RCR Case Study Discussion – Hypothetical Cases and Suggested Questions

Topic #1: Collaborative Research

Excerpts for the topic were taken from the following source, with the original page number from the source. The questions were written by the RCR course director(s).

National Cancer Institute | Collaboration Team Science Field Guide: If you are interested in learning more about collaborations and conflicts, the link will provide you the details but all the material necessary for the Case Study below are included in this document.

Instructions for RCR Facilitators: Read the introduction statement for the chapter, the two case studies and **Take Aways**. At the end of each case study, you will find some suggested questions.

- **You are not obligated to go through all the questions**
- **Feel free to use your own questions**
- **Feel free to discuss your own experience and approaches to handling conflicts in the lab**

After the case studies, you will find optional additional material from the source book that you might find helpful in stimulating discussion including:

- **How to Engage with Conflict**
- **Ask Yourself - Is It Working?** *Properties of functional or dysfunctional collaborations*
- **Conflict Resolution Styles**

Conflict Is Normal Source Page#100

Conflict is about differences; it exists when two or more parties disagree, compete, or perceive that their interests are incompatible. Conflict is both an inevitable and a necessary aspect of human interaction. It is impossible to imagine a collaborative venture in which conflict does not occur. But conflict does not automatically mean there is something wrong with a team. In fact, social cohesion emerges from engaging in and resolving conflicts.

Science is competitive by nature, and this can generate conflict. Many people, including scientists, fear conflict and tend to avoid it. Many scientists are both competitive and conflict avoidant—a potentially counterproductive combination especially for members of a scientific team. Ignoring problems and avoiding conflicts can undermine the research endeavor. This is particularly the case if competitiveness leads to engaging others in ways that elicit conflicts. If you avoid acknowledging and addressing these conflicts, you cannot understand what led to them, which is necessary for resolution.

Team leaders and members should learn not to fear conflict even though they may never enjoy it. We have seen that surfacing differences and talking them through is the only way to manage the disagreement and, if handled well, can strengthen the team.

CASE STUDY - Collaboration and Team Dynamics (Source Page#108)

Dr. Willoughby, a postdoc, complained to her team leader, Dr. Franke, that a senior technician on the project, Dr. Tuma, was withholding data and was unwilling to keep her informed about the studies he was conducting. Dr. Tuma independently reported that Dr. Willoughby was treating him abusively and claiming his ideas for herself. Dr. Franke quickly realized it was important to tackle this conflict head on and invited both individuals to a neutral place for a discussion. After listening carefully to each of them, Dr. Franke became aware that Dr. Tuma was having difficulties managing boundaries and setting limits in his working relationship with Dr. Willoughby. A voraciously curious researcher with seemingly unlimited energy and a willingness to spend day and night in the laboratory, Dr. Willoughby would quickly design new experiments based on the studies and results of others on the research team. Other team participants were able to capitalize on her enthusiasm and work collaboratively with her. For reasons of personal history and style, Dr. Tuma experienced her curiosity as intrusiveness and saw her eagerness to build on the work of others as if she were taking ideas away from them; he felt that his contributions to the team were being threatened. Dr. Franke helped the two scientists negotiate an agreement about how they would work together, including rules about sharing data and communicating about each other's studies. The two then jointly designed a process by which they would each be expected to obtain agreement from the other about building on the other's work or collaborating.

People

Dr. Franke, Team Leader (Lab Head); Dr. Willoughby, Postdoc (she); Dr. Tuma, Senior Technician (he) *

* Tuma has an unspecified doctoral degree, but he was appointed as a technician. As a real-life example, it is not unheard of for holders of foreign MDs to be appointed as technicians in an academic setting, although we are not presented facts in this case for Tuma's background. Could his title play a role in the lab hierarchy and how others professionally interact with him?

Suggested Questions

1. **Tuma alleged that he was abused by Willoughby. What are your thoughts/feedback on Tuma's allegation?**

2. **It is stated that after listening to both Tuma and Willoughby, Franke concluded that Tuma had "difficulty managing boundaries and setting limits" in his interactions with Willoughby.**

   Do you feel that Franke has considered the possibility that Willoughby herself might not be respecting professional boundaries?

   In a research team setting, was there any justification for Tuma to withhold data from Willoughby? If he felt professionally threatened by Willoughby's style, what could he have done differently?

3. **Willoughby is described as "a voraciously curious researcher with seemingly unlimited energy and a willingness to spend day and night in the laboratory", and it is stated that she "would quickly design new experiments based on the studies and results of others on the research team."**

   Based on this description, what are your thoughts on Willoughby workstyle?

   Do you think that there should be any project boundaries in a team-based research setting? Please explain.

4. **It is stated that "other team participants were able to capitalize on her [Willoughby's] enthusiasm and work collaboratively with her."**

   Do you think it is possible that others in the lab were not happy with Willoughby's style, but unlike Tuma, chose to remain quiet and avoid conflict with Willoughby?

