

ACS Cancer Conference 2025

March 12-14 | Phoenix, AZ

Research Integrity

Ethics in Research

Puneet Singh, MD, MS, FACS, FSSO

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Disclosures

- None

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Outline

- Defining research integrity and misconduct
- Key ethical principles
- Best practices for stakeholders
- Changing research culture

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Example case

Former physician Andrew Wakefield and the fraudulent, now retracted, 1998 *Lancet* paper on the MMR vaccine and autism

- No ethic approval from an IRB
- Data selection
- Data manipulation
- Undisclosed conflicts of interest

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It happens!

**In 2023, > 10,000 papers were retracted,
significantly more than the past even after
accounting for growth in publications.**

Armond et al. *J Clin Epidemiol*. 2024;171:111367.

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What is research integrity?

- Ethical and honest conduct of research
- Adherence to professional standards and regulations
- Trustworthiness of the methodology and reliability of findings

Goal is for others to have confidence in the results

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Research misconduct

- Formerly scientific misconduct
- US Public Health Service's Office of Research integrity defines this as:

"fabrication, falsification or plagiarism in proposing, performing or reviewing research, or in reporting research results....Research misconduct does not include honest error or differences of opinion"
(42 C.F.R. Part 93)

<https://www.ncbi.nlm.nih.gov/books/NBK208714/>

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EVERYONE PLAYS A ROLE IN RESEARCH INTEGRITY

— A “PUBLISH OR PERISH” CASE STUDY —

There are many reasons someone might engage in research misconduct — such as inadequate training and oversight, personal and professional stress, and fear of failure.

One potential driver of research misconduct is the pressure to “publish or perish.” Let’s look at how this is affecting Bob, a young scientist, and how his environment may be a contributing factor.

The U.S. Department of Health and Human Services (HHS) defines research misconduct as:

FABRICATION, FALSIFICATION, or PLAGIARISM in proposing, performing, or reviewing research, or in reporting research results.¹



Citations:

¹ For the full definition of research misconduct, see 42 C.F.R. § 93.103.
² Wright, D. E., Thau, L. L., Cornelius, J. B. (2008). Mentoring and Research Misconduct: An Analysis of Research Mentoring in Clinical Cell Lines, Science and Engineering Ethics, 18, 223-238.
³ Getting Published in Nature: The Editorial Process. (2016). Retrieved March 12, 2016.
http://www.nature.com/natureeditorial/get_published/



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<https://ori.hhs.gov/>

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Research behavior is a continuum

Questionable or
detrimental
research practices



Responsible
conduct of
research

Ethical lapses:

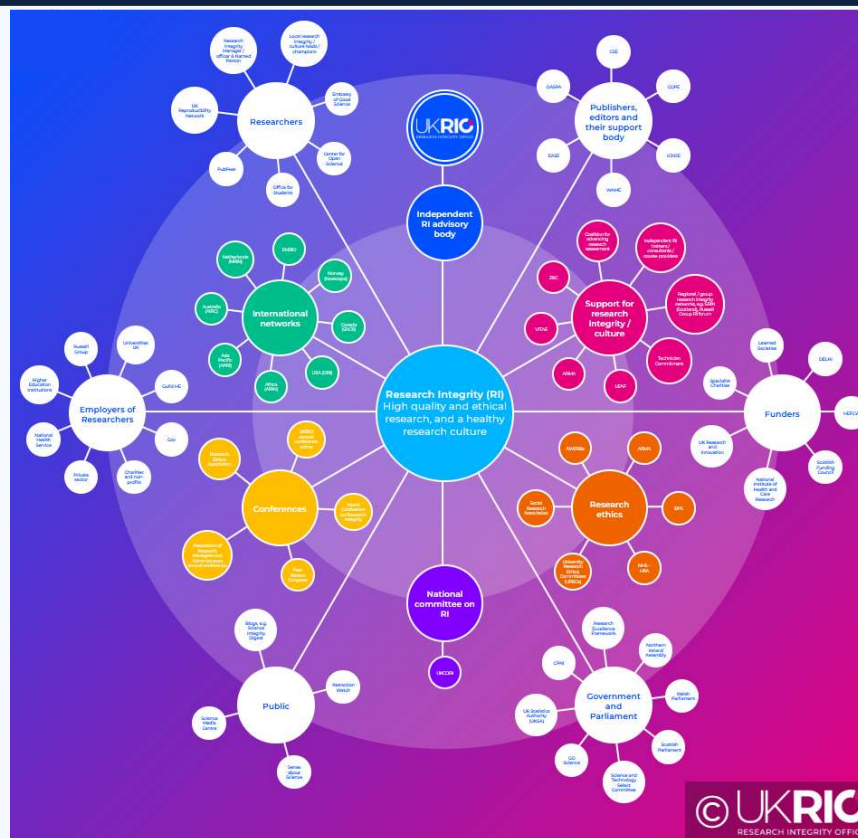
- Cleaning data
- Gaming science metrics
- Biased reporting
- Sloppy data management
- Bad mentorship

Research
misconduct

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Complexity of maintaining integrity



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<https://ukrio.org/research-integrity/what-is-research-integrity/>

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2010 Singapore Statement – Key Principles

- Honesty
- Accountability
- Professional courtesy and fairness
- Good stewardship

<https://ukrio.org/research-integrity/what-is-research-integrity/>

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UK Research Integrity Office Guidance



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<https://ukrio.org/research-integrity/what-is-research-integrity/>

Implications of research misconduct

- Waste of resources
- Reputational damage to individuals and institutions
- Cascading negative effect on patient care
- Media attention may lead to widespread public skepticism and mistrust

Armond et al. *J Clin Epidemiol*. 2024;171:111367.

