ORI: Introduction to the Responsible Conduct of Research, Nicholas H. Steneck, illustration by David Zinn
How to Get Charged with Research Misconduct

Integrity + Objectivity = Trust + Respect = Ethics
Introduction

- Regulatory Compliance
  - Human Subjects
  - Animal Subjects
  - Conflicts of Interest
  - Export Controls
  - Chemical and Biological Safety
  - Hazardous Waste
  - Radiation Safety
- Scientific Misconduct
- And waterskiing to boot!
Quiz – First the Truth
Now more evidence of prowess
Definitions

- Fabrication
- Falsification
- Plagiarism
- Other non-scholarly behaviors
  - Fiduciary
  - Objectivity
  - Egocentricity
- Cheat
- Steal
- Lie
Where are the problems?

- Lack of documentation
- Lack of communication
- Lack of caring
- Compromised Objectivity
- Pressure to finish
- Missing Leadership
- Skipped 2nd Grade?
- Adversarial Relationships

http://www.ncsu.edu/sparcs/lab_management
Where are the problems?

Source: 2007 Federal

* Applications only
Three Words on Documentation

- Laboratory Notebooks
- Fraud more prevalent with digital records
- Forensics are available and getting better and better.
- Challenges in the digital age

Write It Down

packpromise
Digital Records

Systemize storage
- Naming conventions
- Back ups - tracked
- Log / diary / notebook still necessary

Keep the failures
- What’s more important, validation or invalidation when testing a hypothesis?
- Arguably, invalidation is more important
  - Repeating mistakes is stupid
  - Failure to document what has been tried and failed is a tragedy for the advancement of the body of knowledge.
Set Standards

- Set Standards (for documentation, communication of mistakes, errors and failures, questioning success, etc.)
- Discuss Standards in Person – Group Meetings, individual reviews
- Follow-up with written standards
- Require through encouragement and support, attendance of ethics courses/symposia
- Evaluate Understanding of Standards and Instructions
  - Ask for a reiteration back
  - Ensure standards are applied systematically
Teaching + Research Intersection

• Be clear, concise and unambiguous

• Expect and encourage questions, confusion

• Anticipate mistakes, pride, shame

• Measure once, cut twice?

• Respond, reiterate and recognize

• Apply reasonable skepticism

Slow Down!
Meetings

- Schedule Lab Meetings – Never Miss them!
  - Reschedule if needed.
  - Establish an Agenda
  - Room for discussion, debate and q&a
  - Keep minutes

- Schedule one-on-one meetings – Never Miss them!

- Your subordinates are your reputation, your posterity and your productivity
Pay Attention to YOU

Record — Keep it clean and be religious about it

Review — Remind yourself what you did the last few days.

Instruct — Document instructions given and received. Share docs.

Counsel — Let your subordinates and others know how to behave.

Think! — Stop for a moment and think about where you’ve been and where you are headed.

Double Check — Lit search is not a one-stop shopping spree

Heal — Shore up adversarial relationships
Objectivity and Commitment

Competing interests – financial or personal gain superimposed on valid inquiry or decision

- Disclose
- Manage
- Eliminate
Is this what you want?

misconduct say that miscreants often start with minor infractions, building up to widespread falsification of data should their earlier misdeeds go undetected. And experi-

see whether he could get away with falsification? Or did he find himself sucked into an addictive pattern of escalating misconduct?

ing the same month. by then, Ninov's career at the Lawrence Berkeley lab had unravelled, after his colleagues delved into data files and discovered the same type

cancer of fraud now confronts all scientific disciplines, raising questions about the responsibility of co-authors and stressing the importance of training in standards of scientific conduct. Those who have studied