



Academic and Scientific Research Integrity

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Orientation

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Graduate School Success



Academic Integrity

- **Cheating:** Dishonesty of any kind with respect to homework, examinations, large and small group activities, written exercises, journal club, laboratory, presentations or required web-based activities
- **Plagiarism and Copyright:** You must use your own words or paraphrase articles/books used with appropriate reference to the article/book cited.
- **Professionalism:** Includes both the application of academic integrity and honesty in your class participation and assignments and treating both classmates and faculty with respect. Professionalism also includes attendance at required sessions and checking your school email regularly!!

Examinations

- **Classroom examination:**

Unless otherwise stated, no material (books, notes, calculators, computers) of any kind can be used during an examination. You may not look at or copy the work of another student during an exam. NO communications devices, especially cell phones.

- **Take-home examination or work:**

Unless otherwise stated, research and writing must be done individually without assistance or exchange of information with others.

- **New conditions under Covid-19 status**

Be compliant and considerate of the situation

turnitin.com to avoid plagiarism

- **Turnitin** Software is licensed by Rutgers University.
 - **Turnitin** compares your paper to digital content on the web, archived digital content, student papers and thesis, and published journal articles.
 - It does not determine plagiarism, instead it detects matched content
- Create your own Sakai site to check your paper
 - View the following video for directions on how to https://youtu.be/uhv_yGNzHwA
- Check your paper using Turnitin before you submit them to classes or your advisor

What if You Suspect Cheating or Professionalism Violations?

Report it:

- During the exam/exercise to the proctor
- As soon as possible after the exam/exercise to either the
course director

program directors

Assistant Deans: Janet Alder and Smita Thakker-Varia

Sr. Assoc. Dean: Jim Millonig

- Talk to the Student Ombudsperson

Dr. Peter Lobel lobel@cabm.rutgers.edu 848-445-9831

Dean Barbara Bender Barbara.bender@rutgers.edu 848-932-7747

Research Misconduct

- **Fabrication** - making up data or results
- **Falsification** - inaccurate representation of the results by changing or omitting data, by manipulating research materials, equipment or processes
- **Plagiarism** - appropriation of someone else's ideas, results or words without giving appropriate credit

... in proposing, performing, reviewing research, or in reporting research results

- **committed intentionally, knowingly or recklessly**
- **DOES NOT** include honest error, conflicting data, differences of opinion, or differences in interpretations or judgments about data or experimental design.

Why should scientists be trustworthy?

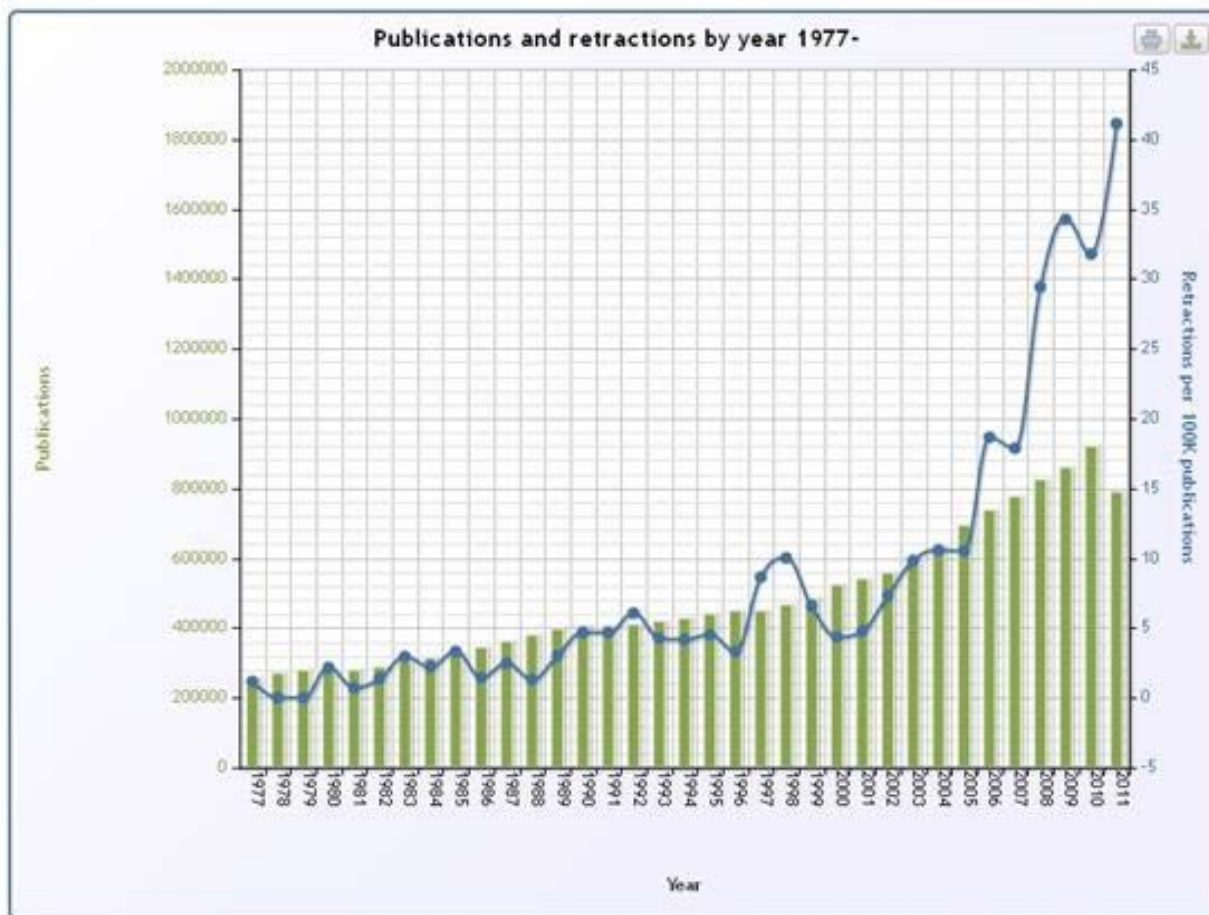
- Public, government and philanthropic agencies have high ethical expectations
- Potential to harm animal and human subjects
- Direct impact on human health
- Scientists have mutual interdependency



