

PERCSS: Program for the Ethical and Responsible Conduct of Science and Scholarship

RCR CASE STUDIES AND QUESTIONS

Introduction to Ethical and Responsible Research

CASE I | Created by: Samantha King

Patricia is preparing a research proposal to obtain funding for her dissertation. Her faculty advisor provided input on the experimental design and reviewed and commented on the proposal prior to submission.

Six months after graduation, Patricia comes across an article written by her faculty advisor that uses ideas and text taken from her proposal. Patricia is given a general acknowledgement at the end of the article.

Did the faculty advisor behave ethically?

What should Patricia do now?

CASE II | Created by: Samantha King

Jay's mentor gives him a copy of a manuscript that he has been asked to review for a journal and asks Jay to produce a written commentary of the work. Jay reads the manuscript and finds it very interesting. In fact, the paper describes an innovative technique that Jay would like to use in his current research project. Jay forwards a copy of the manuscript to his collaborator and asks for his opinion on the usefulness of the technique.

Who has behaved inappropriately?

Is it ethical for Jay to use the technique described in the manuscript in his current research project?

Collaborative Research

CASE I | Created by: Samantha King, Linda Larson-Prior, PhD, Linda Cottler, PhD

Ling has an interesting idea for a future research project and decides to talk it through with her colleague Patrick. Patrick suggests some ways to improve her hypothesis and provides advice on her funding proposal.

During the project, Patrick continues to provide suggestions and comes to some of Ling's lab presentations. He even offers the use of several cell lines maintained by his lab to help her strengthen her hypothesis.

The project produces some very promising results and Ling prepares a manuscript for publication in a prestigious journal. She shares the manuscript with Patrick, who argues strongly that he should be included as a co-author.

Are Ling and Patrick collaborators?

Does Patrick deserve authorship on the manuscript?

Data Ownership, Acquisition, Sharing, and Management

CASE I | Created by: Joe Henry Steinbach, PhD, Jonathan M. Green, MD, Sandra Hale, PhD, Erik D. Herzog, PhD, Samantha King, and Frederick Sweet, PhD

As part of Sam's postdoctoral research, he develops a computerized task that measures the ability of spatial navigation ability of humans. He conducts a cross-sectional study of individuals ranging in age from 15 to 85 years, with an equal number of men and women. When he looks at the performance by age and sex, he is immediately drawn to the striking difference between the youngest and oldest groups. Indeed, an analysis of variance using only the data from the youngest and oldest groups (the extreme groups) reveals a significant interaction between age and sex. However, when all his data are analyzed together, there is no indication that there is an interaction between age and sex.

He discusses the data and analysis with his adviser, who recommends that he first publish the data from the analysis of the two extreme groups and propose that hormonal age differences are the mechanism underlying the (apparent) interaction. After that, he suggests Sam should publish a second article with different conclusions based on the regression analysis of all the data. Sam follows his advisor's suggestions. He does not mention the first paper in the second paper.

What did Sam do wrong?

Has Sam committed research misconduct?

CASE II | Created by: Joe Henry Steinbach, PhD, Jonathan M. Green, MD, Sandra Hale, PhD, Erik D. Herzog, PhD, Samantha King, and Frederick Sweet, PhD

Abe is working on a new research project, which he is just certain will produce positive results. However, as he begins to run experiments, the results are never consistent. Sometimes factor A enhances expression of the reporter, but sometimes not very well. Sometimes B enhances, and sometimes the combination produces very strong (more than additive) effects. There are times when even the controls are too high. Finally, he gets one experiment to prove his hypothesis. Abe is elated.

What should Abe do now?

Mentor-Trainee Relationships

CASE I | Created by: Linda Larson-Prior, PhD, Samantha King, Linda Cottler, PhD

Dr. White has a strong reputation as an academic researcher in his field. Melissa arrived several weeks ago to start her postdoctoral fellowship and Dr. White has been assigned as her mentor. From Dr. White's reputation, Melissa thought it would be a good fit for her, considering the goals she has outlined in her development plan.

Upon arrival, she was surprised to learn that Dr. White's graduate students and his senior post-doc have recently left for new positions and Dr. White is extremely busy and frequently traveling. Since arriving, Melissa has only spoken with him once concerning her responsibilities, which include preparing materials for and teaching Dr. White's undergraduate classes when he is traveling. She has received no direction or guidance to help acclimate to the university or continue her own research.

What could Melissa have done to prevent this situation?

How can Melissa ensure that she receives appropriate mentoring?

CASE II | Created by: Linda Larson-Prior, PhD, Samantha King, Linda Cottler, PhD

Peter has been working to perfect a new technique that he is certain will improve his chances of getting novel and exciting results. He has been in the lab 7 days a week, generally 14 hours a day and has been so busy that he has cancelled many progress meetings with his mentor.

After 7 months of hard work, Peter decides to talk to his mentor about presenting his data at an international meeting. When he takes his results to the mentor, he is told that the progress he has made is not significant enough to present. In addition, the mentor believes that continuing to work on the project would be a waste of Peter's time. Peter is completely shocked and frustrated.

What should Peter do now?

What aspect of mentoring could have best prevented this situation?

Did Peter receive good mentoring in this situation?

