



Research Integrity Training –

Needs and provisions in institutions in India

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Executive summary

Top Level Takeaways and Key Figures

7%

The proportion of respondents who felt that researchers in their field were not using honest and verifiable methods.

“Research integrity refers to the practice of reporting results as is and without any bias; any assumptions made should be specified.”

53%

The proportion of respondents who indicated that their institution provided training on research integrity.

“Research Integrity is Honesty in keeping TRUTH-OBJECTIVITY - on TOP and UNCOMPROMISED - (Ethically or Economically or Egoistically) over personal faith -prejudices, peer pressure and pride. To ensure Research outcome has a social outreach for Health, Wellness and Public Health. To ensure Research Methodology and Pedagogy stays true to the resources and traditions explored (study Apple like apple; not like orange).”

62%

The proportion of respondents who support mandatory training on research integrity for postgraduate students.

87%

The proportion of respondents who felt that research integrity training provided by their institution is effective.

“Research integrity is the backbone of quality research. A researcher must follow 5 principles to maintain research integrity i.e., honesty, diligence, transparency, independence and responsibility.”

34%

The proportion of respondents who are unsure whether training providers are regularly assessed for the quality of training they provide.

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Introduction

Introduction

In 2019, Nature hosted a meeting of stakeholders from all parts of the Australian research community — including representatives from business, government bodies, university and research institutes, and funding organisations — to discuss research integrity and good research practices.

One of the most striking outcomes of this meeting was the realisation of how little anyone knew about the level of understanding or training offered to researchers in research integrity. This led us to launch a series of surveys of researchers in different parts of the world — including Australia, the USA, the UK, and India — to determine the level of understanding of research integrity and relevant training within the research community of each country surveyed.

These surveys aim to address the following:

- To determine the scale of training on research integrity (as defined by the NIH) and good research practices provided to researchers, including how it is provided, who provides it, and with what frequency.
- To understand the perceived need and quality of such training.
- To understand what topics are covered and whether they align with the researchers' needs (as identified by them).

The following report describes the survey results received from 659 participants from more than 460 organisations across India.

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What is understood by
“research integrity”

Unpromoted, 1 in 3 researchers describe RI practices as “honest” and “ethical”

Unprompted understanding of research integrity meaning

The first question in the survey asks participants to describe research integrity (written as RI throughout the report). These open text responses were then coded into the *overlapping* themes provided on the right.

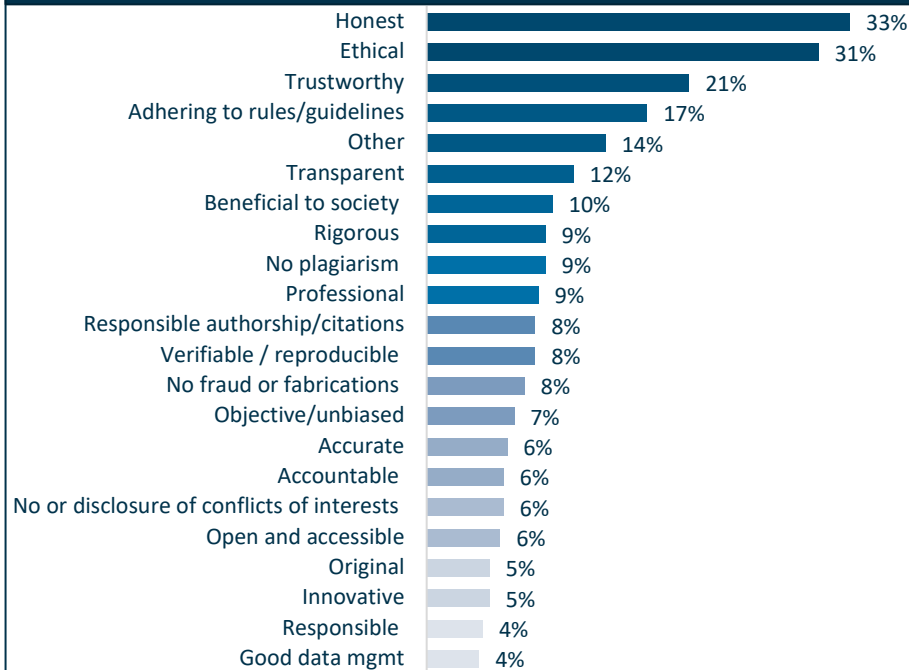
The top 2 most common descriptions for RI were that it was about honesty and ethics (33% and 31%, respectively). This is consistent with survey results from the UK and the US.

Notably, there were no significant differences across demographics.

“To accept and publish findings, even when they are not expected or are not convenient.”

“Research Integrity means being honest in research. It includes accurate reporting of the actual results with due emphasis on the degree of confidence in the results. Following ethical research practices during animal handling and handling of human subjects. Giving due credits to all the contributors, avoiding non-contributing authorships. Ensuring genuine peer review process during manuscript publication.”

Q. How would you describe Research Integrity, including the practices it relates to? (n=365)

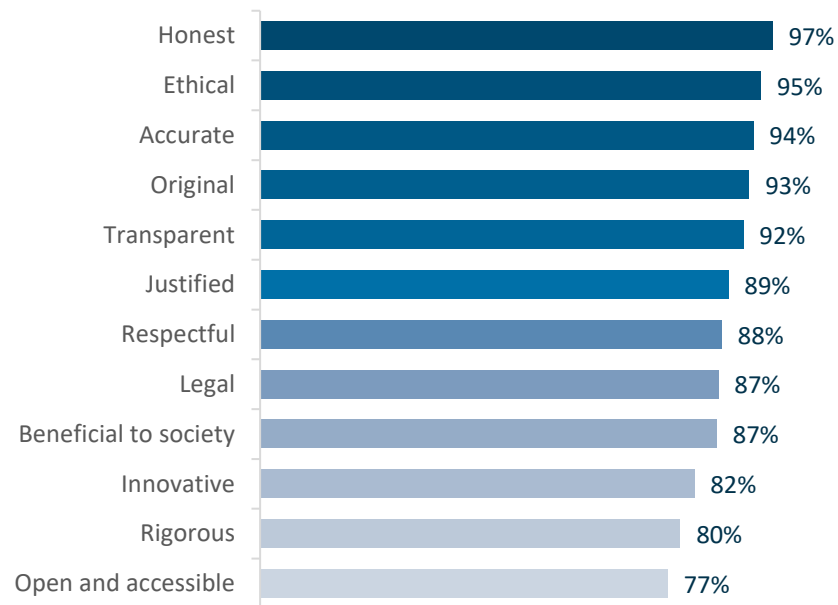


These figures represent the weighted proportion of respondents to give a particular response. Total may not = 100%.

Honesty and ethics remain the top most important aspects of RI in prompted questioning

Prompted understanding of research integrity meaning

Q. How important, if at all, would you rate each of the following with regards to Research Integrity? (n=634)



Honesty and Ethics remain as the two most important aspects of research integrity, with 97% and 95% of participants respectively rating them as “extremely important” or “very important.”

However, the next highest rated elements, “accurate” (94%) and “original” (93%), are inconsistent with the unprompted answers in the previous slide, where they were mentioned much less frequently, thus appearing much lower on that list.

