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Responsible Conduct of Research Role-Plays: Authorship

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Responsible Conduct of Research

Role-Plays

Authorship

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Using Role-Plays in Ethics Education
Role-playing can be a powerful learning experienceand stimulate lively discussion and debate. However this active learning technique, which most people are unfamiliar with, can also make participants feel awkward and uncomfortable at first. The key to its use is to introduce and frame the technique to any group before starting.

Note to Moderator:
After the workshop participants should receive as a handout the section labeled "Resources." That section also includes a summary of the role-play.

Introduction (2-3 minutes)
We generally start a session by talking about the technique and why we use it. We often label it as "experiential" or "active" learning as we talk about it. This introduction can be done relatively quickly and will improve the participation and comfort level of the group.

Points we make include:

- Role-playing is a type of active learning technique. As such, it promotes deep learning, long-term retention and can be very memorable and powerful
- Participants might feel awkward at first, but they are encouraged to participate as fully as possible. The more authentically they engage in their role the more they will learn
- There are no "right" answers in role-plays
- Participants are not being graded
- The purpose of the exercise is to provide an active learning experience in a safe setting where ethical issues can be explored without being about a real problem
- Because role-plays (or simulations) are participatory, educators believe that the information learned will be retained longer and will be more easily accessible in the future if it is needed
- This training will help participants be prepared to recognize and address ethical problems. By grappling with the sorts of ethical problems that arise regularly in professional life in this safe, non-threatening role-play setting, participants can think through the problem and gain some skills and tools to use should they ever encounter such a problem. We think of this as an "inoculation model." By practicing these conversations you become "vaccinated" and thus better able to resist confusion and anxiety when questions of ethical research arise.
- These scenarios are based on real situations that real people encountered. (You cannot make this stuff up.)
- After the role-play we will discuss the experience. We also will discuss the outcome of the real-life situation upon which the role-play is based, where possible.

For anyone who is truly too uncomfortable to try it out, we have an observer role. The observers are expected to take notes as they watch others do the role-play and then to provide comments back to the other participants in their group at the end of the process.

Instructions (3-5 minutes)
After introducing the technique, we give the group instructions and an overview of the procedures.

1) Materials should have been copied in advance on different color paper, so the roles are easy to distinguish. For example, the professor role might be on blue paper, the student on yellow paper, and the observer role on green paper. **Participants know only what is in their own roles, and have no information on what is in the other roles; that comes out as the session proceeds. Decide in advance whether you will be distributing the discussion starters with the roles. If you are, the discussion starters for each role (and only that role) should be on the same color paper as the role.**

2) Ask participants to divide into groups of two (professor/administrator and student) or three (professor, student, and observer). Each group must have one each of the two main roles (professor/administrator and student).

3) Announce that everyone will start together and end together. (This keeps the noise level down while directions are being given.)

4) When partners have been selected, hand out the roles and discussion starters. Participants are not obligated to use the discussion starters, but it does make the exercise less daunting for many.

5) Verify that every group has two or three people and that each one has a different color paper.

6) Ask participants to leaf through their materials: each should have role information and a role-play starter. Using the role-play starters is optional, not required. They are provided to help those who need a little guidance to ease into the role-play.

7) Announce the amount of time available. 10-15 minutes is plenty of time for these short scenarios.

8) Provide a bit of time for individual preparation. Suggest that participants make notes of what you want to find out, and what your first sentence will be.

Optional step:
If time and space permit, it can help focus the role-plays and make sure all aspects of the scenario are covered if you verbally review the key points of the scenario and the participants' role. To do this, take one group — all of whom are playing the same role — out into the hallway and keep the other together in the classroom. If there is only one discussion leader, appoint one member of one of the groups to read the role information aloud to the group while the discussion leader works with the first group. When the leader completes briefing the first group, leave that group to discuss the role among themselves and go brief the second group and answer any questions they might have.

9) Start the role-play. Walk around the room, listening to various groups to get a sense of topics discussed and how the activity is proceeding. Stop the process after it appears that

most have exposed the main dilemma and have spent a little time talking about how to approach it.

10) Make sure at the end of the session that participants receive the "Resources" sheets as a take-away handout.

