Cases on Mentoring for 2003 Case Discussions

Analysis of the results from the survey of the mentoring experiences of NIH postdoctoral fellows (conducted in May-June 2001) suggested that three key factors define the fellowship experience: achievement of training goals, achievement of career goals, and overall quality of mentoring. Predictors of these three factors included such things as scientific direction given by the mentor, amount of independence in the research project, feedback from the mentor whether research was going well or stalled, appropriate recognition for work in publications and presentations, introductions to scientists outside their laboratory/branch by their mentor, and discussion of training and career goals with mentor. These same predictors can be applied to all trainees in the NIH IRP. Mentorship agreements, available from the **Ombuds office**, can be used to establish the goals for a given mentor-trainee relationship.

Key among the knowledge and skills that all trainees should develop is the ethical framework within which research and collaborations should be carried out. Trainees are encouraged to build a strong relationship with their mentor based on mutual trust and respect. They must also recognize the need for team effort and collaborative interactions. This includes certain responsibilities such as attendance at lab meetings, working regular hours, and maintaining a professional attitude at all times.

These cases address a series of issues related to the ethical framework for research and how trainees and their mentors should interact. **Choose the 2-4 you consider of greatest interest and relevance to the group that will discuss them.**

In discussing these cases, consider whether the rules for handling the conflicts would be different if the person were in a different position - i.e., should graduate students be treated differently than postdoctoral fellows, or postbaccalaureate students differently than technical IRTAs? Do they all need equivalent mentoring?

Should a mentor work to enhance a technician's skills? Are training goals important for technicians and should technicians be considered trainees in any sense of the term?

Do tenure-track investigators need mentoring? And if so, from whom should they receive it?

Case Studies

(From Macrina, Scientific Integrity - Chapter on Mentoring: Revised for the NIH)

1 - Different Supervising and Mentoring Styles

Dr. Merry is a first-year postdoctoral fellow in Dr. Morton's laboratory. Because Morton's laboratory emphasizes independence, she chose and plans her own project and meets with Morton (who travels extensively) every 2-3 months to discuss her conclusions and figures for papers. She knows that regardless of how she performs, Dr. Morton will write a glowing generic recommendation for any job to which she applies, and that she can take her project to her next position. She learns that other labs are different from Dr. Douglas, a postdoctoral fellow from the lab next door. Douglas is supervised by Dr. Powell, who stresses publication productivity in high-impact journals. Postdoctoral fellows are assigned a specific project, meet weekly on an individual basis with Powell to discuss experimental details, and keep up with the competition by seeing grants and papers reviewed by Dr. Powell. Dr. Douglas expresses nervousness about his upcoming yearly evaluation, when Dr. Powell provides each lab member an in-depth, written performance critique. Dr. Powell actively helps fellows compete for the jobs for which he decides they are best suited, and his recommendation letters describe strengths and weaknesses. Part of their project may be taken to future jobs based on a written agreement. Dr. Merry and Dr. Douglas debate whether they should ask their supervisors for changes in how they are mentored. What are the advantages and disadvantages to these postdoctoral fellows of the different supervisory and mentoring practices? How about for the supervisors? What responsibilities do postdoctoral fellows have concerning how they are mentored and the information they receive?

2 – Equal Treatment of Postdoctoral Fellows – Sharing of Job Ads

Dr. Eastwood frequently receives letters that announce junior level positions for scientists. Sometimes Eastwood posts the letters on the laboratory bulletin board. Other times he distributes them to faculty or postdoctoral fellows using a routing list. On occasion he gives a letter directly to a postdoctoral trainee. Drs. Smith and Jones are currently postdoctoral trainees in Eastwood's lab. Dr. Jones discovers that Dr. Smith has applied for a job at a prestigious university. In a subsequent conversation, Dr. Smith tells Dr. Jones that Eastwood provided her with a letter sent to colleagues inviting applicants to apply for the position. Dr. Jones confronts Eastwood and indicates that she is upset that she was not notified about this position. Eastwood asserts that his policy is to deal with such letters selectively and states that he could not support Dr. Jones for the position in question. Dr. Eastwood points out that the job was also advertised in scientific journals and thus available to her. Comment on this situation, specifically discussing the mentor's policies. What are the mentor's responsibilities in such matters? If you were a postdoctoral trainee in the laboratory, what would be your expectations regarding such matters? As a mentor, what would be your policy on such matters? Why?

