

Research Integrity: The importance of the mentor/mentee relationship

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Disclosures

No Relevant Financial Relationships
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Objectives

- Identify how (lack of) mentoring can contribute to trainee misconduct, including a case study from JHUSOM
- Identify different models of mentoring and what characteristics make a successful mentor and mentee
- Learn methods for establishing successful mentor-mentee relationships

Research Integrity

**MENTORING AND RESEARCH
MISCONDUCT IN CLOSED OFFICE of
RESEARCH INTEGRITY (ORI/NIH)
CASES**

ORI Cases of Trainee Misconduct

- Review of closed Office of Research Integrity cases (1990-2004) that involved **trainee misconduct**
- Of 158 ORI cases involving misconduct, **30% involved trainees** (N=45: 33 post-docs, 10 graduate students, 2 other trainees)

ORI Cases of Trainee Misconduct

- Fabrication and/or falsification involved in all but 3 cases
 - 39% discovered when others could not replicate
 - 36% were witnessed
 - 25% were triggered when source data could not be located
 - 15% provided inadequate information to classify
- 79% of cases involved joint research with the faculty
- Complaints made by range of people involved, though most often full Professor

ORI Cases of Trainee Misconduct



- Majority of cases (73%), the mentor had not reviewed the raw data generated by trainees
- Majority of cases (62%), the mentor had not set standards (e.g., keeping a lab notebook)

ORI Cases of Trainee Misconduct



- Secondary analysis of “stress” as a contributing factor
 - 62% of cases identified internal pressure to perform as a factor in the fabrication/falsification

ORI Cases of Trainee Misconduct

Trainee Letter of Admission

“There was much excitement over this [surprising and promising preliminary result] and I began to feel a self-imposed pressure to keep the positive data coming in. It was at this time that I began to substitute buffer for the control XXX. At the time I realized I was making a grave error in judgment, but as the excitement over the results grew and grew I felt more pressure to manipulate the system. At no time were any of the co-authors of the paper aware of my actions, nor could they have anticipated my behavior. Over time I lost more and more control and felt like I could not stop falsifying experiments.

ORI Cases of Trainee Misconduct

- 18 (46%) of the 39 cases included a specific **discussion of the issue of mentoring** within the institutional review of the case
 - Only 1 of these 18 cases concluded that the mentor HAD NOT contributed to the misconduct

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MISCONDUCT CASES AT JHUSOM THAT INVOLVED ISSUES OF MENTORSHIP

JHUSOM Cases 2011-2013

- Of 33 research or professional misconduct allegations (from 43 total)
 - 2 of 20 (10%) **research misconduct** allegations involved issues of mentorship
 - 7 of 13 (54%) **professional misconduct** allegations involved issues of mentorship

JHUSOM Cases 2011-2013

- Sample Case

- Initially an allegation of research misconduct was made when identical images were published in several figures representing different experiments
 - This was determined to be an error, so there was no finding of research misconduct

JHUSOM Cases 2011-2013

- **Sample Case**

- Initially an allegation of research misconduct was made when identical images were published in several figures representing different experiments
 - This was determined to be an error, so there was no finding of research misconduct
- **The first author was a trainee working in a faculty laboratory**
 - the trainee had received inadequate supervision and mentorship from the faculty.
 - no review of the trainee's data or documentation of the experiments
 - » (there were no lab notebooks kept and primary data were inadequately/not identified)
 - No timely and regular supervision
 - Based on the JHUSOM policies, there was a finding of **professional misconduct**

Sample Case: Professional Misconduct

- intentional deception or dishonesty in the professional conduct of academic duties....
- **unsatisfactory performance of professional responsibilities;**
- behavior generally unacceptable to the academic community;
- failure to comply with published institutional policies or procedures, state or federal laws or regulations.

Sample Case : Teacher/Learner Relationship

II. Responsibilities in the Teacher/Learner Relationship

A. Responsibilities of teachers

- Treat all learners with respect and fairness.....
- Provide current materials...
- Be on time...

- Provide timely feedback with constructive suggestions and opportunities for improvement/remediation when needed.

