PD HUB Workshop
14th Oct 2022
Research Integrity for Research Staff

Dr Irene Kavanagh, Research Officer, UCC Research, Office of the Vice President for Research & Innovation

Epigeum online RI training – Mandatory for all research staff and students

Link: [Epigeum Registration & Further Information | University College Cork (ucc.ie)]

Core Modules 1-8
1.Good Research Conduct
2.Irresponsible Research Practices
3.Planning Your Research
4.Managing and Recording Your Research
5.Data Selection, Analysis and Presentation
6.Scholarly Publication
7.Professional Responsibilities
8.Communication, Social Responsibility and Impact

Specialist Modules 9-13
Conflicts of Interest
Responsible Conduct of Research with Humans Participants
The Care and Use of Animals in Research
Intellectual Property
Export Controls

Modules 1-8: Early-mid career researchers (students/postdocs)
Modules 1&2: Mid-advanced career researchers

Modules 9-13: All researchers, as relevant/necessary

Topics

- **Overview: Research Integrity and Research Misconduct**
- **High Profile Cases**
- **Questionable Research Practices**
- **Scenarios**
- **Enhancing Responsible Conduct of Research**
- **Research Integrity Checklist for Researchers**
- **Research Integrity@UCC other training**

Additional scenarios, along with important resources are at the end of this presentation

https://www.youtube.com/watch?v=c-bemNZ-IqA (to 2.46min)

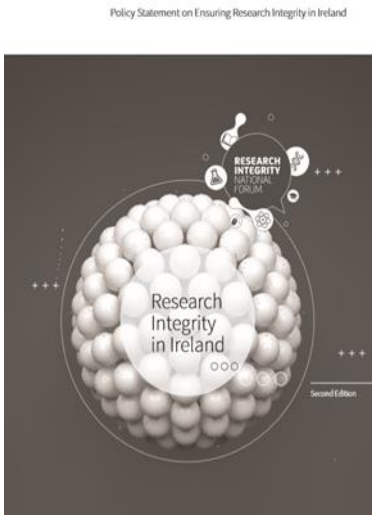
UCC
Coláiste na hOllscoile Corcaigh
University College Cork, Ireland
Research
Taighde

Research Integrity & Research Misconduct – Overview

Research Integrity relates to the performance of research to the highest standards of professionalism and rigour, and to the accuracy and integrity of the research record in publications and elsewhere.

National Policy Statement on Ensuring Research Integrity in Ireland (2019)