3 – Work Hours and Schedules

Milton France, a senior-level graduate student, is seen less and less during the day by his mentor and other members of the laboratory. It becomes apparent to the mentor, Dr. Jeff Wise, that France is working very long hours during evenings and nights when most of the other laboratory workers are not there. This persists for several weeks, and Dr. Wise does not think the pattern is a good one. Dr. Wise approaches Mr. France and requests that he spend more time during "standard working hours" in the lab. Dr. Wise argues that interaction with him and with other members of the laboratory is important and that it is best for all to talk about science regularly. Mr. France argues that he can work much more efficiently when fewer people are around. He cites the fact that a piece of equipment he was using in his research was continually busy throughout the daytime hours and this was not conducive to his performing needed experiments in a timely fashion. France discloses that this was the "straw that broke the camel's back," forcing him into working unconventional hours. Both the advisor and the student hold tight to their arguments, and over the next several days the situation between them grows tense. Comment on this situation and consider what avenues might be pursued to bring about resolution of this conflict.

4 - Mentoring of Technicians

Gillian Roberts, a GS-12 senior technician, has cloned a lymphocyte gene that encodes a membrane protein. The discovery of this gene was unexpected, and Ms. Roberts and her supervisor, Dr. Beth Hillary, agree that further characterization is warranted. Dr. Hillary indicates that the nucleotide sequence of the gene should be determined, and Ms. Roberts agrees. Dr. Hillary wants the nucleotide sequence to be determined by a commercial laboratory that does such analyses on a fee-for-service basis. Ms. Roberts argues that she has had no experience in determining DNA sequences and would like to learn the technology. Dr. Hillary comments that this would be time-consuming and would unnecessarily slow down her progress in other areas. Dr. Hillary indicates that if Ms. Roberts is interested in learning DNA sequencing, she should enroll in a techniques course at a later time. The technician is not receptive to this suggestion, as the course will require extra hours beyond the standard workday. Can the supervisor's decision be justified in your view? Can you suggest resolutions to this problem? Do you think Dr. Hillary would handle this situation differently if Ms. Roberts were a graduate student instead?

5 - Intellectual Property - Mentor's Use of Fellow's Research Proposal

Dr. Maureen Gray, a postdoctoral fellow, has prepared a research proposal in the form of an NIH grant application as part of a course she has been taking on grant writing. Dr. Gray came up with the idea for the proposal after reading her mentor's Annual Report. She has developed the idea thoroughly, and her mentor has provided only minimal assistance in the development of her grant proposal. Several weeks later, Gray learns that some of the ideas from her grant proposal have been included in her mentor's write-up for her upcoming BSC review. Comment on the appropriateness of the mentor's action in using Dr. Gray's research ideas. Dr. Gray wishes to confront her mentor over this issue and has come to you for advice.

6 - Future Collaborations for Tenure-track Investigators

Dr. Robin Carvell has been a postdoctoral fellow in a large NIH research group for 3 years. He has accepted a tenure-track position in another NIH institute and is in the last month of his formal training. Dr. Eleanor Hunt, his mentor, requests to meet with him privately shortly before his departure. Dr. Hunt produces a typewritten document that summarizes Dr. Carvell's contributions during his training. Moreover, the document lists biological materials that Carvell will be allowed to take from the laboratory only if he agrees to continue collaborating with Dr. Hunt in his new position. Finally, it spells out several areas not yet under investigation in Dr. Hunt's laboratory that Dr. Carvell is forbidden to work on in his new position. There is a signature line for Carvell at the end of the document to indicate his agreement with its language. Dr. Hunt asks him to take the document home, read it carefully, and return the signed copy to her in the morning. Dr. Carvell leaves the office and is quite upset with this situation. He believes his mentor is acting selfishly and unethically. He goes to the chief of the laboratory he will be moving to seeking his advice. Will this collaboration hurt his chances for tenure later? What are possible ways to resolve this situation?