Sample Case: Rules and Guidelines for the Responsible Conduct of Research

II. Supervision of Students, Postdoctoral Fellows, and Other Research Personnel

The Johns Hopkins University School of Medicine is committed to fostering an environment that promotes academic and professional success for all research personnel..... Moreover, the complexity of contemporary scientific methods, the need for careful experimental design and the precautions one must take in data interpretation all require that **the preceptor assume an active role in guidance and supervision.**

Sample Case: Rules and Guidelines for the Responsible Conduct of Research

II. Supervision of Students, Postdoctoral Fellows, and Other Research Personnel

B. Recommendations

- The preceptor should supervise the design of experiments and the processes of acquiring, recording, examining, interpreting, and storing data. The editing of manuscripts alone does not constitute adequate supervision by the preceptor
- Collegial discussion among preceptors and trainees contributes positively For this reason, preceptors should schedule periodic meetings with their students, fellows and other members of the research team.

Sample Case: Rules and Guidelines for the Responsible Conduct of Research

II. Data Gathering Storage, Retention

B. Data Collection

In recording data, follow two simple rules to avoid problems later should questions arise about your work:

- **Hard-copy evidence** should be entered into a numbered, bound notebook so that there is no question later about the date the experiment was run, the order in which data were collected, or the results achieved.....
- Data recorded using a computer should be **validated in some way**, e.g. permanent bulk back up on tape, to assure it was actually recorded on a particular date and not changed at some later date.....

Other JHUSOM Cases 2011-2013

- Themes in the misconduct allegations involving mentee/mentor relationships
 - Inappropriate or inadequate supervision
 - Abusive communication style
 - Uncivil behavior
 - Fear of retaliation

"It is an honor to recommend this fabulous book! P. M. Forni's thoughtful discussion of the importance of civility in today's hectic world will surely help readers find viable solutions for dealing with a variety of rude situations."

—Peggy Post, director of the Emily Post Institute and author of *Emily Post's Etiquette*, 17th Edition

The Civility Solution

What to Do
When
People Are
Rude

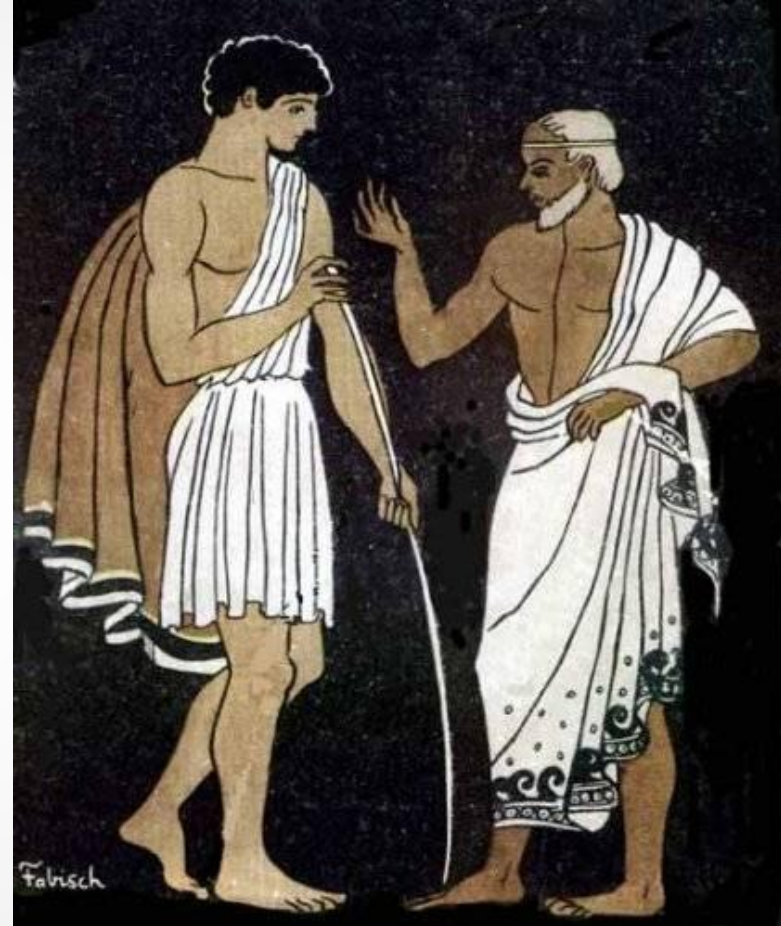
P. M. FORNI

Research Integrity:

WHAT IS MENTORING AND WHY IS IT IMPORTANT?

What is mentoring?

- Origins from Greek mythology
- Modern times¹
 - Noun: “a trusted counselor or guide”
 - Verb: “to give advice and instruction to (someone) regarding the course or process to be followed”
- Typically implies a relationship over some period of time



¹ - Source: Merriam-Webster, online dictionary; accessed 3-4-13.

What is mentoring?