European Code of Conduct for Research Integrity

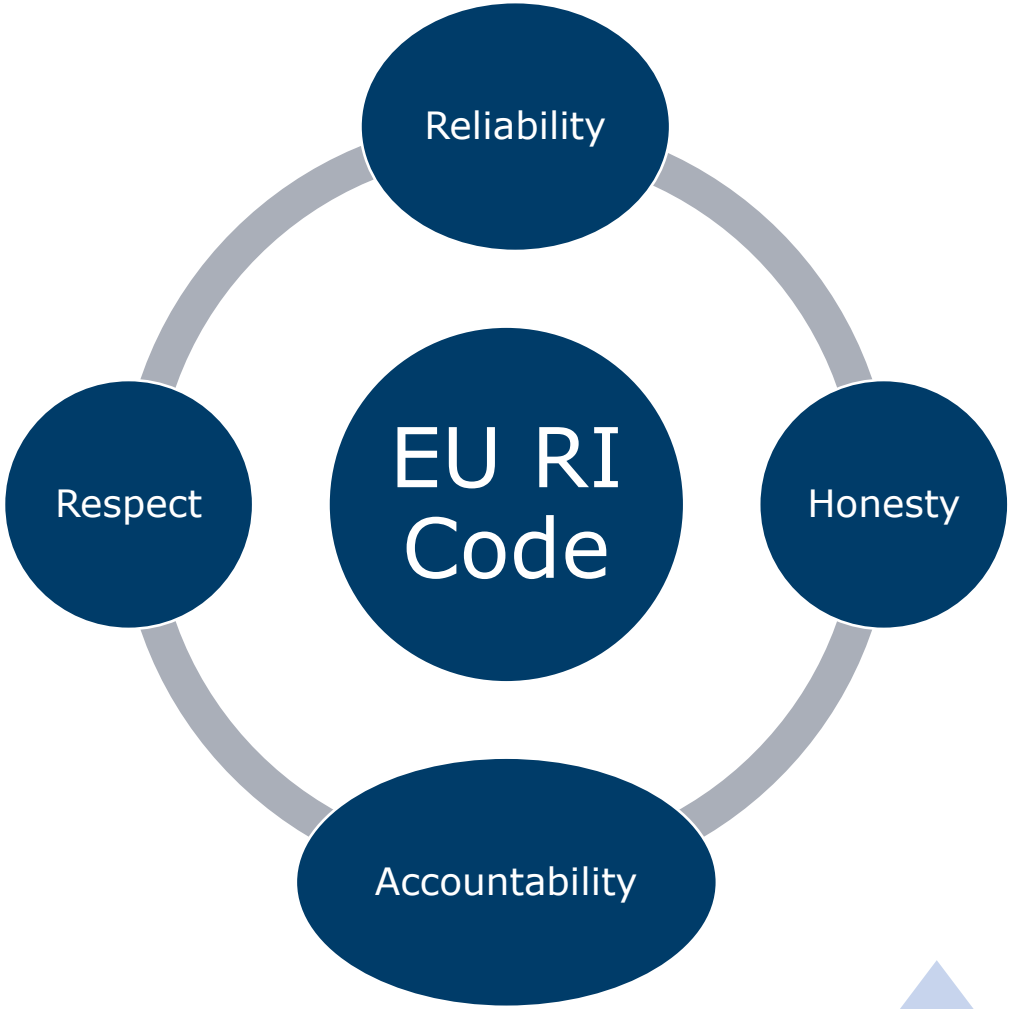


National Policy- Ensuring Research Integrity in Ireland

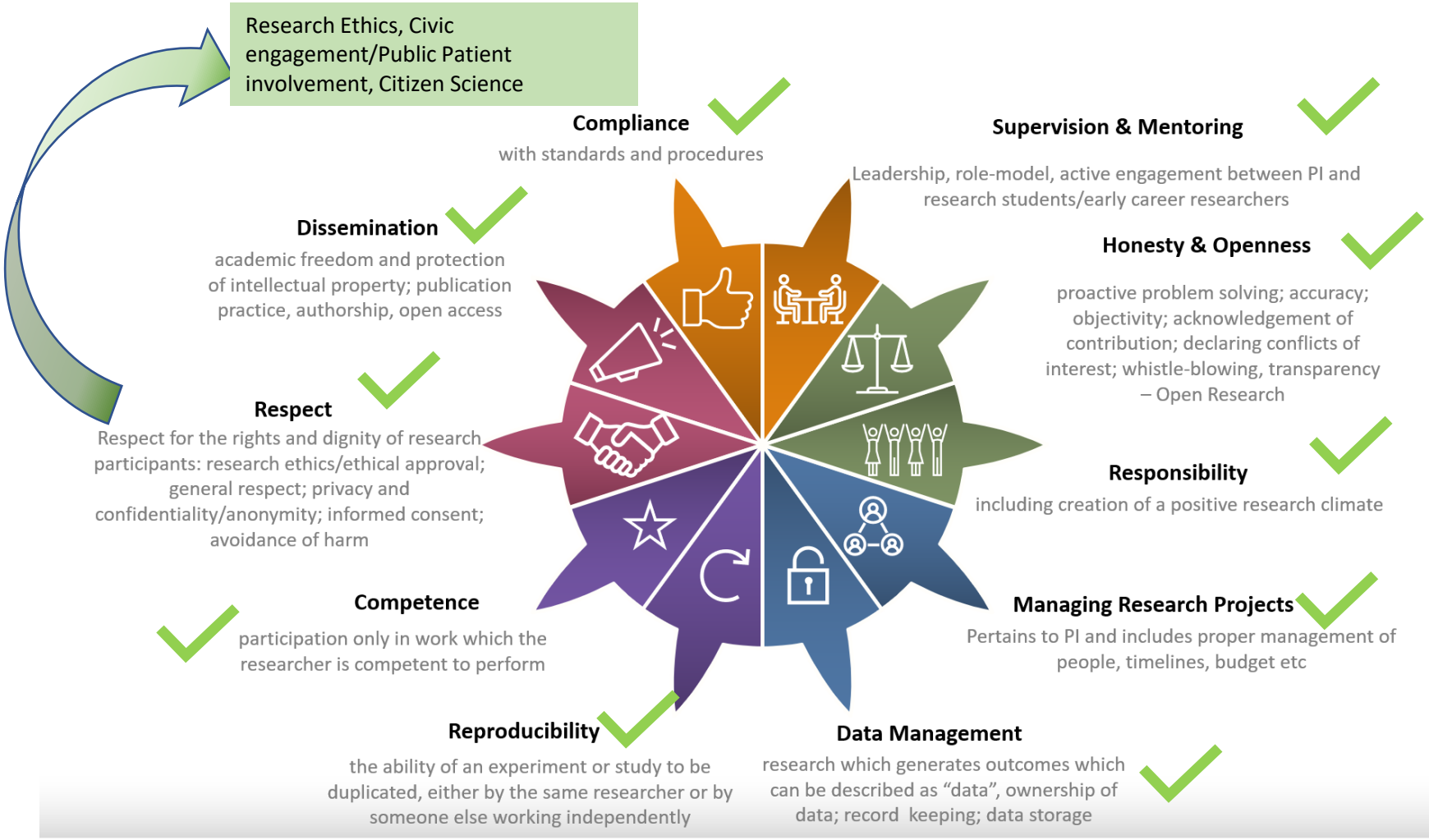
UCC Code of Research Conduct

The four basic principles of good practice in research

European Code of Conduct for Research Integrity



Good Research Practice & the *UCC Code of Research Conduct*



European Code of Conduct for Research Integrity

Unacceptable Research Practices relate to where an individual deliberately, dangerously or negligently deviates from accepted Responsible Conduct of Research practices that are expected to be followed

European Code for Research Integrity (2017); Resnik et al. (2015); Science Europe (2015)

The three major breaches of Responsible Conduct of Research are **FFP:**

Fabrication of data i.e. making up results and recording them as if they were real

Falsification of data i.e. manipulating research materials, equipment or processes, including changing, omitting or suppressing data or results without justification

Plagiarism i.e. using other people's work and ideas without giving proper credit to the original source, thus violating the rights of the original author(s) to their intellectual outputs

- But there are others…

CONFLICTS OF INTEREST

- **Conflicts of interest** represent circumstances in which professional judgments or actions regarding a **primary interest**, such as the responsibilities of a researcher, may be at risk of being unduly influenced by a **secondary interest**, such as financial gain or career advancement

Embassy of Good Science (https://embassy.science/wiki/Theme:2f1668e3-c46b-44b0-bf6a-fc4698b671ca); Emanuel & Thompson (2008)

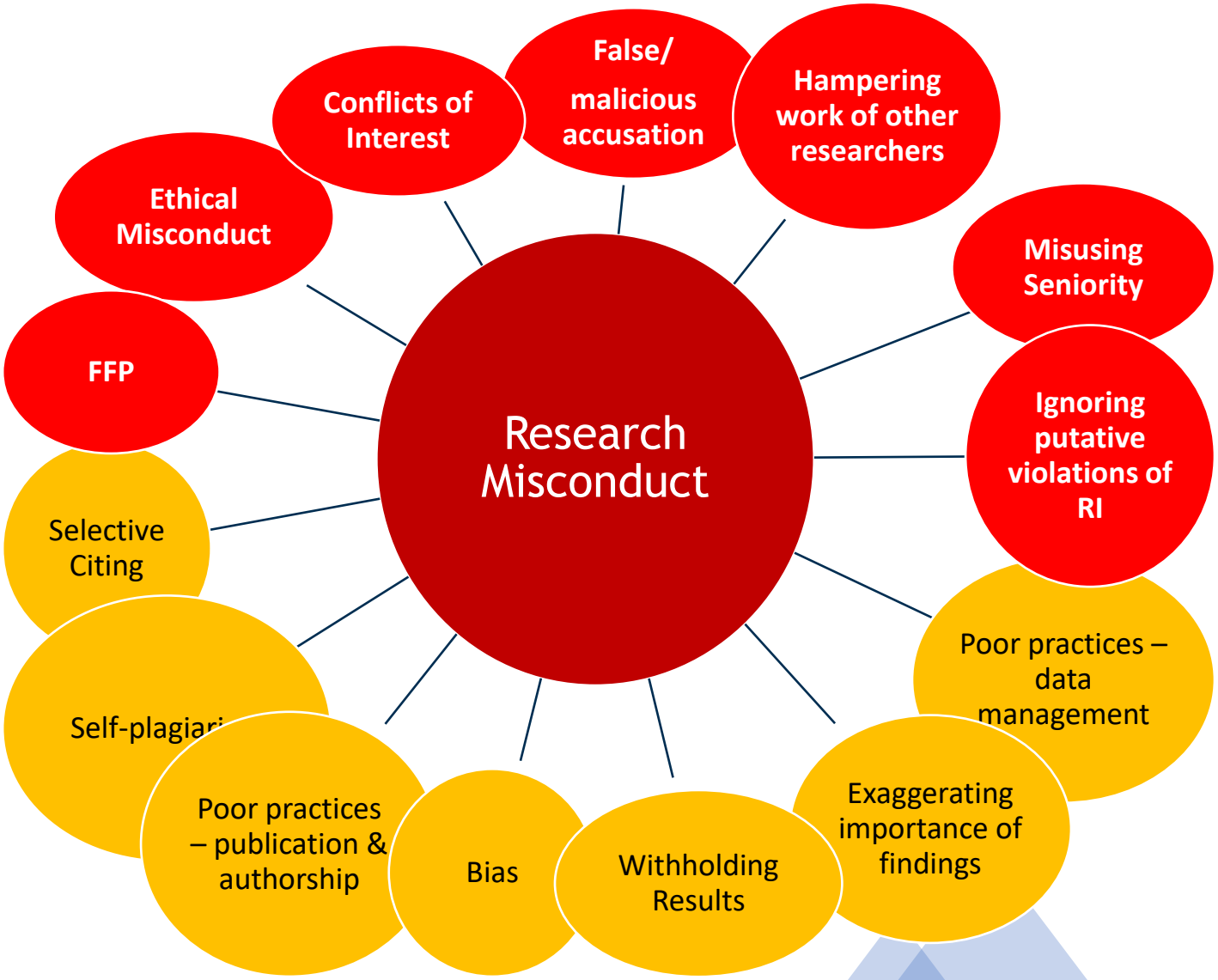
ETHICAL MISCONDUCT

- Failures to follow accepted procedures or to exercise due care in carrying out responsibilities for avoiding unreasonable risk or harm to humans; animals used in research; and the environment

