

**2009 ASM Kadner Institute
Ethics Cases in Authorship and Mentoring**

Authorship Case 1

Jay Akash, a new assistant professor, is getting ready to submit his first paper since joining the faculty. He reviews one of the figures for his paper, which is an image of an ethidium bromide-stained agarose gel. The gel contains the products of PCR-amplified whole-cell DNA. The photograph displays the predicted 3-kb DNA fragment. Jay comments that a second, minor signal was also evident on the original gel. Based on its size, Jay believes that this second fragment represents a very exciting discovery, but it needs considerable additional work. This second fragment cannot be seen in the image. Jay discloses that this is because he has deliberately adjusted the contrast of the image using a computer editing program to obscure the second fragment. He says he did this because he is worried that competing groups in larger, more established labs will recognize the potential of the second fragment and will "scoop" him. He has prepared a figure legend that says: "a second, minor signal of unexplained origin was present in this experiment but is not visible in the photograph." But the figure legend does not indicate the size of the unexplained fragment. Thus, he argues he will be telling the truth while protecting himself from his competition. Are Jay's actions appropriate? Is he (i) simply playing fairly in the hotly competitive arena of biomedical research, (ii) falling victim to self-deception, or (iii) perpetrating scientific fraud?

Authorship Case 2

A computer scientist and a radiologist, both faculty at an research university, have enjoyed a productive collaboration involving the development of a software program to evaluate abdominal tumors that have been visualized using magnetic resonance imaging (MRI). The computer scientist authored all of the computer source code and tested it using archived MRI files. The radiologist designed and carried out the clinical trial, and also provided guidance in this testing phase, allowing the computer scientist to refine and to ultimately perfect the program. Although both collaborators are elated by the fruits of their labors, they have become perplexed over how to publish their results. They recognize that the prime thrust of the manuscript will be the design and creation of the software, and this is not likely to be of interest to clinicians and physician-scientists. Such individuals will be mainly concerned with the application of the program and the clinical results. But these collaborators are well aware of the publication guidelines of journals in their disciplines: most strictly prohibit the publication of the same material in two different journals. The collaborators agree there is no single journal that gives them the necessary coverage to both the computing scientist and the clinician researcher. They also believe that splitting the data into two papers aimed at two different audiences will diminish the impact and possibly the utility of their work. They come to you for advice. What do you tell them?

Authorship Case 3

Dr. Mary Travers, a well-funded scientist, leaves Medium University to take a position at Large Medical Center University. Dr. Levi Stubbs, the department chair assigns another faculty member, Dr. Carl Wilson, to Travers' former office and lab. A few months later Wilson comes across some of Dr. Travers' files in a cabinet drawer. In looking through these materials, he discovers what looks to be a completed draft of a manuscript written by Dr. Travers. What attracts Dr. Wilson's attention is that the title page lists Travers' address as Large Medical Center University. No mention of or acknowledgement of Medium University is noted in the manuscript. Dr. Wilson is puzzled by this but does not take any action. Several months later, a paper authored by Dr. Travers appears in the *Journal of Biological Chemistry*. Dr. Wilson notes the published paper is virtually identical to the manuscript he discovered in Travers' former office. He has a good appreciation of the science involved, and believes that she could not have accomplished the work reported in the few months that she has been at Large Medical Center University. What's more, the acknowledgements in the printed-paper thank a technician who Dr. Travers supervised at Medium University. Dr. Wilson believes that Dr. Travers is attempting to demonstrate her research prowess by convincing her supervisors at Large Medical Center University that her research program is up and running at full throttle. Dr. Wilson brings departmental chair Stubbs the manuscript and a copy of the published paper. He suggests Dr. Travers has committed scientific misconduct by deliberately falsifying information in the manuscript. Commenting, "so Levi, the ball's in your court" Wilson gracefully exits the chair's office. Stubbs comes to you, the department's resident expert in research ethics, and asks what he should do. What's your advice for him?