Institutional management and senior researchers had the harshest attitude towards these integrity elements. Specifically, Vice-chancellors / Vice Presidents were significantly more likely than researchers in other job roles to indicate that Rigour and Respect are “not important at all” to research integrity. And professors were most likely than others to indicate that Innovation is “not important at all”.

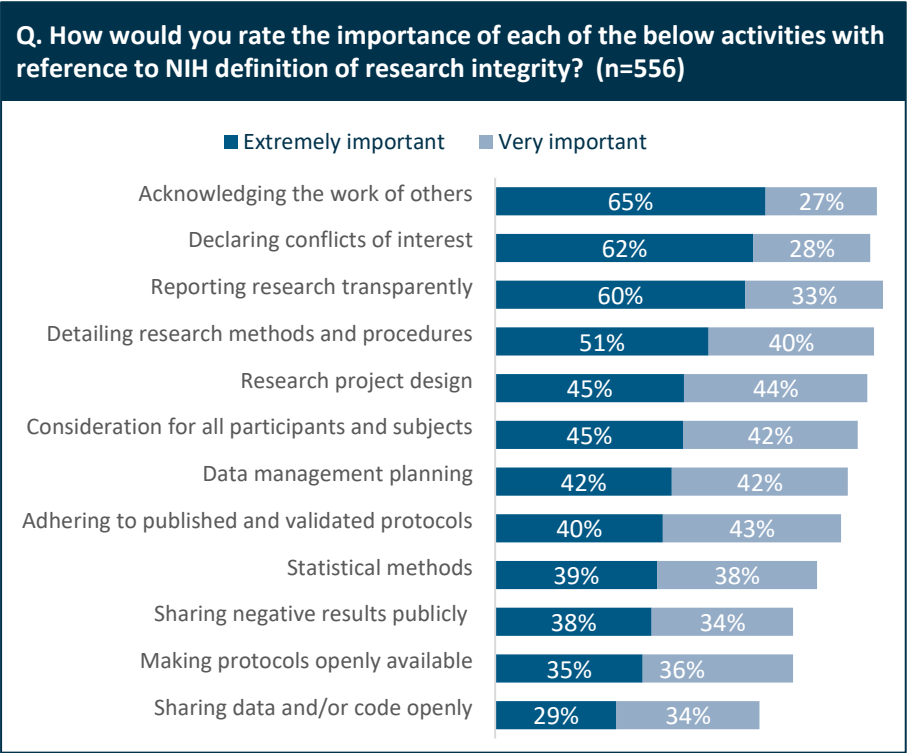
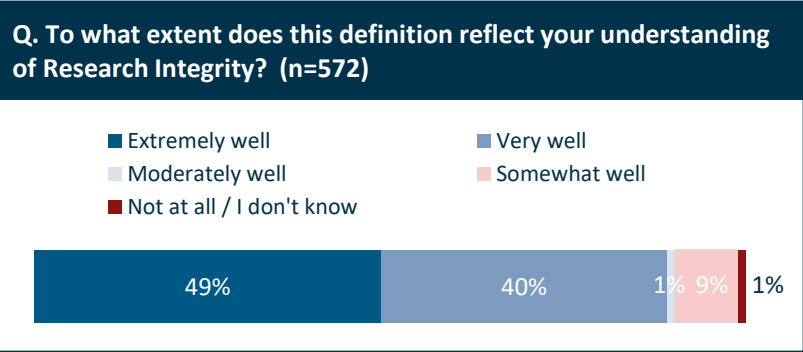
Responsible authorship and conflict disclosures are ranked as top activities for RI

Important aspects for maintaining integrity in research

After initial questions (see slide 4 & 5) respondents were provided with a definition of research integrity to provide context and consistency for further questioning:

“The use of honest and verifiable methods in proposing, performing, and evaluating research and reporting research results with particular attention to adherence to rules, regulations, guidelines, and commonly accepted professional codes and norms.”

89% of participants indicated that the NIH definition reflects their understanding of research integrity “extremely well” or “very well.”





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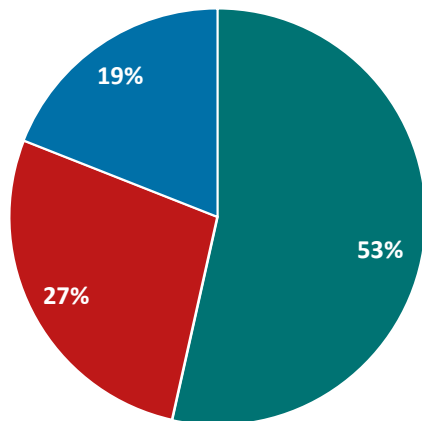
**Current research integrity
training provision**

Awareness of research integrity training based on seniority and work place

Availability of training in research integrity

Q. Does your institution provide training in research integrity? (n=554)

■ Yes ■ No ■ I prefer not to say / I don't know



"Yes" broken down by seniority



Institutional Management – 59%



Senior researcher – 54%



Mid-level researcher – 51%



Early career researcher – 57%



Other / Non-academic staff – 44%

"Yes" broken down by work place



Research organizations – 56%



Academia – 56%



Not for profit – 56%



Government – 29%



Industry – 47%



Self employed – 22%

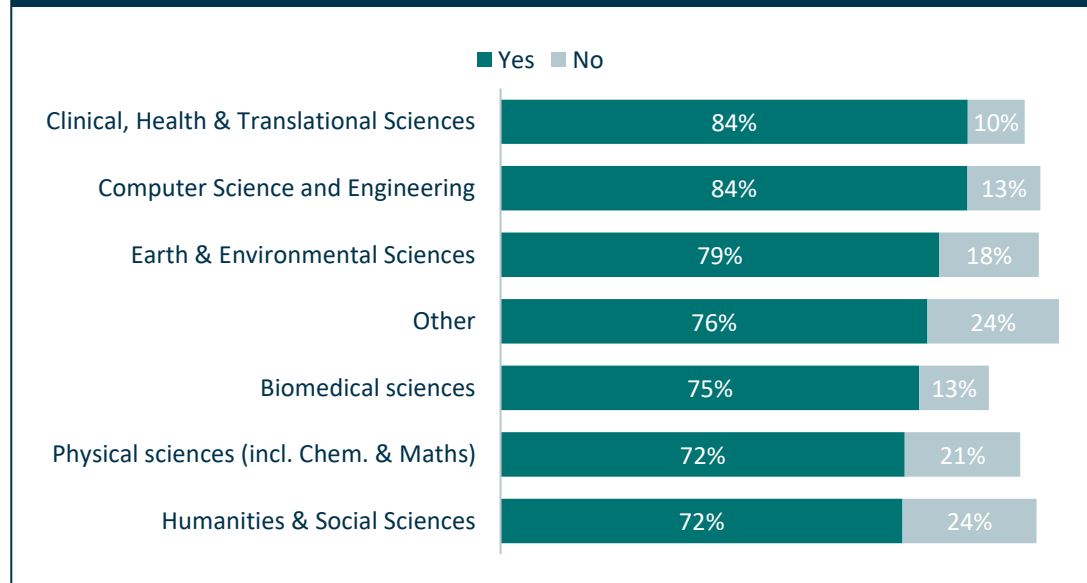


Other – 56%

Researchers within the HSS & physical sciences have the lowest uptake of RI training

Who has taken training in research integrity?

