

Research Misconduct

Acknowledgments

Many of the following slides are taken from a Lecture in GRAD544,
shared with me by Dr. Kathy Partin

Recommended Resources

Good articles and FAQs on many MiS topics we've discussed:

[http://www.webguru.neu.edu/professionalism/research-integrity/fundamental-
types-research-dilemmas](http://www.webguru.neu.edu/professionalism/research-integrity/fundamental-types-research-dilemmas)

Thorough and frequently-cited article on all aspects of plagiarism:

**[Avoiding plagiarism, self-plagiarism, and other questionable writing practices:
A guide to ethical writing](#)**

Miguel Roig, Ph.D.

<http://ori.dhhs.gov/education/products/plagiarism/>

Which of the following is not considered “research misconduct”?

- A. Gathering human subjects research through an interview without IRB approval
- B. Falsification of data
- C. Fabrication of data
- D. Plagiarism
- E. ALL of the above fit in the definition of research misconduct

Multiple definitions:

- CSU Definition
- Federal Definitions
- Editorial Boards’ Definitions
- Professional Societies’ Definitions

Research Misconduct (CSU)

1. Fabrication, falsification, or plagiarism in proposing, conducting, reviewing or reporting research; that
2. Seriously deviates from professional norms in that discipline, AND
3. Has been committed intentionally, knowingly or recklessly; AND, that
4. Has been proven by a preponderance of the evidence (more likely than not)

Misconduct does not include honest error or honest differences in interpretations or judgments of data.

Significant departure from accepted ethical practices of the relevant research community will be treated as violations of the Academic Faculty and Administrative Professional Manual or of the Graduate School Academic Integrity policy.

NSF: CFR Part 689

- (a) *Research misconduct* means fabrication, falsification, or plagiarism in **proposing** or **performing** research funded by NSF, reviewing research proposals submitted to NSF, or in reporting research results funded by NSF.
- (1) *Fabrication* means making up data or results and recording or reporting them.
 - (2) *Falsification* means manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
 - (3) *Plagiarism* means the appropriation of another person's **ideas**, processes, results or **words** without giving appropriate credit.
 - (4) *Research*, for purposes of paragraph (a) of this section, includes proposals submitted to NSF in all fields of science, engineering, mathematics, and education and results from such proposals.
- (b) *Research misconduct* does not include honest error or differences of opinion.

Text viewpoints

- Smith:

- Falsification or fabrication of data; plagiarism and other deviations from accepted practice during proposing, implementing, or reporting of research
- Failure to comply with federal, state or university requirements
- Use of research funds, facilities, or staff for unauthorized or illegal activities
- Conflicts of interest between researchers and sponsors of research

- Valiela:

In theory, the scientific community polices itself (e.g., peer review): assumes ethical behavior

- Acknowledge others' ideas
- Acknowledge others' writing (and only publish results once)
- Use authentic data

Let's Dig Deeper

- Often there is a disconnect between what we think we know about how we do research and how we actually do research (or scholarly activity)
- Let's see if we can walk the walk with regard to **plagiarism**

SPECIAL REPORT

Taking on the cheats

The true extent of plagiarism is unknown, but rising cases of suspect submissions are forcing editors to take action. **Jim Giles** reports.

The fight against plagiarism is about to take a decisive turn. Academic publishers have told *Nature* they hope that software designed to catch cheating students could soon be used to unmask academics who plagiarize other researchers' — or their own — work.

Big publishers such as Elsevier and Blackwell, which between them publish more than 2,500 journals, have been prompted to act by reports that plagiarism is becoming more common. "We're hearing about it more frequently from editors," says Bob Campbell, president of Blackwell Publishing in Oxford, UK.

Self-plagiarism, in which authors attempt to pass off already published material as new, is a particular problem. In an increasingly competitive environment where appointments,



And although most cases are never discovered, almost all of the editors and publishers contacted by *Nature* agreed that self-plagiarism is on the rise. "Edi-

Nature, 2005

Plagiarism

“In scientific writing, perhaps the **most widely recognized unethical lapse** is plagiarism. Plagiarism can occur in many forms and some of the more subtle instances, while **arguably unethical in nature, may not be classified as scientific misconduct** by federal agencies such as the National Science Foundation (NSF) or the Office of Research Integrity (ORI). Nevertheless, the ethical professional is expected to operate at the **highest levels of scientific integrity** and, therefore, must avoid all forms of writing that could be conceptualized as plagiarism.” --*Roig*

- Plagiarism of ideas / Plagiarism of text --*Roig*

Plagiarism

- Two elements
 - Attribution
 - › Attribute specific idea or words to another
 - Documentation
 - › Site the source of the idea or words

Plagiarism: Shades of Grey?

- “Common knowledge” does not need to be attributed or documented
- Definition of plagiarism is not static
 - Definition changes across time and space
 - At least 11 different definitions used on CSU campus
- Find help:
 - CSU Writing Center
 - › <http://writing.colostate.edu>
 - Peers/Faculty
 - › Prof. Sarah Sloane in English Department

Plagiarism Quiz

- Read the Actual Text:

“What is indicated here is an opposition that is fundamental in biography texts: that there is an inside and an outside to a person, that these are separate, but that one may be understood to have a crucial influence on the other. The opening to *Biography* concentrates almost obsessively on Beyonce’s clothes because it is her clothes that allow us insight into her character.”

