

## 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](http://web.mit.edu/environment/ehs/chemical_safety.html)

biosafety guidelines MIT

<http://www4.od.nih.gov/oba/rac/guidelines/guidelines.html>

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