**Authorship Case Studies**

*(PHIL/MBIOL 7570 – Contributed by Bryan Benham)*

**Icebreaker**

What are your experiences with authorship? Has your experience been fair or less than fun? If you had the chance, how would you have done things differently?

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1. **Getting Credit: Being Left Out?**

Samuel, a second year graduate student at Miskatonic University was outraged when he discovered that his name had been left off the penultimate draft of a journal article which he had worked hard at for the last year. He helped design the experimental approach and even collected some of the initial data. “I was promised the second author slot,” complained Samuel. “I don’t know what happened. Maybe Professor Honest forgot, or something, but I barely made it on as fourth author after I complained.” Samuel knew of other grad students that were collaborating with Prof. Honest on the project, but two of the co-authors listed on the final draft were added at the last minute. One was a graduate student just finishing up her degree. She was given second authorship. She was also expected to go on the job market in the coming year. The other was a professor who Samuel suspects did nothing except provide reagents for the experiment.

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**Discussion Questions**

1. Is Samuel justified in being upset about his place in the list of authors? What legitimate reasons might Prof. Honest have for demoting Samuel from second to fourth author?
2. If Samuel’s suspicions about the graduate student and the professor added to the paper are true, is this an appropriate use of authorship? Whose responsibility is it to determine authorship on this paper?
3. Did Samuel do the right thing in complaining to Prof. Honest? How would you have handled it if you were in the same position as Samuel?
4. Imagine that Samuel is himself about to graduate and plans to go on the job market in the next year. Does this change your assessment of the fairness of this situation? Should it? Explain.
2. Getting Credit: The Strange Case of Dr. X

(Contributed by David Goldenberg, 2003)

Dr. X has been recruited to join an already established research group that is interested in the structure of a particular molecule. Although Dr. X does not have any particular expert knowledge of this molecule, he is an expert in an important technique necessary for the analysis, expertise that is not already available in the group. Unfortunately, there is some ambiguity in the conditions of Dr. X's appointment, especially with regard to how much independence he will have and who else will be working on the problem. The situation is aggravated by a personality clash between Dr. X and his nominal supervisor, Dr. Y. None the less, Dr. X's expertise enables him to collect much better data than has previously been available, and he begins to carefully analyze this data. He takes a particularly rigorous approach to the analysis and is able to draw some important conclusions about the molecular structure. But, his approach does not lead to a complete model.

Meanwhile, the supervisor, Dr. Y has been feeling rather frustrated about her failure to communicate with Dr. X and has also been talking with two friends at another institution, Drs. A and B, who are intensely interested in the molecule but do not have access to the material and equipment for making their own measurements. (Or, maybe, they are just too lazy to do their own experiments.)

In the course of their discussions, Dr. Y shows Dr. A some of the data that Dr. X has collected. Probably because of their already strained relationship, Dr. Y has not discussed this with Dr. X. Because they have been thinking about the problem for some time, Drs. A and B quickly recognize features of the data that may have escaped the notice of Drs. X and Y, but they keep it to themselves. Drs. A and B are also much more aware of other data in the literature than are Drs. X and Y. As a consequence, they are very quickly able to put the various pieces of the puzzle together and propose a structure for the molecule. When they are shown the model, Drs. X and Y are quick to appreciate that it very likely represents the correct solution to the problem. But, Dr. X is not aware that his own data played a role in deriving the model and is independently writing a paper describing these results.

Discussion Questions

1. Now that the structure of the molecule has been discovered, how should credit for the discovery be allocated? Should Dr. X get credit? Dr. Y? Explain the order that their names should appear in the published paper announcing the structure of the molecule.

2. Something seems quite unfair about this situation, but exactly what is unfair about this situation? What was the cause of the unfairness? How could this unfairness have been avoided?

3. Does this case strike you as familiar?
3. Ideas from a Grant Proposal

Valerie serves on a review board for an NIH grant competition. While reading a particular grant proposal she encounters a description of a new methodology for studying the very same types of processes that Valerie studies in her lab. The proposal is asking for money to develop this methodology in further detail, and otherwise appears to be a well designed grant proposal. She thinks the grant should be funded, and votes as such when the time comes.

However, Valerie is tempted to use this new methodology in her own lab. She has several graduate students working on similar problems, but she now realizes that the current methodology probably won’t produce the desired results. The new methodology appears much more promising.