Discussion (30-45 minutes)
After the role-play the moderator should lead a discussion. Follow the discussion guidelines provided following the role-play. It's also useful to plan for a few concluding remarks at the close of the session to consolidate the discussion.

Tips for Leading Discussions
Opening questions and guidelines for leading a discussion are provided below.

- After the role-play, discussion usually takes off on its own in light of the experience. However, if no one speaks right away, don't worry.

- After you ask the opening question, let at least 10 seconds go by to give people a little time to volunteer. When you are at the front of the class 10 seconds feels like eternity, but that amount of time allows participants to begin to gather their thoughts and work up the nerve to respond.

- If the discussion is really lagging at any point, a useful technique can be to ask participants to discuss whatever the proposition is with their neighbors. This "buzz groups" approach can build up enough confidence that people will start talking.

Role-Play Discussion Guidelines: Moderator

General questions to ask:

After the role-play is over and the groups come back together, ask the participants what was going on in this interaction.

Work to elicit the whole story, by alternately asking those who played each role what their concerns were:

- For those playing the student, what were their concerns and how they understood the situation?
- Ask those playing the faculty member, what were their concerns and how did they understand the situation?

Then summarize for the group the essential facts of the two main roles. It can be helpful to make a two-part list on an overhead or chalkboard while you are eliciting information, noting the concerns of the faculty member and the concerns of the student.

If there were recurring themes in the groups you picked up while the role-play was under way, work those into your discussion. Ask the group how closely the two versions that emerged in discussions match. If they do align, what was the most helpful in eliciting information and establishing trust, leading to a useful and constructive discussion? If they do not match (you may have some groups in each category), what kept the two versions from aligning? Was information missing? What kept it from coming out?

Other general questions to ask:

- What were the most helpful things that were said?
- What do people on each side wish the person on the other side had asked or said?
- Who should take the next step here? Why?
- Is there a good outcome to this situation?
- What elements might make it more or less likely to come out well?
- What could the student or the adviser have done earlier to change or prevent the current outcome?

If you had any observers, ask them what they saw going on; see if anyone picked up signals the participants missed. What were they? What difference might it have made if the missed signal had been caught? Ask the group to identify the issues that are presented in this role-play.

Specific questions to ask:

- How do the grad adviser's preconceived notions about the student's ability or lack thereof affect the situation? What can be done about this kind of preconception and how it affects interactions?
- What policies apply (tailor this discussion based upon the local policies at the institution or in the department where the workshop is taking place)?
- What must someone do to be a co-author of a research article? *The amount of effort alone does not determine whether someone should be listed as a co-author of an article.*

The international Committee of Medical Journal Editors (ICMJE) has standards for co-authorship that are widely accepted. They are:

Authorship should be based on:

1) *substantial contributions to conception and design, acquisition of data, or analysis and interpretation of data*
2) *drafting the article or revising it for important intellectual content*
3) *final approval of the version to be published*

Authors should meet all three conditions.

- How should an article credit those whose contributions to the reported research did not merit co-authorship? *Everyone who contributed to a research project but who does not merit co-authorship, should be listed in the acknowledgements section at the end of the article. Cutomarily the co-authors thank those who suggested related published articles, provided some technical advice, offered possible solutions to small problems, performed a routine statistical analysis or recommended editorial revisions to a draft manuscript.*

- Does authorship order matter? *Traditionally in most scientific disciplines, the co-authors are listed in order of contributions, from most to least. In a university laboratory, the graduate student who made the largest contribution is the first author and other graduate students in the laboratory follow, with the professor named last. Listing as first (lead) author is considered the most prestigious position. In mathematical disciplines authors are listed alphabetically because it is difficult to quantify the contributions of research collaborators.*

- What should the adviser do next; what are the adviser's responsibilities, if any?
- What's likely to happen if the adviser takes those steps?
- Should the student proceed with a complaint or just let this drop?
- What is likely in either scenario?
- Is this something that the grad studies adviser *can* let drop? Is proceeding entirely up to the student?