Q. Have you undertaken training in research integrity as provided by your current institution? (n=283)



Please note, this question was only shown to those who answered "Yes" to the question "Does your institution provide training in research integrity?" on slide 10.

At least 72% of researchers surveyed indicated that they took integrity training that was provided to them by their institution.

By course levels, those who were currently undertaking PhD programmes were significantly more likely to indicate "yes", compared to undergraduates who were significantly more likely to indicate "no".

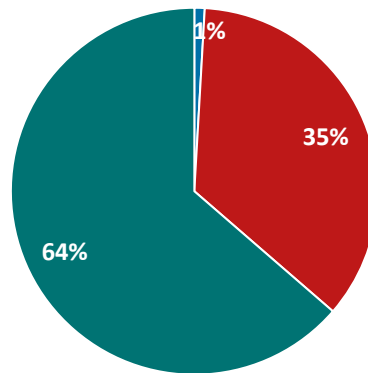
2 out of 3 researchers indicated their integrity training was mandatory

How is research integrity training provided?

Q. Was the training in which you participated mandatory or optional? (n=220)

- By course level, PhD students were significantly more likely to indicate that the integrity training they took was mandatory, compared to undergraduates and masters' students.
- Half of these trainings were delivered in a blended way that mixed online and face-to-face learning.

■ I don't know ■ Optional ■ Mandatory



Q. How is this training provided? (n=296)



Blended – 51%



Online – 13%



In person – 35%



Don't know – 1%

Please note, this question was only shown to those who answered "Yes" to the question "Have you undertaken training in research integrity as provided by your current institution?" on slide 11.

Supervisors lead the way in delivering training to researchers

Who is responsible for conducting training?

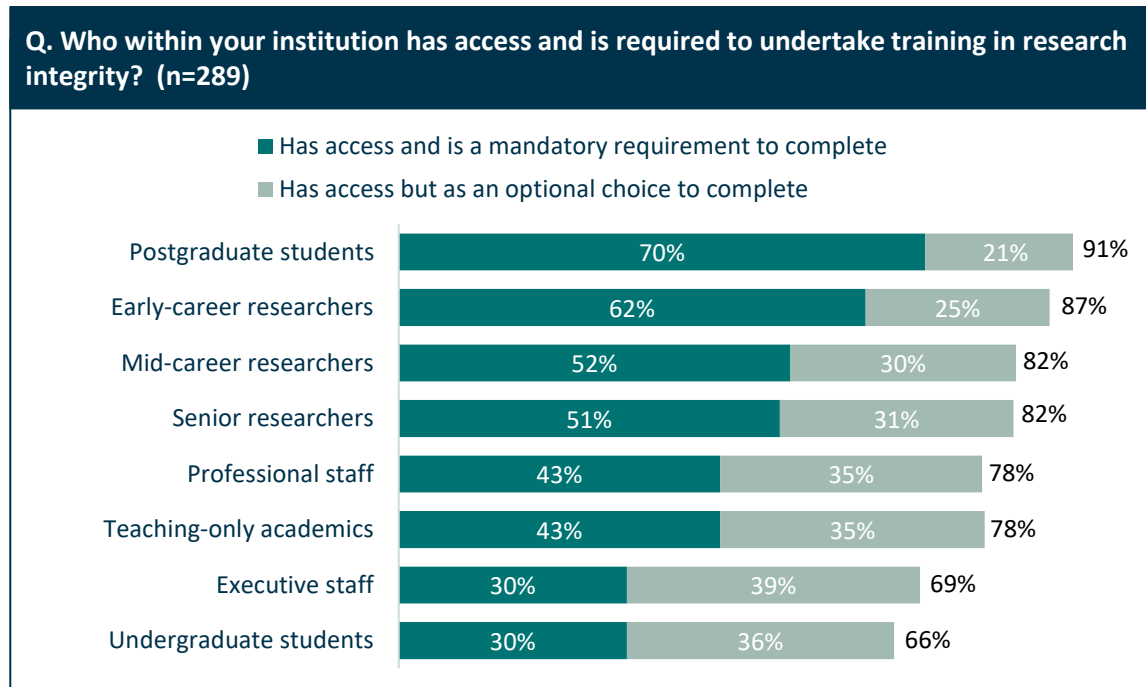
1 in 4 participants reported that Supervisors/Senior leaders were responsible for delivering training within their institutions. This establishes Supervisors/Senior Leaders as the primary group responsible for conducting training for researchers across almost all workplaces such as research institutes, government, and industry.



Please note, this question was only shown to those who answered “Yes” to the question “Does your institution provide training in research integrity?” on slide 10. Additionally, these figures represent the weighted proportion of respondents to give a particular responses, therefore, may not =100%

70% of postgrads are required to take RI training, but only 30% of undergrads are

To whom is research integrity training offered?

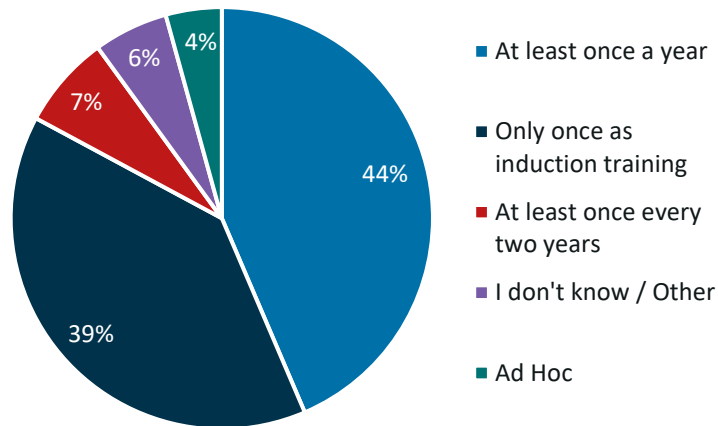


Please note, this question was only shown to those who answered "Yes" to the question "Does your institution provide training in research integrity?" on slide 10.

44% of mandatory training is given once on a yearly basis

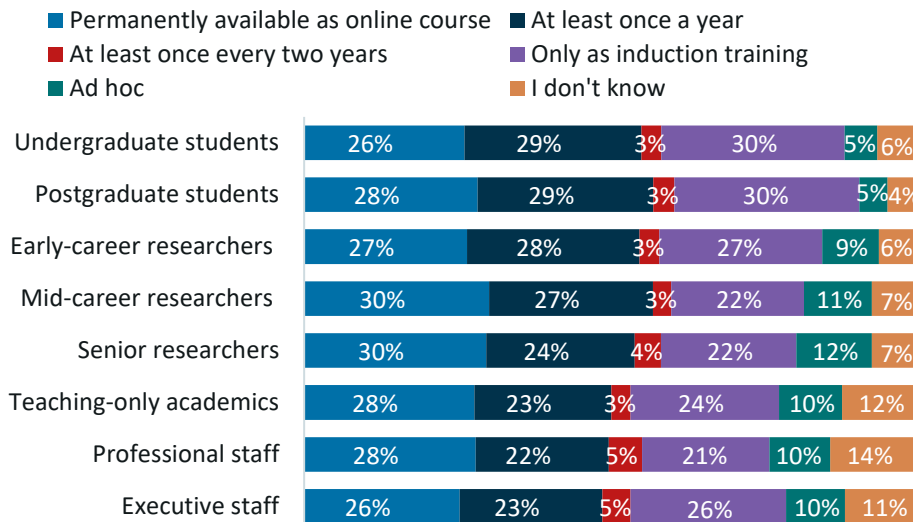
How frequently is training in research integrity taken and provided?

