

Case Study

Creating Individual Awareness about Responsible Conduct in Research: A Case Study of One Institution's Approach for Researchers and Administrators

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Abstract

Fiduciary responsibility, ethical conduct, compliance – If you are a recipient of federal funds, you have seen the increased focus on these issues. Headlines that broadcast “falsified results,” “scapegoats,” “whistleblowers,” “scientific hoaxes,” and “misconduct in investigations” have increased the awareness of legislators and taxpayers of the potential for misappropriation of funds, misuse of research subjects and falsification of data. In an attempt to educate future scientists on what constitutes responsible conduct in research, federal funding agencies are strongly urging that recipients of federal funds train researchers in ethical conduct. At the Institute of Ecosystem Studies (IES), we have used a forum of discussion groups centered on case studies to address not only these issues but the more subtle behaviors than can impact researchers and their research. These case studies, developed for our program by our staff, go well beyond the obvious black and white breaches of ethics such as plagiarism, to explore the gray area of day-to-day behaviors that alienate or exploit colleagues. While these case studies raise difficult issues within our scientific community, they provide a non-threatening avenue for discussion about complex and often contentious topics which are less clear cut, sometimes more insidious, and can be harder to resolve. At IES responsible conduct is viewed as encompassing more than just deliberate and illegal acts of fraud and misconduct. Responsible Conduct includes the interactions of colleagues, peers, senior staff and junior staff and how these interactions impact scientific research, careers and collaborations. It is our belief that this forum for Responsible Conduct in Research Education can serve as a model for other institutions and their administrators and research staff either as a standalone resource or as part of a broader educational program, and that the topics covered in our discussions should be an integral part of any responsible conduct program.

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Introduction

Scientific research is increasingly being conducted in the public spotlight and the public is often frustrated by conflicting scientific results. The confusing stream of information surrounding a research topic often provides an example of science working properly since the accumulation of new data often leads to a new interpretation of existing results. Other times, new methods and data display earlier honest mistakes in the scientific approach taken to address an issue. But reversals in scientific knowledge due to deliberately misleading data are very damaging to the image of science. The public finds these types of reversals disquieting and begins questioning the expenditure of tax dollars on research. Furthermore, misconduct in any field of study can taint public trust of scientific research and delay implementation of policy on critical issues such as preventing the release of toxins into the environment or mitigation of global climate change.

Behavioral misconduct toward colleagues also impedes the progression of science and the participation of people from traditionally underrepresented groups. Many scientists are discouraged or quit because they encounter undue hostility towards novel ideas, exploitation of subordinates, co-option of other's ideas, or alienation of people in differing lifestyle, gender, race or cultural identity. The "relaxed" nature of the scientific enterprise often facilitates misconduct.

Responsible research has been defined (Steneck and Zinn 2003) as research built on commitment to important values, which include honesty, accuracy, efficiency, and objectivity. These values define the meaning of integrity in research. Responsible conduct should be a determinant in how research is performed and the practices that are followed. In order to infuse the research and education process with ethical, responsible behavior, both individuals and communities must explore and identify their own ethical values.

Federal agencies and institutions share the responsibility for the research process

and provide guidelines on responsible conduct through laws, institutional practices, non-binding codes and guidelines of professional organizations. However, the enforcement of expectations for responsible conduct ultimately relies on individual researchers and the community dynamics they create. For example, research mentors impart their perspectives and values to their mentees through interactions in their laboratory groups—behavior that may never be consciously examined but that may play a large role in the development of interactions among mentees. Because of this, federal agencies are strongly advocating that individual institutions be responsible for educating their employees on what constitutes responsible conduct and strongly encourage researchers, both seasoned and new, to participate in these programs. One of the first topics of discussion at IES focused on mentoring relationships, and later discussions touched on how mentoring relationships can either positively or negatively impact young scientists and their careers. The case studies were designed to foster discussions on positive and negative mentoring practices, how individuals behave in power situations, and the impact of these practices and behaviors.

IES Approach to Ethics Education

Institutions bear the responsibility of providing education that raises the awareness of both neophyte and seasoned researchers to recognize behaviors that can negatively impact collaborations, on any and every level, and suggest ways of overcoming and dealing with these behaviors. Providing education on Responsible Conduct in Research (RCR) has been a challenge for some institutions because of limited resources, limited funds, and staff availability. This important topic needs to be presented in a manner that will capture the attention of the research staff, serve as a catalyst for bringing to light unproductive undercurrents, and facilitate productive discussions that will uncover and begin to resolve conflicts. Regardless of the size of

the institution, there are always resources, such as staff expertise or online resources, available to educate the staff about existing problems and potential solutions. Sometimes it is just a matter of being creative in the use of these resources.

