

RESPONSIBLE CONDUCT OF RESEARCH

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What is RCR?

- **Honesty**
- **Accuracy**
- **Objectivity**
- **Fairness**

Introduction to the Responsible Conduct of Research. Nick Steneck. Office of Research Integrity (2004)

RCR is important for YOU!

- **Establish credibility as a researcher**
- **Establish a clear “path” of data**
- **Enable further research**
- **Contribute to the field of research**
- **Meet the expectation of public trust**
- **Membership in the community of scholars-- traditions, values, ethics**

Traditions and values

- **“The scientific research enterprise, like other human activities, is built on a foundation of trust.”**

National Academy of Sciences, “On Being a Scientist”. (1995)

General categories

- **Lab notebooks, chemical, radiation, and biological safety, and mentoring**
- **Responsibility to human subjects**
- **Responsibility to animal subjects**
- **Objectivity/conflict of interest**
- **Avoiding falsification & fabrication of data and plagiarism (“misconduct”)**

Laboratory Notebooks

- **Complete and accurate lab notebooks are important as a primary source of data, to track protocols and equipment, to record your thoughts for future papers, and as the source of data for a potential patent.**
- **Check with your major prof/advisor for more guidelines**
- **Websites:** www.life.uiuc.edu/mcb/580/lab-notes.html or www.swarthmore.edu/NatSci/cpurrrin1/notebookadvice.htm

Institutional Review Boards

- **Human Subjects**
- **Animal Subjects**

**Other University committees on
radiation, chemical, and biological
safety**

Human Subjects

- **Research using surveys, focus groups (SBES) or tissue samples (STEM)**
- **Identifiable private information (confidentiality)**
- **Interactions or interventions**
- **IRB application, approval process**
- **(45 CFR 46-102: federal definition)**

Welfare of Lab Animals

- **Humane care and treatment**
- **“Meaningful” research**
- **IACUC = institutional animal care and use committee; University veterinarian**
- **Non-animal models**

Conflicts of Interest

- **Financial**
 - **Funding**
 - **Companies: employees, equity**
 - **Use of products**
 - **Royalties**
 - **Relationships**
- **Federal requirements for disclosure**

Mentoring

- **Responsibilities of mentors to mentees**
- **Responsibilities of mentees**
- **Honesty, collegiality, fair and open work relationships, letters of reference, helping students develop into professionals**
- <http://grad.msu.edu/all/ris04.pdf> Best practices from Michigan State University

Research Misconduct

- **Defined by federal policies**
- **Adhered to by all universities taking any federal money**
- **Misconduct**
- **“Questionable” research practices**
- **“Unacceptable” research practices**

Plagiarism

- **“Copying the language of another and passing it off as your own” (New American College Dictionary)**
- **CITATIONS**
- **ACKNOWLEDGEMENTS**

- **Referring directly to the ideas and words of others**
- **Using previous work as a foundation for your own**
- **Referencing outside material important to support your argument**
- **Citing information that is not “common knowledge”**

- **Acknowledging contributors**
 - **Group work**
 - **Services from others**
- **Copying sections or passages of text**
- **Using previously submitted work**
- **Paraphrasing**
- **Summarizing**

Whistleblowing

- **Good faith**
- **Best reference:CK Gunsalus. 1998. “How to Blow the Whistle and Still Have a Career Afterwards” Science and Engineering Ethics 4 (1): 51-64.**
- **<http://poynter.indiana.edu/see-ckg1.pdf>**

Gunsalus suggestions

- **Consider alternative explanations**
- **Ask questions, instead of making charges**
- **Documentation**
- **Separate personal and professional**
- **Seek advice and listen to it**

(1998) How to Blow the Whistle and Still Have a Career Afterwards