



## Fighting Misconduct Allegations Through Responsible Conduct of Research

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## Craig S. Wilcox, PhD

- **Academic and Research Background**
  - Chair - Department of Chemistry 1997-2002, 2014
  - Recipient of Chancellor's Distinguished Research Award
  - 25 years of NIH R01 support and peer review service
  - 26 PhD dissertation research projects directed
  - 3 US patents on chemical techniques of drug discovery
  - 100 publications in organic and biomimetic chemistry
  - 6 years experience research misconduct investigations oversight
  - University representative to ARIIO (Association of Research Integrity Officers)
  - 22 years experience in COI management and oversight



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## Administrative Collaborators


- **Bill Yates, PhD**
  - Vice Chancellor for Research Protections
  - Professor of Otolaryngology & Neuroscience & Clinical and Translational Science
  - Vice-Chair, School of Medicine Curriculum Committee
- **Mara Horwitz, MD**
  - Associate Professor – Endocrinology
  - Deputy Vice Chancellor ORP
  - Vice Chair COI Committee
  - Associate Research Integrity Officer

The Office of Research Protections (ORP) aids investigators in designing and performing research studies so they meet current ethical standards and conform to all applicable laws and regulations. The units that comprise the ORP accomplish this goal through education, prospective review of research protocols, consultations with investigators, and monitoring of ongoing studies.



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The screenshot shows the website for the Office of Research Protections at the University of Pittsburgh. The navigation bar includes links for ABOUT, TRAINING, RESOURCES, EVENTS, PEOPLE, and CONTACT. A search bar is visible on the right. The main content area features a grid of nine image-based links: Animal Research Protection, Conflict of Interest, Education and Compliance Support, Human Research Protection, Human Stem Cell Oversight, Institutional Biosafety, Radiation Safety, Research Integrity, and Trade Compliance. The footer includes the University of Pittsburgh logo, the text 'Office of Research Protections', the URL <https://orp.pitt.edu/>, and the number 4.

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## Research Misconduct

- Data falsification, data fabrication, and plagiarism (taking of another's ideas or words for one's own use or credit without appropriately recognizing the source) are Research Misconduct and forbidden.
- Policy
  - University of Pittsburgh Policy #RI 07 "Research Integrity Policy"
  - University of Pittsburgh "Guidelines for Responsible Conduct of Research"
  - US Dept of Health and Human Services: PHS Policies 42 CFR Parts 93 and 50







<https://www.nsf.gov/od/ogcr/regulation.jsp>

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<https://ori.hhs.gov>

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## Research Misconduct

- Excluded from the Definition
  - Honest error
  - Differences of opinion
  - Authorship disputes
  - Rude behavior
- Requirements for a Finding of Misconduct
  - Significant departure from accepted practices
  - Intentional, knowing, or reckless action
  - Proof by a preponderance of the evidence

**If you have a concern, contact the RIO**  
**[craig.wilcox@pitt.edu](mailto:craig.wilcox@pitt.edu)**

Assessment -> Inquiry -> Investigation

**CONFIDENTIAL PROCEEDINGS**



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### In the news

•1974 W. Summerlin, Sloan Kettering  
Falsification of skin transplants

Summerlin later attributed his deceptive behavior to a combination of mental and physical exhaustion, ... and pressure to publicize positive results.

**The New York Times**  
Saturday May 25, 1974

**False allegations can arise...would you be ready?**

**Lead, Lies And Data Tape**

Two psychologists, both of whom have testified for the lead industry and one of whom has received tens of thousands of dollars in research grants from the industry, have filed misconduct charges against the scientist who first linked "low" levels of lead to cognitive problems in children.

**Top German psychologist found to have fabricated data**

University investigation finds anxiety expert pressured whistleblowers

Herbert Needleman  
University of Pittsburgh

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### Science sleuths are proliferating

Elisabeth Bik:

Meet this super-spotter of duplicated images in science papers

Elisabeth Bik can be job to spot errors in research papers -- and has become the public face of image sleuthing.

Leonid Schneider:

**For Better Science**

SCIENCE JOURNALISM BY LEONID SCHNEIDER, ON RESEARCH INTEGRITY AND ACADEMIC PUBLISHING IN LIFE SCIENCES AND BIOMEDICINE

Allegations also arrive from editors, reviewers, coworkers, outside researchers...

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### Objective

**Avoid entanglement with research misconduct.**  
*Make RCR part of your group culture.*

**Avoid**

1. Committing research misconduct
2. Creating or tolerating an environment where misconduct can arise
3. Weakening your defenses against false allegations
  - o Overlooking research improprieties (neglecting RCR)

*Let's talk about how....*

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### Avoid entanglement with research misconduct

**Shared values in science.**

- ✓ HONESTY — ensuring information truthfully and honoring researchers.
- ✓ ACCURACY — reporting findings precisely and taking care to avoid errors.
- ✓ EFFICIENCY — using resources wisely and avoiding waste, and
- ✓ OBJECTIVITY — letting the facts speak for themselves and avoiding inappropriate bias.

1. Don't lie.  
*(or hide the truth, or deceive others)*

*Strive to convey research results truthfully.*

**Important further steps to avoid entanglement...**

2. Eliminate any environment where misconduct can arise
3. Maintain your defenses against false allegations
  - o Find and eliminate research improprieties

**Make RCR part of your group culture.**

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### Origins of Research Misconduct.