Modified from J.A.Mitchell 2/12/05

link: <http://www.kent.ac.uk/english/writingwebsite/workshop/docs/Plagiarism.pdf>

Plagiarism Example 1

One can see the opening to *Biography* concentrates almost obsessively on Beyonce's clothes because it is her clothes that allow us insight into her character.

References

B. Knowles, *Biography*, 2nd ed. New York Press. 2008

Is this plagiarism?

A)Yes

B)No

Plagiarism Example 2

One can see the opening to *Biography* concentrates almost obsessively on Beyonce's clothes because it is her clothes that allow us insight into her character (1).

References

1. B. Knowles, *Biography*, 2nd ed. New York Press. 2008
-

Is this plagiarism?

A)Yes

B)No

Plagiarism Example 3

Biography texts give us **insight into characters** through their appearance. The opening paragraph of Biography, for example, **concentrates on the clothes worn by Beyonce** (1).

References

1. B. Knowles, *Biography*, 2nd ed. New York Press. 2008
-

Is this plagiarism?

A)Yes

B)No

Plagiarism Example 4

Biographies depend on an opposition between the interior and exterior person, as we can see by glancing at the first paragraph of a biography.

Is this plagiarism?

A)Yes

B)No

Plagiarism Example 5

Knowles argues that biography depends on an opposition between the interior and exterior person, and she demonstrates that point in *Biography* (1).

References

1. B. Knowles, *Biography*, 2nd ed. New York Press. 2008
-

Is this plagiarism?

A)Yes

B)No

Plagiarism Example 6

The opening paragraph of *Biography*, for example, focuses 'obsessively on Beyonce's clothes because it is her clothes that allow us insight into her character' (1).

References

1. B. Knowles, *Biography*, 2nd ed. New York Press. 2008
-

Is this plagiarism?

A)Yes

B)No

When confronted with a quandary while writing?

- Stop
- Insert a comment into your draft
- Go back to your primary sources
- Get a second opinion
- Don't be afraid of crediting in a footnote
- Too much information to your advisor is more helpful than is too little



Is it plagiarism?

A graduate student ...

... is asked by her major professor to write a short paper on a topic outside their area of research. The student does so and turns in the paper. Two years later the student sees a paper written “by” her major professor that borrows large chunks of the short paper the student wrote, but the student’s name is not mentioned!!

There are many ways to plagiarize

- **Self-plagiarism** occurs when authors reuse their own previously written work or data in a ‘new’ written product without letting the reader know that this material has appeared elsewhere.
 - Redundant and duplicate publications
 - Data fragmentation / data augmentation
 - Text recycling
- **Other “misdemeanor” unethical writing practices**
 - Relying only on the abstract for content of a cited source
 - Citing sources that were not read or thoroughly understood

Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing

Miguel Roig, Ph.D.

<http://ori.dhhs.gov/education/products/plagiarism/>

Theses and Dissertations

- Guidelines available from ACS series, “Publishing Your Research 101”

<http://pubs.acs.org/page/publish-research/index.html>

**See PDF of presentation by Baysinger,
“Electronic Theses and Dissertations: Ethical and
Publishing Issues”**

- “In most cases, your dissertation will incorporate previously copyrighted material, and you must ensure that your reuse is legal.

Permission may be required to use your own work, if you assigned rights to a publisher.

If material was jointly published, ensure your co-authors are aware of the reuse.”

Research Misconduct – surprising cases?

- Getting money from two agencies for the same work (nearly identical proposals submitted)

NEWS IN FOCUS

MISCONDUCT

Duplicate-grant case puts funders under pressure

Critics call for tighter checks to stop researchers being funded twice for the same work.

BY EUGENIE SAMUEL REICH

It sounds like every researcher's dream: two or more agencies are falling over each other to fund your grant proposal.

But for those tempted to accept funding for the same piece of research from more than one

Nature, 2012

a 2010 paper (S. C. Roy *et al.* *ACS Nano* 4, 1259–1278; 2010) he openly acknowledged both the NSF and ARPA-E for supporting the same work. That year, the DOE inspector-general spotted the similarity between the grants, the NSF began its investigation, and Grimes resigned his university position

down a grant if it overlaps with another.

But the additional funding may pose to a temptation for some researchers, and agencies could take further steps to nip duplicate grants in the bud, says Harold Garner, a bioinfectician at Virginia Tech in Blacksburg. In general, agencies do not cross-check federal

Reporting Concerns

- All employees and individuals associated with CSU should report observed, suspected or apparent Research Misconduct to their Department Head, Dean, the RIO and/or the Vice President for Research.
- If an individual is unsure whether a suspected incident falls within the definition of scientific misconduct, **a call may be placed** to one of these individuals to discuss the suspected misconduct informally.