Q. How frequently are you required to undertake training in research integrity? (n=140)



Please note, this question was only shown to those who answered "Mandatory" to the question "Was the training in which you participated mandatory or optional?" on slide 12.

Q. For those who have access, how often is training in research integrity provided/made available by your institution? (n=186)

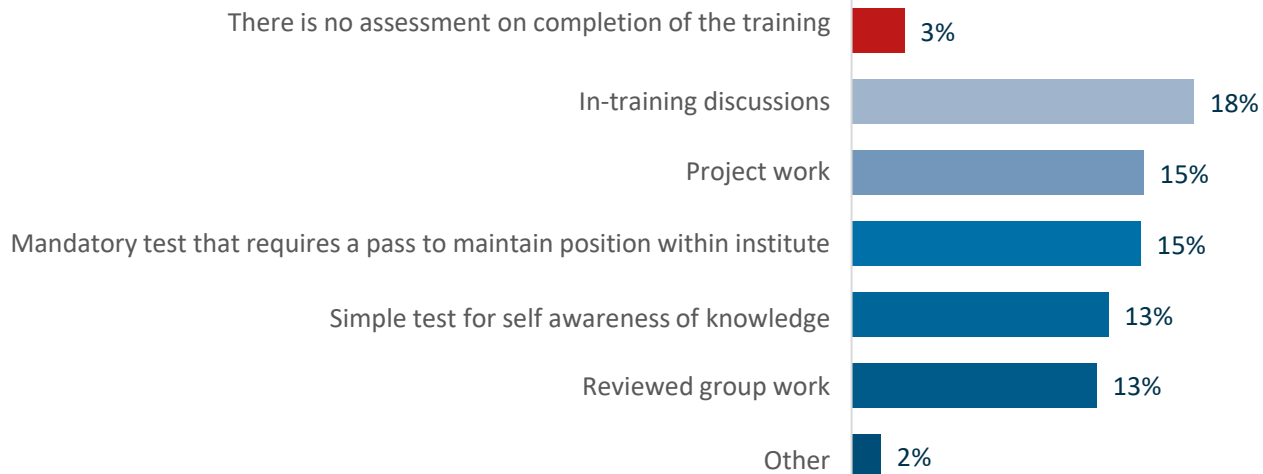


Please note, this question was only shown to those who indicated these groups did have access to Research Integrity training on slide 14.

1 out 6 indicated they are required to pass mandatory tests to maintain their positions

How is training in research integrity assessed?

Q. How, if at all, is learning from the training on research integrity assessed? (n=278)



Please note, this question was only shown to those who answered "Yes" to the question "Does your institution provide training in research integrity?" on slide 10.

Additionally, these figures represent the weighted proportion of respondents to give a particular responses, therefore, may not =100%

Conferences and workshops are the most common way to encourage RI outside training

How else do institutions encourage research integrity?

Q. Aside from formal training opportunities, how else does your institution encourage and develop research integrity? (n=497)



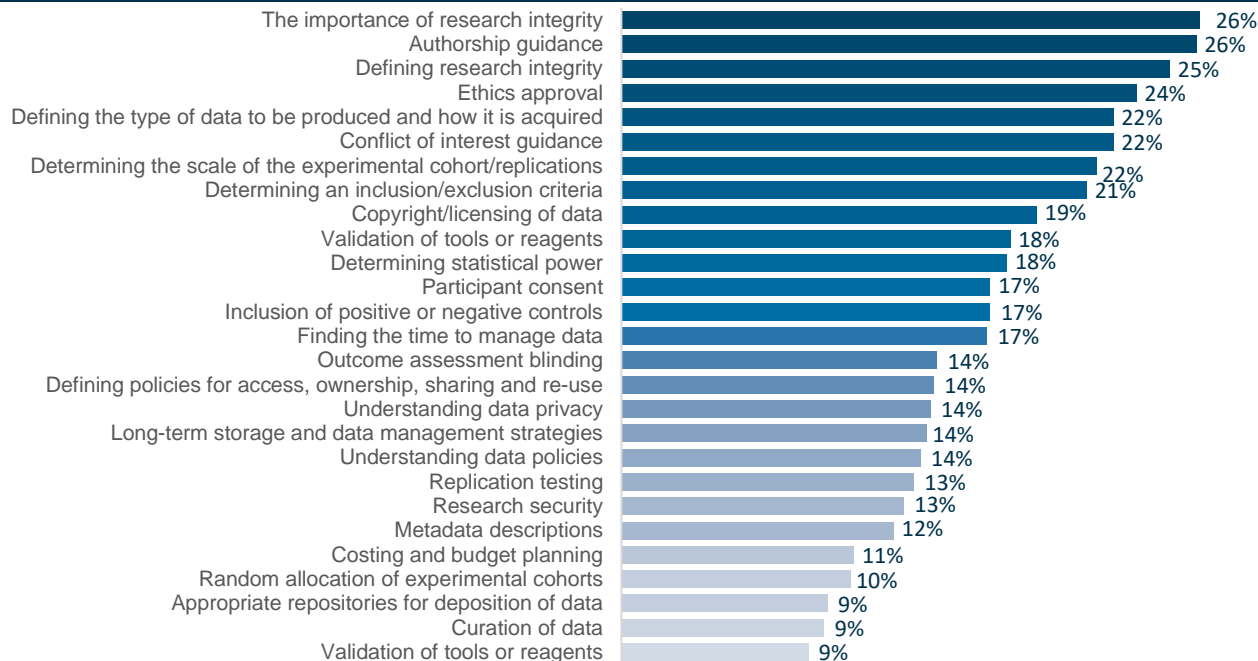
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**Topic inclusion within
training**

Current most topics covered in trainings focuses on foundational elements of RI

Topics covered in institutional research integrity training

Q. Which aspects associated with research integrity are included in your institution's training? (n=216)



The importance of research integrity, authorship guidance, defining research integrity, and ethics approval are the most covered topics in research integrity trainings, with about 1 in 4 participants indicating their institution's training included them.