- Failures to follow procedures relating to the proper handling of privileged or private information on individuals collected during the research

UK Research Integrity Office (UKRIO), 2016.

RESEARCH MISCONDUCT ENCOMPASSES A WIDE RANGE OF UNACCEPTIBLE RESEARCH PRACTICES



Prevalence of Research Misconduct

"An often-heard argument against implementing guidelines, frameworks or governance structures to ensure research integrity is that it is an over-reaction, since serious misconduct is so rare"

Hiney, M. (2015). Briefing Paper on Research Integrity. What it Means, Why it is important and How we Might Protect it. Available at: Briefing Paper on Research Integrity: What it Means, Why it Is Important and How we Might Protect it. 2015

- Meta-analysis span: 1992 - 2020
- 42 articles
- 571 studies, spanning different disciplines
- 23,228 participants, consisting of researchers and PhD students from 18 countries.
- 2.9% of researchers had committed RM concerning at least 1 of FFP, 12.5% had committed QRPs concerning 1 or more QRPs.
- 15.5% of researchers witnessed certain behaviours of RM, of whom 39.7% had knowledge of various QRPs

Xie, Y., Wang, K. & Kong, Y. Prevalence of Research Misconduct and Questionable Research Practices: A Systematic Review and Meta-Analysis. Sci Eng Ethics ***27,*** *41 (2021). https://doi.org/10.1007/s11948-021-00314-9*

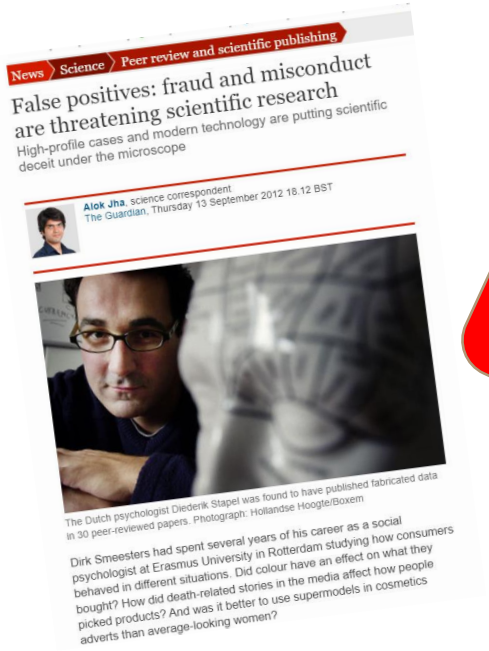
How big a problem is research misconduct?

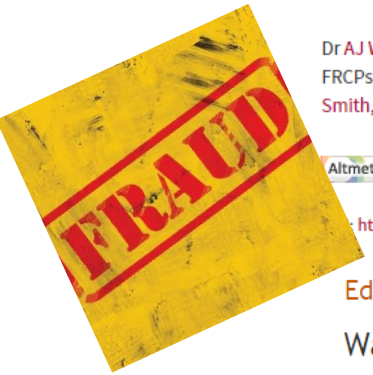
- Research Misconduct is an international issue
- Research Misconduct arises in all disciplines: Humanities, Arts, Social Sciences, Business & Law as well as Biomedical, Physical and Engineering Sciences
- The incidence of Research Misconduct is tracked by official statistics, survey results, and analysis of retractions
- **All of these indicators have shown that the incidence of Research Misconduct is increasing over time**
- For example, studies suggest that as many as one in every 100 researchers engages in serious misconduct over the course of a three to five year period (US ORI)

High Profile Cases

Falsification

Fabrication





THE LANCET

RETRACTED: Ileal-lymphoid-nodular hyperplasia, non-specific colitis, and pervasive developmental disorder in children

Dr AJ Wakefield, FRCS, SH Murch, MB, A Anthony, MB, J Linnell, PhD, DM Casson, MRCP, M Malik, MRCP, M Berelowitz, FRCPsych, AP Dhillon, MRCPath, MA Thomson, FRCP, P Harvey, FRCP, A Valentine, FRCR, SE Davies, MRCPath, JA Walker-Smith, FRCP

Altmetric 1,471

RETRACTED

http://dx.doi.org/10.1016/S0140-6736(97)11096-0

Andrew Wakefield's discredited theory linking vaccination and autism stirred public fears.
L. MACGREGOR/REUTERS

Editorials

Wakefield's article linking MMR vaccine and autism was fraudulent

BMJ 2011 ; 342 doi: http://dx.doi.org/10.1136/bmj.c7452 (Published 06 January 2011)
Cite this as: *BMJ* 2011;342:c7452

theguardian

thebmj

nature immunology

Nature Immunology **9**, 1317 (2008)
doi:10.1038/ni1208-1317

A case of junk science, conflict and hype

Many studies have refuted Wakefield's claims. Furthermore, Wakefield had a serious conflict of interest, as his research was secretly funded by personal-injury lawyers whose clients were suing MMR vaccine makers. The paper was retracted and Wakefield is being tried for professional misconduct. Despite this, the rumors that the MMR vaccine causes autism persists. But vaccine scares are hardly new.

DutchNews.nl

MONDAY 23 SEPTEMBER 2013

Home | Columns | Features | International | In Dutch | Dictionary | What's On | Job

«« previous next »»

Professor faked 61 pieces of research: Volkskrant

Monday 23 September 2013

A former professor at Amsterdam's VU university published at least 61 pieces of faked research over a 15-year period, the Volkskrant reports on Monday.

Mart Bax, who retired in 2002, was involved in fraud for at least 15 years, publishing invented research, recycling his work under other names and lying about awards and other work, the Volkskrant says.

The university is not taking any legal steps against Bax, a political anthropologist, because he stopped working 11 years ago. The results of a formal investigation into Bax will be published later on Monday.

In 2011, Tilburg professor Diederik Stapel was sacked after it emerged he had faked research data in at least 30 scientific papers.