Valerie is a conscientious researcher, but she is conflicted in this case. On the one hand, she feels that her duties as grant reviewer require that she keep the information confidential. Using the methodology would be a clear breech of this obligation. She thought of contacting the researcher who proposed the new methodology, but feels that this too would be a breech of confidentiality. On the other hand, she feels an obligation to her own graduate students and her own research not to unreasonably delay the progress of either. It is clear to her that the current methodology used in her lab won’t work, and this new methodology will. Continuing along her current research path with the current methodology will impede the progress of her graduate students’ work, and her own research.

Discussion Questions:
1. What should Valerie do? To whom is her strongest obligation, her duties as reviewer or her students and her own research?
2. Suppose that without contacting the researcher Valerie decides to adopt the new methodology in her lab and does so with great success. She and her graduate students are ready to publish some findings, but Valerie also realizes that the researcher who proposed the new methodology has not yet published using the new methodology. Should she publish? If so, how should she credit the researcher who developed the new methodology?
3. Suppose that Valerie decides to contact the researcher who proposed the new methodology and asks if she might use it in her own lab, but the researcher is reluctant to let her use it, especially since he hasn’t fully perfected it yet, nor published it. He suggests she wait until he publishes on it, probably in a year or so. What should Valerie do in this circumstance?
4. Imagine you are a graduate student in Valerie’s lab. Also, suppose that despite her misgivings and the reluctance of the researcher who developed the new methodology Valerie decides to use it anyway. She comes to you and explains that she read about this new methodology while reviewing a grant proposal and thinks that you should adopt this new methodology because it promises better results and will save you much time. What should you do?
4. Plagiarism: A Matter for Interpretation?
A graduate student sits in front of a review committee consisting of three professors. He is accused of plagiarism on three separate instances. The first case was a laboratory report to his director in which he copied sections from published papers verbatim without citing the original source. The second was a draft proposal for a grant in which he admitted to lifting the entire literature review from another source. The third case of plagiarism involved paraphrasing large sections from published material for a paper that was going to be submitted to a mid-level journal. He is asked to explain himself. He says that he didn’t know plagiarism was wrong. English was not is primary language and he thought it would help to use existing information. No one explained to him what plagiarism is and why it was unacceptable. He was thought it was fine to borrow from existing scholarship. And in the grant proposal he explains that he would have come up with much of the same literature review on his own if he had done the literature search herself. No need to spend time duplicating the search when it is already available.

Discussion Questions
1. Is the student’s explanation defensible? If not, is there any defensible reason for “plagiarism”? Explain.
2. What is the responsibility of the professors (or program) to educate students about plagiarism and other forms of misconduct? What is the responsibility of the student to know about plagiarism and other forms of misconduct?
3. How should the committee deal with this case? Should the student be punished? Should the punishment depend on your degree or position: should a graduate student be more severely punished than a post-doc or a professor who is caught plagiarizing?
5. Authorship Responsibility

The misdeeds of the now discredited South Korean stem-cell researcher, Woo Suk Hwang, are well known. But the actions of his senior co-author, the American collaborator Professor Gerald Schatten, are less well known. Dr. Schatten, who is the director of the division of developmental and regenerative medicine at the University of Pittsburgh School of Medicine, was a collaborator with Dr. Hwang on several projects and was listed as senior author on one of the Science papers that were retracted after it had been determined claims made in the papers were based on fabricated data. Before the scandal broke, Dr. Schatten contacted the journal Science to withdrawal his name as senior author – a title that usually designates laboratory leader where the work was done and ultimate responsibility for resulting publications. A six-member panel from the University of Pittsburgh reviewed Dr. Schatten’s activities and reported that Dr. Schatten had not committed research misconduct, but he was reprimanded for lesser violations. The panel said he, “shirked” his responsibilities as senior author of an article found to be fraudulent, and that his actions represented “a serious failure that facilitated the publication of falsified experiments.”

The report also criticized Dr. Schatten for taking credit for the breakthrough research, but then attempting to evade responsibility when the study turned out to be based on fabricated data.

The Schatten case is reminiscent of two earlier misconduct cases involving two prestigious physics laboratories (both discussed in the class lecture on misconduct): Jan Hendrik Schön who was at Bell Laboratories and Victor Ninov at the Lawrence Berkeley national Laboratory were each found guilty of misconduct, for fabricating data in published research. Even though some questions were raised by the committees investigating the cases, the co-authors of the suspect papers were not found guilty of misconduct (in the narrow sense of FFP).