   Is it possible that Willoughby receives special recognition from Franke because she is willing to work day and night, and this might influence others' willingness to bring up any concerns about Willoughby's style?

   If you were in this lab, based on their personalities or working styles, would you want to collaborate with either Tuma or Willoughby? What might be the pros or cons of collaborating with each of them?

5. **It is stated that "for reasons of personal history and style, Dr. Tuma experienced her [Willoughby's] curiosity as intrusiveness and saw her eagerness to build on the work of others as if she were taking ideas away from them; he felt that his contributions to the team were being threatened."**

   Should Franke have spoken to others in the lab about how they feel about working with Willoughby? Or should he keep the Willoughby/Tuma dispute confidential and refrain from seeking others' opinions?

6. **It is stated that "Dr. Franke helped the two scientists negotiate an agreement about how they would work together, including rules about sharing data and communicating about each other's studies. The two then jointly designed a process by which they would each be expected to obtain agreement from the other about building on the other's work or**

collaborating."

What are your thoughts on Franke's approach to resolving the conflict? Is there something else you would have done if you were in Franke's position?

How can Dr. Franke improve the team dynamics of his lab?

Take Aways:

- When handled skillfully, conflict can be productive and provide opportunities for creativity. If it is handled poorly, it can undermine a team's functioning.
- Ignoring conflict is a sure way to guarantee that it will remain alive and perhaps worsen.
- Resolving conflict requires individuals to take the time to understand what is driving it.
- Team leaders must develop strong listening skills to thoughtfully and fairly intervene in conflicts; they can then encourage and mentor team members to learn and use those same skills to listen to one another and begin to understand differing opinions and perspectives.
- Teams should be proactive and establish processes to handle conflicts, ambiguities, or other concerns when they arise.
- Taking the Thomas-Kilmann Conflict Mode Type Instrument can greatly benefit the team by helping everyone understand their (and others') conflict styles.

Optional Additional Material

HOW TO ENGAGE WITH CONFLICT Source Page#102

Ref: Adapted from Cloke and Goldsmith, 2000

If you are leading or participating on a team, consider the following steps for managing and resolving conflict:

Understand the culture and the context of conflict—seek out the meaning of the conflict for yourself and/or the other parties.

Actively listen—assure others you have heard what they said and ask questions to confirm your understanding.

Acknowledge emotions—they will likely be part of the conflict but expressing them and hearing them can help lift barriers to resolution.

Look beneath the surface for hidden meaning—hidden fears, needs, histories, or goals may be the underlying source of the problem.

Separate what matters from what is in the way—get away from discussing who is right or wrong and focus more on how to satisfy mutual needs.

Learn from difficult behaviors—let those experiences help you develop your skills in managing difficult situations and having empathy for and patience with others.

Solve problems creatively and negotiate collaboratively—this also means committing to action.

Understand why others might be resistant to change—the problem could be an unmet need.

ASK YOURSELF: IS IT WORKING Source Page#110

When It's Working:

- All team members—from team leaders to trainees—are attuned to potential conflicts among team members, have established processes to address them, and are comfortable intervening should they arise.
- The team maintains high expectations of interpersonal civility (see Chapter 05: Trust and Chapter 11: Sustaining and Strengthening the Team)
- Areas of scientific and methodological disagreement are not understood in personal terms.
- Once recognized, ambiguities over team members' roles and responsibilities are addressed proactively.
- The team leader conveys and demonstrates to team members that conflict can have a positive impact—from improving group cohesion and enhancing research to promoting team goals.
- Initial signs of conflict are addressed promptly.

When It's Not Working:

- There are undiscussed interpersonal conflict(s) and tensions within the team.
- Groups do not listen to concerns, engage in mediation between colleagues, nor seek out other third-party resources to serve as neutral intervenors.
- The team is unaware of or avoids acknowledging other team members' motivations and needs.
- The "deeper" meaning behind the conflict is not seen.
- There is a failure to listen carefully to team discussion.
- Group members interpret conflict as unhealthy when it is actually constructive.
- Individuals misread a lack of argument or challenge as agreement.
- Team leads overestimate team members' ability to work together as a team.

CONFLICT RESOLUTION STYLES (Source Page#103)

When you encounter conflict, you may rely more heavily on one style than on others, whether because of temperament or practice. But everyone is capable of using all five conflict resolution styles. Think about how different styles could be used in different situations.

Competing: When competing, you use whatever power seems appropriate to win your own position. Competing can involve "standing up for your rights," defending a position you believe is correct, or simply trying to win.

Accommodating: When accommodating, you neglect your own concerns to satisfy the concerns of others. Accommodating might take the form of selflessness or yielding to another person's direction or point of view.