- Prof Mart Bax, Dutch emeritus, endowed professor in Political Anthropology Vrije Universiteit (VU University), Amsterdam, the Netherlands.
- Of the 161 publications claimed by Bax, 64 are non-existent. He signed off his yearly publication list, so this makes it a crime of written misrepresentation.

- *Publications on events that allegedly took place in Medjugorje during the Bosnian War were proved to be false*
- *His account of the town of "Patricksville" (presumably Buttevant) as having extensive corruption, bribery, and clientelism is considered controversial among experts.*

Explosive book of bribes and bombs in Cork is blown out of the water

Justine McCarthy

Sunday January 20 2019, 12.01am GMT, The Sunday Times

'Patricksville' is now believed to refer to Buttevant

...en cast over whether incidents of intimidation, bribery and a ...ere chronicled in a 1976 book by a Dutch academic,

...vspaper in the Netherlands, reported on Thursday that ...iverified events in Harpstrings and Confessions: ...in the Irish Republic, written by Mart Bax, who went on to ...anthropology at the Free University of Amsterdam.

Fabrication

theguardian

BBC NEWS

Lack of reproducibility

Riken researcher Haruko Obokata working at her laboratory in Kobe. Photograph: Jiji Press/AFP/Getty Images

The year [illegible]s for Haruko Obokata. A year of high highs and ev[illegible]rely 30 years old, she was head of her own laboratory at the [illegible]ter for Developmental Biology (CDB) in Kobe, Japan, and was taking the [illegible] dominated world of stem cell research by storm. She was hailed as a bright new star in the scientific firmament and a national hero. But her glory was short-lived and her fall from grace spectacular, completed in several humiliating stages.

nature International

Fabrication, falsification

Claimed to have triggered stem cell abilities in regular body cells that could be grown into tissue for use anywhere in the body.

Within days of her two Nature papers being published, disturbing allegations emerged in science blogs and on Twitter. Some of her images looked doctored, and chunks of her text were lifted from other papers. Riken soon began an investigation and, on 1 April, announced its findings: Obokata was guilty of scientific misconduct.

Questionable Research Practices

Questionable Research Practices (QRP)
"50 Shades of Grey"

Responsible Conduct of Research (RCR)

- Represents the ideal standard individuals & institutions strive to meet
- "The practice of research investigation with integrity." *(NIH – Office of Research Integrity)*

Falsification Fabrication Plagiarism (FFP)

- Represents practices everyone agrees should be avoided

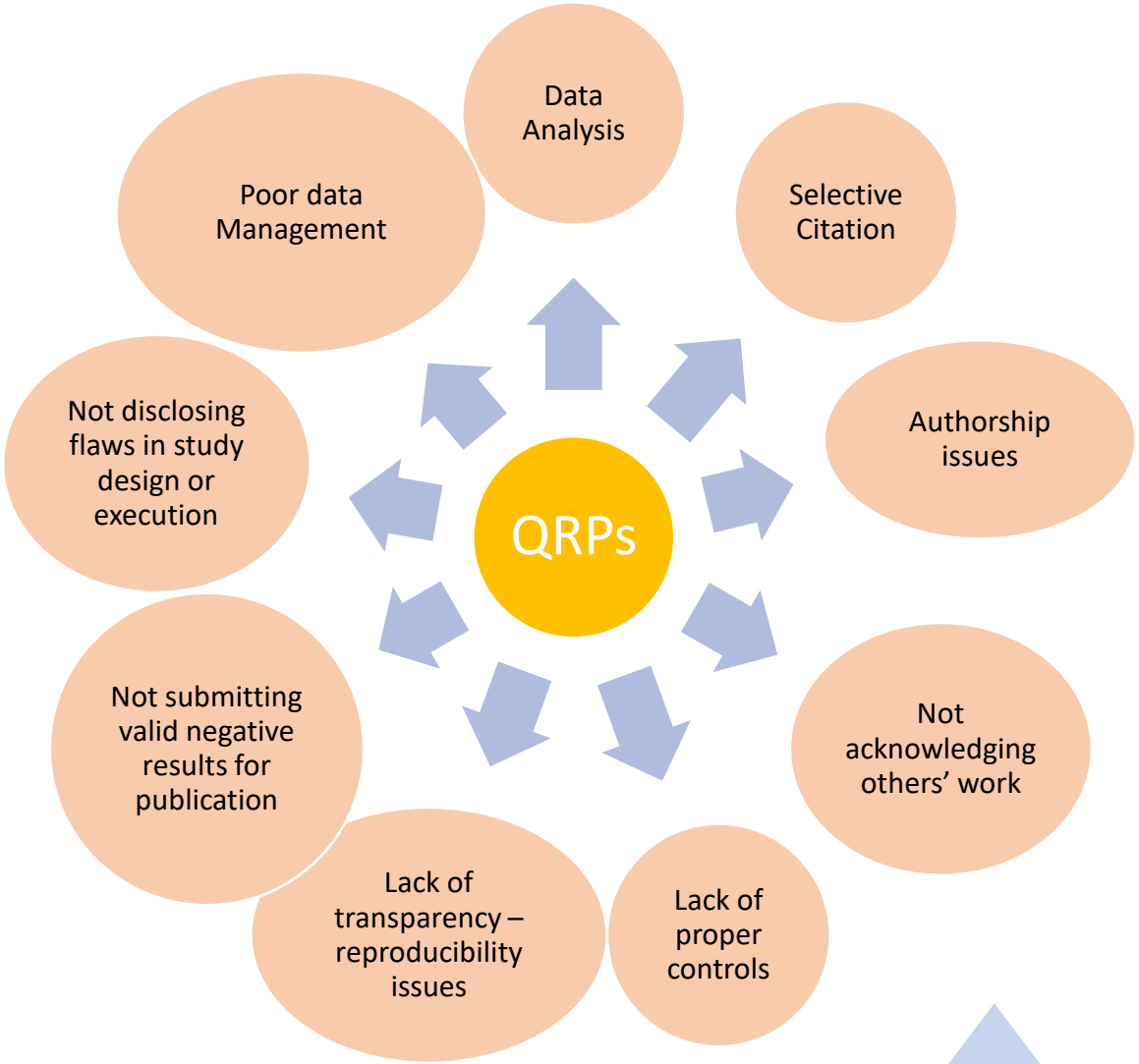
Questionable Research Practices (QRP)

- In between - "The 50 Shades of Grey"

John LK, Loewenstein G, Prelec D. (2012) Psychol Sci. 23(5):524-32.

From: McCarthy J, UCC PhD Pilot Seminar Series 2017

QRPS


QRPs
Data Analysis
Selective Citation
Authorship issues
Not acknowledging others' work
Lack of proper controls
Lack of transparency – reproducibility issues
Not submitting valid negative results for publication
Not disclosing flaws in study design or execution
Poor data Management

QRPS - poor research practices

- Actions that concern trespassing methodological principles that threaten the relevance, validity, trustworthiness, or efficiency of the study at issue
- **QRPs** sit on the continuum between what is truly correct and truly deceptive.
- Whether a QRP qualifies as research misconduct is often determined by the seriousness of the incident and the culpability and intent of the researcher

QRPs = "Sloppy science/research" – is it a problem?