Mentoring Case 1

Dr. Brown's research group recently published an important paper in a leading physiology journal. Four months after the publication of the manuscript, Dr. Brown is contacted by a European colleague who has been unable to reproduce the results presented in two figures of the paper. Dr. Brown faxes copies of the pertinent laboratory protocols and recipes to his colleague and thinks no more of the discrepancy. Two months later, a graduate student in a competitor's laboratory contacts Dr. Brown and reports that he too was unable to reproduce the results. After this second call, Dr. Brown meets with Adam Green, the postdoctoral fellow who did the experiments in question. He asks Adam to bring his data book to the meeting so they can review the results together. Once in Dr. Brown's office, Adam confesses that he has been remiss in keeping his data book. He says that all of his electrophysiology experiments were recorded on VHS tapes with a live microphone into which he reported the experimental proceedings and observations. Adam transcribed these observations into his data book. However, there was a period of several days when his microphone was not working properly. Although Adam replaced the microphone as soon as he found that it was not working, he relied on his memory to transcribe the results of those particular experiments. After completing the figures for the manuscript, Adam was pleased to find that his data supported Dr. Brown's hypothesis. Dr. Brown comes to you for advice on how to handle this situation. What do you suggest?

Mentoring Case 2

Jim Allen has been a postdoctoral fellow in your lab for 3 years. He is in final negotiations for a tenure-track assistant professorship at another university. He is excited about taking this job, and you are pleased that the position will allow him an excellent opportunity to grow into an independent scientist. At the request of Dr. Wiley, his prospective departmental chair, Jim has been preparing an equipment list needed to set up his laboratory. Jim has come to you for advice several times while preparing this list. This morning he shows up in your office and you immediately sense he is upset. Last night Dr. Wiley called and asked him to be sure to include several additional equipment items on his list. Dr. Wiley told him, "Setting up faculty is our best opportunity to get equipment money for the department from the dean and vice president's office. The department desperately needs a new FPLC chromatography unit, a phase-contrast microscope, a scintillation counter, and an ultra-low-temperature freezer. So please add these to your setup list. I promise that asking for these items won't compromise our ability to secure the money for the equipment you actually need for your lab." In Jim's present or planned research, he has no need for an FPLC or a phase-contrast scope. Jim feels he is being asked to falsely represent his needs to the university administration. He is worried that if he objects to or refuses Dr. Wiley's request, he may not be offered the job. He asks you for advice on how he should proceed.

Mentoring Case 3

Rob Woods is a second-year predoctoral student in neurobiology. His mentor, Dr. Ames, has helped Rob select a research topic for his dissertation and has been proactive in helping him get started in the lab. Dr. Ames has provided Rob with written guidelines and benchmark dates for completion of various phases of the project. Rob recognizes that this project is particularly ambitious and appreciates the need for the rigid deadlines Dr. Ames has imposed. Rob is concerned that he may have difficulty meeting these deadlines: his wife is pregnant and he is overseeing the care of his father, who has early-onset Alzheimer's disease and resides in a local adult home. Rob has not disclosed either of these facts to his mentor. Rob begins the project enthusiastically but after a year is overwhelmed by the combination of the demands on him coming from both his research and his personal life. Because his progress has been modest, he finally tells Dr. Ames about his situation. Rob is shocked at Dr. Ames's reaction. Dr. Ames is very upset with Rob for not providing this information sooner and implies that Rob has compromised the progress of the lab's overall research program by not being honest with him when he began as a trainee. Dr. Ames immediately assigns Rob to a different dissertation research project that does not have as many time constraints and deadlines. Dr. Ames tells Rob that the work he has completed will be given to another student, who will be able to meet the time deadlines. Dr. Ames mentions that when the work is completed, he will look at Rob's contribution and decide at that point whether Rob should be an author on the paper reporting the findings of the project. Rob becomes depressed at this turn of events. He takes a week off to regain his composure. During that time he comes to you for advice. Should he have done anything differently? Should he change mentors now? Did Dr. Ames behave appropriately? Are there compromises he could suggest to Dr. Ames that would allow him to continue working on his initial project?