

Mentoring in Research Ethics with Developing Scientists

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Who are developing scientists?

- Graduate students
 - Postdoctoral staff
 - Junior faculty
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- My background--- Director of a PhD program at CUNY; Senior faculty at Columbia U
 - Served as a mentor for each of these categories of researchers
 - Don't hold myself out as an 'ethics' expert; just struggled with these issues
 - Although I have mentored many; it was 'on the job' learning; Never really had a major mentor

Mentoring vs. Teaching

- Talk will focus on mentoring
- Broader than teaching
- More person-oriented and personal
- More interrelated; interdependent relationship than professor-student

What is a mentor?

- men·tor (mntôr, -tr)*n.* A wise and trusted counselor or teacher.

v.intr. To serve as a trusted counselor or teacher, especially in occupational settings.

v.tr. To serve as a trusted counselor or teacher to (another person).

Mentor and Telemachus in Galley after Fleeing the Island of Calypso



- *Mentor* was a friend of *Odysseus* who placed *Mentor* in charge of his son *Telemachus*, when *Odysseus* left for the Trojan War. *Athena* disguised herself as *Mentor* to guide *Telemachus*.

Is research ethics mentoring adequate?

- Eastwood et al. (1996)---About 40% of postdoctoral research fellows at UCSF reported having had no guidance in ethical research from a scientific mentor.
- Brown and Kalichman (1998) reported that 50% of graduate students at UCSD reported that the total time spent discussing responsible conduct of research with a major professor or advisor had been ≤ 1 hour.
- Swazey and Anderson (1998), in a PhD student survey, reported that for almost every defined area of training in ethics, $> 50\%$ reported that faculty members provided little or no help.

Is mentoring adequate?

- In a survey of 2000 doctoral students, Anderson et al. (1994) found that departmental climate was the strongest predictor for misconduct in a survey of 2,000 PhD students
- Misconduct occurred more often in departments in which the climate favors competition and discourages collaboration.
- Research misconduct occurred least often where students felt that their advisors, or others, provided useful feedback and evaluation.

ST. LOUIS POST-DISPATCH

Two articles out of Washington University are retracted for fraud

July 04, 2013 12:15 am • [By Blythe Bernhard bbernhard@post-dispatch.com 314-340-81291](#)

Two psychology articles by Washington University researchers have been retracted after a former doctoral student admitted to faking data to create better results.....The Journal of Neuroscience retracted a paper from an August 2010 issue by and..... **mentor** when he was at the school. The article about human motivation contained significant misrepresentations and “cannot be considered reliable,” according to the Journal’s announcement.



Harvard Psychology Researcher Committed Fraud, U.S. Investigation Concludes

6 September 2012

“I never actually saw the raw data, just his summaries, so I can’t speak to the exact nature of what went wrong.”

co-author

Research Mentoring Models ^{1/3}

- **One-on-one mentoring:** Individualized and personal but narrow.
- **Team mentoring:** The collaborative nature of basic, clinical, and translational research often requires a team-based approach for success. The mentee has access to different points of view and to discussions among more senior investigators

Research Mentoring Models ^{2/3}

- **Multiple mentors:** Mentee has more than one mentor, and the mentors meet individually with the mentee.
 - Easier to manage than team mentoring
 - Having ready access to multiple mentors from different disciplines can be an ideal source of advice and guidance for a mentee on a complex research project
 - Can lack integration

Research Mentoring Models 3/3

- **Peer mentoring:** Mentoring by colleagues who are at a similar point in their career or are maybe a year or two ahead of the mentee.
 - The peer mentoring model is less formal and less inhibiting than other mentoring models.
 - Peers can provide important advice and guidance about negotiating in the academic world and about mentoring relationships, and this advice can be effective, but it is not sufficient as the only mentoring model.
- **Distance mentoring:** Mentoring via e-mail, supplemented by telephone calls and occasional visits

<http://www.icre.pitt.edu/mentoring/models.html>

Guidelines for Mentoring?

Introduction to Mentoring: A Guide for Mentors and Mentees

<http://www.apa.org/education/grad/mentoring.aspx?item=7>

- Gerry Koocher during tenure as APA President formed a Presidential Task Force on Mentoring
- Psychologist Linda Phillips-Jones suggested that standards for mentoring are not required but that better preparation for both mentors and mentees is needed (Mentoring Group, November 15, 2005).

