

**RESEARCH
INTEGRITY
AND ETHICS**

DEFINITIONS

Active adherence to ethical principles and professional standards essential for the responsible practice of research.

CATEGORIES

- Conflicts of Interest
- Human Subjects
- Animal Welfare
- Data Acquisition & Management
- Responsible Authorship and Publication
- Research Misconduct
- Mentoring
- Collaboration
- Peer Review
- The Scientist as a Responsible Member of Society



CONFLICTS OF INTEREST

Financial

Academic

Conscience

Commitment

HUMAN SUBJECTS

- History
- Belmont Report
 - Respect for Persons
 - Beneficence
 - Justice
- Common Rule
 - Regulations for research institutions
 - Informed consent
 - IRB requirements
 - Vulnerable populations (prisoners, pregnant women, and children)
- Institutional Review Board (IRB)

ANIMAL WELFARE

- **Animal Welfare Act (1966)**
 - Warm-blooded species (except rats, mice, and birds)
 - Excludes invertebrates, fish, and farm animals
 - Register with USDA
 - Enforced by unannounced inspections with USDA
- **The Guide**
 - Standards for housing, medical care, facilities
- **3 Rs**
 - Replacement
 - Reduction
 - Refinement
- **Institutional Animal Care and Use Committee (IACUC)**

DATA ACQUISITION & MANAGEMENT

- Recorded factual material to validate findings
 - Includes: protocols, numbers, graphs, field notes, computer files, research notebooks
 - Does not include: peer review notes, trade secrets, personnel info
- Ownership
- Collection
 - Garbage in – garbage out
 - Mistakes vs falsification
 - Authorization – IACUC, IRB, photographs, etc
 - Numbered, bound notebooks and electronic verification
- Storage
- Sharing

RESPONSIBLE AUTHORSHIP & PUBLICATION / RESEARCH MISCONDUCT

■ Authorship

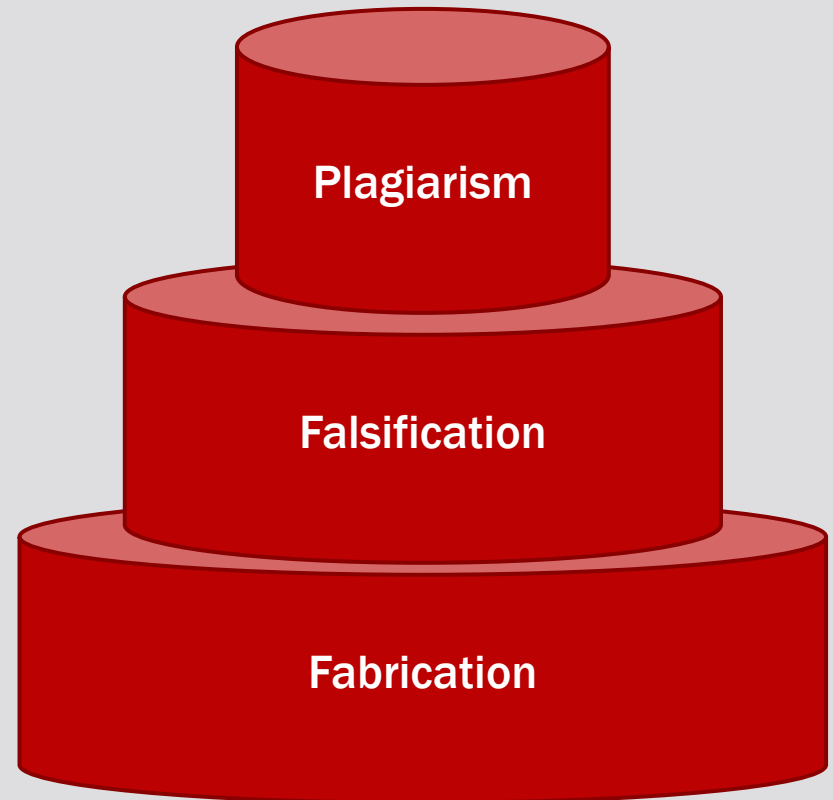
- Who should be listed as an author?
- Who shouldn't?
- What order?

