

UNM's Responsible Conduct of Research Initiative

Mentoring and the Responsible Conduct of Research: How do you learn to Mentor?

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Today...

- Mentoring as Part of RCR Training
- For NSF, RCR and Mentoring are Requirements
- Are you a mentor? Do you have a mentor?

- These 3 sessions
 - Introduction
 - Interview
 - Plan



What are we talking about?

- Researchers should practice research responsibly
- Three broad categories of behaviors:
 - Deliberate misconduct – fabrication, falsification, and plagiarism (FFP)
 - **Questionable research practices (QRP)**
 - Ideal standard, responsible conduct of research (RCR)



Remember, we talked about Research Misconduct...

...the Reason for the Season



42 Code of Federal Regulations (CFR) Part 93

- RM 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." 45 C.F.R. 689.1(a)
- Does not include mistake or honest error.
- "Awardee institutions bear primary responsibility for prevention and detection of [RM], and for the inquiry, investigation, and adjudication." 45 C.F.R. 689.4(a)
- OIG reviews institution reports for accuracy, fairness, and completeness. If warranted, conducts additional investigation and reports to NSF Deputy Director, who adjudicates.



Questionable Research Practices

- Worst behaviors – FFP – rare
- QRP troubling, but little government regulation
- Most assume research institutions effectively regulate own behavior



Nature article

- Serious misconduct 1%
- 0.5% admitted to “falsifying or cooking research data”
- 1% using another’s ideas w/o permission or giving credit
- 5.3% failing to present data that contradicted their own previous research
- 12.8% overlooking use of flawed data
- Other: non-disclosure, change or inadequate scientific design for funding source, withhold details



INCREASING ALLEGATIONS

- From 1998-2008, NSF has observed a 3-fold increase in RM allegations

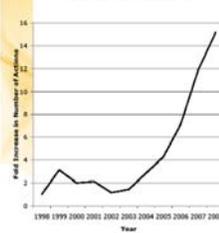


I like the excuses.... (NSF OIG)

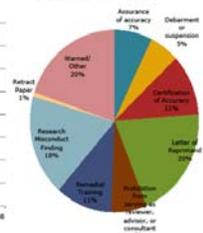
- I didn't do it. My grad student/undergraduate/postdoc/grant writer/faculty colleague/secretary/Co-PI/SRO/AOR/VP office, Research/Dean/spouse wrote that section.
- It's only background/introductory material (or it had no technical merit).
- The reviewers are smart enough to know what is my work and what is someone else's.
- It's in the public domain.
- It's not plagiarism; it's just bad citation.
- I used the same words, but I meant something different.
- There's no other way to say that.
- I didn't have space for all the citations
- "It's only a proposal. It's not like it's a publication"
- "Fastlane removed all the quotation marks"
- "My English teacher told me it's not plagiarism if I change every 7th word."
- "I was told that having between 70-80 citations in a proposal was enough."
- "Anymore and I would look like I wasn't proposing to do something new."
- "If that was done by me, it was not intentional, and if I did it, I was not aware that I was doing it, and if I did it, it stopped."
- A bird distracted me.
- I was suffering from severe acid reflux.



Research Misconduct Actions Since 1998



Research Misconduct Actions Since 1998



UNM RCR Content Standards

1. Conflict of Interest / Commitment
2. Ethical use of human and other animal subjects in research
3. Authorship and Publication
4. Data acquisition, management, ownership, & sharing
5. Peer Review
6. **Mentoring and mentee relationships**
7. Research Misconduct and policies for handling research misconduct; include whistle blower ethics
8. Collaborative research (include industry)
9. The Scientist as a responsible member of Society

Includes but differs a bit from the ORI “9”



What is Mentoring?

...many Mentor-Mentee relationships in science look like this



- Handouts



The Mentoring Relationship



Mentors...

- inform, instruct, provide examples for trainees, establish long-term interactions with mentees
- Create a safe environment
- Embody mutual trust
- Provide stages of independence –changing roles
- Provide opportunities
- Foster socialization
- Conducting research that is of interest, potentially

We learn “acceptable” habits from parents, teachers, religious leaders, political leaders, friends, colleagues, and many more.- where do we learn professional conduct?



Mentee – Trainee Responsibilities

Mentees...

- Be open-minded and want to learn new things
- Ask questions to clarify & gain new knowledge
- Seek out opportunities to acquire skills in making presentations, use new technologies, ethical conduct, writing papers, etc
- Strive for independence in thinking, hypothesis generation, experimental planning
- Identify career goals, training opportunities
- Prepare and meeting timelines to reach goals
- Seek advice from multiple sources
- Take responsibility!



| Trainee (Student) Responsibility | Mentor responsibility |
|--|--|
| Flexible in scheduling | Availability and time to be a mentor |
| Available | Accessibility |
| Respect and consider input from Mentor | Best interest of trainees in mind |
| Communicate | Communicate |
| Trust is key | Trust |
| Know when to ask for help | Accept and process input from trainees |
| Take responsibility | Discuss points of conflict |
| Project Ownership | Provide training |
| Develop independence | Provide guidance for a career trajectory |



Something New... NIH, NSF RCR Requirements

NSF → <http://edocket.access.gpo.gov/2009/E9-19930.htm>

NIH → <http://grants.nih.gov/grants/guide/notice-files/NOT-OD-10-019.html>

REIP Website – *Scientific Integrity Plan (SIP)* approved by VPR Julia Fulghum (June 11, 2010)

- <http://research.unm.edu/researchethics/>



RCR Compliance

- **Principal investigators are responsible** for ensuring that individuals supported by NSF and NIH funding have satisfactorily completed RCR instruction.
- This responsibility includes keeping a **written record of the instruction** provided and submitting information electronically to the Vice President for Research at ResEthic@unm.edu when a research participant has completed formal training (whether through a course, seminar, or other format).



Summary

- Misconduct is bad, but Questionable Research Practices may be worse
- Together – through mentoring - we can raise ourselves and standards up whereby we know we are doing the right thing with integrity and honest science
- As a university, respond to added requirements of funding agencies, but more important expectations of the public



Graduate Student Funding Initiative (GSFI)
A "one stop shop" to preparing funding proposals

REGISTER AND FOR MORE DETAILS:

<http://research.unm.edu/graduatefunding/>

HOW TO SIGN UP FOR THE GSFI+RCR CERTIFICATE PROGRAM



More on the Graduate Student Funding Initiative

- 8 lectures + go to 6 = Get a 4-year Certificate
- Feb 2-3- Intro to RCR
 - Feb 10 -11 – Mentoring
 - Feb 17-18 – Mentoring workshop
 - Feb 24-25 – Animals (humans) as participants
 - March 3- 4- COI
 - Mar 10 – 11 – Records, data, IP
 - Mar 24-25 – Authorship, publications
 - Mar 31, Apr 1 – Research results, notes
 - Apr 7-8 – Social Responsibility

