65 (0.49) | 3.27 (1.27) | 4.44 (1.13) |
|  | 2.12 (1.41) | 1.82 (0.98) | 2.67 (1.22) |
|  | 3.41 (1.23) | 3 (1) | 3.67 (1) |
|  | 3.29 (1.21) | 3.73 (1.19) | 3.67 (0.87) |

### Item 17

“One of the likely drivers of trust and distrust in research is the way research institutes, publishers, and funders respond to allegations of research misconduct” (Bouter, 2024)  
- A. Agree  
- B. Neutral  
- C. Disagree

| Subitem | 1\_S (N = 17) | 2\_R (N = 11) | 3\_O (N = 9) |
| --- | --- | --- | --- |
| agree | 1.47 (0.8) | 1.64 (0.92) | 1.33 (0.71) |

## Free text comments

**Free text comments on item 1**

| x |
| --- |
| 1\_S Restricting definitions of “serious research misconduct” to where researchers *intended* to commit fraud would put the burden of proof onto institutions to prove such an *intention*. That will be extremely difficult. |
| 1\_S I believe that finding and punishing the guilty party is an outdated approach to quality control. We can learn from how errors are managed in other areas, such as the often-mentioned airlines as well as clinical medicine, and focus more on identifying structural issues. |
| 1\_S Why do researchers violate scientific ethics? |
| 1\_S “We know it when we see it” so less need for further discussion. A defined process for handling it is the most pressing need. |
| 1\_S I think you may want to distinguish between misconduct by authors and misconduct elsewhere in the peer-review pipeline (rogue editors or reviewers, cohesive citation, citation cartels etc.) |
| 1\_S Though it is of course important to have criteria for what constitutes serious research misconduct, my experience is that debates on semantics tend to detract from the concrete implementation of mechanisms to prevent harmful conduct. So searching for the “one true definition” seems less fruitful and useful to me. |
| 1\_S My view is that there is less clarity and consistency on point 2 and little research to best inform it |
| 1\_S If we first focus on ‘what constitutes serious research misconduct,’ we may never get to the other two. There need to be consequences for serious research misconduct. |
| 1\_S I think all of these are important, so they are all on the ‘high importance’ spectrum of things. |

Although the statement “what serious research misconduct constitutes” is important, it can also lead to endless discussions and different actors / teams / clubs / societies ending up with different definitions. I think we all know what serious research misconduct means and I think we need to act rather than discuss. | |1\_S Feel like there are already pretty good definitions out there for what serious misconduct is. No need to reinvent the wheel by coming up with a new definition. | |1\_S I think the “process” for identifying, investigating and determining sanctions, should be adversarial and clearly defined - similar to the way the criminal justice system is intended to work. That system is not perfect, but it provides guardrails that protect both the accused and the public at large. | |1\_S We need agreement between publishers, institutions, funders and researchers on appropriate sanctions. Sanctions which would occur need to be visible to act as deterrents. | |1\_S Sanctions impossible to enact; most institutions have no interest and never follow up on concerns | |1\_S All three would deserve a high priority, but I have ordered them. | |2\_R Regarding sanctions for serious research misconduct - my University’s Procedure does not include disciplinary action. If an allegation is upheld, the information is shared with Human Resources to take forward in accordance with the University’s Disciplinary Procedure. However, the Pro-Vice Chancellor Research & Innovation may recommend informal remedial actions. | |2\_R Awareness of potential issues, followed by awareness of consequences are the two most important things for me. Processes for handling allegations may vary between institutions/contexts for very acceptable reasons. | |2\_R I interpreted the question as “should be a primary focus for the research integrity community”, not “interests me personally most”. | |2\_R Sanctions may already be defined by institutions, societies, or other jurisdictions. Being prescriptive may not add value in these settings, but could be helpful in settings lacking defined policies. | |3\_O Methods for identification of potential serious research misconduct (although this could be covered under statement 1 and 2) | |3\_O How we can change the environment so that misconduct would be less likely to occur and to be caught earlier. | |3\_O Identification of the “entrance portal” for an allegation to constitute serious misconduct would be beneficial. Sanctions are so variable across the sector and different nations that it is not really possible to have a coherent conversation with meaningful outcomes. |

**Free text comments on item 2**

| x |
| --- |
| 1\_S If you define “serious research misconduct” as only intentional, it is quite rare. |
| 1\_S It is difficult to estimate the percentage of researchers who commit misconduct. However, I personally believe the ammount of researchers committing scientific misconduct could be anything between 10% and 50%. I ackowledge this range is quite a wide range, but we cannot pin down a precise number. In some research fields is higher than others |
| 1\_S I think James Heathers’ recent preprint is the best current overview |
| 1\_S I don’t think false research findings are at the level where it poses a threat to the literature, but false research findings are widespread enough to skew the publishing landscape by incorrectly enhancing the rankings of weak journals (which may have the affect of boosting the CVs of weak researchers, who move up in academia) |
| 1\_S This is discipline-specific. In health and medicine it seems pre-clinical has a larger problem than clinical but somne clin ical areas (e.g. prehnancy and childbirth seem more impacted than others and in those the third option would be most relevant. |
| 1\_S Because science is cumulative, there is a risk that grave errors are copied over and over again. You might end up with ‘fruit from the poisonous tree’, which can lead to persistent problems in whole subfields of science. |
| 1\_S It’s rare, but only because the denominator in the fractional calculation is massive and continues growing exponentially. |
| 1\_S This under-appreciated study seems the best evidence to me: <https://srhe.ac.uk/wp-content/uploads/2020/03/WILLIAMSJoannaROBERTSDavid.pdf> |
| And that’s before the rise of paper mills. |
| 2\_R Although there is more media attention on the issue, I have not seen a rise in proven allegations. What I have witnessed is a rise in breakdowns in communications and working relationships since the pandemic, which has led to an increase in complaints which require some form of mediation. Also, the comments posted on post-publication platforms such as PubPeer suggest issues are rife, but are often the result of misunderstandings. |
| 2\_R I don’t think the research community has fully woken up to the problem of unreliable research driven by a perverse insentive structure. There is still a romantic view of the “detached scientist/researcher” driven by mostly altruistic/humanitarian motivations, which does not reflect reality. |
| 2\_R All in all, serious misconduct (with the intention to mislead) is rather rare, I have the impression. But the challenge of fake papers submissions (AI generated) flooding journals, of which not all are well detected, is enormous. It is not misconduct by PhD-holding researchers, but by criminal organisations falling outside of accountability standards common to universities and research insititutes. |

