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Research Misconduct and Noncompliance

2026 RCR Workshop

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Noncompliance vs. Misconduct: What's the difference?

Misconduct:

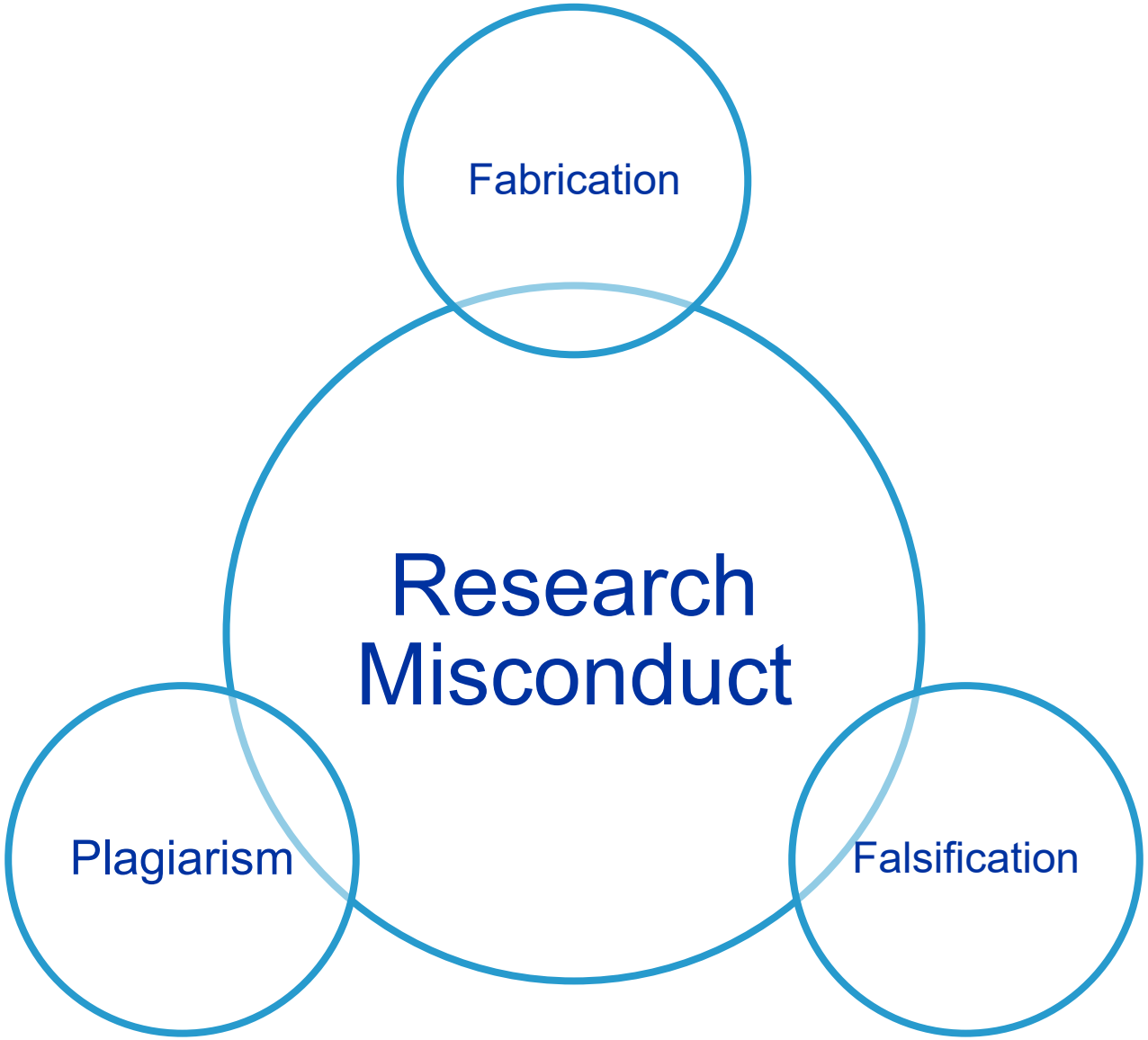
1. Fabrication
2. Falsification
3. Plagiarism

Noncompliance:

Failure to comply with applicable federal regulations, state or local laws, the requirements or determinations of the IRB, IACUC, or university policy for research involving human or animal subjects

Who is involved?