Prompted by the Ninov and Schön scandals the council of the American Physical Society, the leading professional physics organization, issued a set of revised and expanded ethical guidelines for researchers. It called for a community understanding that scientific misconduct “diminishes the vital trust that scientists have in each other” and that the public has for science. With regard to the roles and duties of authorship in scientific papers the committee acknowledged that in large interdisciplinary projects no one individual may be an expert in every aspect of the research, but that “All collaborators bear some degree of responsibility for any paper they author.” The guidelines continue: “While not all co-authors may be familiar with all aspects of the research presented in their paper, all collaboration should have in place an appropriate process for reviewing and ensuring the accuracy of the reported results, and all co-authors should be aware of this process.”

Discussion Questions

1. Does it seem suspicious Schatten withdrew his name – as senior author – just prior to the stem cell misconduct scandal. Do you think Schatten was acting ethically by removing his name? Are there any ethically legitimate reasons for withdrawal ones name from a controversial paper?
2. In the Ninov and Schön cases their co-authors were exonerated of any misconduct – they did not fabricate, falsify, or plagiarize information. Yet if they did not technically commit misconduct, did they still do something unethical? If so, what should they have done?
3. If no one individual in a collaborative project cannot be considered an expert in all aspect of the research, what should be the appropriate “process for reviewing and ensuring the accuracy of reported results”? Should journal editors and peer reviewers bear some of the burden of “policing” authorship responsibilities?
6. Senior Authors and a “Culture of Fraud”?

In his review of two books on scientific misconduct Richard Lewontin (Dishonesty in Science. The New York Review of Books 51(18), November 18, 2004) points to a neglected but “pervasive dishonesty in the practice of science that makes a certain level of intellectual corruption characteristic of the institution.” He is referring to the authorship credit that laboratory directors get as co-authors or “senior authors” on all papers that come out of the director’s laboratory even if the director performs no actual work on the paper. Although Lewontin recognizes considerable variation in practice across different laboratories, he paints a challenging picture of the role of laboratory directors in the production of research:

“Regardless of the actual involvement of the laboratory director in the intellectual and physical work of a research project, he or she has unchallenged intellectual property rights in the project, much as a lord had unchallenged property rights in the product of serfs or peasants occupying dependent lands. The chief product of a laboratory is in the form of published papers and the chief manifestation of the director’s intellectual property rights is that he or she will be coauthor on every publication from the laboratory, sometimes including even general review papers and book chapters written by subordinate group members.”

Laboratory directors may claim credit in virtue of obtaining funds that support the work of the laboratory, but Lewontin questions the ethical grounds for this exalted position. “But if laboratory directors as a matter of course claim authorship of work to which they have made no intellectual contribution or only a trivial one then they are, year in and year out, committing an intellectual fraud from which they reap immense rewards of ego, prestige, income, and social power. Moreover, by an unconscious affirmation on the part of the scientific community as a whole, these rewards grow autocatalytic.” Lewontin goes on to condemn this practice as a problem not just for individual laboratory directors, but as a cultural problem faced by the community of scientists, for they are all complicit.

“Scientists in training are conscious of the appropriation of credit for their work by senior scientists and they resent it but feel that they cannot protest. It is not that they place no value on the details of authorship. They will fight bitterly with colleagues of their own rank about who should be first author on jointly authored publications. Yet when they too become seniors they will engage in the same fabrications of intellectual credit. The fabrications and falsifications of scientific research that we condemn as fraud are carried out from the desire for fame, status, and economic reward. But the misappropriation of credit by senior scientists arises from the same motives. How can we expect scientists to hold literal truth about nature as an inviolable standard, when they participate, en masse, in a conscious everyday falsification about the production of that truth? That is an aspect of what Judson [Horace Judson, The Great Betrayal: Fraud in Science. Harcourt, 2004] calls “the culture of fraud” that is far more relevant to scientific honesty than the behavior of the executives of Enron on whom most scientists claim to look with disdain.”

Discussion Questions
1. Do you agree with Lewontin’s image of laboratory directors having “unchallenged intellectual property rights” to whatever comes out of their laboratory? Do you agree with Lewontin’s assessment that this amounts to intellectual fraud?
2. If a laboratory director’s only claim on a project is that he or she is the “principle investigator” on a grant that funds the project, is this sufficient to justify co-authorship on that project? What are the potential consequences of this practice for assigning credit and responsibility for publications?
3. Lewontin also implicates the entire community of scientists for perpetuating a “culture of fraud”. Do you agree with Lewontin that there is an inherent contradiction in this practice: pursuing truth about nature while at the same time being dishonest about the production of that truth?
4. If everyone does it, what is so wrong about the practice of giving credit to senior scientists who simply direct laboratory production and write grants to support the laboratory?
5. What is the practice in your laboratory or according to your director?