Reference: Ioannidis, Transparency, bias, and reproducibility across science: a meta-research view, JCI, <https://www.jci.org/articles/view/181923?s=09#B41> “Fraud may become more widespread with new AI tools. For example, Wiley recently revealed that when they used a new detection tool, 10%–13% of the 10,000 papers submitted per month in 270 journals were identified as products of paper mills (40). Apparently, fake papers have already massively invaded the scientific literature (41).” | |2\_R The answer depends on what is considered as serious research misconduct. | |2\_R Serious scientific misconduct is still rare relative to the overwheling bundge of published papers. However, just within the group of landmark papers/game changers it occurs too frequently. My impression based on retractions is that the peak was in the first 10 years in the 20’s century but research misconduct leading at times to worse quality of care should not happen that frequently | |2\_R the publicity around “research integrity sleuths” suggests the problem is far more prevalent than previoulsy acknowledged. | |3\_O In pain medicine there are a number of examples identifying increase in retractions and potential misconduct however it is unclear whether definite misconduct has been identified. The impact of such studies if not identified has been demonstrated to impact on results of meta-analyses conducted to evaluate pain interventions therefore I think it is already a serious problem

<https://doi.org/10.1016/j.jpain.2023.07.003>

10.1097/j.pain.0000000000002947 | |3\_O Whilst (in my opinion) serious misconduct it is rare, I believe the potential damage it causes is substantial. | |3\_O It is rare, yet still very important to address. | |3\_O In some disciplines, I would judge that the threshold for the third category has been reached. But not across all disciplines. | |3\_O I used to think it was rare but there have been too many high-profile revelations recently, and complacency can no longer be justified. |

**Free text comments on item 3**

| x |
| --- |
| 1\_S “Institutions, whose resources are diverted to tackling misconduct” only applies if institutions lack clear and efficient processes |
| 1\_S Public trust in science is remarkably high despite reproducibility problems etc |
| 1\_S It depends on the discipline. In some areas misconduct is very harmful. I |
| 1\_S Most legitimate research has hardly any impact on policy, application, or wider society, so fraudulent research is unlikely to have major impact either. |
| 1\_S I think there is currently a low level of harm due to serious research misconduct on institutions, but only because institutions currently do not invest a large quantity of resources into investigating research misconduct (relative to the prevalence of misconduct, in my opinion). I *wish* that serious research misconduct was currently more harmful to institutions, as this would compel them to take more serious action to address and prevent it. |
| 1\_S I feel like “Consumers of research findings” and “Other researchers” should belong on a shared 4-rank, if I HAVE to make a choice, I’ll choose this. |
| 1\_S I have grade the harms to institutions as relatively low because, in my experience, in most cases institutions do not divert resources to tackling misconduct. They ignore and cover it up. |
| I have grades the harms to public trust as relatively low because the public does not appreciate the full extent of serious research misconduct. |
| 2\_R While it is important that research funding is used appropriately, one could argue that by funding research results are not guaranteed and may not always be ‘utilised’ in the most effective way. Perhaps this is also contributing to the larger issue of research misconduct. |
| 2\_R Misconduct will always occur, so both funders and research sponsors should have processes in place to identify and address it. When these systems fail it is the consumers of research, be they society, patients or other researchers, are the ones who suffer the consequences. |
| 2\_R - By far, the worst impact is on consumers and other researchers (wasting their time). As work that turns out to have been time waste eventually, is less harmful than wrong medical treatments or inefficient policies, I ordered this way. |

* I have the impression that the impact on misconduct on public trust is overestimated.
* Institutions should devote resources to quality assurance and tackling misconduct anyhow. Prevalence of misconduct can be a driver for developing institutional policies, guidance and capacity for research integrity. | |3\_O The impact on societal trust is the most concerning aspect. | |3\_O Serious misconduct is harmful to everyone involved, but of course the most serious consequences are for those who are directly affected and society at large. |

**Free text comments on item 4**

| x |
| --- |
| 1\_S I think that the scientific record is the greatest tool available to mankind. Doing everything in our power to maintain it, should automatically lead to an increase in public trust and it would (hopefully) deter others from committing fraud (just like a clean environment will encourage people not to litter). |
| 1\_S The old adage “fraudsters gonna fraud” applies. Responding to misconduct is not a deterrent - those who commit misconduct just do it, they’re not following the publicity on how such cases are handled/resolved. |
| 1\_S When there is research misconduct, it will often be necessary to prevent offenders committing the offences again. The primary aim is to prevent future misconduct by an individual who cannot be trusted. That may be seen as the individual being punished, but punishment should not be the primary aim. Nevertheless seeing the loss of an appointment or status by an offender acts as a deterrent for others. |
| 2\_R As disciplinary actions are confidential, the outcomes of proceedings are often not well publicised. |
| 2\_R Care needs to be taken to distinguish between mistakes/desperation driven by perverse insentives, and direct maliciousness. In most cases it is the system that drives misconduct in individuals who are bowing under personal pressure. Unfortunately the outcome is that everyone suffers as integrity and trust in research is subsequently compromised. |
| 2\_R I do not understand the meaning of “to maintain academic integrity”, so I answered only for “to correct the academic record”. This is the most relevant. Punishing offenders additionally is least critical: as science is a reputation game, having an allegation of serious research misconduct proven against you (and it being known among colleagues and peers) is a very severe punishment after all. |
| 2\_R It is difficult to beleive that researchers committed FFP because others are committing fraud. Honesty and rigour should be intrinsic values |
| 2\_R In my experience, punishment is usually avoided |
| 3\_O Punishment must be , at least at this point, a major topic of discussion. If no meaningful action is taken against serial offenders there is no hope for stopping the crisis . |
| 3\_O But, punishing offenders may have an impact on the other items listed. |
| 3\_O Correcting the academic record is, in my opinion and experience, almost impossible. |
| 3\_O All of this is important although to avoid top rankings everywhere I selected punishment as less important. Provided the offenders are removed from their positions and academia, I am less concerned about what happens to them afterwards. |

**Free text comments on item 5**

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| 1\_S There are enough resources - but are they allocated to this problem? |
| 1\_S There is conflict of interest also for publishers, who are earning money on the number of papers published. If they were retracting too much, authors will stop sending manuscripts to them. There is conflict of interest also among researchers from the same field, as it is good for everyone from any given research field that many papers are published in that field. |
| 1\_S Some of the bureaucratic delays/inefficiencies are likely to exist by design in my opinion |
| 1\_S By academic institutions, I assume you mean hiring organisation, like universities. But it should also include journals and publishers. |