PLOS ONE

RESEARCH ARTICLE

Prevalence of questionable research practices, research misconduct and their potential explanatory factors: A survey among academic researchers in The Netherlands

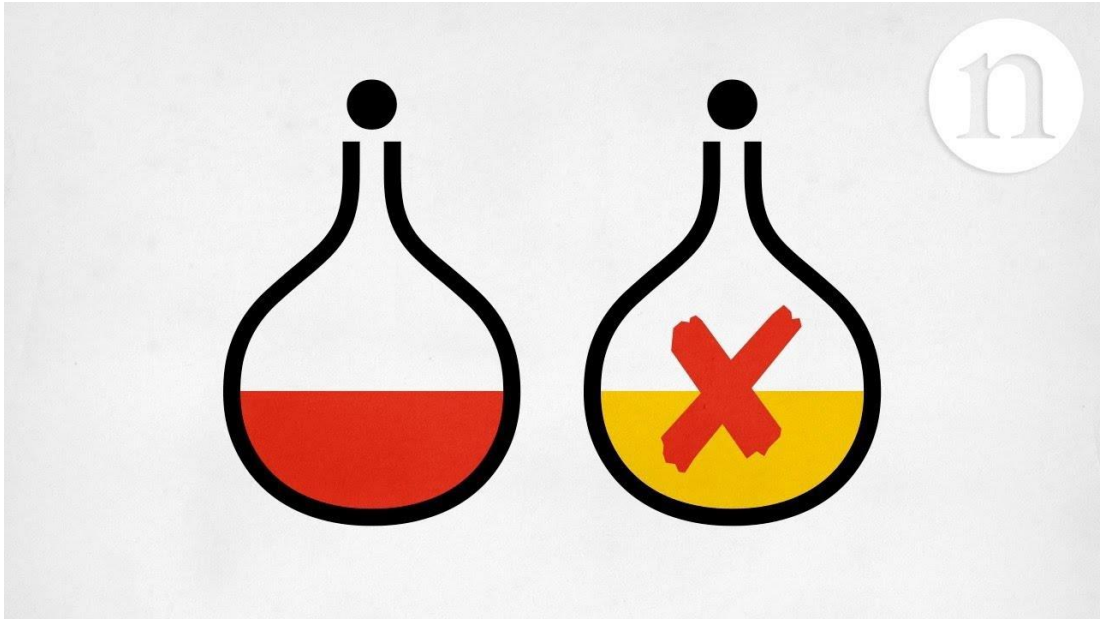
Gowri Gopalakrishna[1*], Gerben ter Riet[2*], Gerko Vink[3†], Ineke Stoop[4†], Jelte M. Wicherts[5*], Lex M. Bouter[1,6*]

Collectively, lesser forms of research misconduct, or QRPs, may have more impact owing to their prevalence

- National Survey on Research Integrity 6,813 academic researchers in The Netherlands
  - Prevalence of fabrication and falsification were 4.3% and 4.2%, respectively
  - 51.3% of respondents engaged frequently in at least one QRPs
  - Conclusions: suggest that greater emphasis on scientific norm subscription, strengthening reviewers in their role as gatekeepers of research quality and curbing the "publish or perish" incentive system can promote research integrity

G. Gopalakrishna, G. ter Riet, M. Cruyff, G. Vink, I. Stoop, J.M. Wicherts, L.M. Bouter (2021) Prevalence of questionable research practices, research misconduct and their potential explanatory factors: a survey among academic researchers in The Netherlands. Preprint https://www.researchgate.net/publication/353051736

Reproducibility Crisis



Out of 1,576 scientists, most agree that there is a crisis and over 70% said they'd tried and failed to reproduce another group's experiments.

Baker, M. (2016). 1,500 scientists lift the lid on reproducibility. Nature533, 452–454 (2016). https://doi.org/10.1038/533452a

Scenarios (*there are some additional scenarios at the end of the presentation)

What would you do…?

Scenario I

https://ori.hhs.gov/images/ddblock/SCRIPT-06-hi-res.mp4

Scenario 1-Discussion Questions

Go to www.menti.com and use the code **1743 7498**

Why do you think the postdoc chose to falsify his data? Are there external pressures that influenced his decision?

What would you do in his place?

Images – General Guidance

- Digital manipulation of images – increasingly problematic
- Images are data
- Difficult to develop universal set of rules – discipline specific

Tips

- Follow subject-specific best practice and journal guidelines in which you intend to publish
- Avoid complex or inconsistent manipulations:
  - cutting and pasting (copying one part of an image into a different image or a different part of the same image)
  - cloning (replacing one part of an image with material from another part of the same image)
  - burning (darkening specific parts of an image);
  - improper cropping; colour/contrast/brightness manipulation;
  - inconsistent image use
- Explain how you processed/manipulated the image you are presenting
- Keep and time stamp the original image; you could be asked to provide this information if the validity of your published image is ever questioned

Scenario 2

Go to www.menti.com and use the code **5361 7768**

You are about to finish the experimental work of your research project. When analysing the data, some data-points appear to be outliers.

The outliers don't match with your dominant interpretation of the other data and including them in your dataset may lead to not so conclusive results. It would probably be difficult to get it published in a good journal.

You could not find a logical reason why the data-points are so far off, and you would feel better if you could just exclude them

What would you do?

For discussion:

Chose an option and justify your answer.

A) I adapt my statistical model to see whether the results make sense in a new light.

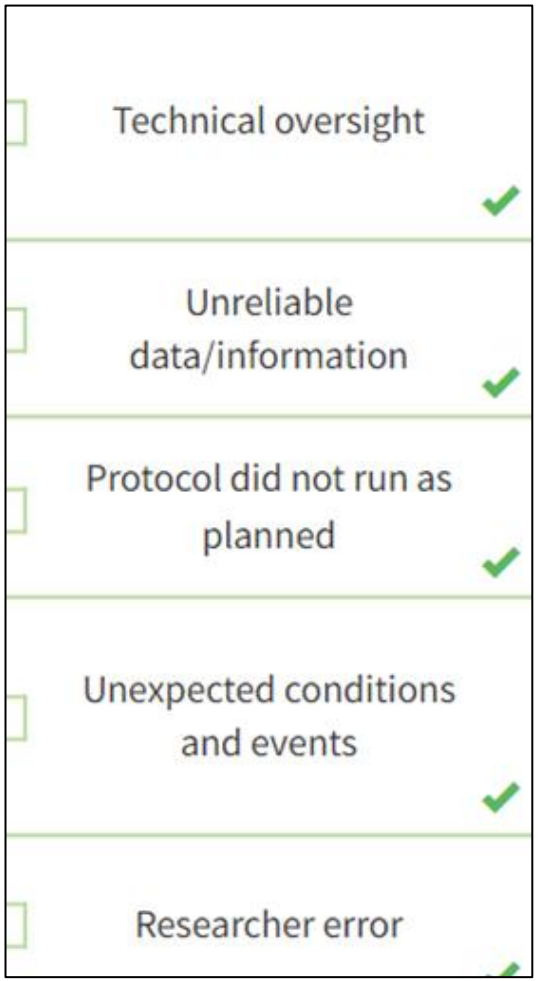
B) Outliers are a normal part of research. I exclude them and report them in a sidenote.