Principles that apply to authorship and attribution:

Provide a short explanation of FFP (Fabrication, Falsification and Plagiarism), that includes definitions of plagiarism, problems of authorships and attribution, what steps are in the local policy, what safeguards are available for the student, etc. If time permits, go through the steps in "How to Blow the Whistle and Still Have a Career Afterwards" (Gunsalus, Science and Engineering Ethics, see resources section). Has the student taken every reasonable precaution?

Fairness:
Everyone who contributed to the research should receive appropriate credit (see standards described above).

Responsibility for findings:

If the article has serious mistakes then the co-authors are together responsible for issuing a correction or for retracting the article. All listed authors should have contributed to the research and must all be actual people: fictitious names could mislead readers.

Alternative Formats:
A: After the discussion, ask for two volunteers, and do the role-play again, in a "fishbowl" format where the audience observes one pair proceed through the scenario that the group just discussed. Stop the action every now and then and ask for suggestions from the audience on what might be done differently to improve the outcome. Ask the role-players to back up a bit in the interaction and try to incorporate that advice as they move forward again. See if there are differences in how the interaction goes. What lessons can be learned?

B: Before the discussion, pass out the roles and have each person prepare individually. Ask for two volunteers to come forward to do the role-play in a "fishbowl" format, and then follow with the discussion portion.

Close by telling the end of the real-life story on which this role-play is based.
The student did end up filing a complaint, and an academic integrity inquiry followed. The committee sought the submitted draft from the editor and compared it to the student's drafts. Other than the title, there was no resemblance. Upon being interviewed, "Professor Plottner" indicated that the student's work was so bad that he didn't think there was anything to be salvaged from it. Consequently he had thrown it all out and written something hastily himself. There was no plagiarism or violation of authorship standards, but there were severe violations of the standards for graduate mentoring. "Professor Plottner's" graduate faculty privileges were suspended by the dean of the college, because the department head was afraid to rock the boat with the prominent Professor Plottner. (The department head stepped down at the end of the academic year, at the request of the dean.) The dean then required Professor Plottner to meet with him monthly until the dean was personally satisfied the faculty member met the institution's standards for being a grad faculty member. (This took almost two years.)

The student was moved to an adviser in another department to avoid Professor Plottner's wrath. (Plottner wanted the student drummed out of the corps; he was extremely irate that his integrity had been impugned, notwithstanding his own unacceptable conduct.) The new adviser had higher professional standing than Plottner, and the student eventually graduated (about a year late). He got an academic job and now has tenure. We hope he's treating his own students well, but we don't know.

RESOURCES
Role-Play Summary

This role-play deals with issues concerning authorship credit. Concerns about authorship raise the ethical principle of fairness because people should receive credit for their contributions. Authors of a scientific work must have made substantial or significant contributions to the project because they are taking public responsibility for its content. Authors must also be willing and able to respond to questions about the work. The hard part of authorship is deciding what kind of intellectual contribution counts as substantial or significant and therefore warrants authorship. Despite the availability of guidelines, there are differences of opinions within and between scientific disciplines. Broad guidelines state that an author should participate meaningfully in the design, data collection, or interpretation of the research, and be involved in drafting or revising the article, and give final approval to the published version.

This role-play was not focused on making a judgment about authorship on this paper. It focused on the process for determining authorship on a paper. The selection of authors for a paper or the method and metrics that will be used to assess authorship after the work is completed should be jointly agreed by all of the collaborators as soon as the group has decided on the assignment of responsibilities and workload for the group members. This discussion of the division of labor leads to decisions of who will be the primary or lead author. All changes in responsibilities over time should include discussion of changes in authorship if warranted. These discussions can help preempt later conflict over authorship. These discussions are especially important in work within an adviser-advisee or mentorship relationship. Part of the adviser's role is to help the student with the publication process. This help may warrant authorship depending on the contribution and the standards within the field. Having these discussions early helps avoid possible misunderstandings and promote fairness.

Resources on Authorship

American Chemical Society guidelines
http://pubs.acs.org/instruct/ethic.html

Rennie, D. (1994). Authorship! Authorship! Guests ghosts, grafters and the two-sided coin. *Journal of the American Medical Association, 271,* 469.

Rennie, D., Flanagi, A., Yank, V. (2000). The contributions of authors. *Journal of the American Medical Association, 284,* 89.