In my experience, lack of will was the biggest obstacle. Followed by the default deferral to journals and peer-review as arbiters of quality. | |1\_S I think another problem is the shared responsibility accross all stakeholders (scientist, editors, publishers, institutes, funders, research societies). Everybody could do something about serious research misconduct, but it’s easier and less time consuming to point to another party that should ‘take the first step in the right direction’. | |1\_S Respondents “lawyering up” is a big problem. | |1\_S The main hindrance to institutions responding appropriately to research misconduct is the desire to cover up the misconduct. Concerns about legal repercussions and due process are minor - institutions have no concerns about legal repercussions or due process when silencing whistle-blowers. Institutions can always find individuals who can deal with the complexities provided they have the will. Other factors are concerns that the institution may have to repay grants awarded for the falsified research and concerns that if one looks at the allegation of research misconduct one might find that within the institution the problem is more widespread and involves bigger individuals. | |2\_R We know what needs to be done, and which systems work. The problem is that the academic community is not yet on board as it does not yet realise the scale, or harms, of the problem. As a consequence meagre resources are provided to relatively junior or inexperienced administrators who are given the run around by powerful and intelligent researchers who are often more concerned with protecting their own reputation/ego than the overall reputation of research/science. | |2\_R From national experience, I know that many institutions face a lack of resources for research integrity governance (as well as for open science, ethics etc.) Large universities and rich research institutions may be less vulnerable to this, but smaller research institutions, university colleges, academic hospitals / medical centers … have other priorities than research integrity, and their funding is geared towards these other challenges. The lack of resources is detrimental, as it determines the institutional attention for research integrity issues (and hence the expertise buildup, the overal capacity, including the the coordination capacity, the conflict-of-interest-management etc.) | |2\_R Lack of coordination in particular in Asia | |2\_R the review process is very time-consuming for a small number of people. | |3\_O My review (Inside an Academic Scandal, MIT Press, fall, 2025) suggests that the American story is unique in the degree to which legal concerns drive how universities respond. |

**Free text comments on item 6**

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| 1\_S The literature on criminology (esp white collar crime) has a lot of useful insights into: |

Low probability of being detected and/or reported Low probability of being punished if detected and/or reported | |1\_S I ranked ‘publish or perish’ highly, but not because I took it literally. My experience with fraudsters was not that they needed to publish in order to progress their careers. Rather, they wanted to progress up the career ladder as fast as possible. | |1\_S Also need to consider direct financial incentives to publish | |1\_S Might wanna break out this question by career stage - incentives to commit misconduct likely very different for trainees vs. PI’s. | |1\_S All of the above, but in addition there are are institutions where there is a culture of misconduct. I have been involved in cases when individuals were encourage to commit research misconduct and told how to get away with it by more senior individuals. I have investigated cases where individuals agreed to be co-authors of publications they knew were false and professors claimed they supervised entirely fabricated reports. | |2\_R As a non-academic, I would say that internal / external pressures have a negative impact on researchers and can potentially lead them to cut corners. | |2\_R The grant funding, and problem in obtaining permanent contracts/positions, are two well know perverse insentives that drive misconduct. But increasingly the frankly criminal state of the publication/research dissemination system is driving more misconduct as publishers seek money over the integrity of the research record, and academics play along if it bolsters their CVs. | |2\_R - This question is only concerned with researchers operating in an accountability environment (like a university). Paper mills generating fake papers cover a far more prevalent and intentional misconduct, operated by criminal gangs, not researchers. - The latter two options have the same meaning for me (the last one before tenured a position, the second last for tenured staff). However, the latter “losing one’s job is not productive enough” may have a higher accumulated impact, as postdocs looking for a fixed position have less to lose. This is speculation and gut feeling, not evidenced by research. | |2\_R - Systemic issues weigh particularly heavy in China - Not alluded to here are political agendas to destabilize the West through generating mistrust in core institutions/societal foundations - Also not alluded to are substantial business interests–e.g., by paper mills and predatory publishers (of course, “reputable” publishers have substantial business interests as well) | |3\_O In my experience, the most serious cases of research misconduct are committed by established, renowned and highly published scientists. This is not about protecting their jobs, getting promoted or getting more publications, it is about gaining adulation and power. | |3\_O This list reads like a list from an economist assuming rational action. Diederik Stapel’s Outspouring (Derailed in English) tells a much more clinical story. I apologize for being self-serving, but I provide a chapter on “why they do it” in Inside an Academic Scandal - happy to provide a draft copy. | |3\_O In addition to the above drivers, I think another main factors is simply pursuit of fame and power. This is not (just) about “publish or perish” but about TeD talks, TV shows, and other rewards for being a top scientist. |

**Free text comments on item 7**

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| 1\_S Very strongly positive in my opinion. I rarely see vexatious claims, but I do see lots and lots of well-founded and competent sleuthing. Partly this is because I stopped following certain colleagues online. I might as well come out and say that I am thinking mainly of Jim Coyne (no longer with us) and Leonid Schneider. I think Schneider basically does good work but I find his style to be tiring. |
| 1\_S I had a positive experience with posting online. And publishers do care about their image. |
| 1\_S I think it is negative, but not for the reason given here. Social media distorts investigations of fraudulent research because it amplifies cases on socially hot-button topics. For example, a paper about gay cruising grounds get disproportionate attention (<https://retractionwatch.com/2021/11/17/elsevier-makes-sand-sun-sea-and-sex-with-strangers-paper-disappear-following-criticism/>), as did plagiarism accusations by Harvard’s then-president. Attention is taken from less sensational, but more widespread, cases of fraud. |
| 1\_S Given that social media has somewhat effectively decentralised scientific communication, I think modern sleuthing is only possible because of it. There is more research misconduct now than ever, but there is also a greater frequency of detection of this misconduc (still low, of course). |
| 1\_S Currently, social media has been mostly positive in bringing problems to light. However, this is starting to and will change as more people try to either become ‘sleuths’ without adequate training or will intentionally weaponise scientists. |
| 1\_S I think it’s great that sleuths like Elisabeth Bik, Cheshire, Dorothy Bishop and Mu Yang have had a strong social media presence, showing the world what’s wrong. |

But when you think about it, they are forced to use social media, because contacting funders, journals and institutes generally leads to nothing. If these parties would take their responsibilities and provided a clear system to report serious research misconduct, the battle wouldn’t have to be fought in public.