Avoiding: When avoiding, you sidestep the conflict altogether.

Collaborating: When collaborating, you attempt to work with the other person to find a solution that fully satisfies the concerns of both. It means digging into an issue to pinpoint the underlying needs and wants of the individuals.

Compromising: When compromising, you attempt to find an expedient and mutually acceptable solution that partially and even fully satisfies the concerns of all parties.

Ref: Adapted from Thomas-Kilmann, 2007

Topic #2: Authorship

Excerpts for the topic were taken from the following source: **Research Cases for Use by the NIH Community | NIH Office of Intramural Research**

NIH has many resources that researchers can refer to. Below are some links to guidelines:

- Departing Staff Request to Remove Copies of NIH Records | NIH Office of Intramural Research
- Authorship Guidelines and Resources | NIH Office of Intramural Research

Instructions for RCR Facilitators: At the end of each case study, you will find some suggested questions followed by four different cases of authorship policies from four hypothetical labs.

- **You are not obligated to go through all the questions**
- **Feel free to use your own questions**
- **Feel free to discuss your own experience and approaches to handling authorship issues/conflicts in your lab.**
- **Please discuss different authorship policies and the best practice guidance**

NIH Note: "The hypothetical case study uses proper names to identify characters, which do not represent real persons affiliated with NIH. The names have been randomly chosen to accurately mirror the rich diversity of the NIH intramural community. Readers are cautioned to question stereotypes they associate with names that may suggest a specific race, national origin, ethnicity, gender, or sex."

CASE STUDY - Using AI to Write a Manuscript (Case #2)

Dr. Blue is principal investigator at the NIH who specializes in cancer genotyping. A prestigious review journal has asked Dr. Blue to write an article reviewing the current state of the field. Dr. Blue is very busy with clinical, research, and administrative responsibilities, so Dr. Blue asks Dr. Green, a postdoctoral fellow working in the lab, to write the review. Without telling Dr. Blue, Dr. Green uses an artificial intelligence (AI) tool to summarize the literature on this topic and generate references. Dr. Blue reads the review and congratulates Dr. Green on a job well done. They submit the solicited review to the journal. The article lists Drs. Blue and Green as authors but does not acknowledge the use of the AI in preparing the article. Two months after publication, an anonymous critique of the article, appearing in a post-publication peer review blog, claims that two of the citations in the article are fake. The editors of the review journal inform Dr. Blue about this and ask the authors to submit a correction. Dr. Blue meets with Dr. Green about the issue and asks how the problem occurred. Dr. Green admits to using an AI tool to help write the article and says the tool must have made the mistakes. Dr. Blue is furious at Dr. Green for using this tool without consulting with the corresponding author first. They both carefully examine the references and verify that the two references mentioned by the critic are indeed

fake. They also discover that three additional references are inaccurate, three are irrelevant, and two sentences in the article are copied word-for-word from another article without quotation marks or attribution.

Suggested Questions:

1. When Dr. Blue and Dr. Green submit their correction to the journal, should they also address the inaccurate and irrelevant references and the copied sentences and acknowledge the use of the AI tool?

2. Should they explain how the problem occurred, i.e., that the AI tool made the mistakes?

3. Should they retract the article?

4. Did they commit research misconduct, i.e., plagiarism?

5. What are the responsibilities of authors when using AI tools to review the literature?

Authorship Policies:

Authorship guidelines have been published by institutions, sponsors, or journals. For example, the **International Committee of Medical Journal Editors (ICMJE)** authorship **recommendations** states that an *author must meet all of the following four criteria*. Meeting less than all four of the criteria would qualify the contributor to be acknowledged, but not to be an author.

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work
- Drafting the work or reviewing it critically for important intellectual content
- Final approval of the version to be published
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

However, sometimes authorship decisions might be influenced by the style of the PI or lab precedent and to be less defined by specific published guidelines.

Please see the next pages to find out four different authorship policies from four hypothetical labs. Suggested points of discussion: What are the pros/cons of each style?