Content/Science mentors:
guide scientific and
conceptual development,
but may not be good at
process mentoring

- **Process/Career mentors:**
guide academic and career
development but may not
have the expertise to guide
scientific career



Models of Mentoring

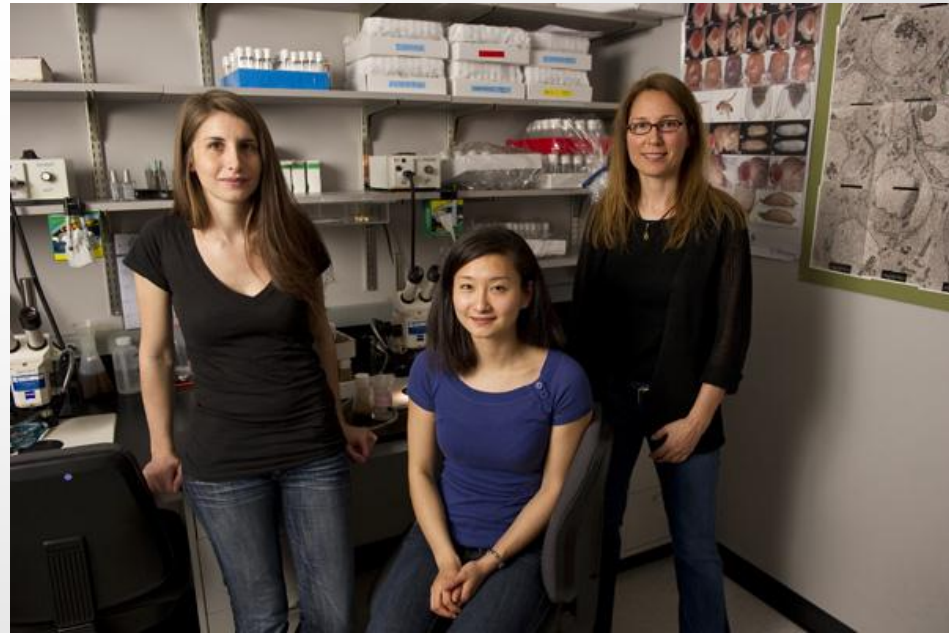
- Individual Mentoring
 - Traditional and familiar model
 - Limitations
 - Can perpetuate same approaches and limit innovation
 - Power inequality can lead to exploitation, unrealistic expectations
 - Can be inconsistent
 - A limited numbers of suitable/motivated/appropriate mentors limits the impact



Models of Mentoring

- Group Mentoring
 - e.g., lab meetings with students and post-docs
 - Clear advantages in some circumstances
 - Efficiency
 - Role modeling both mentoring and being a mentee

Can lead to Cascade Mentoring



Models of Mentoring

- Peer Mentoring
 - Can address the challenge of availability of senior mentors
 - When peers are at similar points (work and personal life), they can share insights
 - Benefits of the absence of a power inequality
 - Mutual feedback
 - Can turn into friendships
 - Limitations
 - Competition can develop, particularly when resources are limited **are scarce**

Why is mentoring important?



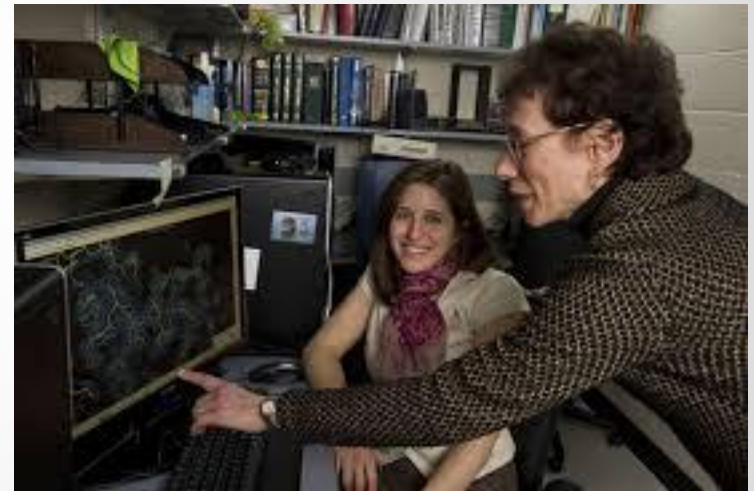
- Mentoring **increases confidence** of mentees in performing work and attaining career goals
 - Having a mentor increases interest in academic medicine
 - Having a mentor may increase likelihood of staying in academics

Why is mentoring important?