C) I consult my colleagues and try to find the reason for the outliers.

E) Is there another option?

Data Analysis

Should any information be excluded from interpretation?



Data Analysis

What is unacceptable?

Pick and choose evidence

Selective use of time periods

Delete unwanted data

Fabricate data

Ignore conflicting evidence

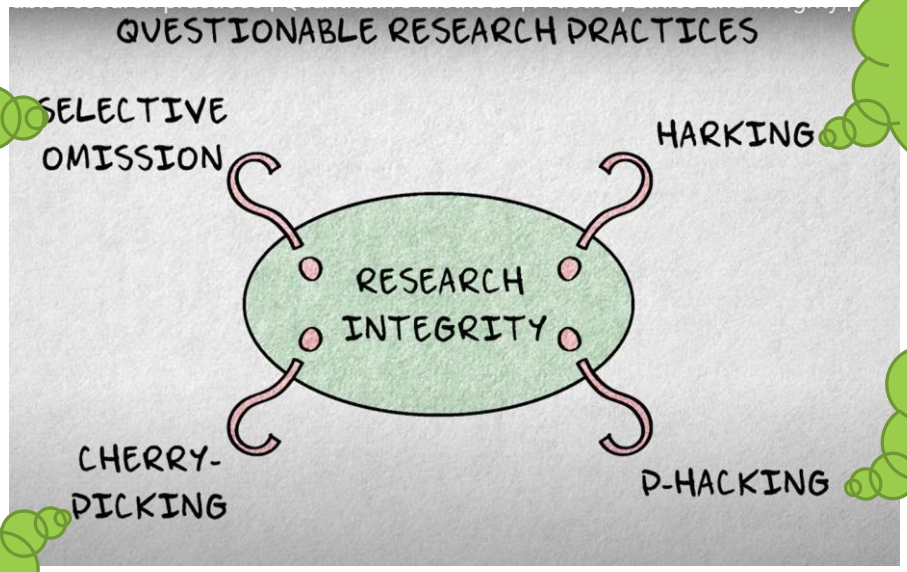
Improper controls

Ignore protocol requirements

Terminate study prematurely

QRPs - Data Analysis

Opposite of Cherry Picking: omitting data/results which are not favourable to your hypothesis and/or impact negatively on the statistical significance of your findings



Hypothesising after results are known

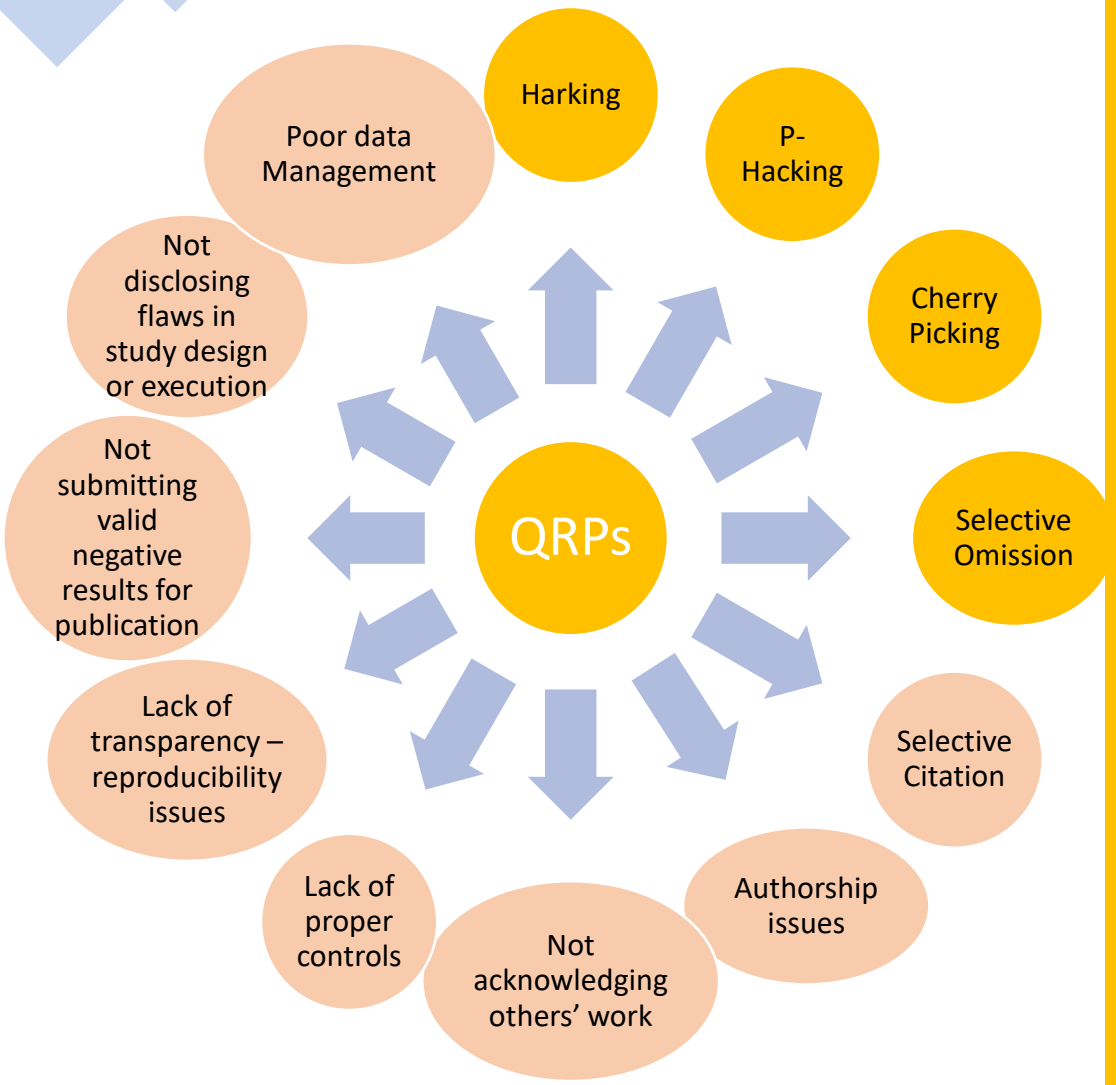
Selecting data which makes the significance (P value) more statistically favourable

Related to P-hacking: selecting only results which are significant or favourable to your hypothesis

UNIVERSITY OF AMSTERDAM

https://www.youtube.com/watch?v=tufAPd1NITQ

QRPS with data analysis issues



- **Harking** : Hypothesising after results are known
- **P-Hacking:** Selecting data which makes the significance (P value) more statistically favourable.
- **Cherry Picking**: Related to P-hacking: selecting only results which are significant or favourable to your hypothesis.
- **Selective Omission:** Opposite of Cherry Picking - omitting data/results which are not favourable to your hypothesis and/or impact negatively on the statistical significance of your findings.