■ Publication

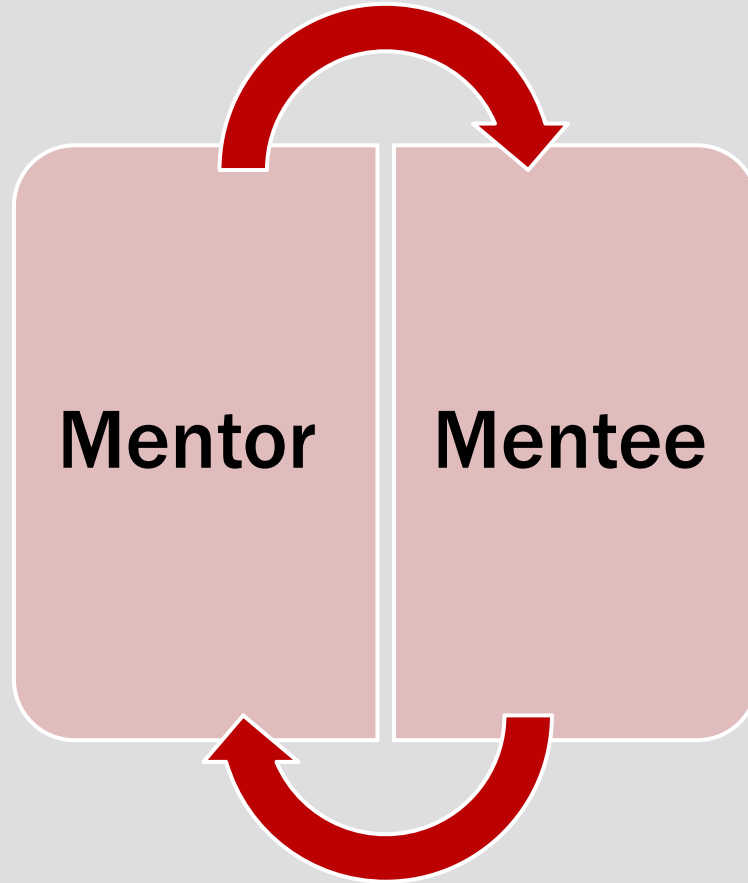
- Full and fair description
- Accurate report of the results
- Honest and open assessment of findings

- <http://retractionwatch.com>

Significant departure from norms, committed intentionally/knowingly/recklessly, preponderance of evidence