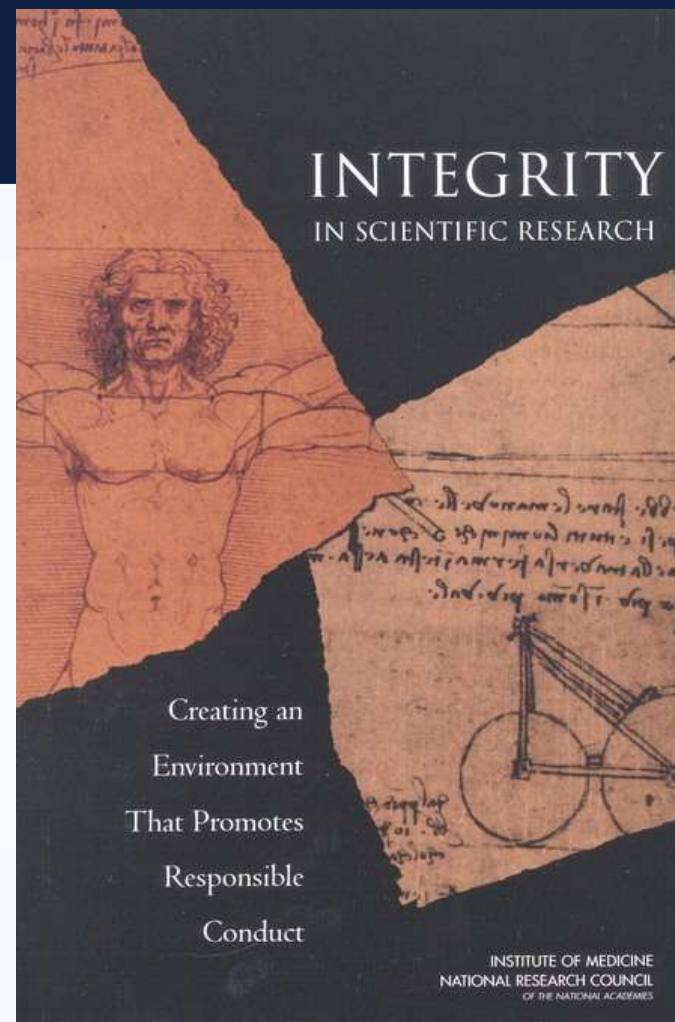
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2002 Committee Report from Institute of Medicine and National Research Council

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Who is responsible?

- Many stakeholders but primarily individual researchers and their institutions are responsible
- For individuals, integrity is an aspect of moral character and experience
 - Defining features include intellectual honesty and personal responsibility
- For institutions, goal is to create an environment promoting responsible conduct and monitoring related structures, processes, policies and procedures

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The individual level

- Intellectual honesty in proposing, performing and reporting research
- Accuracy in representing contributions to research proposals and reports
- Fairness in peer review
- Collegiality in scientific interactions
- Transparency in conflicts of interests (including potential COI)
- Protection of human subjects
- Humane care of animals
- Adherence to mutual responsibilities between investigators & their research teams
- Mentoring and advising

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The institutional level

- Leadership in support of responsible conduct
- Encourage respect for everyone
- Promote productive interactions between trainees and mentors
- Advocate adherences to rules for research (human subjects, animals)
- Anticipate, reveal and manage individual & institutional COI
- Timely and thorough inquires/investigations of allegations of scientific misconduct and appropriate sanctions
- Educations opportunities related to research integrity
- Continuous quality improvement through monitoring and evaluating environment

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Broader culture change

- Quality over quantity should be emphasized and valued
- Proper education of researchers and all stakeholders
- Open discussion of mistakes which are inevitable
- Responsible supervision and mentoring
- Funding bodies to not only prioritize novelty but also replication studies

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Summary

- Research integrity is the ethical and honest conduct of research
- Key elements include:
 - Honesty
 - Transparency
 - Accountability
 - Rigour
 - Respect
- Many stakeholders must ensure the responsible conduct of research but individual investigators and institutions who create the appropriate environment are most responsible
- Strategies to improve research culture may help decrease research misconduct and questionable research practices

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"Most people say that it is the intellect which makes a great scientist. They are wrong: it is character." -- Albert Einstein

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<https://www.ncbi.nlm.nih.gov/books/NBK208714/>

Thank you!

psingh6@mdanderson.org



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