European Code for Research Integrity (2017); National Policy Statement on Ensuring Research Integrity in Ireland (2019) Science Europe (2015); UCC Code of Research Conduct (2021)

Scenario 3

https://ori.hhs.gov/images/ddblock/SCRIPT-08-hi-res.mp4

Go to www.menti.com and use the code **23 25 29 9**

Scenario 3-Discussion Questions

What could the PI have done to help prevent this situation from occurring?

What considerations should be taken into account when determining authorship?

Authorship & Acknowledgement

Authorship

- Assuming accountability for all aspects of the work, ensuring that questions related to the
- accuracy or integrity of any part of the work are appropriately investigated and resolved.
- Giving final approval of the version to be published.
- Drafting the work or revising it critically to incorporate important intellectual content.
- Making a substantial contribution to the conception or design of the work (or the acquisition, analysis or interpretation of data for the work).

Acknowledgement

- Acting as a mentor or supervisor.
- Conducting routine work (e.g. scheduling interviews or collecting routine data)
- Providing the funding for work done by others.
- Providing special equipment, materials, reagents or skills.

Resource: COPE (Committee on Publication Ethics) https://publicationethics.org

Enhancing Responsible Conduct of Research

Who is responsible for Responsible Conduct of Research?

Research Integrity applies to all research disciplines and RI training is required across the entire range of research community and personnel

Collective Responsibility

"The primary responsibility for ensuring this lies with individual researchers and institutions. However, the entire research community, which also encompasses academic publishers, funders and regulators, has responsibilities to fulfil in order to maintain high standards of research integrity".

Epigeum Online Research Integrity Training (v2.0), Oxford University Press (2021)

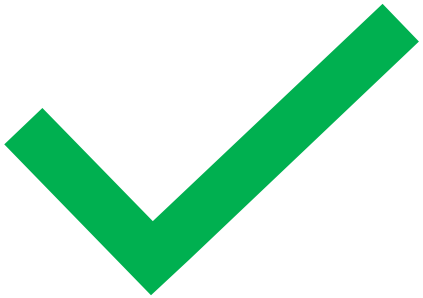
Enhancing Research Integrity: Changing the research culture

- Enhancing Research Integrity therefore means fostering and developing a cultural mind-set whereby all researchers should strive to improve the quality, relevance and reliability of their work.

https://www.iua.ie/for-researchers/research-integrity/

The Turing Way (2020) 10.5281/zenodo.3695300

UCC
Coláiste na hOllscoile Corcaigh
University College Cork, Ireland
Research
Taighde



Research Integrity Checklist for Researchers

Exercise – make a checklist

- **Devise a non-technical 'researcher checklist' for a research project.**
  - ➢List the key points of good practice in research that would be applicable to all subject areas
  - ➢Also include in your list key points of good practice for a research project that are specific to your subject areas
- **Tip:** It may be helpful to compile the list under three subheadings
  1) Before conducting your research
  2) When conducting your research
  3) When finishing your research

UKRIO Recommended Checklist for Researchers

This Checklist by the UK Research Integrity Office lists the key points of good practice for a research project a
is applicable to all subject areas. More detailed guidance is available in our *Code of Practice for Research*.

Before conducting your research, and bearing in mind that, subject to legal and ethical requirements, roles and contributions may change during the time span of the research:

1. Does the proposed research address pertinent question(s) and is it designed either to add to existing knowledge about the subject in question or to develop methods for research into it? ☐
2. Is your research design appropriate for the question(s) being asked? ☐
3. Will you have access to all necessary skills and resources to conduct the research? ☐
4. Have you conducted a risk assessment to determine:
   - a whether there are any ethical issues and whether ethics review is required; ☐
   - b the potential for risks to the organisation, the research, or the health, safety and well-being of researchers and research participants; and ☐
   - c what legal requirements govern the research? ☐
5. Will your research comply with all legal and ethical requirements and other applicable guidelines, including those from other organisations and/or countries if relevant? ☐
6. Will your research comply with all requirements of legislation and good practice relating to health and safety? ☐
7. Has your research undergone any necessary ethics review (see 4(a) above), especially if it involves animals, human participants, human material or personal data? ☐
8. Will your research comply with any monitoring and audit requirements? ☐
9. Are you in compliance with any contracts and financial guidelines relating to the project? ☐
10. Have you reached an agreement relating to intellectual property, publication and authorship? ☐
11. Have you reached an agreement relating to collaborative working, if applicable? ☐
12. Have you agreed the roles of researchers and responsibilities for management and supervision? ☐
13. Have all conflicts of interest relating to your research been identified, declared and addressed? ☐
14. Are you aware of the guidance from all applicable organisations on misconduct in research? ☐

When conducting your research:

1. Are you following the agreed research design for the project?
2. Have any changes to the agreed research design been reviewed and approved if applicable?
3. Are you following best practice for the collection, storage and management of data?
4. Are agreed roles and responsibilities for management and supervision being fulfilled?
5. Is your research complying with any monitoring and audit requirements?

When finishing your research:

1. Will your research and its findings be reported accurately, honestly and within a reasonable time frame?
2. Will all contributions to the research be acknowledged?
3. Are agreements relating to intellectual property, publication and authorship being complied with?
4. Will research data be retained in a secure and accessible form and for the required duration?
5. Will your research comply with all legal, ethical and contractual requirements?

Research Integrity @UCC
Other Training

UCC Digital Badge in Responsible Conduct of Research–For Research teams (including collaborative groups) and/or groups of researchers from a specific discipline.

Link: [Digital Badge in the Responsible Conduct of Research | University College Cork (ucc.ie)]

Topics
1.Research Integrity
2.Data Management & FAIR Principles
3.Reproducible Research

Delivered by
UCC Library (Aoife Coffey),
UCC Research (Irene Kavanagh)
Clinical Research Facility – Cork (Brendan Palmer)

Contact: aoife.coffey@ucc.ie

Course content & requirements
Self-directed learning through Canvas
Live session (2.5 hours)
Submission of a reflective exercise
Complete online Epigeum Research Integrity course.

Research Skills Training Programme–For Research Staff (CPD)

Link: [Research Skills Training Programme | University College Cork (ucc.ie)]

Delivered via Teams on Wednesdays	
UCC Research Skills Training Programme, **Contact: n.uibreithiunaigh@ucc.ie**	**9th November: Research Integrity and Research Ethics** The seminar is delivered by Irene Kavanagh (Research Integrity) and by Ciara Heavin, Christian Waeber & David Kerins (from the Uni Ethics Committee).

See Research Integrity Training | University College Cork (ucc.ie) for further details

Thank you!

Dr Irene Kavanagh | Research Officer | UCC Research

National Funding Programmes & Wellcome Trust | Research Integrity | Research Business Continuity Team (RBCT) Coordinator

UCC Research | Office of the Vice President for Research & Innovation |

4th Floor Block E, Food Science Building UCC | University College Cork |

E: irene.kavanagh@ucc.ie

https://www.ucc.ie/en/research/support/integrity/

Additional Scenarios

Scenario 1a

You are a postdoctoral researcher at a university, employed on a fixed-term contract that is just coming up for renewal. You are a member of a research team involving university staff and several PhD students. Your Department is rapidly gaining a reputation as an exceptional place to work, not least because of the research of a colleague, 'X'.