Whistleblowing

- Your right to blow the whistle is protected by the US Constitution and upheld by state regulations
- Whistleblowing, particularly when vulnerable subjects or federal funds are involved, is the right thing to do and is expected from you
- Blowing the whistle has some risk...

CONTACTS

- Dr. William Farland, VP for Research
 - William.Farland@Research.ColoState.edu
- Dr. Hank Gardner, RIO, Associate VPR
 - Hank.Gardner@Research.ColoState.edu
- Ms. Kathi Delehoy, Associate VPR
 - Kathi.Delehoy@Research.ColoState.edu
- Dr. Bernard Rollin, University Bioethicist
 - Bernard.Rollin@ColoState.edu
- Dr. James Owiny, University Veterinarian
 - James.Owiny@ColoState.edu
- Dr. Kathy Partin, Director of RICRO
 - Kathy.Partin@Research.ColoState.edu
- Dr. Sue Vandewoude, Director of LAR
 - Sue.Vandewoude@Research.ColoState.edu
- Dr. Robert Ellis, University Biosafety Officer
 - Robert.Ellis@ColoState.edu

Climategate

On the Nature of Scientific Integrity

Overview

- November 2009, University of East Anglia, Climate Research (CRU) Unit computer backup system was hacked
- 3000 documents were shared on various websites
- Allegations of research misconduct against Climate Scientists: Phil Jones, the head of the CRU; Keith Briffa, a CRU climatologist specializing in tree ring analysis; Tim Osborn, a climate modeler at CRU; and Mike Hulme, director of the Tyndall Centre for Climate Change Research
- LOTS OF MEDIA COVERAGE...
- Eight inquiries into the emails and Dr. Phil Jones, Dr. Michael Mann (director of Pennsylvania State University's Earth System Science Center)
- All exonerated the scientists, but...
- And the UK police investigation into the hacking incident is still ongoing.

Background (see Wikipedia for outline)

- Hacking of Climatic Research Unit at the University of East Anglia
- Stolen files and emails shared on the internet (~1000 emails, ~2000 documents, including commented source code)

Two main accusations

1. Scientists manipulating data

- **Hiding declining trend and the Medieval Warm Period... Mike's Nature Trick**
- **Also, source of the temperature measurements (China) – a good argument to take notes!!!!**

From email: "I've just completed Mike's *Nature* trick of adding in the real temps to each series for the last 20 years (ie, from 1981 onwards) and from 1961 for Keith's to hide the decline."

Response: "The so called "trick" was nothing more than a statistical method used to bring two or more different kinds of data sets together in a legitimate fashion by a technique that has been reviewed by a broad array of peers in the field"

2. Project scientists suppressing their critics (not sharing data)

UK panel: "It was not the immediate concern of the Panel, but we observed that there were important and unresolved questions that related to the availability of environmental data sets. It was pointed out that since UK government adopted a policy that resulted in charging for access to data sets collected by government agencies, other countries have followed suit impeding the flow of processed and raw data to and between researchers. This is unfortunate and seems inconsistent with policies of open access to data promoted elsewhere in government."

Official Investigations

- Eight committees investigated the allegations finding **no** evidence of fraud or scientific misconduct:
 - University of East Anglia: Independent Climate Change Email Review
 - <http://www.cce-review.org/pdf/FINAL%20REPORT.pdf>
 - University of East Anglia: Science Assessment Panel
 - <http://www.uea.ac.uk/mac/comm/media/press/CRUstatements/SAP>
 - House of Commons Science and Technology Committee
 - <http://www.publications.parliament.uk/pa/cm200910/cmselect/cmsctech/387/387i.pdf>
 - Pennsylvania State University: Michael Mann Inquiry
 - http://www.research.psu.edu/orp/pdf/Findings_Mann_Inquiry.pdf
 - Pennsylvania State University: Second Investigation Committee
 - http://live.psu.edu/pdf/Final_Investigation_Report.pdf
 - USEPA
 - <http://yosemite.epa.gov/opa/admpress.nsf/0/56EB0D86757CB7568525776F0063D82F>
 - Inspector General of the U.S. Department of Commerce
 - http://www.oig.doc.gov/OIGPublications/2011.02.18_IG_to_Inhofe.pdf
 - National Science Foundation
 - <http://www.science20.com/uploads/1770191916-429173860.pdf>
- Wikipedia: “However, the reports called on the scientists to avoid any such allegations in the future by taking steps to regain public confidence in their work, for example by [opening up access](#) to their supporting data, processing methods and software, and by promptly honouring [freedom of information](#) requests. The [scientific consensus](#) that global warming is occurring as a result of [human activity](#) remained unchanged throughout the investigations.”

Some Interesting Reading...

- BBC interview with Dr. Phil Jones
<http://news.bbc.co.uk/2/hi/science/nature/8511670.stm>
- Nature article on the Climate Email Thefts
<http://www.nature.com/nature/journal/v462/n7273/full/462545a.html>
- How they were portrayed in blogs and media (one of many)
<http://blogs.telegraph.co.uk/news/jamesdelingpole/100017393/climategate-the-final-nail-in-the-coffin-of-anthropogenic-global-warming/>