The general public might think serious research misconduct happens more often than it actually does (due to the public nature of the allegations) and anti-science voices might use the social media posts of sleuths as proof that science untrustworthy and needs to be defunded. | |1\_S If you’re counting PubPeer as social media. w/o PubPeer, I don’t think just talking about it on Xitter or whatever social media platform would be as effective. | |1\_S Social media does encourage more colorful commentary than might be desired, however that fact seems to have encouraged investigations when entities involved encountered that commentary. | |1\_S I have put “neither positive nor negative” but I think it is actual “both positive and negative”. It does allow speedy commentary but also allows some vexatious complaints. In addition, it does allow propagation of false claims. | |2\_R As someone whose role it is to support the investigation of allegations of research misconduct, I always encourage individuals to report concerns using the University’s formal procedures. Anonymous posts are not helpful - formal procedures exist for a reason. | |2\_R It has worked well for increasing awareness among junior researchers in particular, although not really produced any solutions. | |2\_R - Disclaimer: I have little knowledge on this topic. - If PubPeer is considered a social medium, then I think the balance is positive. I have no knowledge about unwarranted complaints by vexatious individuals. Every accusation or allegation should be well-informed and grounded in tangible evidence or at least indications. Accusations I have seen on PubPeer are mostly well-documented. | |2\_R not the proper forum for dealing with misconduct. Evaluation of misconduct requires a high level of expertise and confidentiality, not to be found in social media | |3\_O Having seen social media discussions on specific articles, I do not think it an appropriate way to ‘judge’ and highlight. The current systems make it difficult to discern who is and is not an informed party and there is limited moderation | |3\_O In my experience, the most serious cases are the least likely to hit social media as institutions and individuals try and protect themselves from poor publicity. What does hit the media is those working to uncover misconduct that institutions and individuals are trying to hide, so predominantly positive. | |3\_O Social media, including PubPeer is the only major avenue for detectives to post their findings. While these are by default ignored by the relevant institutions , sufficient concerted activity can ultimately trigger an investigation. | |3\_O I think that the net effect is positive. At the same time, my read of the 2023 social science story is that journalists are too quick to tell a cute story where they do not really understand what happened. | |3\_O I am a great believer in the positive aspects of post-publication peer-group review on sites such as PubPeer and RetractionWatch | |3\_O This is very difficult to answer. There are so many cases of Twitter mobs ganging up on good-faith researchers (e.g., during COVID) that the positives are overshadowed. So on balance social media are terrible for this sort of thing because hysterical outrage in most cases is entirely misplaced. There may be some cases of cogent allegations that turned out to be meritorious but I don’t see social media as a good place to debate these issues. |

**Free text comments on item 8**

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| <https://www.transparimed.org/single-post/transparimed-files-ethics-complaint-over-unreported-cancer-trial-result> |
| 1\_S I have tried reporting misconduct anonymously only to have it swept under the rug. Then I talked to a journalist and suddenly there was a flurry of motion. |
| 1\_S It depends on the publisher or institution but in general it is very slow. |
| 1\_S It can go both ways. Willing editors can act very quickly and effectively if they are willing (example: the coordinated investigation of Jonathan Pruitt). But in other cases, editors, publishers, and COPE interlocutors can drag their feet for years without doing anything. |
| 1\_S They are also confusing. Who knows who to contact? |
| 1\_S Clear-cut cases of photoshopped images often remain in the literature without as much as an expression of concern. stakeholders often hide behind protocols and guidelines, such as the COPE guidelines. These protocols and guidelines have been often put in place by the parties themselves, which should make it very easy to change them if they feel they don’t work as intended. |
| 1\_S Just finding out who the RIO is at a given institution is nigh on impossible. |
| 1\_S The lack of transparency makes this difficult to know for sure. When I report concerns, I only get a automatic “thank you for reporting…” response from a small minority of entities; most say nothing. After that, when nothing occurs for years, it isn’t clear that anyone even looked into my concerns. |
| 1\_S Based on experience with numerous publishers and editors, institutions and COPE. Just a few motivated individuals are different. |
| 1\_S That is my overwhelming experience in a large number of cases I reported. |
| 1\_S The silence and covering-up culture is still strongly present and there is very limited protection of the whistlerblowers while the retalliation is very common and the consequences on reporting could have enormous consequences on career and health. |
| 2\_R Recruiting appropriate individuals to sit on panels can often slow down proceedings, and then managing availability. Some of the delays here are difficult to manage in advance. |
| 2\_R Although I agree that formal processes can be long and drawn out, there are usually good reasons for this - such as the need to ensure fairness and the prevention of detriment. One case I was working on involved the submission of over 350 pieces of evidence, which took time to review and assess. Universities are also reliant on senior academic giving up their time to participate in investigations, which is difficult to fit in around other roles and responsibilities. Finding external panellists to participate is also challenging and time consuming. |
| 2\_R Often the slowness and obstructiveness comes from researchers themselves who see processes as a direct attach on their egos. The two slowest research misconduct investigations I have contributed to were significantly impeded by researchers employing legal representatives at a very early stage - in both cases the legal help turned out not to be needed, but slowed the investigations down by six months to a year. |
| 2\_R I agree that they are slow. I have witnessed procedures that took 3 and 4 years at the university, before coming to the second-advice national system, which added another half a year. |
| But I wouldn’t call them obstructive, as official investigation procedures are the only channel delivering a high authority report. |
| 2\_R not sure what is meant by this question. There is a defined path for REPORTING misconduct. |
| It is the evaluation process that is quite protracted, but not obstructive. |
| 3\_O I have not had personal experience in reporting. From seeing colleagues trying to do this, there is sometimes a fear associated with raising a concern without anonymity as they are concerned for the impact it may have on their career if raising concerns about more senior players in their own field |
| 3\_O I find official channels slow but less obstructive than they used to be. Guidance is clearer, funders and journals are more open about what is and isn’t problematic and how to deal with it, so the option for institutions to bury things (although still their first impulse) is reducing over time. |
| 3\_O If by official channels you mean HHS\_ORI or equivalent, the channel is indeed slow and rarely leads fi meaningful action. |
| 3\_O I think that they have good legal reasons for their slowness, but that does not morally excuse them for the harm that they create as a result of their slowness. |
| 3\_O Very dependent upon the institution, the institutional culture and the institutional leadership. |

**Free text comments on item 9**

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| 1\_S As indicated before, I would in general prefer to move away from punishing the guilty to fostering systems that promote quality within research institutions. But the way things are now, I believe it is better if an external agency gets to investigate misconduct than for universities to do it internally, because of the inherent conflict of interest. |
| 1\_S The publishers should take responsibility. Governments should regulate publishers - not researchers - if it can be proven that they knowingly ignored fraudulent research and failed to act in a transparent way to credible charges of fraud. This will be difficult because these are multinational companies, but regulation could come from the government where the publishers if headquartered (similar to regulations for media companies) |
| 1\_S I do not think there is an ideal solution to this presently; a state-entity solution would mean potentially inconsistent enforcement across countries; an independent regulatory agency may find itself stretched too thin/bumping against international legal issues; self-regulation by universities has clearly to date failed. Ideally, I would like to see self-regulation by universities, and with meaningful consequences delivered to universities who fail in their duty to limit misconduct (e.g., financial restrictions from funding agencies). Ideally regulation would be similar to in industry: where corporations do in-house quality control while also being held accountable by state regulatory agencies. |
| 1\_S Guidelines are nice, but reinforcement is needed. |

Governance on a national or institutional level can lead to a very heterogeneous approach with widely variable outcomes for similar issues. This does not help the scientific record.

