

Armstrong is a first year graduate student, working in a molecular biology laboratory. She has great admiration for Hayes, who is just finishing his thesis work. He seems to have a golden touch in the laboratory. His experiments produce clean data, with scatter consistently less than or equal to theoretical predictions. Because his experiments seldom need to be repeated Hayes has produced a thesis full of fascinating and demonstrably correct results. The laboratory has already followed up on several of these with success. One day Armstrong notices Hayes leaving the scintillation counter and can't help noticing he has 80 vials. This barely registers in her subconscious until later in the day he shows her his experimental results with 40 data points. When she asks about the missing points, he explains that it is standard practice to eliminate "outliers" from the analysis. He goes on to mention that the scintillation counter is a scientific instrument that frequently produces murky readings distorted by many different kinds of factors. The more Armstrong thinks about this, the more distraught she becomes. A week later she summons up her courage and tells her story to the professor in whose lab she and Hayes work. He seems uninterested and irritated. He hoped she had come to present him her experimental results, which she hasn't done for several months.

What should Armstrong do next, if anything, and why?

MODERATOR'S ANSWER: Scientific research critically depends upon accuracy in the reporting of experimental data. Although a first year student, Armstrong has a responsibility as a scientist --in her case, as a scientist in training --to maintain the integrity of the research process. This means that she must not simply drop the matter of her concerns about Hayes' research methods. She should raise the issue again with her professor, emphasizing, if she didn't do so the first time, that she doesn't wish to accuse Hayes of fraud. Instead, she should convey to her professor that as a first year graduate student it is very important to her to understand the standards of acceptable practice in her field with respect to the reporting of data. If her professor still is unresponsive the Armstrong should raise the matter with Chair of her department.

Case from the March 6, 1997 Intercollegiate Ethics Bowl. Copyright Robert Ladenson, Center for the Study of Ethics at the Illinois Institute of Technology, 1997.