NIH Suggested Topics for RCR Training

- Conflict of interest – personal, professional, and financial
- Policies regarding human subjects, live vertebrate animal subjects in research, and safe laboratory practices
- Mentor/mentee responsibilities and relationships
- Collaborative research including collaborations with industry
- Peer review
- Data acquisition and laboratory tools; management, sharing and ownership
- Research misconduct and policies for handling misconduct
- Responsible authorship and publication
- The scientist as a responsible member of society, contemporary ethical issues in biomedical research, and the environmental and societal impacts of scientific research

Potential Problems in Mentoring 1/3

- Problems in the relationship may hinder the career development of either individual.
- A mentee may be overly dependent on a mentor, asking for micromanagement instead of career advice and counsel. A mentee may also ask for personal favors or expect involvement and credit with the mentor's work.
- Mentors may ask too much of the mentee or resist the separation stage and insist on some voice in the mentee's career decisions.

Potential Problems in Mentoring 2/3

- May experience problems with performance issues.
- One partner may struggle as a result of errors made by the other. A mentee's reputation may be tarnished if his or her mentor commits a serious breach of ethics.
- A mentor may be viewed negatively if his or her mentee's performance is not meeting expectations.
- The mentor's judgment in selecting a good mentee may be questioned as well as the quality of the mentor's counsel and advice.

Potential Problems in Mentoring 3/3

- Time constraints: The amount of time required to be a mentor has increased
- Pressure to produce: Funding is increasingly difficult to achieve; journal rejection rates increased; academic success requires publication and funding by both mentor and mentee
- Lack of expertise: Mentees are likely to develop expertise in areas other than the mentors; quality control is difficult, if not impossible; e.g. fMRI analysis; complex data analytic techniques

Elements associated with appropriate ethical behavior in the mentee-mentor relationship

- Promoting mutual respect and trust.
- Maintaining confidentiality.
- Being diligent in providing knowledge, wisdom, and developmental support.
- Maintaining vigilance with regard to the mentee-mentor relationship (superior power increases the mentors' obligation to be cognizant of the mentees' feelings and the mentees' rights).
- Acknowledging skills and experiences that each bring to the mentee-mentor relationship.
- Carefully framing advice and feedback.

APA Principle on Research Ethics: Important but not Hot Topics

- **8.01 Institutional Approval**
conduct the research in accordance with the approved research protocol.
- **8.02 Informed Consent to Research**
- **8.03 Informed Consent for Recording Voices and Images in Research**
- **8.04 Client/Patient, Student, and Subordinate Research Participants**
- **8.05 Dispensing with Informed Consent for Research**
- **8.06 Offering Inducements for Research Participation**
- **8.07 Deception in Research**
- **8.08 Debriefing**

APA Research Principle: Hot Topics

- *8.10 Reporting Research Results*
 - (a) Psychologists do not fabricate data.*
 - (b) If psychologists discover significant errors in their published data, they take reasonable steps to correct such errors in a correction, retraction, erratum.....*
- *8.11 Plagiarism*

Psychologists do not present portions of another's work or data as their own, even if the other work or data source is cited occasionally.

APA Research Principle: Hot Topics

- *8.12 Publication Credit*
 - (a) Psychologists take responsibility and credit, including authorship credit, only for work they have actually performed or to which they have substantially contributed.*
 - (b) Principal authorship and other publication credits accurately reflect the relative contributions of the individuals involved, regardless of their relative status.
 - (c) Except under exceptional circumstances, a student is listed as principal author on any multiple-authored article that is substantially based on their dissertation.

APA Research Principle: Hot Topics

- **8.13 Duplicate Publication of Data**

Psychologists do not publish, as original data, data that have been previously published.

- **8.14 Sharing Research Data for Verification**

(a) After research results are published, psychologists do not withhold the data on which their conclusions are based from other competent professionals who seek to verify the substantive claims through reanalysis.....

- (b) Psychologists who request data from other psychologists to verify the substantive claims through reanalysis may use shared data only for the declared purpose.

- **8.15 Reviewers**

Psychologists who review material submitted for presentation, publication, grant or research proposal review respect the confidentiality of and the proprietary rights in such information of those who submitted it.

Improving the Mentoring Process and Reducing Potential for Research Fraud

- Choose mentees wisely; vice versa—clear description of oversight procedures may discourage problems and ‘problem’ mentees
- Adopt a team approach to mentoring
- Include review of all ethical procedures including review of data as a routine aspect of mentoring
- Institute peer to peer mentoring/oversight where data is reviewed in an ongoing manner (e.g. peer chart reviews)
- Systemic changes where not only positive findings are the route to success and where mentoring is given a higher value (and more allocated time).

Resources

- Introduction to Mentoring: A Guide for Mentors and Mentees
<http://www.apa.org/education/grad/mentoring.aspx?item=1>
- HHS Office of Research Integrity: Case Summaries
http://ori.dhhs.gov/case_summary
- HHS Office of Research Integrity: RCR Mentoring: Annotated References
http://ori.hhs.gov/education/products/columbia_wbt/rcr_mentoring/winResources.html#3

Thank you!