Since science is an international endeavour, I feel that an international regulatory agency would be best, with stakeholders from different scientific backgrounds, different scientific roles and different continents. | |1\_S I suspect most working in this field would prefer a government regulatory agency. I suspect that this agency will be ineffective, under resourced, and politicized. I would prefer a self-regulatory regime financed by research institutions, somewhat akin to the way Financial Industry Regulatory Authority (FINRA) works in the finance industry in the U.S. I think research institutions might consider some sort of audit system for each other. | |1\_S I believe that a body similar to Health and Safety Executive is required, because the HSE can bring criminal prosecutions. I would want a national body that can bring criminal prosecutions for serious research misconduct. | |2\_R As universities are always accused of conflicts of interest in ‘marking their own homework’, I have suggested that an independent body could be useful in restoring trust. However, there would still be a resource implication for universities in liaising with investigation panels and providing information. | |2\_R Institutions are too varied, and have too many conflicting interests, to do this properly as the current situations demonstrates. An independent ombudsman/adjudicator as in other countries would probably be fairest, and most efficient. | |2\_R - As far as I see, these options are not exclusive. In Finland, Netherlands and Belgium, a genuine two-level system is in place, combining self-regulation by institutions with second advice possibility by a national-level system. National guidelines are consistent with self-regulation as well. - It is hard to discern regulatory agencies “of government” and “independent from government”. They are anyhow publicly funded, even if they are established by the research community. The key difference is probably the level of legalization / juridisation, when these Boards are part of the state apparatus, to comply with all transparency standards, like in USA, China or Denmark. This is not advised, as it turns away the attention from the core (deviation from good science) to procedural matters, as noted in the Evaluation of the Dutch Code of Conduct for Research Integrity (June 2024, findable online) | |2\_R National standards would be helpful. I expect most institutions have the internal expertise and knowledge to handle individual cases most efficiently. | |3\_O With a preference for a national guidelines approach there must however be a clear route to sanction that is overseen with an external body to prevent institutions from not acting in accordance with the guidance | |3\_O This is a difficult one. In my experience, outside agencies are impartial but they also often fail to understand the situation and investigate it appropriately, whilst internal agencies start by assuming there is no misconduct and do everything they can to prove that. And both outside and internal agencies are obsessed with single step investigations (hear one side, hear the other side, make a decision) that they fail to recognise that this will lead to biased and (possibly) incorrect judgements. They fail to share documentation with each party, they fail to check inconsistencies and lies, and they therefore make their decisions based on partial information. This is why courts of law work the way they do (allowing each side to cross examine and allowing each side to see the evidence). Having said that, internal | |3\_O Only an independent organization can monitor and implement measures that are meaningful. | |3\_O In the American context, I think that this needs to be affected by the funding source. But, regardless of the answer, I think that Universities should take action based on misconduct by their faculty. | |3\_O I work in a system that adopts the first. It does not work! | |3\_O A lot of these investigations require local knowledge and so they are best handled by the institution involved. However, to ensure independence, the investigation should also include independent external participants (e.g., academics or experts from another institution). |

**Free text comments on item 10**

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| 1\_S Asking about “investigations into serious research misconduct” would include allegations that were not proven. People are and should be innocent until proven guilty. |
| 1\_S Rather they should check the quality of the work of the prospective employee and see if it appears to be robust |
| 1\_S Easy to implement step, but the problem is that possible problematic employees could try different employers until they find one that isn’t rigorous enough. Prospective employers should be able to warn others to prevent them from hiring bad actors. |
| 1\_S In the US there needs to be a reporting requirement along the lines of Title IX (sexual misconduct), where institutions are required to report findings and they’re available in a database. |
| 1\_S Just like asking former employers in private industry about an employees past employment record, there are too many legal consequences for this to work well. |
| 1\_S I would like there to be a database of individuals found to have committed research misconduct, which could be checked rather like a criminal records check. |
| 2\_R This has been discussed informally by research support professionals in this area; one of the key concerns raised regarding this approach relates to data protection and the legality of doing so. |
| 2\_R Agree - but we should also be mindful of the principle of the prevention of detriment where an allegation has been unproven, or the case has been dismissed as vexatious / malicious. |
| 2\_R There should be a legal obligation on employers to ask for, and receive, a confidential statement from previous employers relating to historical research misconduct. |
| 2\_R A standard statement could be developed by EUA, EARMA, ENRIO and other players, setting the bar. |
| 3\_O This should be a specific question requested of previous employers as part of a reference/application process |
| 3\_O However, I have known of a case where the new employer was informed and they still decided to go ahead with the employment. They are balancing the negative against all the positives (internationally renowned academic with publications for the REF and funding). |
| 3\_O This is critical, but as far as I have seen these investigations are kept secret. Offenders tend to jump from place to place, especially if they are “productive” and famous. |
| 3\_O I think that there needs to be a basis for such intrusion. I also see multiple cases of innocent people being wrongly harmed by institution viewing anyone near a fraud story as contaminated. |
| 3\_O I agree. In reality, GDPR aspects make this nigh-on impossible in reality. |
| 3\_O What are the legalities of this? I agree it is important to establish a track record but is it legally permissible? |

**Free text comments on item 11**

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| 1\_S Hard to enforce with foreign based actors |
| 1\_S Transparency is essential to fight corruption in general and in this setting |
| 1\_S This is tricky. While ideally this would be the case, I can see this being greatly misused for political purposes. |
| 1\_S In line with my text in the previous text box. |
| 1\_S Only gonna work if mandated at government level and tied to funding… “if you want this grant, here’s what you have to do”. |
| 1\_S Just like asking former employers in private industry about an employees past employment record, there are too many legal consequences for this to work well. |
| 1\_S Whilst appearing attractive, I fear that this would actually inhibit accusations/investigations; legislative enforcement has significant implications. I also doubt this would be enforced. |
| 1\_S I would have criminal sanctions for individuals who covered up research misconduct and punitive fine for organisations (employers, funders and publishers). |
| 2\_R Universities do this already. |
| 2\_R I agree, although lessons should be learned from the education/child protection sector relating to the damage that false allegations could cause if this sort of route is pursued. |
| 2\_R They should share information to support investigations, that is clear. All instruments and guidance that may help them to do so, should be applauded. I’m not sure if a legal requirement would be very beneficial. It could contradict other legal requirements and put research integrity investigations further in the sphere of legality, which is to be avoided. |
| 2\_R Medical researchers should undergo a similar degree of scrutiny as clinicians for the purpose of protection of the public |
| 3\_O Absolutely vehemently agree with this. I’ve seen journal articles refuse to retract papers that clearly contain serious misconduct because they are afraid of being sued. |
| 3\_O This requires changes to national and international legislation. |
| 3\_O See above. This requires a legal framework. |

**Free text comments on item 12**

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| 1\_S The publishing model needs to be changed. Peer-review should start from the assumption that research is false, unless proven otherwise (reject, unless proven otherwise). At the moment, it is assumed that research is legitimate, unless given reasons to reject a paper (accept, unless proven otherwise). |

I believe mistakenly publishing an incorrect paper is asymmetrically worse than mistakenly rejecting a good paper. This used to be the case when publishers got most of their revenue from subscription, but the move to OA has changed the incentives to where it is financially costly to reject good papers. | |1\_S Research ethics training would not be worthwhile, I think. Those who commit serious misconduct know that it is unethical. Our focus should be on incentivising/reinforcing good research practices and disincentivising/punishing (in the behaviourist sense) misconduct. | |1\_S Difficult one.

