Designing a Course in RCR

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This is where it becomes important to keep in mind the differences between being an ethical person and knowing how to be an ethical professional – while there may indeed be some overlap between these, learning how to be an ethical professional requires both learning and practice in an open and encouraging environment.

Encouraging Discussion

In short, the goal of active learning of research ethics depends largely on encouraging discussion.

Content

- Can we cover everything?
- Should we cover specific topics or general principles?
- Should we focus on imparting knowledge or developing skills? Changing behaviour or attitudes?
- How do we decide relative importance of the topics?

Content

- Who is the target audience and is this knowledge or skill or behaviour or attitude deficient in some, many, or all members of the target audience?
- Is the magnitude of the possible impact of the training sufficient to warrant the training?

Methods

- Case studies
- Role play
- Current events
- Debates
- Question based lectures
- Case driven lectures
- Surveys

Case-based Discussion

Assume that it is two years from now and you are preparing to publish a paper based on some of the work you are currently doing. In addition to the work that you have done on the project, a graduate student, Galen Siang, from a different discipline than your area of expertise had also been included to provide a complementary data important to the research project.

Case contributed by Dr. Michael Kalichman

You have just finished writing a first draft of the paper based on this work and you have distributed the draft be e-mail to your three co-authors: the head of the research group (Robin Gorsky), Galen Siang and Galen's thesis advisor (Tomas Allen). Professor Gorsky has quickly responded to you by questioning some of your results and those of Galen. She wants to see the raw data from both of you.

You contact Galen for his data and, after getting no response, you try Professor Allen. He tells you that Galen has apparently abandoned a career in science. When you ask to see Galen's data, Professor Allen appears reluctant to provide it to you.

After several weeks of discussion, both Professor Allen and Professor Gorsky have become sufficiently angry with one another that all dialogue has broken down. Professor Gorsky is insisting that the data for the project belong to her and she will not publish with Professor Allen, but Professor Allen insists that he will not publish with Professor Gorsky.

Related questions:

Data are typically central to what many of us do as researchers or scholars. In that context, and using the case as a starting point:

1. what products of research might be needed to verify the integrity of what had been done?
2. What are some of the good practices necessary for the integrity of data acquisition?
3. Who owns the data? And what does data ownership mean?
4. In practice, what are the rights and responsibilities for of researchers for data ownership?

Question based lecture: Authorship

- What does it mean to be an author of an academic publication?
- Why is authorship important to academics?
- What are the criteria for authorship?
- Are there written guidelines or rules for authorship? What are they? Who wrote them? Are they typically followed? Are they cross-disciplinary?

Question based lecture

- If there is more than one author, what is the significance of the order of authorship?
- Other than authorship, how can credit be given to someone who has made an important contribution?
- What can be done to minimize the risk of disputes about authorship?
- What can be done if you have a dispute about authorship?

Case analysis

A case analysis consists of a clear and brief (e.g., no more than 500 words) identification of the ethical dilemma(s), of those who have an interest in the outcome of the case, of their interests, the principles underlying a proposed solution to the case, and acknowledgement of alternate resolutions to the case.

From research-ethics.net

Case analysis

Based on real or contrived scenarios, case studies are a tool for discussing scientific integrity. Cases are designed to confront the readers with a specific problem that does not lend itself to easy answers. By providing a focus for discussion, cases help trainees to define or refine their own standards, to appreciate alternative approaches to identifying and resolving ethical problems, and to develop skills for dealing with hard problems on their own.

From research-ethics.net

Case analysis

Who are the affected parties (individuals, institutions, a field, society) in this situation?

What interest(s) (material, financial, ethical, other) does each party have in the situation?

Which interests are in conflict?

From research-ethics.net

Case analysis

Were the actions taken by each of the affected parties acceptable (ethical, legal, moral, or common sense)? If not, are there circumstances under which those actions would have been acceptable? Who should impose what sanction(s)?

From research-ethics.net

What other courses of action are open to each of the affected parties? What is the likely outcome of each course of action?

For each party involved, what course of action would you take, and why?

What actions could have been taken to avoid the conflict?

From research-ethics.net

It should be noted that the focus is on ethical decision-making (a process) rather than ethical decisions *per se* (an endpoint). The clearest instance of a *wrong answer* is the failure to engage in that process. It is always unacceptable to have made no reasonable attempt to define a consistent and defensible basis for conduct.

From research-ethics.net

An anthropologist has been studying for several years a Native-American community that lives on an island off the coast of Canada. The community is currently involved in a dispute with the Canadian government concerning the ownership of the island. The community claims that they have been living on the island for hundreds of years, long before any white settlers arrived in Canada. In her discussions with some of the elders of the community, the anthropologist is able to get a better estimate of how long they have been living on the island. She discovers that they actually arrived on the island a little more than 100 years ago. This fact, if disclosed to the public, would undermine their ownership claims.

From *Responsible Conduct of Research*
Adil Shamoo and David Resnik
Oxford University Press: New York 2003

Petra, a new assistant professor, is preparing to submit her first paper since joining the faculty. One of the figures for her paper is a photograph of an ethidium bromide-stained agarose gel. The gel contains the products of PCR-amplified whole-cell DNA, and the photograph displays the predicted 3-kb DNA fragment. However, Petra comments to you, her faculty colleague, that a second, minor signal was also evident on the original gel. Based on its size, Petra believes that this second fragment represents a very exciting discovery, but it needs considerable additional work.

This second fragment cannot be seen in the photograph. Petra discloses that this is because she deliberately prepared an underexposed print to obscure the second fragment. She says she did this because she is worried that competing groups in larger, more established labs will recognize the potential of the second fragment and will "scoop" her. She has prepared a figure legend that says: "a second, minor signal of unexplained origin was present in this experiment but is not visible in the photograph."

But the figure legend does not indicate the size of the unexplained fragment. Thus, she argues she will be telling the truth while protecting herself from this competition.

Adapted from

Francis L. Macrina

Scientific Integrity: Text and Cases in Responsible Conduct of Research

3rd Edition

ASM Press: Washington DC

2005

Closing Discussion

- **What do you want to accomplish? What are your goals?**
- **What is already in place to make that possible?**
- **Who else do you need to involve?**
- **What to you need to do next?**

Thank you!