- Mentoring **facilitates** career advancement and productivity
 - Serves as a catalyst for success
 - Mentees allocate more time for research, write more papers, get more grants
- Lack of mentorship is listed as a specific barrier to achieving publication and completing projects

Why is mentoring important?

- Not clear if mentors should be assigned or selected
 - Business: personality characteristics can influence a person's likelihood of being mentored (Turban & Dougherty, 1994).
- Women perceive more difficulty finding mentors as compared to men



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MENTOR GOALS AND OBJECTIVES

Mentoring Goals and Objectives

A partial list of mentor **objectives** might include:

- provide professional guidance to trainees
- provide leadership role model for trainees
- share research relevant knowledge and experience with trainee
- identify and resolve potential obstacles to trainees
- **guide trainee in conducting research responsibly**
- assist trainee to develop professional networks
- enhance trainees' research and publication efforts
- demonstrate/model how a trainee might develop greater initiative, increased independence, and self-reliance

Mentoring Responsibilities

Trainees should not only be made aware of acceptable standards of practice, but encouraged to see the value of adhering to them as well. A partial list of **other mentor responsibilities** includes:

- **instruct** trainees how to conduct research responsibly
- provide proper **supervision and review** of trainee's work
- **critique and support** trainees' research
- promote trainee's research career
- socialize trainees into profession
- assist trainees to establish a network of professional collegial relationships
- steer trainees' research agenda or training in a productive direction

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SUCCESSFUL MENTEE/MENTOR RELATIONSHIPS

[When Mentoring Relationships are not Successful]

- Themes
 - Poor communication
 - Lack of commitment on the part of one or both individuals
 - Competition
 - Failure to see that a mentee's success reflects well on the mentor
 - Lack of clarity around intellectual property
 - **COMMON issue**
 - Conflicting interests
 - Competing agendas (e.g., supervisory)
 - Lack of experience on the part of the mentor

Successful Mentoring Relationships

- Characteristics of **effective mentors**
 - Altruistic
 - Active listeners
 - Experience mentoring and professionally
 - Accessible
- Characteristics of **effective mentees**
 - Open to feedback
 - Active listeners
 - Responsible for the relationship, meeting deadlines
 - Prepared for meetings

Successful Mentoring Relationships

- Relationship themes
 - Reciprocity: “bidirectional... consideration of strategies to make the relationship **sustainable and mutually rewarding**”
 - Mutual respect (time, effort, qualifications)
 - Clear expectations
 - Both held accountable
 - Personal connection
 - Shared values

The Details: Mentees Rule!

- “Manage Up”... take ownership and direct the relationship
 - Share your goals for career and mentoring relationship
 - Plan and set meeting agendas and meet regularly
 - Ask for feedback
 - Follow through on action items in a timely way
- It Takes a Village... have more than one mentor



The Details: Communication

- Communication Framework
 - **Active listening**: reiterate, summarize and review
 - Ensures both parties understand the discussion and action items
 - Checklist to guide topics discussed
 - **Regular appointments** with ongoing list of action items



The Details: Set Expectations

- In the early phases of the relationship, discuss procedures and expectations
 - Expectations¹
 - What type of assistance does the mentee want or need from the mentor?
 - Mentee's short- and long-term career goals
 - Mentor's expectations for mentee
 - Mentee's expectations for mentor
 - Level of independence of the mentee

¹ – early alignment of expectations can help avoid mismatch and prevent misunderstandings: Huskins et al., *Clin Trans Sci*, 2011, 4:439

The Details: Set Expectations

- In the early phases of the relationship, discuss procedures and expectations (cont'd)
 - General procedures
 - Laboratory procedures/orientation
 - Meetings
 - Frequency and duration of meetings – who will schedule meetings?
 - Agenda for meetings
 - Plan for what occurs between meetings
 - Ground rules for confidentiality, openness, feedback
 - Other individuals involved in project/supervision
 - Procedures for conflict resolution

The Details: Set Expectations

- In the early phases of the relationship, discuss procedures and expectations (cont'd)
 - Support
 - Allocation of mentor's time
 - Resources available for the mentee's research
 - Access to training opportunities
 - Advocacy of the mentee
 - Review these issues regularly (yearly?)

Objectives

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- Learn methods for establishing successful mentor-mentee relationships

Panel Discussion

- Jennifer Haythornthwaite, Ph.D.
- Chiquita Collins, Ph.D.
- David Hellman, M.D.
- Zsuzsanna McMahan, M.D.

- Julie Gottlieb, M.A.
 - *Moderator*