

**RCR Topic:** Management of Research Data  
& Continuum from Research Integrity to Research Misconduct  
& Mentor/Trainee Relationships

**Title:** Shut Up!

**Case:** Dr. Berg has spent the majority of his research career investigating liver diseases. About 5 years ago, Dr. Berg has published a paper in a prestigious journal, describing the effects of nuresin on hepatocyte function. Since then, Dr. Berg has been pursuing the mechanisms of nuresin action in depth. He has successfully published several other papers, and last year he has obtained NIH funding supporting the continuation of these studies.

Mike is a graduate student who has recently joined Dr. Berg's laboratory. A senior student, Debbie, is teaching Mike how to perform the assay measuring a specific hepatocyte function in the presence of nuresin and various receptor antagonists. They are using the protocol that was designed when Dr. Berg's assistant first attempted measurement of the hepatocyte function and first tested nuresin, 5 years ago.

Mike is trying to understand the measurement and he asks Debbie about the composition of the "solution B" used at the critical measuring point of the assay. Debbie shows him the recipe used for solution B. Mike notices that this solution is not controlled for pH. He asks Debbie whether she or anyone else has ever checked the pH and Debbie says that it is probably fine and that he shouldn't worry about it.

Months later, while doing literature searches on liver function for his PhD dissertation proposal, Mike reads an older research paper describing the pH sensitivity of hepatocyte function measurements and he remembers his dilemma concerning solution B. At this point, Mike has already been assigned a portion of the grant project and is performing the experiments by himself. He decides to measure the pH of solution B and he discovers that it is below normal. He then does an experiment testing the effects of nuresin on hepatocyte function and he discovers that if solution B is at normal pH, no effect of nuresin can be observed.

Mike informs Debbie about his finding. Debbie points out to Mike that all her papers and PhD research, as well as Dr. Berg's NIH grant, are based on the results obtained from that assay and are thus in jeopardy. Nevertheless Mike decides to inform Dr. Berg. Dr. Berg appears very upset and tells Mike that they will discuss this later. However, several weeks have passed and Dr. Berg has not mentioned this incident in the lab meetings. Debbie and Dr. Berg's assistant continue their experiments using the old protocol. Mike asks Debbie again about this and she advises him to forget about the

control experiment he had conducted, and instead focus on his PhD dissertation proposal.

**Discussion Questions:**

1. What concerns do you have about communication, collegiality, and mentoring within Dr. Berg's research group? Explain.
2. What concerns do you have about the accuracy and integrity of the research results related to the nuresin studies? To what extent (and why) would journal readers and other colleagues care about the accuracy and integrity of these results? How might a carefully maintained laboratory notebook help to resolve Mike's concerns?
3. Has Mike behaved responsibly up until this time? Are there any additional actions he should have taken? Did he do anything he should not have done?
4. What should Mike do at this time, giving consideration to his status as a new graduate student in Dr. Berg's research group?
5. What would you do now if you were Debbie?
6. What would you do now if you were Dr. Berg?
7. How could this problem have been avoided?
8. Does this problem constitute questionable research practices, unacceptable research practices, or research misconduct? Explain.
9. Where could Mike (or Debbie or Dr. Berg) find additional information or help with respect to this situation?