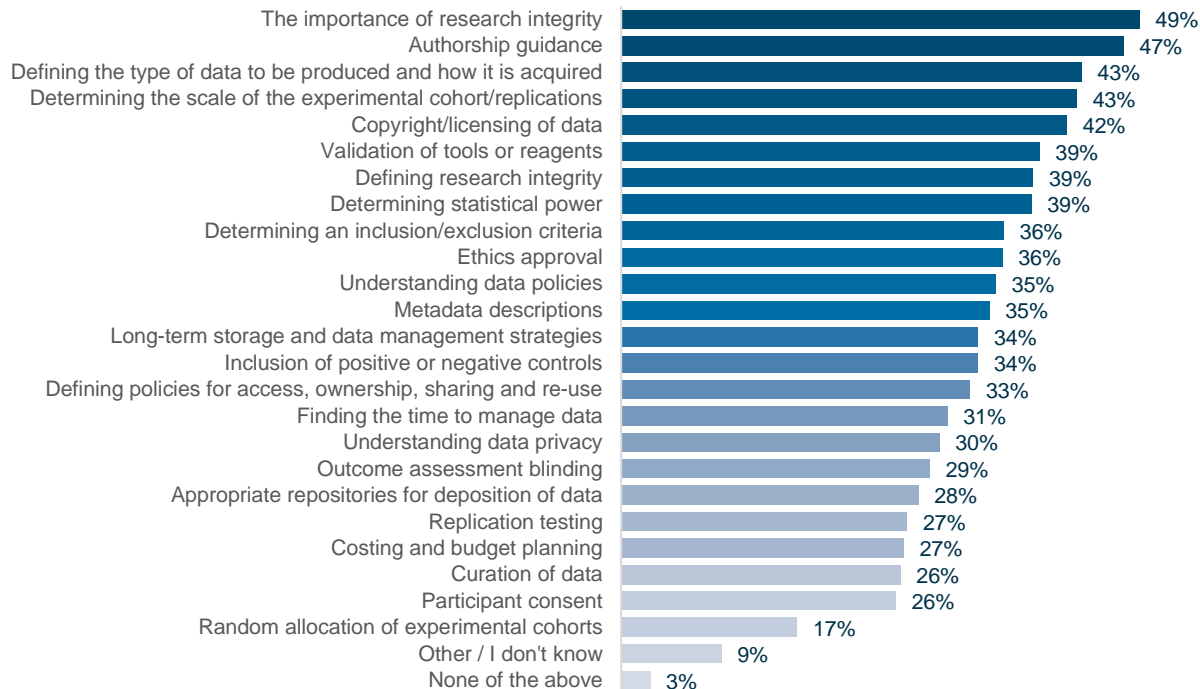
However, researchers working in the Clinical, Health & Translational Sciences were significantly more likely to indicate their training covered random allocation of experimental cohorts, participant consent, and determining an inclusion/ exclusion criteria.

Please note, this question was only shown to those who answered "Yes" to the question "Have you undertaken training in research integrity as provided by your current institution?" on slide 11.

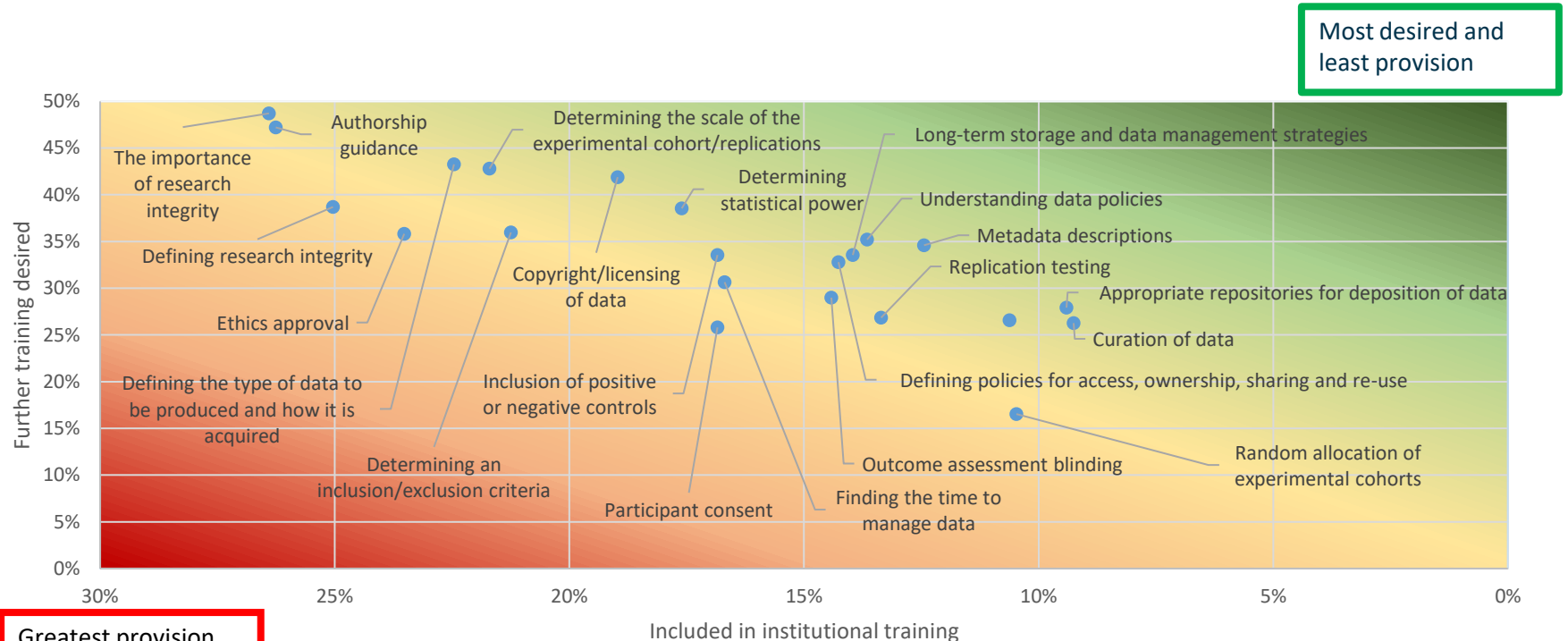
Top 2 most desired topics are aligned with the top 2 most covered topics