Changing criteria is definitely the way forward to make sure as few as possible NEW cases of misconduct come into the arena.

I also think that making sure that serious research misconduct is found and reported, will make it less appealing to potential problematic scientist to start (or continue) with the misconduct.

I research integrity officers can be important, but they cannot do much if nobody is reporting problems.

Basic ethics training programs need to stay in place but they probably don’t yield results if the incentive it to produce as many papers as possible. You basically guilt-trip researchers by first saying there are clear rules in place for going good science, but then show them that it is impossible to climb to the top when they obey those same rules. | |1\_S Item 1 (criteria) seems great on paper, but what do you replace it with? We have to measure something and there is a lack of alternative metrics. It’s beyond the scope of an exercise such as this to design and deliver new research performance metrics. Whatever you end up choosing as a metric, it’s a matter of time before people figure out how to “game” it (Goodhart’s law). | |1\_S Unfortunately, in any system where incentives are designed to drive behavior, some individuals will look for shortcuts to receive the incentives without the effort. Sanctions, better investigations, etc. will not stop misconduct, but might make it less a attractive option for some. Personally, I think this is a particularly difficult problem to fix since much of the funding for research is from the public and taxpayers don’t directly see the costs of misconduct. | |1\_S The key things are detection and punishment of offenders, plus sanctions on institutions where offenders worked. If institutions face large enough sanctions they will police themselves, but there needs to be the threat of external regulators with powers to compel cooperation. Collecting data is meaningless unless we have proper detection, because the data collected will be worthless. I believe all researchers should get training in research ethics but do not think it will affect prevalence much. | |1\_S Other option: support for researcher training so that researchers can recognize possible signs of research misconduct in their fields and avoid relevant papers. | |2\_R I think the sector should consider the ‘carrot’ rather than the ‘stick’ as training is patchy across institutions. This should include information about how to avoid common pitfalls, because in my experience, it is very rare to come across someone who deliberately sets out to commit research misconduct. | |2\_R The task really needs to be professionalised by individuals with the experience to do this properly, and who are paid accordingly. At the moment this is often an additional and unwanted task dumped on administrators or leaders who have other primary concerns. | |2\_R These are all very valuable options! It is hard to rank them really, because (a) they are not equally expensive – for example, changing evaluation criteria is in essence cost-neutral; and (b) they are not all in the same way “solutions to serious misconduct”. Searchable national inventories of closed cases are very useful for systemic learning, but have at most an indirect effect on the prevention of future misconduct. The option “support for individuals/organisations who have expertise in detection of serious research misconduct” is really interesting. Sleuths are extremely beneficial for the scientific ecosystem and it is absurd that they don’t receive the recognition they deserve. Charity-based funding for sleuths would be greatly advised. The deterring effect of their multiplied actions could be huge, perhaps. | |3\_O research ethics training should be part of anyone’s education in research and not require specific funding. WRT serious research misconduct, it is likely that those conducting it understand best practice but choose to ignore it therefore educating them will not help it. Education around detection and raising concerns would be valuable | |3\_O Sleuths are an invaluable resource, and mostly ignored by the relevant institutions. There is no real lack of courses on ethics, but without deterrent these remain devoid of any impact. | |3\_O I believe that we need to have universities better engage on the problem and create clear norms to their faculty. I also believe that we need to change the norms of co-authors - e.g., having a second co-author examine all aspects of data collection and analysis. | |3\_O Item 2 is fairly well implemented already, both at the doctoral training and early career researcher stages. Option 4 has just been adopted in my country. | |3\_O I am not sure the ethics training achieves much. Those who need it will not pay attention or will intentionally disregard it. I don’t think any of the recently uncovered frauds were acting out of ignorance. |

**Free text comments on item 13**

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| 1\_S Database will not work in practice. |
| 1\_S I disagree with the framing of the question. Who says that the journals have a responsibility to decontaminate the literature? While I am aware of COPE and of certain publishers and individuals within publishing organizations that are doing good work in this regard, I fail to see who appointed the publishers to have any responsibility at all except to their shareholders. I believe that the legacy model of scientific publishing is a structural barrier preventing progress on quality improvement and research integrity, and that the best we can do is stop pretending that journal publication is a marker of quality or integrity. |
| 1\_S “Articles that contain serious errors that undermine confidence in the findings should be retracted promptly, without waiting for an institutional investigation” - it is possible to add an expression of concern, and then retract the paper after the institutional investigation |
| 1\_S Publishers and journal editors ARE responsible for determining fraudulent research. They are domain experts and they license or own the copyright of the fake research. Unless they act appropriately in the face of evidence of fraud, they are complicit. |
| 1\_S All of these are important. For the last statement: it needs to be 100% clear that all findings are on the same author. Sometimes it is hard to disambiguate. |
| 1\_S Regarding the last point, I don’t see existence of a database per se would be a problem - it’s not “public” so it likely would not cross the bar for defamation - unless of course the contents were leaked, so it needs to be VERY secure! |
| 1\_S When an institutional investigation is completed, the institution should directly approach the publisher of articles affected by severe research misconduct and request retraction- It should be the responsibility of the institution to ensure that articles ARE retracted, because it often doesn’t happen nor promptly. Institutions need to update their databases too, e.g. PURE. |
| 1\_S The above presumes that institutions and publishers can be trusted to conduct investigations. They cannot. Journals make money from publishing and would make much less money if readers realised how much in the journals are false or published because there are editorial conflicts in publishing certain research. That particularly applies to major medical journals publishing reports showing drugs or medical devices in a positive light: every such article can bring major journals (e.g. New England Journal, Lancet, JAMA) more than $500,000 in reprint sales. I would have a regulator with trained forensic investigators doing the investigation. |
| 2\_R I am a bit wary about the final point - what if the comments are being regularly raised by someone with an axe to grind? |
| 2\_R The problem is that there are so many publishers, and so many papers, that individual publishers are almost powerless. A national/international database run by an independent organisation would make far more sense. |
| 2\_R These are good suggestions, the one more pressing than the other. The slowness of publishers’ decisions about retractions (awaiting investigations and legal counsel) is at unease with the direct need for readers / consumers to know that there is (or might be) something wrong with a paper, that is for sure. Some of these suggestions aim to speed up the process, but a thorough investigation will need time anyhow. A very parallel suggestion might be to have publishers adopt “under investigation” or “(retraction) decision pending”, as a fourth (non-final) status apart from published / retracted / concern expressed. It should be clear that being transparent that an investigation is ongoing, should not induce “trial by media”. The journalistic code (also by retraction watch) should be so that no news item is published about articles in such a status. |
| 3\_O A serious publisher should not accept sending manuscripts for review if these are coming from labs either a clear pattern of misconduct or negligence. The fact that they keep the doors open for serial offenders (while automatically rejecting less famous investigators) is outrageous. |
| 3\_O Throughout the above text “should” is an ideal situation that is probably not achievable without legislative change. All of these impact on GDPR in some way or another. |
| 3\_O I suspect the database idea is legally problematic. |