Peer Review

CASE I | Created by: Erik D. Herzog, PhD, Jonathan M Green, MD, Sandra Hale, PhD, Samantha King, Joe Henry Steinbach, PhD, Frederick Sweet, PhD

A professor receives a request from a prestigious journal to participate in a review of a manuscript and decides to accept the invitation after reading the abstract. After receiving the complete manuscript, he discovers the work includes a considerable amount of statistics to explain the concepts and outcomes of the study, something not apparent in the abstract. The professor knows that he does not have the necessary training to provide a competent and responsible review of the manuscript's statistical component. Because the reviewer does not wish to retract his agreement to review the article, he asks the department's consulting statistician if she would be willing to provide assistance. Although the statistician agrees to provide input, she suggests that her contribution should be acknowledged. Because the professor is the reviewer of record, he feels that it would be unnecessary to disclose the statistician's assistance.

Which of the three requirements of ethical peer review is in danger of being violated: Objectivity, Confidentiality, or Competence?

How should the professor proceed?

CASE II | Created by: Erik D. Herzog, PhD, Jonathan M Green, MD, Sandra Hale, PhD, Samantha King, Joe Henry Steinbach, PhD, Frederick Sweet, PhD

Dr. L. has been asked to review the work of a graduate student who has submitted a manuscript to the major journal in her field. She is familiar with the student's work, which overlaps substantially with the research of students in her lab. Dr. L. knows she is qualified to do the review and is confident she can provide an objective, constructive judgment of the student's work, however she is concerned about the appearance of a conflict of interest.

Which of the three requirements is Dr. L. concerned about: *Objectivity, Confidentiality, or Competence?*

Who should Dr. L. consult for advice on this apparent conflict of interest?

Research Conflicts of Interest

CASE I | Created by: Samantha King, Jeneane Braden

Dr. Abernathie is a faculty member with ownership interest in SmartBrands, a market research company. SmartBrands is sponsoring a large research project at the University and Dr. Abernathie is the project director. Dr. Abernathie supervises the research of a graduate student, Bob, who is working part time on research related to his graduate thesis. SmartBrands hires Bob as a consultant to help with the research. Dr. Abernathie also serves on Bob's thesis advisory committee.

Do Dr. Abernathie or Bob have any potential conflicts of interest?

How should this situation be managed?

CASE II | Created by: Samantha King, Jeneane Braden

Dr. Jung developed a new implant, which was patented by his university and licensed to Tech Industries. Dr. Jung currently receives less than \$5,000 in royalty payments from the university for the license of the device. Tech Industries approaches Dr. Jung and asks him to lead the phase II clinical study evaluating the efficacy of the device.

Does Dr. Jung have a potential conflict of interest?

What are the risks if he is permitted to lead the research?

How should this situation be managed?

CASE III | Created by: Samantha King, Jeneane Braden

Dr. Shelbey is a full time faculty member. He earns \$9,500 in consulting fees yearly from Medi-Pharm, a pharmaceutical company where his wife works as the Director of Research Development. Dr. Shelbey also has an active grant funded by Medi-Pharm to study immune responses in mice. In addition to lab personnel, Dr. Shelbey has two trainees working on the research.

Does Dr. Shelbey have a potential conflict of interest?

How should this situation be managed?

Research Integrity

CASE I | Created by: Samantha King

Upon completion of his graduate thesis, George's mentor and collaborator agreed to work with George to submit the manuscript for publication. After graduation, George moves to a new institution to begin his postdoctoral fellowship. While conducting a literature review for a new research proposal, George finds a journal article that closely resembles his graduate thesis. George's previous mentor and collaborator are both listed as authors and George is given a general acknowledgement at the end. George compares the publication to his thesis and discovers that almost all of the text and the figures, consisting of a graph and a table, are taken directly from his work.

What have George's mentor and collaborator done wrong according to WUSTL policies?

What should George do now?

Responsible Authorship and Publication Practices

CASE I | Created by: Erik D. Herzog, PhD, Samantha King, Joe Henry Steinbach, PhD, Frederick Sweet, PhD

During an analysis of patient records, you uncover two unique correlations in the data. Both correlations are statistically significant. You decide to write two separate papers, which you submit to two different journals. In each manuscript, you describe the data for the particular correlation you consider, and do not refer to the other data or manuscript. Both manuscripts are eventually published.

When presenting the results of your study at a conference, you are asked why you did not correct for multiple comparisons. You argue that no correction was necessary since each paper was about single comparisons.

Should your publication refer to other publications using the same data?

Should you have corrected for multiple comparisons?

Did you behave in an ethical manner?

CASE II | Created by: Jonathan M Green, MD , Sandra Hale, PhD, Erik D. Herzog, PhD, Samantha King, Joe Henry Steinbach, PhD, Frederick Sweet, PhD

You start a new research project based upon some experiments conducted by a graduate student who has recently left the group. The project is quite interesting and, because of your work, the research is expanded. The new experiments include transgenic mice (provided by another group) and some novel pharmacological agents (obtained by your advisor through his contacts with industry).

By the time you write the paper, none of the original data from the student's work (which is unpublished) are included. Your manuscript does describe the student's results in the Introduction, and the student also reviews and corrects some of the Methods section and provides copy editing for the entire document.

How should you acknowledge the contributions of the graduate student?

Which one of the following should be listed as an author on the paper?

About PERCSS

The case studies above were written by members of three Washington University faculty task forces as part of an initiative to develop educational content for eight online learning modules related to the responsible conduct of research (now named PERCSS – Program for the Ethical and Responsible Conduct of Science and Scholarship). PERCSS modules are currently available to the Washington University research community. For more information and to access a public version of one of the PERCSS modules, please visit the PERCSS website at <http://percw.wustl.edu>.

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