The protégé of the Head of Department, X has published a series of papers in high profile journals which have been described as ground-breaking research, attracting a great deal of interest from the research community and beyond.

The decision on your contract extension will be made by a panel of senior colleagues, including your Head of Department. You think that it is very likely that your contract will be extended for several more years: your research has been well-received, as have a number of articles you have published; you get on with your colleagues and managers; and you have been able to attract the interest of additional funding bodies.

Emily, a PhD student who is part of the same research team as you, brings to you three papers written by X, all published in peer reviewed, high profile journals. She shows you digital images in the three papers. The images are identical. However, X has described them as denoting the results of a different piece of work in each paper.

You have thoroughly gone over the figures and the data that supports them. Perhaps X, the protégé of your Head of Department, has made a serious mistake in his work? Or has he deliberately falsified information in one or more of the articles?

Scenario 1a-Discussion Questions

Go to www.menti.com and use the code **27 16 07 3**

What do you do?

How might the matter be resolved?

Scenario 1a-Discussion Questions

What do you do? As a researcher - whether a member of staff or a research student – it is not your responsibility to investigate any concerns you may have about the conduct of research. Your research organisation does not expect you to be a detective and find out what has happened. However, it is your responsibility to raise your concerns with your institution, providing as much information as you can, so it can then investigate the matter.

Your institution will have a formal process for investigating allegations of research misconduct, including who to contact if you have any concerns about research

How might the matter be resolved? There is no way of knowing at this stage whether the allegation concerning X is true or not. You and Emily may be mistaken; you may be right and X has made an honest error in their work; or they could have committed research misconduct. A full investigation of the matter is necessary to determine whether the allegation is upheld or not, and what actions might need to be taken.

Scenario 3a

Dr Jones and Dr Smith are researchers based in the same department at a UK university. They have been working on a joint research project for several years, publishing a number of articles on their work in peer reviewed journals. The two researchers are now producing a book about their research. The research was conducted under the auspices of their university.

The final manuscript was submitted to the publishers a while ago and Dr Jones contacts the firm for an update. He is surprised and very upset when the publishers tell him that the book is to be published with Dr Smith as the sole author. Dr Jones is informed that his role in both the research and the book itself will be acknowledged in the list of contributors to the project, nothing more. The publishers' decision is based on information supplied by Dr Smith.

As far as Dr Jones is concerned, he wrote the book with Dr Smith and should also be credited as an author of the work. Indeed, he is convinced that he and Dr Smith had previously agreed that the book was a joint work and that they would each receive co-authorship. He does not remember having any written record of this agreement or of any discussions regarding authorship.

Dr Jones speaks to Dr Smith in an attempt to reach some sort of agreement on the matter but the position remains unchanged. He then tries speaking to the publishers of the book. They say that they have received reassurances from Dr Smith which they accept and they have no plans to change the attribution of authorship.

Prior to this dispute, Dr Jones believed that he had a good working relationship with Dr Smith. As well as wanting to resolve the issue of authorship, he is also concerned how his career may be affected by the dispute with Dr Smith.

Go to www.menti.com and use the code **5885 6959**

Scenario 3a-Discussion Questions

What could Dr Jones do?

Could anything have been done to prevent this situation from occurring in the first place?

Scenario 3a-Discussion Questions

What could Dr Jones do? Dr Jones has tried to resolve the matter informally, first with Dr Smith and then with the publisher. Neither approach has been successful. As Dr Jones' and Dr Smith's joint research project was conducted under the auspices of the university, it has to meet the university's standards for good research practice, including authorship. Breaches of these standards can happen because of misconduct in research; they can also happen because of honest mistakes.

Having exhausted other options, Dr Jones should contact the university and ask it to look into the matter. It may be able to resolve the matter informally, through talking to the three involved parties, or it may initiate a formal investigation to determine whether the university's and the publisher's standards for authorship are being met. Regardless, the university should address the matter objectively, thoroughly and fairly.

The university should also reassure Dr Jones that it has processes to help ensure that people raising concerns in good faith do not suffer any detriment. Equally, it should reassure Dr Smith that persons accused of wrongdoing but subsequently exonerated will also suffer no detriment.

Could the situation have been prevented? There is no 'universal' definition of authorship in academic research. Definitions and practices can vary considerably between disciplines. So researchers should make sure they are familiar with the standards relevant to their work. These would include any overarching standards for their discipline or sub-discipline, the requirements of their university or other employer, guidance from relevant professional bodies and learned societies, organisations such as UKRIO and the Committee on Publication Ethics (COPE) and, in particular, the requirements of the journal or publisher in question.

The roles and contributions of researchers may well change during the time span of the research (sometimes this subject to legal and ethical requirements). What is important is that researchers start thinking early on about how they will approach these issues – they should not leave it until the last stages of the project. Decisions on publication and authorship should be agreed jointly and communicated to all members of the research team.

Important additional Resources and helpful links

1. UCC-based guidance, research policies & resources

2. Other useful resources

1. Important Resources & Guidance - UCC

Research Integrity @UCC UCC Research Integrity

UCC Code of Research Conduct UCC Code of Research Conduct v2.4_14th Sept 2021

Mandatory Epigeum online Research Integrity training for UCC research staff (and students)
Epigeum Registration & Further Information | University College Cork (ucc.ie)

Other training for researchers at UCC (Research Integrity)
Digital Badge in the Responsible Conduct of Research | University College Cork (ucc.ie)
Seminars workshops & talks | University College Cork (ucc.ie)
Research Skills Training Programme | University College Cork (ucc.ie) *Research Integrity and Research Ethics workshop on 9th Nov 2022, contact n.uibreithiunaigh@ucc.ie

Research Ethics @ UCC (getting ethical approval for your research) Research Ethics | University College Cork (ucc.ie)

UCC Research Data Management Planning supports & Policy
UCC Research Data Services (Data Management Planning)
Research Data Management Policy

UCC Open Access
Home - Open Access @ UCC - UCC Library at University College Cork
OpenAccessPublicationsPolicy.docx (live.com)

UCC Conflict of Interest Policy Conflict of Interest Policy | University College Cork (ucc.ie)

2. Other Resources & Links

TED Talk Research Culture is Broken; Open Science can Fix It | Rachael Ainsworth | TEDxMacclesfield *ref slide # 4*

University of Amsterdam - Questionable Research Practices & Data Analysis *ref slide #36*

COPE (Committee on Publication Ethics) *ref slide #40*

UKRIO (UK Research Integrity Office)-Recommended-Checklist-for-Researchers-Research Integrity *ref slides #46, 47*

Useful additional guidance & tips from UKRIO on all things related to Responsible Conduct of Research Research Integrity Resources - UK Research Integrity Office (ukrio.org)