7 - Issues Related to CRADA Funding of Trainees

Dr. Mitchell Conrad has received a CRADA (Cooperative Research and Development Agreement) to do basic research that has long-term implications for commercialization. A new pre-IRTA graduate student, Michelle Lawless, has just joined his lab because it provides the best opportunity for her to pursue the kind of basic research that interests her. Dr. Conrad outlines several projects that can be pursued by Ms. Lawless as part of the CRADA. He indicates that there is a proviso in the CRADA agreement which says that all material to be submitted for publication must first be reviewed by the company. This review must

always be completed within 120 days. Dr. Conrad points out that this presents only a minimal disruption to the normal publication process as compared with the unrestricted publication of material gathered in the NIH intramural program. He also mentions that the positive aspects of working on this proposal include the fact that there is money in the CRADA for Ms. Lawless to travel to at least two meetings per year, something others students do not receive. Also, the CRADA provides money for a personal computer that will be placed at her lab station while she is working on the project. Dr. Conrad emphasizes that working on the project will give Ms. Lawless an "inside track" with the company should she want to pursue job possibilities there following completion of her thesis, something she considers likely. After considering the pros and cons, Ms. Lawless agrees to work on the project. Comment on the ethical and conflict-of-interest implications of this scenario. Is it possible for Dr. Conrad to separate his mentoring obligations to Ms. Lawless from his contractual obligations to the CRADA?

8 – Confirmation of Lab Results – Request for Secrecy

Dr. Ron Archer is a Principal Investigator who has several postdoctoral fellows in his laboratory. One of his fellows, Dr. Gordon Polk, shows Dr. Archer data that describe a novel property of an enzyme under study. Both Archer and Polk believe this work has major implications for expanding the knowledge of this enzyme. At Dr. Archer's request, Dr. Polk repeats the experiments successfully. Then, because of the important implications of this work, Dr. Archer approaches another postdoctoral fellow, Dr. Phil Jefferson, and asks him to perform the same experiments in order to double-check the results. He instructs Jefferson not to discuss the experiments with anyone else in the lab in order to obtain independent data to confirm Polk's potentially important findings. Dr. Jefferson objects that it is not appropriate to keep secrets from others in the lab, and particularly from Dr. Polk whose work it is. Are the advisor's actions justified in this case?

9 – Handling of Personal Relationships in the Laboratory

John Brandt and Dr. George Woodford have met several times to discuss possible projects that Mr. Brandt might take on as a postbaccalaureate IRTA. During the last discussion Woodford recites a series of rules that he applies uniformly to his advisees. He indicates that he wants Mr. Brandt to know the rules of his laboratory fully before making a decision to join the lab. Most of the issues covered are straightforward, reasonable, and come as no surprise to Brandt. However, one rule surprises and concerns him. Woodford says that he does not permit his laboratory staff to enter into romantic relationships with one another. Should such a relationship develop, he insists that one of the members of the relationship find a new laboratory. Mr. Brandt argues that this is direct interference with personal matters and that such relationships are of no concern to the advisor. Woodford counters with the fact that twice in the past 5 years his laboratory has been significantly disrupted by romantic relationships between his lab staff. These situations have resulted in ill will, diminished productivity, and a negative effect on the overall morale of his laboratory group. The PI indicates that he has carefully considered the implications of such relationships and has decided that the only reasonable thing to do is to prevent the problems they create by asking those involved to decide which of the two of them will leave the laboratory. Discuss the issues of mentorship responsibilities, ethics, and conflicts of interest that you feel are important to this scenario. Would it matter if Mr. Brandt were a technician rather than a trainee?

10 – Dealing with A Substance Abuse Problem in the Laboratory

Mike Morton is a technical IRTA at the NIH, where he is immersed in his research in cell biology. One fall Saturday afternoon Dr. Joe Black, a postdoctoral fellow, is working in the lab when Mr. Morton arrives to do some work, having just attended a Redskin home football game. He seems in a jovial mood as he shuts down a 2-D electrophoresis apparatus and prepares his gel for processing. He then prepares

some samples and starts an ultracentrifuge run that will take 3 hours. As he works near Dr. Black's bench, Black can smell alcohol and concludes that although Mr. Morton may not be drunk, he has clearly been drinking. Dr. Black has some concerns that Morton could be endangering himself and others by operating potentially dangerous lab equipment following alcohol consumption. The next afternoon Dr. Black visits the lab to change some cell culture media, and discovers Morton's centrifuge has completed its run and is sitting idle with the samples still in it. He phones his apartment but gets no answer, so he sends him an e-mail alerting him to the problem. Sensitized by these events, Dr. Black take a keen interest in Mr. Morton's behavior and notices that he can sometimes smell alcohol on Morton's breath in the mornings when he comes to the lab. Is Dr. Black obliged to act on these observations? What actions, if any, should he take? What actions could the lab supervisor take?