Methods to provide responsible conduct in research training range from full courses to single classes and discussion units. During the 2003-2004 academic year the, Institute of Ecosystem Studies utilized an existing discussion group forum to meet monthly and present case studies for discussion. A mix of postdocs, staff scientists, research assistants, and members of the administrative staff attended the discussions and presented varied reactions to and perspectives on the problems presented in the case studies. These case studies were, for the most part, written by a cross section of IES research and administrative staff and were based on the premise that responsible conduct goes deeper than plagiarism, falsification of data or theft of ideas. They were designed to delve into core individual values and how they shape research interactions and to explore the institutional role in the process. A basic premise was that irresponsible conduct could severely hamper scientific progress.

The goal in providing a series of discussions on RCR was to provide more than a course in ethics. It was to give staff members an open forum to examine, share and discuss problems and concerns. The discussions made the IES community aware of how behaviors negatively and positively impact collaborative relationships. They also made us aware of how important it is to examine and re-examine these interactions so that the parties involved do not lose sight of how their actions and interactions affect each other and the project.

Most of the case studies (available at http://www.ecostudies.org/responsible_conduct.html; see Appendix) were specifically designed to be thought provoking by focusing on the nuances of human interactions rather than the more obvious and deliberate instances of misconduct. In particular, the case studies written by IES research and/or administrative staff were designed to delve

into the ways in which individual values shape research interactions. As a secondary goal, many case studies were written to encourage discussion of institutional responsibilities not only in setting guidelines for behavior but also in the development of an atmosphere of trust and respect. These case studies left the reader free to interpret the problems and behaviors of the individual characters and led to many honest debates on how the problems should be addressed and solved. The participants often discussed similar situations in their own careers and the impact that the behaviors or problems that they had with mentors or colleagues had or could have had on their research or their careers. Often the discussions were insightful and stimulating, and all discussions continued beyond the scheduled meeting time. The reactions of participants depended in part on their experience; some considered the discussions new and interesting, while others who had been in situations similar to those in the case studies often found the discussions painful or frustrating. The most positive aspect to these discussions was the opportunity to discuss problematic topics more openly in a somewhat neutral setting. To the extent that these case studies might open awareness among scientists, staff and administrators, they can be used as a somewhat neutral vehicle for exploration of difficult topics. In the long-term, only self-examination of personal values and prejudices can change individual behavior and contribute to ethical behavior within a community.

A common theme throughout many of the case studies was how individuals, colleagues, and institutions should cope with cases of misconduct in which one powerful individual hampers the welfare of another with less status. Cases ranged from co-option of ideas, improper attribution of co-authorship, and sexual or racial discrimination. In all cases, it was clear that power inequalities exist not only among colleagues at different career stages, but also within the same career stage, when one wields more political power within the field or institution. Many participants agreed that in situations with power imbalances, the person on

the losing end was most likely to accept the loss and move on, because attempts by them, or on their behalf, to question the behavior of a more powerful colleague could further jeopardize their career and reputation.

Repeated discussions on this topic made it clear that in order to enforce ethical conduct among colleagues and create an atmosphere that is fair and just, it is essential for the overall community to use peer pressure on their misbehaving colleagues, and to stand behind those who have been placed at a disadvantage by those in power. Institutional authorities need to be very clear that damaging behaviors will not be tolerated, and they need to provide a clear course of action for conflict resolution.

Communication Is the First Step

The many discussions emphasized the fact that difficult issues of personal conduct in scientific research are best addressed through clear communication among all participants, their supervisors, and institutional administrators. Effective communication can be successful only in an atmosphere of trust, openness, and respect. The lines of open and honest communication are often intentionally closed because academics are often too busy to discuss topics that require a great deal of time, thought, and energy and because the topics are not considered to be immediately contributing to their career productivity, even though these issues are often central in the longer term.

In many of the case studies, participants perceived the situations differently, and those differences in perception led to differing opinions about the correct course of action. Discussion of these topics made participants aware of how some seemingly innocent behaviors could have harmful effects on some members of the community. For example, when a powerful leader in a scientific discipline makes sexual advances towards a younger colleague at a meeting, it is not simply a matter of the person's "having fun," because more often than not, the younger colleague feels de-valued for their

scientific accomplishments and worries that their responses to these advances could jeopardize their career in a system based on peer review by influential members of the field. The outcomes of the discussions emphasized that one should be careful not to make assumptions about other people's perceptions; a clear understanding of a situation requires a dialogue between the parties involved. One of the most enlightening and surprising revelations of the discussions was the fact that, although some staff members had worked side by side for over 15 years, they were unaware of how their co-workers would respond to or felt about many of the issues. On more than one occasion one person would say, "The answer to that is simple and obvious; it is this," while another participant would say, "I, too, thought the answer was obvious, but it was not this; it is definitely that."