Retractions on the Rise

PubMed Retraction Notices - By Year

Timeline | Cumulative | By Year | Journals



THOMSON REUTERS

-Neil Saunders

Are You Authorized To Collect Data?

- Human subjects:
 - CITI training, IRB submission or addition
- Animal subjects:
 - IACUC approval, vivarium training and tour
- Radioactive materials:
 - Training
- Laboratory safety:
 - Training

Human Subjects: Informed Consent

- Voluntary: problems with prisoners, students, employees, children, etc.
- No undue inducements
- Must be understandable to subject
- Risks and potential benefits must be presented accurately
- Right to withdraw at any time
- Deception is generally not allowed

Animal Subjects: The Three Rs

- **Replace** the use of animals with alternative techniques, or avoid the use of animals altogether.
- **Reduce** the number of animals used to a minimum, to obtain information from fewer animals or more information from the same number of animals.
- **Refine** the way experiments are carried out, to make sure animals suffer as little as possible. This includes better housing and improvements to procedures which minimize pain and suffering and/or improve animal welfare.

Enhancing Reproducibility through Rigor and Transparency

Four areas that NIH is now requiring in applications and reviewing:

- **SIGNIFICANCE:**

Describe Scientific premise: consider strengths and weaknesses of published research or preliminary data crucial to the support of the application

(rigor of previous experiments; methodology, analysis and interpretation, relevant biological variables, authentication of key resources)

- **RESEARCH STRATEGY:**

2) Describe rigorous experimental design and methods and how will achieve robust and unbiased results: sample size calculation for significance (# mice per group), randomize subjects, blinded, inclusion/exclusion criteria etc.

3) Consider relevant biological variables for vertebrate animals or human subjects: e.g. Sex, weight, age, genetic strain etc.

4) Authentication of key biological and/or chemical resources; how plan to authenticate; methods to ensure identity and validity

e.g. Cell lines (not mis-identified or contaminated), speciality chemicals, antibodies, other biologicals

Fabrication and Falsification

Best way to prevent scientific misconduct is promote good research practices:

- Good record keeping
- Solid basis for data selection
- Talking to each other, to PI, to other researchers; don't get isolated

Data Acquisition and Lab Tools

- Data are the basis of science
- Who owns them?
- Data entry into lab book
 - ✓ Date
 - ✓ What you did
 - ✓ Why you did it
 - ✓ How you did it
 - ✓ Where the materials are
 - ✓ What happened
 - ✓ Your interpretation
 - ✓ Contributions of others
 - ✓ What's next
- Notebooks - paper or electronic (not erasable)
- Computer files (not editable)
- Physical samples (not removable)
- Confidentiality
- Keep for how long?

What if You Suspect Research Violations?

Report it immediately to either:

- PI
- Senior Associate Dean for Research: Celine Gelinas
- The Research Ombudsperson

Dr. Paul Manowitz manowitz@rutgers.edu 732-235-4347

Protection and Responsibilities of “Whistle Blowers”

- Initially, the identity of a complainant can be kept confidential.
- Should the allegation lead to an inquiry or investigation, testimony by the complainant may be required.
- The University is committed to the protection of “good-faith” whistleblowers.
- However, “whistle-blowers” whose allegations which prove to be untrue and which are found to have been made in bad faith will be subject to appropriate disciplinary actions by the University.

Policies of Rutgers

- Student handbooks online at http://rwjms.rutgers.edu/gsbs/current/student_handbook.html
additional information about expected professional conduct and policies.
Ignorance of rules is not an excuse!
- Rutgers Academic Integrity Policy:
<http://academicintegrity.rutgers.edu/integrity.shtml>
- Rutgers Policy on Research Misconduct 90.2.2
<http://policies.rutgers.edu/view-policies/research-section-90#2>

Expectations

- Check and respond to Rutgers email
- Ensure we have correct contact information
- Read handbooks
- Familiarize yourself with website content
- Complete and submit academic forms in timely manner
- Maintain 3.0 GPA
- Follow academic integrity policies
- Follow research integrity policies
- Let us know if there is a problem
- Let us know when something good happens!