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UKCORI
UK Committee on Research Integrity

Research integrity in the UK: Annual Statement 2023

Supplementary material

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This report provides further background data and information on analyses conducted for the 'Research Integrity in the UK: Annual Statement 2023'. The findings are discussed within that report, but this supplement provides additional material which may be useful for those wishing to look more closely at specific questions. The analysis of data relating to retracted publications and the Vitae Culture, Employment and Development in Academic Research Survey are included here.

Supplementary material on the analysis of UK responses to the International Research Integrity Survey can be found here: https://osf.io/xb9rk/

CEDARS analysis

The Culture, Employment and Development of Researchers Survey (CEDARS) is a survey led by Vitae into the views and experiences of researchers working in universities and research institutes. It is designed to reflect the principles within the Researcher Development Concordat and includes a series of questions that relate to aspects of research integrity. The biennial survey is run locally and responses pooled to create a UK aggregate dataset. In 2021 48 institutions participated in CEDARS producing 12,594 responses from fairly similar proportions of early career researchers (27%), mid-career (29%) and senior researchers (26%); and a small proportion of doctoral researchers (10%). UK Committee on Research Integrity commissioned Vitae to analyse the CEDARS questions relevant to research integrity by career stage and by broad disciplinary groupings, both of which are self-identified by respondents. The full CEDARS results can be accessed here: https://www.vitae.ac.uk/impact-and-evaluation/cedars

For disciplinary groupings, CEDARS asks researchers to select the most appropriate main Research Excellence Framework (REF) panel as a proxy. We are aware that individuals may work across disciplines and main panels and therefore this provides a rough indication only.
REF Panel A: Medicine, health and life sciences
REF Panel B: Physical sciences, engineering and mathematics
REF Panel C: Social sciences
REF Panel D: Arts and humanities

Knowledge and understanding of the following UK sector initiatives or frameworks

- Researcher Development Concordat (RD)
- Research Integrity Concordat (RI)
- Knowledge Exchange Concordat (KE)

Table 1.1: How would you rate your knowledge and understanding of the following UK sector initiatives or frameworks? By REF Panel

	I have some understanding of this	I know this exists, but I don't know the detail	I have never heard of this	N
REF Panel A				
RD Concordat	28.5%	31.6%	39.9%	4165
RI Concordat	22.8%	32.2%	45.0%	4161
KE Concordat	11.9%	29.8%	58.3%	4157
REF Panel B				
RD Concordat	29.1%	30.7%	40.2%	2590
RI Concordat	21.5%	29.1%	49.4%	2591
KE Concordat	13.6%	27.2%	59.2%	2590
REF Panel C				
RD Concordat	30.0%	30.6%	39.4%	2693
RI Concordat	25.0%	30.2%	44.8%	2692
KE Concordat	14.4%	30.1%	55.5%	2689
REF Panel D				
RD Concordat	25.3%	31.1%	43.6%	1167
RI Concordat	19.3%	29.7%	51.0%	1167
KE Concordat	12.0%	30.3%	57.7%	1167

Table 1.2 How would you rate your knowledge and understanding of the following UK sector initiatives or frameworks? By career stage

	I have some understanding of this	I know this exists, but I don't know the detail	I have never heard of this	N
Early career researcher				
RD Concordat	22.9%	31.7%	45.3%	3390
RI Concordat	15.0%	31.1%	53.9%	3386
KE Concordat	8.8%	27.5%	63.7%	3384
Established researcher				
RD Concordat	25.4%	32.3%	42.3%	3560
RI Concordat	20.4%	31.5%	48.1%	3560
KE Concordat	12.0%	28.6%	32.5%	3559
Senior researcher				
RD Concordat	43.4%	30.6%	26.0%	3256
RI Concordat	36.7%	31.6%	31.7%	3255
KE Concordat	20.3%	34.1%	22.8%	3249

Table 2.1 In which areas have you undertaken, or would you like to undertake, training and other continuing professional development? By REF Panel

	I have done this	I would like to do this	I have no interest in this	N
REF Panel A				
Research integrity	44.3%	39.8%	15.9%	1839
Interdisciplinary research	21.5%	59.4%	19.0%	1839
Open research	24.6%	53.3%	22.1%	1829
Research methods	51.1%	37.7%	11.3%	1884
Leadership	19.6%	63.8%	16.5%	1864
REF Panel B				
Research integrity	38.1%	40.0%	21.9%	1046
Interdisciplinary research	25.0%	59.1%	15.9%	1051
Open research	27.7%	49.7%	22.6%	1047
Research methods	36.9%	44.3%	18.8%	1048
Leadership	21.1%	61.6%	17.4%	1059
REF Panel C				
Research integrity	46.4%	35.6%	18.0%	1025
Interdisciplinary research	29.4%	57.1%	13.5%	1041
Open research	25.1%	53.5%	21.4%	1021
Research methods	55.6%	33.9%	10.5%	1054
Leadership	27.1%	54.9%	18.0%	1047
REF Panel D				
Research integrity	33.8%	40.7%	25.5%	447
Interdisciplinary research	28.1%	56.1%	15.8%	456
Open research	20.7%	55.5%	23.8%	449
Research methods	43.7%	36.2%	20.1%	453
Leadership	24.3%	49.4%	26.3%	449