- Principle investigator (PI) and any member of the research team
- Office of Research Compliance and Integrity (ORCI)
- Human Research Institutional Review Board (IRB)
- Institutional Animal Care and Use Committee (IACUC)
- Radiation Safety, Biosafety, Laser Safety Committees
- Research Integrity Officer (RIO)
- DHHS – Office of Research Integrity (ORI)
- DHHS – Office for Human Research Protections (OHRP)
- Funding agencies – NIH, NSF, FDA, etc.


Fabrication
Research Misconduct
Plagiarism
Falsification

ORI Category	Definition	Common Forms	Example
Fabrication	Making up data or results and recording or reporting them.	• Invented datasets • Fabricated survey responses • Made-up citations	Creating fictional interview responses and presenting them as real data.
Falsification	Manipulating research materials, equipment, processes, or changing/ omitting data such that the research record is not accurately represented.	• Image manipulation • Selective reporting of results • Altered statistical outputs • Misrepresenting methods	Removing outliers without disclosure to achieve statistical significance.
Plagiarism	Appropriation of another person's ideas, processes, results, or words without giving appropriate credit.	• Direct (verbatim) copying • Mosaic/patchwork writing • Paraphrasing without citation • Idea plagiarism • Data/figure plagiarism	Copying a paragraph from a grant proposal without attribution.

Plagiarism Subtype	Description	ORI Category
Direct (Verbatim) Plagiarism	Word-for-word copying without quotation or citation	Plagiarism
Mosaic (Patchwork) Plagiarism	Blending copied phrases from multiple sources	Plagiarism
Paraphrasing Plagiarism	Rewriting ideas without attribution	Plagiarism
Idea Plagiarism	Using unpublished concepts without credit	Plagiarism
Data/Figure Plagiarism	Using another's data, tables, or images without permission or citation	Plagiarism (can overlap with falsification if altered)
Source-Based Plagiarism	Misrepresenting or inventing references	Often Fabrication (if source is fake) or Falsification (if misrepresented)
Self-Plagiarism (Text Recycling)	Reusing one's own prior work without disclosure	Typically **not classified as ORI misconduct** unless deceptive in federal funding contexts

Important Clarifications Under ORI

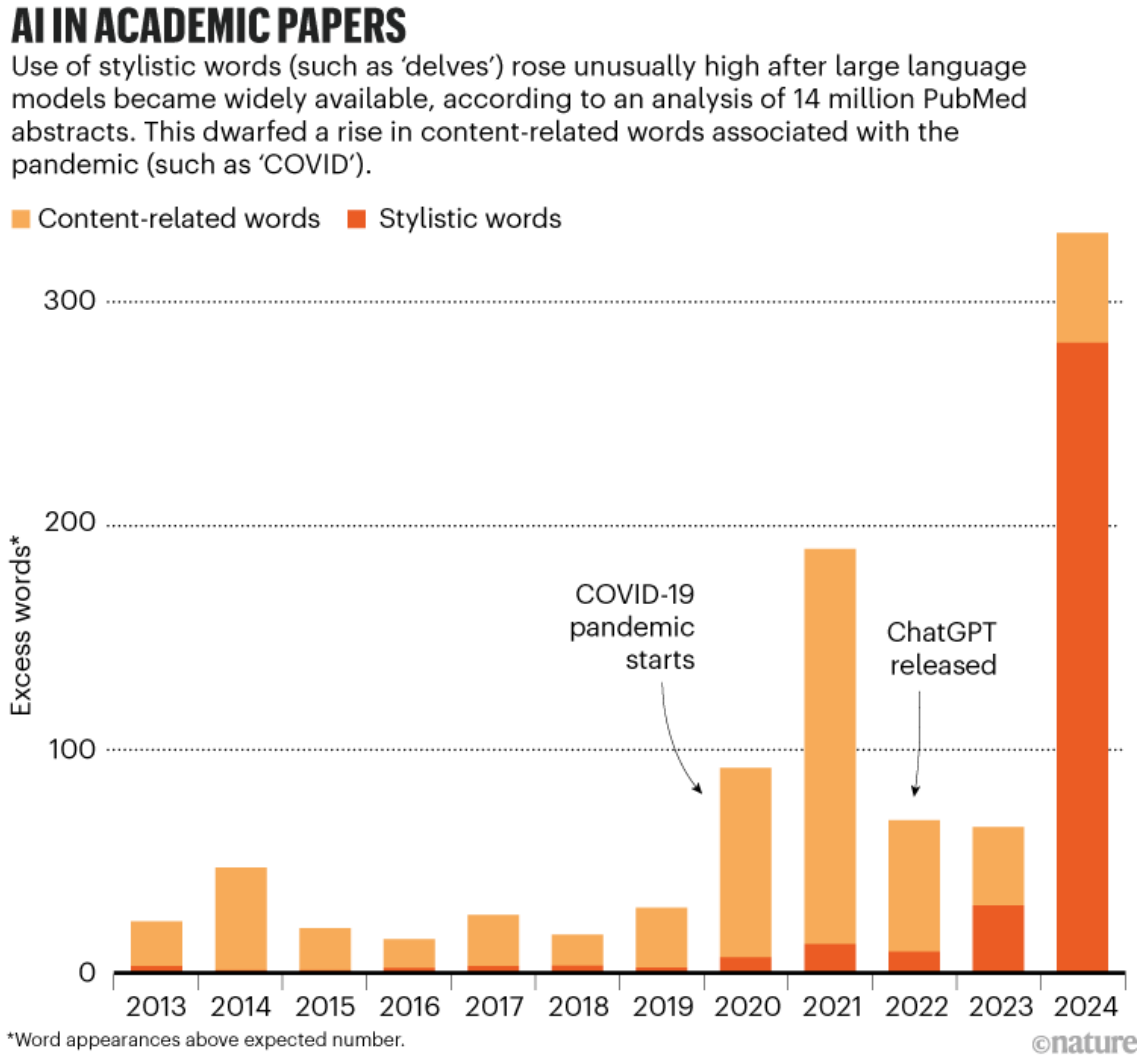
Intent matters: Misconduct requires that actions are committed *intentionally, knowingly, or recklessly*.