**Free text comments on item 14**

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| 1\_S Transparency International has good guidelines / principles on whistleblowing in other sectors |
| 1\_S Not sure if there are insufficient ways to protect scientific whistleblowers, I think the problem has more to do with that some scientific communities are small and tight-knit, which makes it difficult to talk about the problems of what seemed to be a friend. It might also make it difficult to stay anonymous. |
| 1\_S Anonymity is sacrosanct! |
| 1\_S I have blown the whistle on misconduct and do not like the idea of anonymous allegations. In addition, it is always possible to work out who blew the whistle. The only collateral damage to others in the research group should arise if they knew of the misconduct and failed to report it or colluded in some way. |
| 2\_R I think the topic of whistleblowers is an interesting one. At my University, someone can raise a concern via our Whistleblowers Policy, but the matter would be deferred for investigation under the University’s Research Misconduct Procedure and would be required to identify themselves to the lead investigator. Although all reasonable steps are taken to ensure confidentiality, full anonymity cannot always be guaranteed. |
| 2\_R This is a difficult subject given how closely researchers work together, and how powerful PIs are compared to postdocs/students. Again it comes down to the career structure and perverse insentives. |
| 2\_R Please don’t use conjunctions/juxtapositions (“A and B”) in statements. If you agree with A and disagree with B, you are lost. |
| For whistleblower protection in research, please see ENRIO’s Handbook on Whistleblower Protection in Research. |
| 3\_O Whilst there is a potential for a significant negative impact on researchers I do not think these are really ‘disincentives’ as all researchers must uphold integrity as a primary aim therefore have a duty to report concerns |
| 3\_O I believe that we have ignored the harm to innocent members of a research group affected by misconduct. |
| 3\_O I actually think all of the above are 5. However, the reality is that anonymity cannot be maintained in legislative systems that require disclosure of the allegations to the impacted parties. Hence, “4”. |

**Free text comments on item 15**

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| 1\_S Deliberate serious research misconduct should be a firing offense. No ifs and buts. |
| 1\_S Some kind of restorative approach may be appropriate, but I don’t think it would be in the form of meeting with those affected. I’m not sure what it would be instead but possibly some way for the researcher to show that they have changed their ways. |
| 1\_S To me, the “serious” in serious research misconduct implies some form of intent. It is different from unintentional error or even negligence. Therefore, it should be treated as fraud in the workplace. |
| 1\_S I feel very uncomfortable and unqualified to answer this question. |
| 1\_S I think that direct consequences for those performing research misconduct is most appropriate. Especially when they have to (literally) face the consequences of their actions. |
| I think it’s important to share results of investigations publicly, but it is imperative this does not lead to a ‘witch hunt’ or automatic ‘guilt-by-association’. It is nuanced and I think the general public is not ready to handle that. |
| 1\_S Name and shame! |
| 1\_S I think that all reports on research misconduct should be made public, but the sanction should depend on the degree of guilt and harm done. In medical research, how can you have restorative justice when a researcher such as Don Polderman is required to meet the relatives of thousands of relatives of patients killed by his research fraud and we do not know which of the deaths were the “excess deaths” due to the fraud and which were the deaths that would have occurred anyway? I chaired a research misconduct inquiry in a developing country. The head of department compelled 4 juniors to falsify data and all 4 said that they had been threatened with being killed and 2 professors at a major US university, who were co-authors, colluded in cover up. |
| 2\_R In principle the idea of Restorative justice approaches are fantastic, but I think would be a huge administrative task to facilitate effectively. |
| 2\_R Sanctions are important, but the contribution of the system itself does need to be acknowledged. If, for instance, a University places a member of staff under severe pressure, they shouldn’t be blameless for the subsequent consequences. |
| 2\_R All should be options. Whenever SERIOUS misconduct (with intention to mislead) is upheld, no follow-up measure should be excluded a priori. However, it might be advisable to reflect on the desirability of each of these in various situations. Not all of them might be well-suited for all misconducts. Restorative justice may be difficult for example when no people, but only “the reliability of the literature” is harmed. |
| 3\_O I think transparency to the public is vital to ensure confidence in academia. I am concerned that educational retraining is not necessarily the answer if misconduct has been conducted in an intentional manner but could be useful for examples where it has been conducted in error |
| 3\_O Demotion and dismissal should be on the table , otherwise any measures are toothless. |
| 3\_O Personally, I believe that option 4 (the nuclear option) is correct. However, it could not be implemented in any regime that I am aware of (outside the People’s Republic of China). |
| 3\_O Again, I doubt this is usually a matter of (lacking) education about ethics. If the misconduct is serious and established beyond doubt, then dismissal is the only feasible option. |

**Free text comments on item 16**

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| 1\_S “Investigations of serious research misconduct divert researchers and associated resources from more productive research work” - it is impossible to base a scientific work on previous fraudulent research. For example, fake papers delay and bias systematic reviews, meta-analysis, etc. |
| 1\_S I do think that investigations of serious research misconduct divert researchers and associated resources away from potentially more *fruitful* work (in the sense that undoing misconduct is not building towards scientific theory etc), but I think the act of sleuthing is “productive” is a different way (i.e., it saves resources in the long-run when there is a literature plagued with misconduct). |
| 1\_S Investigating serious research misconduct = productive research work :) |
| 1\_S Institutions are already failing to address serious research misconduct, so it’s difficult to see how this could lead to more bureaucracy. |
| 2\_R The last point is an interesting one, as ‘failure to address serious research misconduct’ is a form of research misconduct in itself, but currently requires the institution to reflect on any procedural irregularities. At my university, we have addressed these types of claims via an Appeal Panel with at least one external member to ensure objectivity. However, in these situations it would be useful to have a fully independent body to assess the claim, otherwise the outcome may not be accepted by the Complainant. |
| 2\_R I don’t like the wording of the second item as it implies that detecting and dealing with research misconduct isn’t productive. In actual fact correcting the scientific record could be seen as more productive that producing new data, on the premise that no data is better than bad data! Regarding weaponising research misconduct, I’ve experienced this a couple of times (relating to vaccines, and to research into single-sex spaces), but in both cases it was relatively straight forward to protect the researchers due to proof that they had followed ethics/governance processes. Infact my view is that if we have more robust processes in place, they will be able to identify and dismiss malicious claims fairly rapidly. |
| 2\_R - It is not entirely clear whether the required “agree/disagree” should correspond with the desired state, or the actual reality. It would be good to disambiguate this in a future round. |

