DEFINING THE ORDER OF AUTHORS: AN EXAMPLE

Perhaps the following example will help clarify the level of conceptual or technical involvement that should define authorship. Suppose that Scientist A designs a series of experiments that might result in important new knowledge, and then Scientist A tells Technician B exactly how to perform the experiments. If the experiments work out and a manuscript results, Scientist A should be the sole author, even though Technician B did all the physical work. (Of course, the assistance of Technician B should be recognized in the acknowledgments.)

Now let us suppose that the experiments just described do not work out. Technician B takes the negative results to Scientist A and says something like, “I think we might get this damned strain to grow if we change the incubation temperature from 24 to 37ºC and if we add serum albumin to the medium.” Scientist A agrees to a trial, the experiments this time yield the desired outcome, and a paper results. Technician B also provides some insights that contribute to the interpretation of the results. In this case, Scientist A and Technician B, in that order, should both be listed as authors.

Let us take this example one step further. Suppose that the experiments at 37ºC and with serum albumin work, but that Scientist A perceives that there is now an obvious loose end; that is, growth under these conditions suggests that the test organism is a pathogen, whereas the previously published literature had indicated that this organism was nonpathogenic. Scientist A now asks colleague Scientist C, an expert in pathogenic microbiology, to test this organism for pathogenicity. Scientist C runs a quick test by injecting the test substance into laboratory mice in a standard procedure that any medical microbiologist would use and confirms pathogenicity. A few important sentences are then added to the manuscript, and the paper is published. Scientist A and Technician B are listed as authors; the assistance of Scientist C is noted in the acknowledgments.

Suppose, however, that Scientist C gets interested in this peculiar strain and proceeds to conduct a series of well-planned experiments that lead to the conclusion that this particular strain is not just mouse-pathogenic, but is the long-sought culprit in certain rare human infections. Thus, two new tables of data are added to the manuscript, and the results and discussion are rewritten. The paper is then published listing Scientist A, Technician B, and Scientist C as authors. (A case could be made for listing Scientist C as the second author.)