Honest error or differences in interpretation are not misconduct.

Self-plagiarism is generally handled as a publication ethics issue rather than federal research misconduct unless it involves deceptive grant or reporting practices.

Generative AI: a new avenue for misconduct

- AI generated plagiarism (“AI-giarism”)
- Image/figure generation or manipulation
- Hallucinated references



Kobak, D., González-Márquez, R., Horvát, E.-Á. & Lause, J. Preprint at arXiv https://doi.org/10.48550/arXiv.2406.07016 (2024)

Research Misconduct Examples

Hwang Woo-suk (2004-2005)

Field: Stem cell biology
Key Publications: *Science* (2004, 2005)
Misconduct Type: Fabrication, ethical violations

What Happened: Hwang claimed to have successfully created patient-specific human embryonic stem cells via cloning. Investigations revealed fabricated data and unethical procurement of human eggs from junior researchers.

Consequences: Both *Science* papers retracted (2006)
Dismissed from Seoul National University
Criminal conviction in South Korea (embezzlement and bioethics violations)

Significance: One of the largest scientific fraud cases in biomedicine; prompted reforms in research ethics oversight in South Korea.

Research Misconduct Examples

Jan Hendrik Schön (2000-2003)

Field: Condensed matter physics
Affiliation: Bell Labs
Misconduct Type: Data fabrication

What Happened: Published a series of groundbreaking papers in *Science* and *Nature* on molecular semiconductors. Investigations revealed reused and manipulated datasets across multiple papers.
Consequences:~28 papers retracted, PhD revoked by the University of Konstanz, dismissed from Bell Labs

Significance: Major embarrassment in physics; led to stronger data retention and co-author accountability standards.

Research Misconduct Examples

Francesca Gino (2021-2023)

Field: Behavioral ethics
Affiliation: Harvard University
Misconduct Type: Data falsification (alleged and institutionally investigated)

What Happened: Allegations of manipulated datasets in studies on honesty and ethics.
Consequences: Multiple papers retracted or corrected, tenure revoked, ongoing legal disputes

Significance: Highly visible case involving a senior scholar studying ethical behavior.

Research Misconduct Examples

Paul Kornak (Early 2000s)

Field: Clinical drug trials
Affiliation: Weill Cornell Medical College
Misconduct Type: Falsification, human subjects violations

What Happened: Enrolled ineligible participants in drug trials and falsified records.
Consequences: 2006: Sentenced to 51 months in prison, Federal conviction, Strengthened scrutiny of site-level trial oversight

Significance: Notable for criminal prosecution tied directly to human subject safety risks.

Research Noncompliance

Research noncompliance = Failure to follow:

- Federal regulations
- Sponsor requirements
- University policies
- Approved research protocols

⚠ Noncompliance sometimes constitutes research misconduct (FFP), but both can carry serious consequences.

