7.18 Day 12 Agenda

Discussion Section
Conduct in the lab
  Safe lab practices
    radioactivity
    toxic chemicals
    biologics
Ethical standards in science
  Case Study
    confidence, freedom to communicate
    privileged information, proper attribution of work
Discussion Section

Purpose: Interpretation of the data

The story relates the data to the introduction

Identify key pieces of data

Discuss the significance (new finding, crucial step in protocol, alternative interpretation, etc.)

Relate data to a model, hypothesis

What is missing, what is next?
Lab Safety

Environment, Health, and Safety Office (EHS)

http://web.mit.edu/environment/ehs
radioactive safety MIT RPO
laser safety MIT RPO
chemical safety MIT EHS
http://web.mit.edu/environment/ehs/chemical_safety.html
biosafety guidelines MIT
animal safety CAC

clean bench, protective safeguards (clothing, goggles and gloves, monitors, limits, swipes, storage and disposal, and record keeping)
Lab conduct

Freedom to communicate

confidentiality and privileged information

conflict of interest

Confidence in information

lab notebook and record keeping

standards for accuracy and reproducibility

manipulating and reporting data

Proper attribution of work

authorship and order of authorship

sources of funding
Case Study: Collaborative research and authorship

Bill Williams has constructed a plasmid that allows carefully regulated expression of genes inserted into it. He has not found the plasmid useful in his own work but has discussed it with his colleague Harry Douglas at a meeting. Harry thinks he can put the plasmid to good use and asks Bill if he can try it. Bill is receptive to this and sends the plasmid to Harry. Harry and his coworkers proceed to use the plasmid to create several novel constructs that provide considerable insight into the function of two previously ill-studied genes. The impact of these studies is great, and Harry and his coworkers write a manuscript for submission to a prestigious journal. In the final stages of writing, Harry calls his group together and asks how they feel about including Bill Williams on the author byline. What would you say?
Lab relationships

faculty mentorship
lab collegiality

conflict resolution
harassment
misconduct