Conclusion

The goal of the discussions was for IES to respond to an institutional and national need to identify institutional problem areas regarding responsible conduct in research, issues that many researchers face at some time during their careers. Perhaps the more important outcomes were that, through discussions, it appears possible to begin to open the lines of communication and to help the members of our scientific community evaluate their behavior. Understanding the effects of one's behavior on others helps strengthen the good behaviors and recognize and re-evaluate the less than positive ones.

We discovered that using the case study approach is a good way to begin discussions that assist the administration to understand institutional problems as well as aiding in the development of policies. It is a model that most institutions can use and benefit from. Postdocs and research specialists participating in the discussions found that the problems they were experiencing were not novel, and they benefited from sharing experiences and possible solutions with their peers and senior staff members. Senior staff

members were often forced to re-examine behaviors and view them from the perspective of those most affected by them. Although often no definitive solutions to many of these problems exist, participants began to recognize the tools needed to improve their handling of difficult situations. These tools can be invaluable to a researcher's career and present and future collaborations.

IES has made a good start, but it is just a beginning of a long process. The discussions need to continue to keep the dialog open. Individuals and institutions must be open to carefully evaluate and modify their behaviors and attitudes. As an institution, we must remain keenly aware of the possibility for these collaborative and mentoring relationships to go awry, and to prevent harmful situations by providing a forum for conflict resolution and creating an atmosphere that fosters positive interactions among colleagues. The growing emphasis on collaborative relationships coupled with limited funding resources and the need to nurture innovative scientific research makes it essential that institutions attract and retain talented scientists and foster a productive, stimulating atmosphere in which the research of many individuals can flourish.

References

Steneck, N., & Zinn, D. (2003). *ORI Introduction to the Responsible Conduct of Research*. Washington, DC: Department of Health and Human Services, Office of Public Health and Science, Office of Integrity.

Appendix

Snapshot of Case Studies Topics on the IES Web Site

January 11, 2005
Harassment, Worship, Admiration or Imagination? - Led by Marie F. Smith, CRA
[Case Study](#) —Written by Marie F. Smith, CRA (IES staff)

June 16, 2004
On Being a Responsible Scientist - Led by Dr. Clive Jones

[Case Study](#) —Written by Dr. Clive Jones; Marie F. Smith, CRA; Kathleen Wallen & Dr. Maria Uriarte (IES staff)

[Additional reading 1](#)

[Additional reading 2](#)

May 13, 2004
Personal Conduct & Harassment - Led by Dr. Maria Uriarte

[Case Study](#) —Written by Dr. Maria Uriarte; Dr. Holly Ewing; Dr. Kathleen Weathers; Dr. Valerie Eviner (IES staff)

April 22, 2004
The Other Side of Collaboration: Maintaining the Balance of Power—Led by Dr. Valerie Eviner and Ms. Marie Smith

[Case Study](#) —Written by Marie F. Smith, CRA; Dr. Valerie Eviner; Dr. Kathleen Weathers; Dr. Holly Ewing (IES staff)

April 2004 - Presentation to the Board of Directors
Mentoring & Ethics - Led by Drs. Holly Ewing and Maria Uriarte

[Case Study](#) —Written by Dr. Maria Uriarte; Dr. Holly Ewing; Dr. Valerie Eviner; Dr. Kathleen Weathers (IES staff)

March 18, 2004
Collaboration - Co-Led by Drs. Valerie Eviner and Kathleen Weathers

[Case Study](#) —Written by Dr. Valerie Eviner; Dr. Kathleen Weathers; Dr. Holly Ewing (IES staff)

February 19, 2004
Publication & Authorship
Led by Dr. Jonathan Jeschke

[Case Study](#) —Written by Dr. Jonathan Jeschke (IES staff)

[discussion in the mailing list ECOLOG-L](#)

January 15, 2004
Ownership of Research Materials - Led by Dr. Peter Groffman

[Case Study](#) — Stanley G. Koremann and Allan C. Shipp, Eds, Teaching the Responsible Conduct of Research Through Case Study Approach: An Handbook for Instructors, Association of American Medical Colleges, 1994.

[Data Access Policy for the LTER Network](#)

December 18, 2003
Mentoring & Ethics -Led by Dr. Maria Uriarte
[Case Study](#) —Written by Dr. Maria Uriarte; Dr. Holly Ewing; Dr. Valerie Eviner (IES staff)