MENTORING

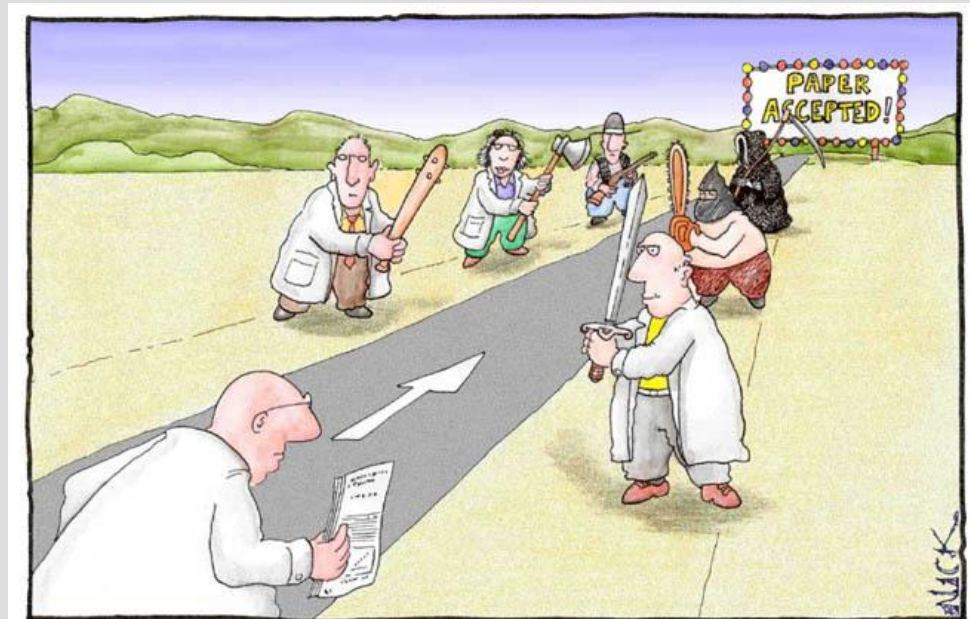


COLLABORATION



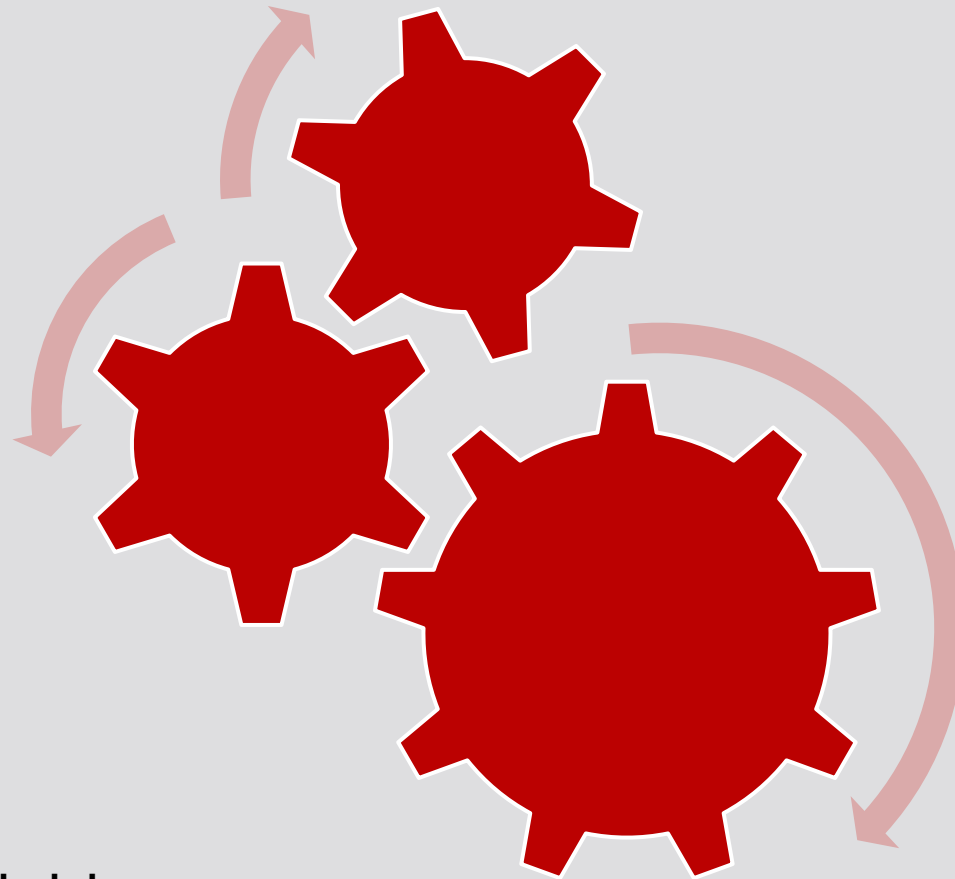
PEER REVIEW

- “Evaluation by colleagues with similar knowledge and experience”
- Effective peer review
 - Timely
 - Thorough
 - Constructive
 - Free from personal bias
 - Confidential



Most scientists regarded the new streamlined peer-review process as ‘quite an improvement.’

THE SCIENTIST AS A RESPONSIBLE MEMBER OF SOCIETY



<http://ori.hhs.gov/thelab>