Human Subjects (IRB) Risks

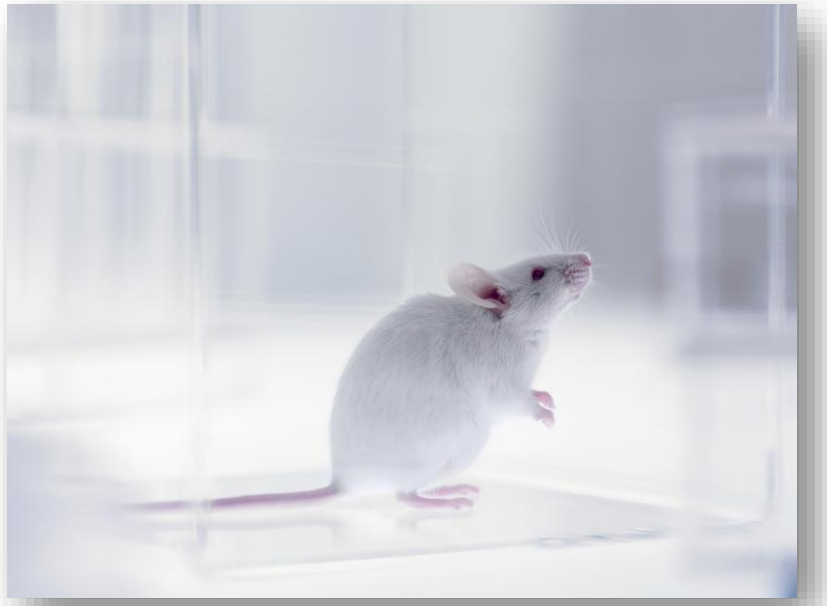
Common Issues:
Procedural errors
Conducting research without IRB approval
Using outdated or incorrect consent forms
Protocol deviations without approval
Failure to report adverse events
Inadequate data confidentiality protections

Why It Matters:
Participant safety
Institutional liability
Federal audit risk

Animal Research (IACUC) Risks

Common Issues:
Performing procedures not in the approved protocol
Exceeding approved animal numbers
Inadequate monitoring or documentation
Failure to report on time

Why It Matters:
Animal welfare compliance
Funding suspension risk



Conflict of Interest (COI)

Common Issues:
Failure to disclose financial interests
Outdated COI disclosures
Not following a COI management plan

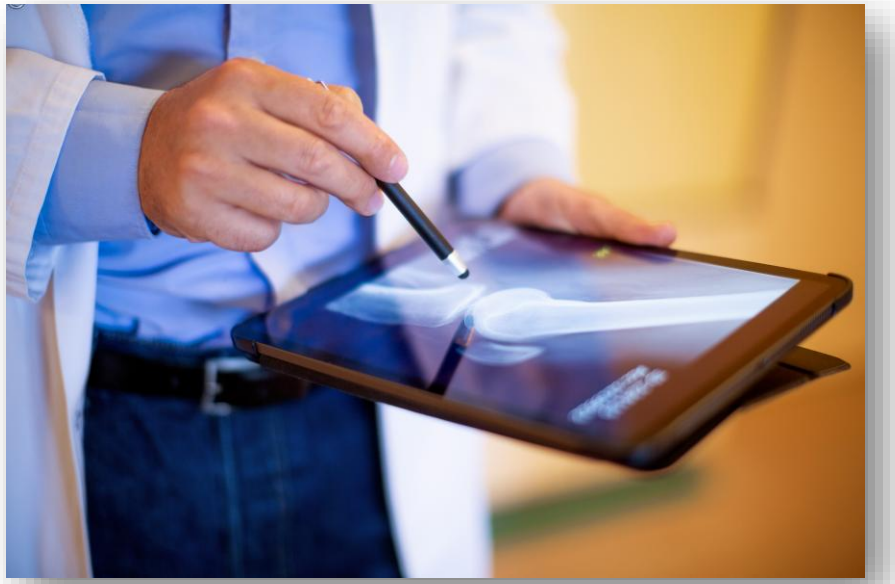
Why It Matters:
Public trust
Funding jeopardy
Reputational damage

Example Consequences of Noncompliance

- Required corrective action plans
- Study suspension
- Grant termination
- Federal audit findings
- Personal sanctions
- Institutional reputational harm

Best Practices for Faculty

- ✓ Maintain organized research records
- ✓ Report deviations promptly
- ✓ Keep approvals current
- ✓ Complete required trainings
- ✓ When unsure — ask ORCI early



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Questions?