Table 2.2 In which areas have you undertaken, or would you like to undertake, training and other continuing professional development? By career stage

	I have done this	I would like to do this	I have no interest in this	N
Early career researcher				
Research integrity	44.0%	41.2%	14.9%	2525
Interdisciplinary research	24.9%	61.6%	13.5%	2533
Open research	26.3%	54.7%	19.0%	2519
Research methods	49.8%	39.4%	10.7%	2578
Leadership	17.6%	67.0%	15.4%	2559
Established researcher				
Research integrity	45.9%	32.3%	21.8%	989
Interdisciplinary research	31.0%	53.1%	15.9%	1010
Open research	27.4%	48.1%	24.5%	990
Research methods	54.5%	30.0%	15.5%	1022
Leadership	29.0%	51.4%	19.6%	1024
Senior researcher				
Research integrity	52.4%	19.0%	28.6%	269
Interdisciplinary research	38.1%	37.7%	24.3%	268
Open research	34.2%	33.5%	32.3%	269
Research methods	54.9%	21.3%	23.9%	268
Leadership	51.5%	24.8%	23.7%	274

Table 3.1 Knowledge of and confidence in institutional reporting processes. By REF Panel

	Agree strongly	Agree	Disagree	Disagree strongly	Don't know	Not applicable	N
REF Panel A							
I am familiar with my institution's mechanisms to report incidents of misconduct	13.1%	45.0%	28.9%	4.7%	7.7%	0.6%	4161
I would feel comfortable reporting any incidents of research misconduct	17.4%	49.1%	19.4%	4.7%	8.8%	0.6%	4158
I trust my institution to investigate any reported incidents of research misconduct fairly	17.0%	51.1%	9.6%	5.4%	16.2%	0.6%	4160
I trust that my institution would take action if appropriate after such an investigation	16.9%	47.9%	10.4%	5.6%	18.6%	0.6%	4161
REF Panel B							
I am familiar with my institution's mechanisms to report incidents of misconduct	15.8%	42.9%	28.3%	5.4%	7.2%	0.4%	2597
I would feel comfortable reporting any incidents of research misconduct	21.8%	49.6%	16.9%	4.4%	6.7%	0.5%	2596
I trust my institution to investigate any reported incidents of research misconduct fairly	21.3%	48.1%	10.1%	5.1%	15.0%	0.5%	2594
I trust that my institution would take action if appropriate after such an investigation	20.2%	45.6%	10.6%	5.6%	17.4%	0.6%	2596
REF Panel C							
I am familiar with my institution's mechanisms to report incidents of misconduct	14.5%	44.2%	27.0%	5.4%	8.3%	0.6%	2690
I would feel comfortable reporting any incidents of research misconduct	18.7%	46.7%	18.1%	5.8%	10.1%	0.6%	2691
I trust my institution to investigate any reported incidents of research misconduct fairly	16.9%	46.9%	11.0%	7.6%	16.9%	0.7%	2692
I trust that my institution would take action if appropriate after such an investigation	16.0%	45.2%	11.6%	7.7%	18.8%	0.7%	2692
REF Panel D							
I am familiar with my institution's mechanisms to report incidents of misconduct	12.2%	44.6%	29.1%	4.4%	8.6%	1.1%	1163
I would feel comfortable reporting any incidents of research misconduct	14.7%	50.3%	18.2%	4.2%	11.4%	1.1%	1163
I trust my institution to investigate any reported incidents of research misconduct fairly	12.7%	46.4%	11.1%	5.9%	22.9%	1.0%	1162
I trust that my institution would take action if appropriate after such an investigation	12.3%	43.7%	11.3%	6.1%	25.5%	1.1%	1162

Table 3.2 Knowledge of and confidence in institutional reporting processes. By career stage