Responsible Conduct of Research: Responsible Authorship and Peer Review
http://ccnmtl.columbia.edu/projects/rcr/rcr_authorship/introduction/index.html

Responsible Conduct of Research Resources

Columbia University
http://ccnmtl.columbia.edu/projects/rcr/

Committee on Science, Engineering, and Public Policy, National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, *On Being a Scientist: Responsible Conduct in Research*, National Academy Press, Washington, D.C., 2nd ed., 1995.
http://www.nap.edu/readingroom/books/obas/

Gunsalus, C. K. (1998). How to blow the whistle and still have a career afterwards. *Science and Engineering Ethics, 4*, 51-64.

ORI Introduction to the Responsible Conduct of Research,
http://ori.dhhs.gov/publications/ori_intro_text.shtml

Online Ethics Center, National Academy of Engineering
http://onlineethics.org

Research Ethics Modules, North Carolina State University,
http://www.fis.ncsu.edu/Grad/ethics/modules/index.htm

Macrina, F. L. (2005). *Scientific Integrity: An Introductory Text with Cases* (3rd ed.). Washington, D.C.: American Society for Microbiology Press.

North Carolina State University Open Seminar
http://openseminar.org/ethics/screen.do

Shamoo, A. E., & Resnik, D. B. (2003). *Responsible Conduct of Research*. New York: Oxford University Press.

Graduate Program Director Role

What follows is an outline of your role. You will need to improvise to some extent – be creative but try to stay within the bounds of what seems realistic.

A graduate student has made an appointment to see you to talk confidentially about a problem with the student's adviser.

Before the student comes in, you pulled the graduate records file and review it. You note that the student is on academic probation, an extremely unusual situation in your department. You also see notes in the file indicating that the student had been to see the department chair and your predecessor as graduate program director with concerns about several different faculty members. In every case, the student declined to file a formal complaint even when it might have been warranted, and seemed just to want to vent and talk to someone. You see in the file that the student's adviser is Randall Plottner.

Plottner is quite prominent in your discipline, publishes prolifically and is also frequently quoted as an expert in the popular press like the *New York Times* and the *Wall Street Journal.* Because he's a nationally recognized expert, you know that Plottner was the subject of a major retention effort by the university last year, when he was offered a prestigious chair by an Ivy League university. This was the subject of at least one news story and you're guessing that he got a pretty big raise to stay. (Plus, you know that his elderly mother lives about 30 minutes away, and he was reluctant to move away from here.)

You also know that Plottner is extremely disorganized, usually late with whatever he does, and that things fall through the cracks with some regularity. Plottner has a reputation of not being a nice man and most people in the department (in fact, anyone who's worked closely with him) dislike him intensely.

You want to help the student make the best possible decision taking into account possible outcomes based on both the student's history and Plottner's reputation.

(*Note: assume that anything the student says is in writing and has brought along to show you is real and authentic.)*

Graduate Program Director Role-Playing Notes:

- ✓ Your goal is to give the student the best advice on how to proceed
- ✓ Prof. Plottner is important to the University
- ✓ The student may or may not have a legitimate case
- ✓ This student has had other issues in the past
- ✓ The student's career could be at stake

Plan for your meeting:

- ✓ Write questions that you will ask the student
- ✓ Follow-up questions that you might ask
- ✓ Questions that the student might ask you, and your answers

Starting the Authorship Role-Play

Program Director: *How are you today?*

Grad Student: *Not so good … The anxiety from this issue has been keeping me awake at night … It is distracting me from my work, too …*

Program Director: *Well that sounds pretty serious. What exactly is the nature this problem that you are facing?*

Grad Student: *I really don't know if there is anything that can be done about it … I'm working with Professor Plottner. He asked me to write a chapter for a new book …but I think that he removed my name as an author from a chapter that I wrote with him …*

Program Director: *Authorship questions can be tough to deal with sometimes … Are you sure that you should be listed as an author on this chapter? … Did you talk about authorship when you started the project? … Explain your version of the situation to me …*

Grad Student: *I thought that you might have questions …so I brought drafts of everything I worked on including the note that Professor Plottner gave me to start working on the chapter … See, he commented on each draft and I did all this work …*

Program Director: *It does look like you did a lot … How do you know that you are not an author on the chapter? … Did Professor Plottner tell you?*

Grad Student: *My friend saw a final draft of the chapter in the department office and my name was not on it … I talked to Professor Plottner and he was dismissive saying it was just a good learning experience for me …*

Graduate Student Role

What follows is an outline of your role. You will need to improvise to some extent – be creative but try to stay within the bounds of what seems realistic.