* Fear of reputational damage hinders institutions to be transparent about their cases (we see in our country). I’m not sure this hinders them to take appropriate action. It is not excluded that investigation commissions qualify serious misconduct too lightly (as it’s about their own peers in their own institution).
* This growing weaponisation is a documented tendency. (It’s much more for personal conflicts than for political agendas, but also for political agendas indeed.) I can testify myself, as I have seen such “weaponisation” complaints for political reasons where there were none before. The Evaluation Report of the Dutch Code of Conduct for Research Integrity (2024) notices this, and hence advises to assess admissibility of complaints more strictly. The foreword of the 2021 Annual Report of the LOWI, Dutch organ for Research Integrity, makes an inventory of motives it sees for cases brought forward to it, which are much more diverse than only safeguarding the integrity of the research record. <https://lowi.nl/wp-content/uploads/2022/09/Jaarverslag-adviescommissie-LOWI-2021.pdf>
* It is indeed well-known (and I heard this confirmed multiple times) that democratic governments are ready to themselves police the issues that are deficiently handled by the sector itself. This seems like a political law (from sugar industry over journalism, AI safety and social media algorithms to research integrity). Whenever a research fraud case happens in a country, political questions and discussions pop up in Parliaments (does our country have the right instruments in place? Have they failed? Should they be replaced by governmental control?). If the research sector wants to self-steer and self-govern, it should self-police its research integrity behaviours. If it fails, it will be delivered to the will of national politics. | |2\_R diversion of investigators’ time and effort is a necessary consequence of the process, but not a barrier | |3\_O One major element is fear of losing money. Many of the highly productive fraudsters are well funded individuals who boost rankings and bring a lot of overhead to their respective institutions. |

**Free text comments on item 17**

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| 1\_S Social trust in research was very high in the 1950s but there were probably no strong mechanisms then. |
| 1\_S The public seems to trust us researchers despite widespread and well-known problems with transparency and reproducibility as well as research integrity. I wish Bouter were right but my hunch is that the public is too far removed and will not notice. |
| 1\_S You can add authors to this list. Authors that admit error increase trust |
| 1\_S It is also how research is communicated and how scholarly communication is navigated in the current world political environment. |
| 1\_S If everybody would be open on what was happening, people could make an informed decision and make up their own mind on what was going on at the moment. |
| 1\_S Not sure it’s proven to be a “driver” of mistrust, but it may contribute in part. I think in the public eye the criticism probably does apply to research institutes (failure to address misconduct), and the funding agencies (inadequate sanctions for researchers such as funding bans). However, I’m not so sure the public really grasps the role of publishers in the research misconduct pipeline, or holds them “responsible” in the same way as institutions of funders. Most of the public just don’t understand how scientific publishing works in the first place! |
| 1\_S This statement could be true, however what’s not specified in the quote is trust in research by whom (which/ all groups), ie the public, funders, researchers, etc. Different sectors of society are likely to have different levels of awareness around how institutes, publishers and/or funders handle allegations of research misconduct. |
| 2\_R As previously stated, universities, publishers and funders are limited as to what information they can share with the wider public due to confidentiality. |
| 2\_R I would say the problem is researchers in general, not only institutions, publishers and funders (although they do play a part, hence my neutral rating). |
| 2\_R Publicly visible reactions by institutions, employers and funders (and the media coverage of them by journalist) may indeed influence trust and distrust, but I think overall, this impact is overrated. Let it be one of many drivers, yes. |
| 3\_O Most of the variance in trust/distrust is explained by political and ideological variables. |

## Final thoughts

**Free text comments: final thoughts**

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| 1\_S The whole framing of research conduct as only being “serious” if it was (verifiably) deliberate is problematic. It sets the bar for evidence very high. |
| Efforts to combat fraud will only be successful if relevant actors are *incentivised* to find and follow up on problems. Right now, everyone is incentivised not to find problems, so it’s all blah-blah. |
| 1\_S I would like to contextualise these questions about research integrity in a broader discussion about transparency, incentives, and how to build structures/workflow that allow errors to be caught, as well as how to build systems that allow data provenance, processing, and analysis to be tracked and certified. |
| 1\_S Good luck! |
| 1\_S What are the impediments to publishers rapidly flagging an article with an expression of concern, if data are known to be unreliable? Financial, reputational, legal, relevant expertise missing, and others? How can these impediments be addressed? |
| 1\_S Both, sleuths and research integrity officers could be silenced by the leadership if a “golden boy” or “a member of the old boys network” is investigated. According to my experiences there is a big difference in handling the misconduct cases or outcome of the investigation taking into account the power relations of the researchers involved. The ones at the top seem strongly protected and the systems are not well resistant to the missuse of their power on the outcome of the investigations, I have witnessed a few cases that as retalliation for the whistlerblowers false accusaitions have been filled in. |
| 2\_R Are ‘sleuths’ aware of the potential impact of making allegations which are not backed up by evidence on the academic careers and mental health of researchers? I am particularly thinking about some of the comments made on PubPeer which are made anonymously. |
| 2\_R I’m both a research integrity/ethics office AND a researcher so have a foot in both camps. |

One topic of interest not addressed in this survey is use of terminology. More should/could be done to avoid confusions around terms like research culture, integrity, ethics, misconduct, governance, open research etc. etc. | |2\_R In the first few ranking questions, my experience in filling surveys directed me to answer reversely: “1” as the top ranked (most important), “2” the second most important etc. This is contrary to the instruction in the question. I have read carefully and changed all my answers as they should be, but there might be other respondents who didn’t notice this and filled reversely. Suggestion to ask expert statistical advice to detect possible reverse answers, or double-check consistency between comments and ranking. | |2\_R I suggest using simpler words. For people who speak a second language, it can be hard to understand the questions. At least this was my experience. From what I’ve seen, it’s better to use easy words so everyone understands, as language levels can be different.

Also, the scales in the questions were not consistent. In one question, 1 meant the lowest, but in another, 1 meant the highest.

The survey was not anonymous. So this should be clearly stated as one separate sentence. | |2\_R See previous comments | |3\_O Seems pretty thorough and comprehensive to me. |