Topics desired from research integrity training

Q. Which of the following topics in RI do you feel you would benefit from further training in? (n=511)

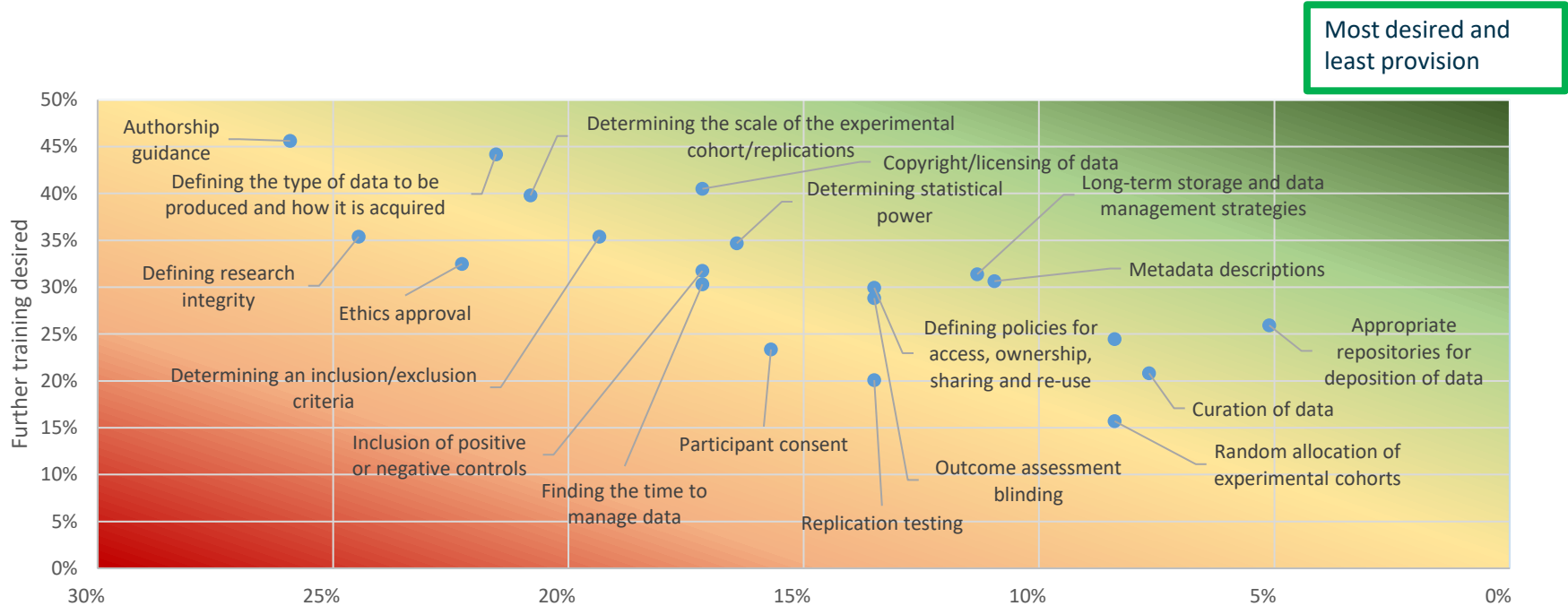


Cross-plot of training topics provided and training topics needs identify key institutional training development areas



Senior researchers' cross-plot of training topics provided and training topics needs

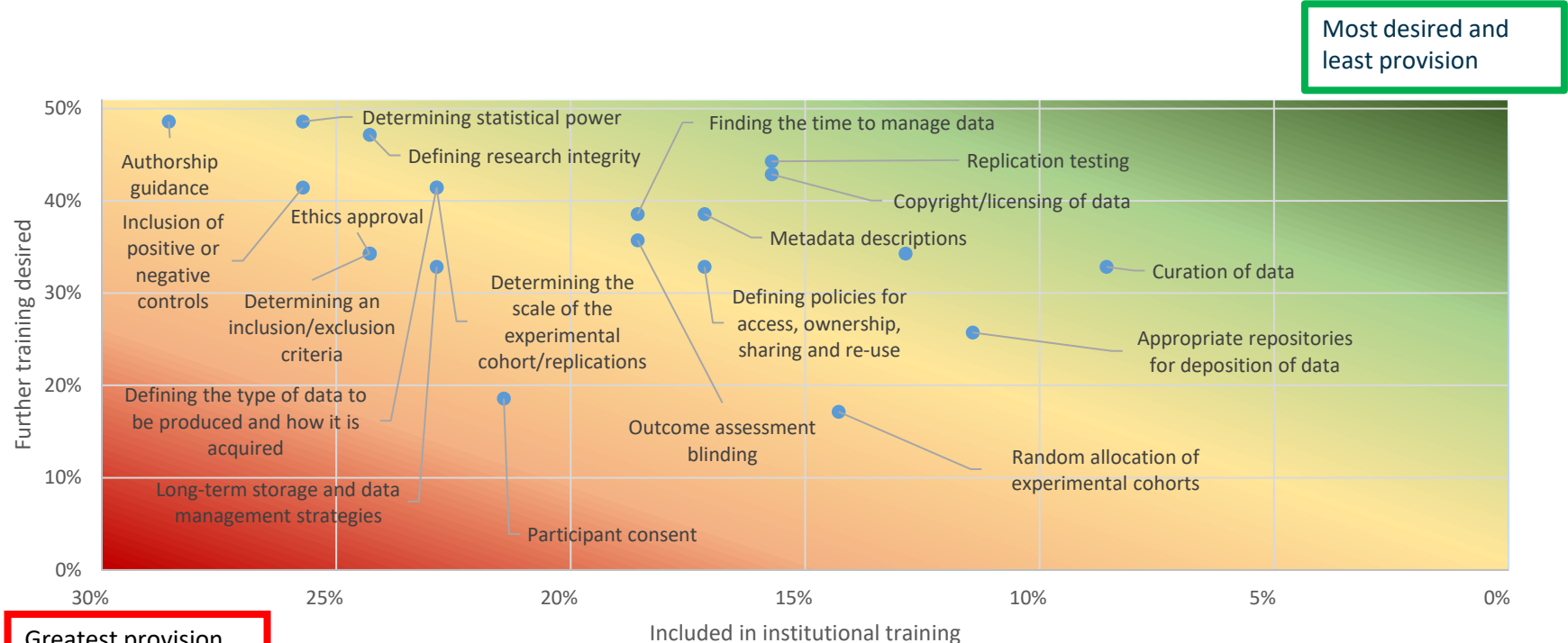
Topics covered in research integrity training versus topics desired by seniority group



Greatest provision and least desired

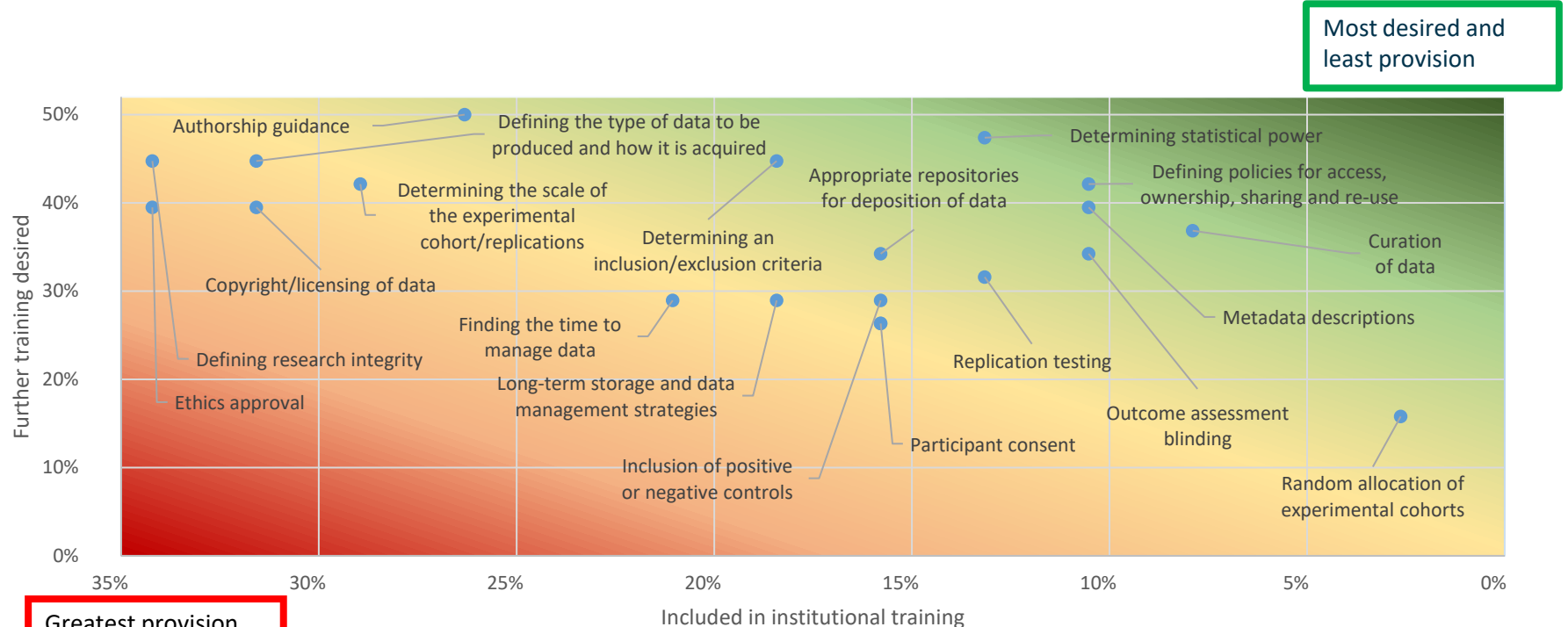
Mid-career researchers' cross-plot of training topics provided and training topics needs