	Agree strongly	Agree	Disagree	Disagree strongly	Don't know	Not applicable	N
Early career researcher							
I am familiar with my institution's mechanisms to report incidents of misconduct	12.0%	40.7%	31.6%	6.3%	9.2%	0.3%	3387
I would feel comfortable reporting any incidents of research misconduct	16.1%	47.0%	20.1%	5.6%	10.9%	0.3%	3386
I trust my institution to investigate any reported incidents of research misconduct fairly	16.5%	49.7%	9.3%	5.6%	18.7%	0.3%	3388
I trust that my institution would take action if appropriate after such an investigation	16.3%	47.1%	9.6%	5.8%	20.9%	0.3%	3386
Established researcher							
I am familiar with my institution's mechanisms to report incidents of misconduct	11.6%	42.9%	31.3%	5.7%	8.0%	0.4%	3560
I would feel comfortable reporting any incidents of research misconduct	15.5%	48.8%	20.2%	5.5%	9.5%	0.4%	3558
I trust my institution to investigate any reported incidents of research misconduct fairly	14.0%	47.4%	12.1%	7.5%	18.7%	0.4%	3560
I trust that my institution would take action if appropriate after such an investigation	13.4%	44.6%	13.0%	7.6%	21.0%	0.4%	3562
Senior researcher							
I am familiar with my institution's mechanisms to report incidents of misconduct	18.2%	48.6%	24.4%	2.9%	5.8%	0.1%	3256
I would feel comfortable reporting any incidents of research misconduct	23.7%	49.5%	16.9%	4.1%	5.8%	0.1%	3257
I trust my institution to investigate any reported incidents of research misconduct fairly	21.0%	48.4%	10.8%	5.8%	13.9%	0.2%	3254
I trust that my institution would take action if appropriate after such an investigation	19.9%	45.9%	11.4%	6.2%	16.3%	0.2%	3256

Analysis of retracted publication data

As outlined in Box 10 of the main statement we used data in The Retraction Watch Database http://retractiondatabase.org/ for our analysis which is the most comprehensive searchable database of retracted papers. An extract of the database containing all retracted publications (around 39,000) was provided by The Center for Scientific Integrity, the parent non-profit organisation of Retraction Watch. Under the terms of the data use agreement we were permitted to use the data for our analysis, but not to publish any part of the dataset.

Methodology: Our analysis only included data on papers originally published from 2003-2022 and retracted between 2010-2022, which reflects the period of optimum data quality for both Retraction Watch (see The Retraction Watch FAQ, including comments policy – Retraction Watch), and our comparator dataset from Dimensions.

We used Dimensions in order to compare the Retraction Watch data with the overall numbers of publications, in order to obtain percentages of retracted publications for each country.

Each publication in the Retraction Watch dataset is assigned at least one reason code chosen according to information provided in the notice. The full list of reasons is available here: Retraction Watch Database User Guide Appendix B: Reasons – Retraction Watch. For the analysis we assigned each reason to one of four categories: misconduct, concern, error, and 'other', and coded each reason to one of those four. Codes that do not give a reason for retraction and instead convey some metadata about the retraction (e.g. that no notice of retraction was published) were omitted. Table 4 shows the coding for all reasons used against publications with at least one UK co-author within the specified timeframe. If a publication had at least one misconduct- or concern-related reason, it was included in the calculation of percentage of publications retracted due to misconduct or concern.

We note that 'doing the right thing' should be recognised as a positive reason for retraction. There is only one publication with a UK co-author with that reason in the dataset we analysed.

Table 4: Reasons

Category	Reasons
Concern	Breach of Policy by Author; Complaints about Author; Complaints about Company/Institution; Concerns/Issues About Authorship; Concerns/Issues About Data; Concerns/Issues About Image; Concerns/Issues about Referencing/Attributions; Concerns/Issues About Results; Concerns/Issues about Third Party Involvement; Copyright Claims; Investigation by Company/Institution; Investigation by Journal/Publisher; Investigation by ORI; Investigation by Third Party; Lack of Approval from Author; Objections by Author(s); Objections by Company/Institution; Objections by Third Party; Original Data not Provided
Misconduct	Conflict of Interest; Duplication of Article; Duplication of Data; Duplication of Image; Duplication of Text; Ethical Violations by Author; Euphemisms for Duplication; Euphemisms for

	Plagiarism; Fake Peer Review; False Affiliation; False/Forged Authorship; Falsification/Fabrication of Data; Falsification/Fabrication of Image; Falsification/Fabrication of Results; Informed/Patient Consent - None/Withdrawn; Lack of Approval from Company/Institution; Lack of Approval from Third Party; Lack of IRB/IACUC Approval; Manipulation of Images; Manipulation of Results; Misconduct - Official Investigation/Finding; Misconduct by Author; Paper Mill; Plagiarism of Article; Plagiarism of Data; Plagiarism of Image; Plagiarism of Text; Rogue Editor; Taken from Dissertation/Thesis
Error	Author Unresponsive; Bias Issues or Lack of Balance; Contamination of Cell Lines/Tissues; Contamination of Materials (General); Duplicate Publication through Error by Journal/Publisher; Error by Journal/Publisher; Error by Third Party; Error in Analyses; Error in Cell Lines/Tissues; Error in Data; Error in Image; Error in Materials (General); Error in Methods; Error in Results and/or Conclusions; Error in Text; Miscommunication by Author; Miscommunication by Company/Institution; Miscommunication by Journal/Publisher; Miscommunication by Third Party; Results Not Reproducible
Other	Cites Retracted Work; Doing the Right Thing; Legal Reasons/Legal Threats; Not Presented at Conference; Unreliable Data; Unreliable Image; Unreliable Results; Withdrawn (out of date); Withdrawn to Publish in Different Journal