After several sleepless nights, you have made an appointment to talk to the graduate program director in your department. The adviser is known for supporting students; easy to talk to and a very nice person. You really hope that talking to the graduate program director is the right thing to do, and you don't have any other ideas about how to handle the situation. You have had some struggles in your graduate program. You are on academic probation and have complained about faculty members in the past. However, you have never filed a formal complaint.

You have been working on a chapter with your adviser, Randall Plottner. He was invited to write the chapter for a forthcoming book. You started working on this project after Professor Plottner handed you the letter inviting him to write the chapter and suggested that this would be a good project for you. You have a copy of the letter with a note from Professor Plottner scrawled across the bottom is a note saying "Take a stab at this. --RP"

You have also gathered together almost all of your drafts; there have been so many, you're not really sure you have them all, but you have at least five or six different versions. Each one is dated and has handwritten marginal comments by Professor Plottner (matching the handwriting on the letter) making suggestions for revisions and additions. These drafts show the evolution of the chapter, as each of Professor Plottner's suggestions were successively incorporated in a new version of the draft. The last version has a note at the end saying "This is fine. No more work will be necessary. -- RP" (*Note: The other role-player will take your word that these documents are authentic; you can "offer" them in your conversation.)*

Your friend, who works in the main office of the department, has told you that last week that Professor Plottner submitted the chapter to the editor of the book. Your friend said the chapter had the same title as the one you've been working on for months, but the only author's name listed on the chapter was Professor Plottner's.

At first, you couldn't decide what to do. Yesterday, you finally went to see Professor Plottner. You thought you handled the meeting correctly. You asked about the chapter (he told you not to worry about it). Finally, you built up enough courage and asked him when it would be published, as you'd like to list it on your resume as a co-author. His answer stunned you: Professor Plottner told you (this is an exact quote) "Oh, don't worry about that. This was a learning exercise. You'll get to co-author things later."

You don't want any trouble with Professor Plottner, but you also feel that you have been unfairly deprived of credit for work that you have done. You know Professor Plottner can really cause a lot of trouble for you, but this just isn't right. You are going to see the graduate program director to figure out what to do.

Student Role-Playing Notes:

- ✓ You need Professor Plottner for your future career
- ✓ You are upset and unsure of what to do
- ✓ You worked hard on this project and deserve credit
- ✓ You are looking for good advice from the faculty adviser
- ✓ You should try to convince the adviser that you did in fact write the chapter

Plan for your meeting:

- ✓ Write questions that you will ask your adviser
- ✓ Follow-up questions that you might ask
- ✓ Questions that your adviser might ask you, and your answers

Starting the Authorship Role-Play

Program Director: *How are you today?*

Grad Student: *Not so good … The anxiety from this issue has been keeping me awake at night … It is distracting me from my work, too …*

Program Director: *Well that sounds pretty serious. What exactly is the nature this problem that you are facing?*

Grad Student: *I really don't know if there is anything that can be done about it … I'm working with Professor Plottner. He asked me to write a chapter for a new book …but I think that he removed my name as an author from a chapter that I wrote with him …*

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Grad Student: *My friend saw a final draft of the chapter in the department office and my name was not on it … I talked to Professor Plottner and he was dismissive saying it was just a good learning experience for me …*

observer role

I

Observer Role

- *Read both roles on the following pages.*
- *Watch the interview and take notes.*
- *If the conversation appears to be stopping early, encourage discussion on topics that still haven't been addressed.*

What is the student trying to convey?

What is the professor trying to achieve in this meeting?

Did the student "read" the signals from the adviser well? What cues did you see?

Did the professor "hear" the student well? What signals of this were there?

What questions do you think could/should have been asked that were not? What do you think could have been said that was not?