Topics covered in research integrity training versus topics desired by seniority group



Early career researchers' cross-plot of training topics provided and training topics needs

Topics covered in research integrity training versus topics desired by seniority group



Greatest provision and least desired



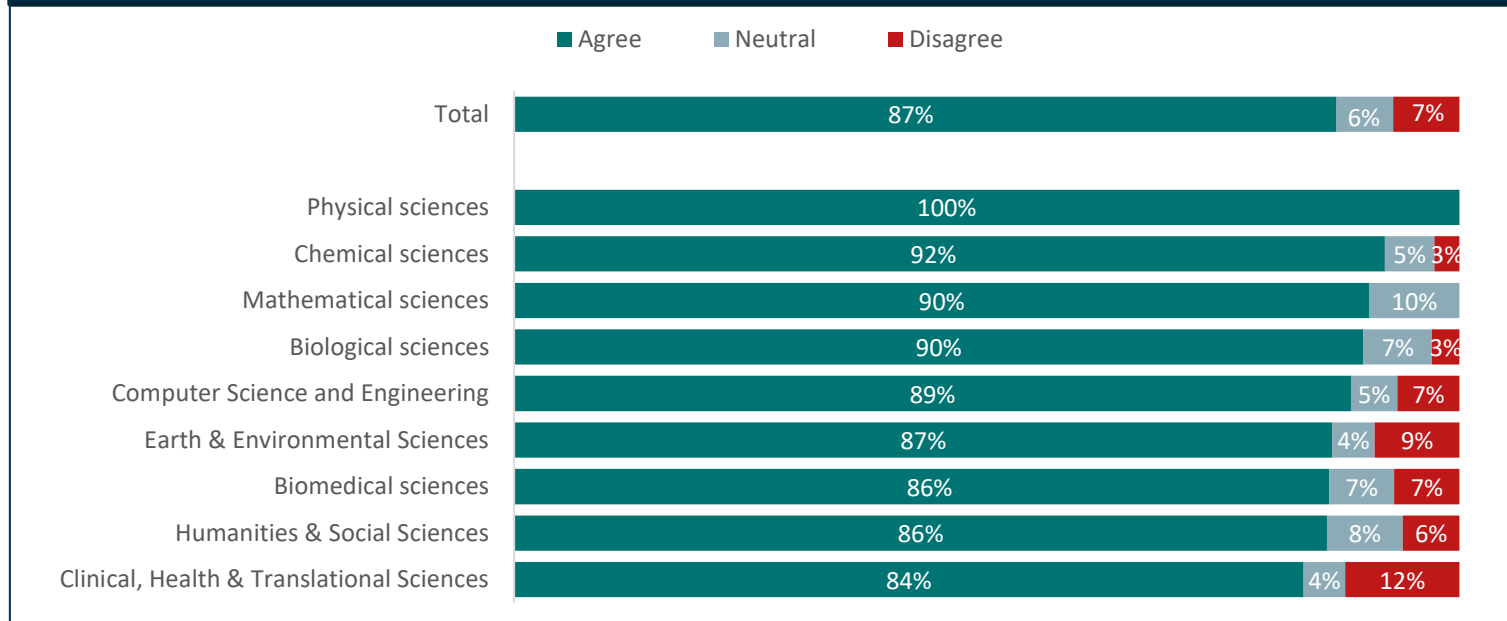
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Current training efficacy

Participants working in physical sciences see greatest practice of RI in their field

Field specific perceptions of problems associated with research integrity

Q. To what extent do you agree/disagree that researchers within your field are using "honest and verifiable methods in proposing, performing, and evaluating research and reporting research results"? (n=549)



62% support mandatory training for postgrads, but 9% oppose it for all

Who should training in research integrity be mandatory for?



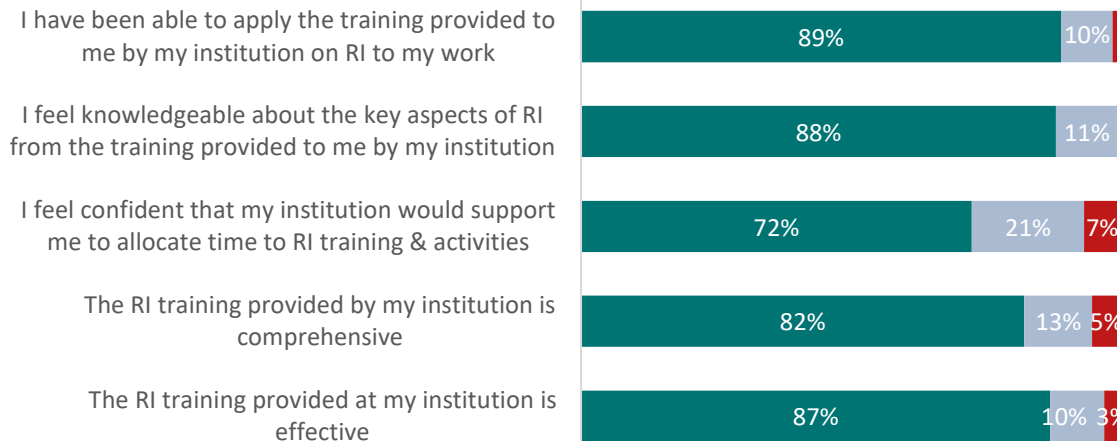
These figures represent the weighted proportion of respondents to give a particular response. Many respondents chose more than 1 answer. Total may not = 100%.