Research misconduct, like embezzlement, is a solitary act.

**Origins of poor research practice**

- POOR SUPERVISION**  
"I WAS SCARED TO GO TO MY PI. HE USED TO SCREAM & YELL AT ME WHEN THINGS DID NOT WORK AS PLANNED."
- INADEQUATE TRAINING**  
"AFTER TWO YEARS OF A POSTDOCTORAL FELLOWSHIP I STILL DON'T KNOW HOW TO PROPERLY PUBLISH WESTERN BLOT DATA."
- COMPETITIVE PRESSURES**  
"I FELT IT WAS NECESSARY TO GET A PAPER IN A HIGH-PROFILE JOURNAL IN ORDER TO GET A FACULTY POSITION."
- PERSONAL CIRCUMSTANCES**  
"I HAD BEEN APPLYING FOR A GREEN CARD AND FELT PRESSURED TO MAKE A GOOD PAPER AND GET GOOD PUBLICATIONS."
- INDIVIDUAL PSYCHOLOGY**  
"HALF OF ME WANTED TO MAKE MY PI PROUD. THE OTHER HALF WAS TERRIFIED OF FAILING... SO I FABRICATED A PIECE OF DATA."

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### Eliminate opportunities for misconduct

• Establish best practices – confirm practices

**1. AVAILABLE & APPROACHABLE**

Schedule regular team meetings  
individual meetings

If possible, define times for 'open access'.

Develop and practice a thoughtful process for manuscript preparation, documentation, and submission.

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### Eliminate misconduct opportunities

*Make RCR part of your group culture.*

Establish standards and procedures for data collection and handling.


Protect data integrity and accuracy, accessibility, and stewardship.

Set aside group meeting time for discussion of research misconduct cases and RCR best practices.

**2** Verify the steps taken in moving from the experiment to the figure.

- follow the data
- verify that data are properly stored
- audit data interpretation

**Back up all data!**

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### Eliminate misconduct opportunities

...learn and share values and best practices.

**3** **COMMUNICATE EXPECTATIONS**

Prevent misunderstandings by making sure everyone is on the same page.

**4** **PROVIDE TRAINING and GUIDANCE**

Avoid making assumptions about anyone's skills or knowledge.

**Group Meeting Topics**

- Professional standards
- Ethical conduct
- Data handling
- Image manipulation – good and bad
- Recent RCR news
- Manuscript preparation processes
- Authorship



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### Eliminate research improprieties

- Failing to keep original, unaltered image data\* --
- Failing to download, archive, and back up raw instrument data --
- Failure to keep a laboratory notebook or record experiments
- Neglect or delay in recording, labeling, or dating data and observations
- Changing an approved regulated protocol without permission --
- Inappropriate research support acknowledgements --
- Improper image prep (splicing lanes, eliminating background,...)\*
- Failure to seek agreement from all coauthors when publishing
- Removing research records from the University --
- Failure to establish record handling methods (naming and storage) --

\*<http://www.aje.com/en/arc/avoiding-image-fraud-7-rules-editing-images/>

**Communicate standards - model good behavior.**




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### Review of Responsible Practices\*

- **Understand data ownership and access**
  - the institution owns the data
  - you have rights to the data
  - others have rights to the data
- **Retain and store data at least 7 years**
- **Promptly correct publication errors**
- **Use electronic notebooks**
- **Before submitting, use iThenticate plagiarism software**

\*Set aside group meeting time for discussion of these practices





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### Review of Responsible Practices\*

- **Compliance with standards for use of data**
  - report and justify exclusion of data points
  - do not exclude outliers without a reported rationale
- **Backup your data**
- **Discuss authorship criteria and expectations**
- **Follow IRB/IACUC Protocols**
  - Seek IRB/IACUC approval for changes
  - Self-audit for compliance
- **Practice good group management**
  - review primary data
  - set standards for data acquisition and transfers
  - keep individuals engaged in your team – not isolated

\*Set aside group meeting time for discussion of these practices

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### Mentorship is a Science Tradition

“Adviser, Teacher, Role Model, Friend: On Being a Mentor to Students in Science and Engineering”

- National Academy of Sciences
- <http://www.nap.edu/catalog/5789.html>
- <http://www.nap.edu/html/mentor/>

“A Hand Up: Women Mentoring Women in Science”



**AWIS**  
ASSOCIATION FOR WOMEN IN SCIENCE



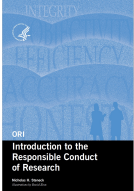
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## Take Responsibility

 How? Seek advice - read RCR articles – use available resources. 

- Seminars and online RCR training alone will not bring you to the needed level of excellence in scientific practices.
- Evaluate not only research objectives and experiments. Put effort into evaluating the *processes* of research - data management, authorship, safety, confidentiality, mentorship, ethics, professional standards, time management, ....
- The federal Office of Research Integrity (ORI) web site and Pitt's Office of Research Protections (ORP) are valuable sources of advice and information.



<https://ori.hhs.gov/ori-introduction-responsible-conduct-research>



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## Best wishes for your success!




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