89% of those who received integrity training were able to apply it to their work

Perceived quality of current research integrity training provision

Q. Level of agreement with statements relating to the provision of training in research integrity? (n=140-523)

■ Strongly agree / Agree ■ Neutral / I don't know ■ Strongly disagree / Disagree

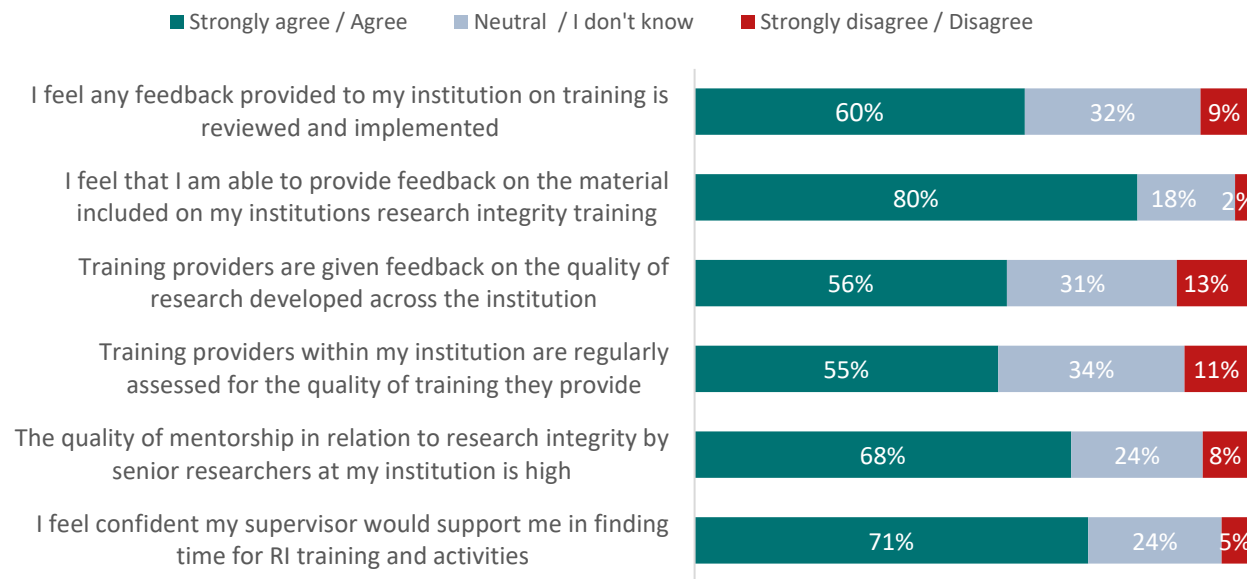


- 88% of respondents who received research integrity training feel knowledgeable about it, with 89% able to apply the training to their work.
- Researchers working within the Biomedical sciences, however, are significantly least likely to agree that they feel knowledgeable about the key aspects of research integrity from the training provided (with only 3% agreeing).
- And 7% of participants disagree that their institution would support them in allocating time to research integrity training and activities.

Only half of participants agree that training providers are assessed for training quality

Perceived quality of training providers and feedback mechanisms

Q. Level of agreement with statements relating to the providers of training and feedback routes? (n= 140-523)



- 80% of participants feel they are able to provide feedback on training materials, but 9% feel that feedback is not reviewed and implemented.
- Researchers working in STM fields are significantly more likely than other fields to disagree (75%) that training providers are given feedback on the quality of research developed.
- Researchers working in government organisations are significantly more likely than other workplaces to strongly disagree (26%) that the quality of mentorship in relation to research integrity by senior researchers is high.

Participants want more formal training & to shift attitudes about research integrity

Why is training not effective and what is your biggest unmet need in training?

Q. You indicated that your institution's research integrity training was not effective and/or comprehensive. Please say more. (n=7)

❖ Lack of formal and practical training

- "No formal means of training."
- "There is no assessment for people other than PhD students."
- "Not providing a training program in abstraction, rather in practice with real case situation."
- "The training mostly covers the ethical aspects of conducting human-subject research, but other aspects such as publication practices, study design, data quality and costing is mostly missing."

Q. What do you feel is the biggest unmet need in training in research integrity? (n=104)

❖ Awareness of existing training programmes

- "Lack of awareness that it even exists."
- "At many research institutes or universities I don't see any training or awareness program on research integrity."

❖ Cultivating research integrity attitudes

- "The biggest unmet need in training for research integrity is fostering a culture of ethical conduct in research."

❖ Standardization of trainings & integrity expectations

- "There is no formal training in research integrity. Therefore, it is very subjective."
- "The development of comprehensive and standardized educational programs."



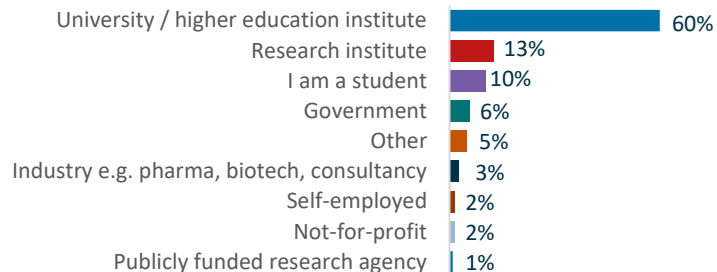
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Appendix

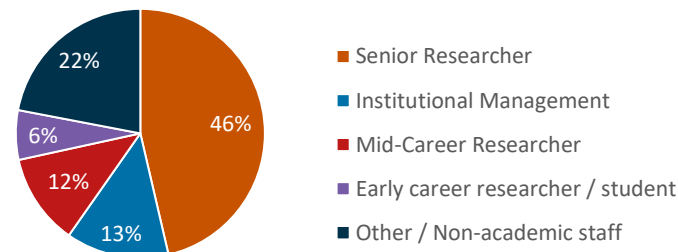
Respondents profiles

Demographics (1/2)

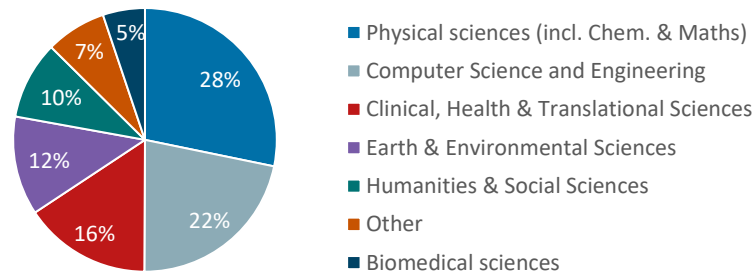
Workplace or student status (n=659)



Job role / Seniority (n=591)



Primary field of interest (n=659)



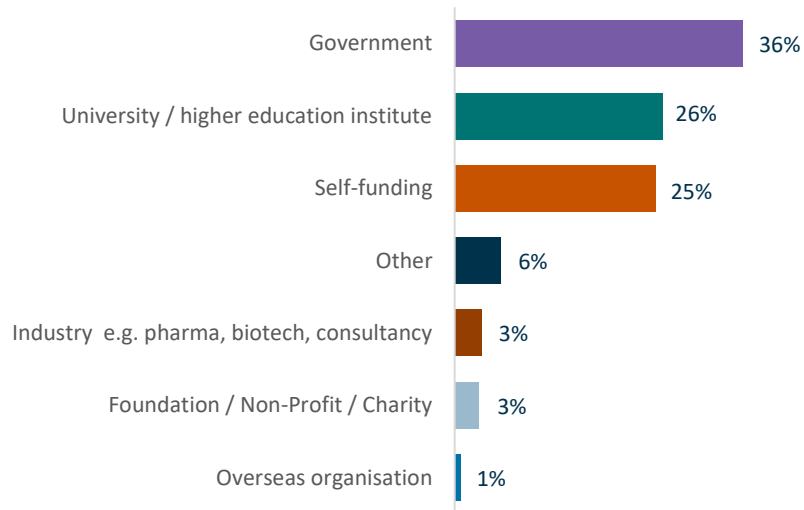
Training responsibility (n=659)



Respondents profiles

Demographics (2/2)

Main funder of current research (n=659)



Thank you