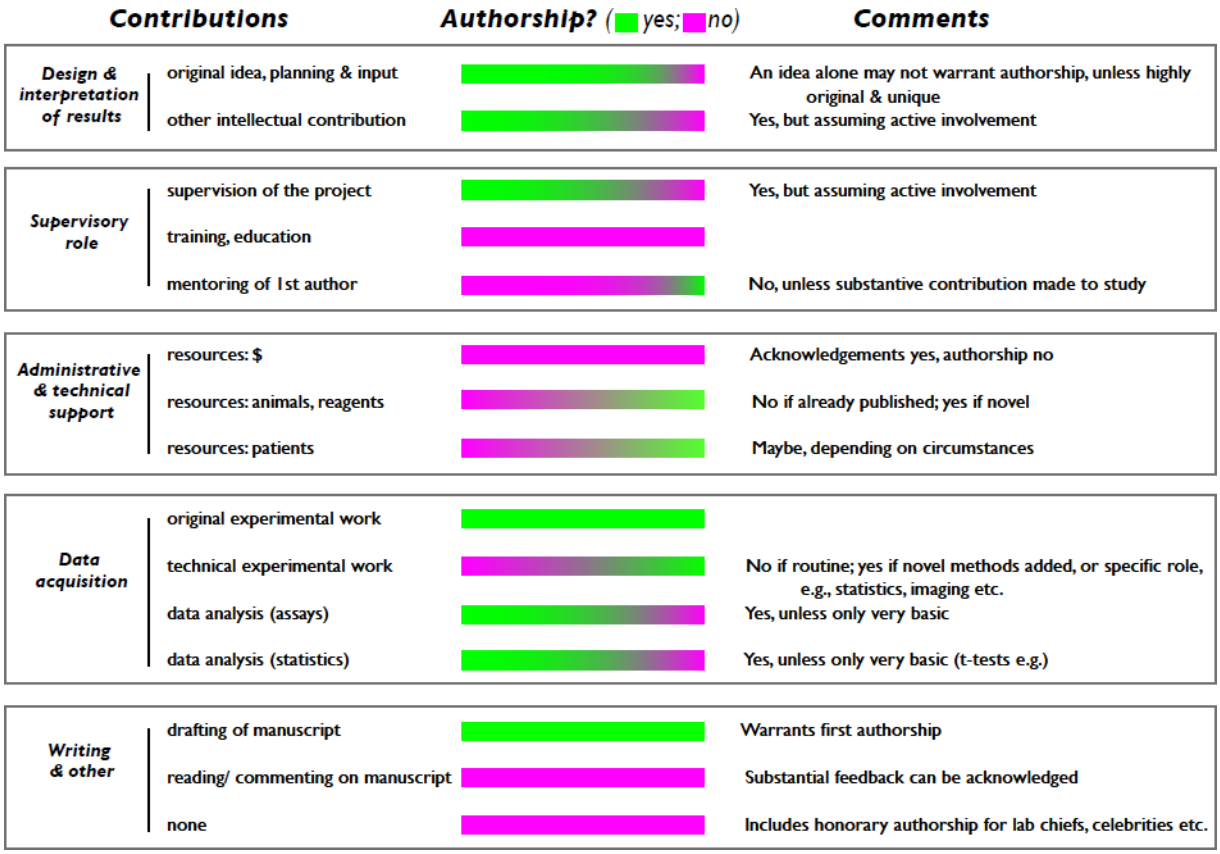
Are certain policies more or less likely to:

- promote fairness/equality and discourage favoritism in the authorship decision?
- promote the career advancement of the lab members?

- promote personal pressure/stress and intra-lab competition?
- reduce personal pressure/stress and create a harmonious laboratory environment?
- create environment that might motivate someone to engage in research misconduct?
- promote or discourage collaborations with other labs?
- promote a higher quality of adherence to the rigor and reproducibility of the scientific research enterprise?

A. NIH GUIDELINES FOR AUTHORSHIP CONTRIBUTIONS

The PI in Lab A follows the NIH intramural guidelines for authorship (**HERE**) (*and below*). This PI feels that adhering to the NIH guidelines removes the arbitrary qualities of the authorship decision process.



For example, in this lab:

- Lab technicians are generally not given authorship. To earn authorship, they must display an intellectual contribution akin to a grad student, or have highly developed skills in techniques difficult to easily master (these few skilled technicians can accumulate multiple authorships compared to their general technician peers).
- Core facility staff are acknowledged. Core directors are given authorship if they intellectually influenced the project direction beyond the role of their standard

core facility management.
- Clinical staff (including physicians) that only provide patient tissue samples are just acknowledged.
- The PI will remove their own name from authorship if a trainee is solely responsible for intellectual development, grant writing, and execution of the project.

B. FIRST AUTHOR DECIDES

The PI in Lab B feels that the first author is in the best position to know "who did what" over the course of the research project. The PI encourages the first author to check out published authorship guidelines but provides little oversight over the author selection process. Within this lab, some first authors choose to completely follow published authorship guidelines, some choose to follow some but not all elements of published guidelines, while others follow no guidelines at all. Overall, there may be little consistency in the authorship criteria used by different first authors in this lab.

*Depending on the choices of the first author, the following types of contributions/roles **may or may not** result in authorship on papers from this lab*:

- Lab technicians performing routine technical work, including those that work in core facilities.
- Proofreaders of the manuscript
- Graduate student or postdoc colleagues that performed some experimental work, but did not contribute intellectually to the project.
- Colleagues that contributed intellectually but did not perform any experimental work.
- Former lab members that worked on the project that the first author never knew.
- Core facility directors
- Clinical staff (including physicians) that provide patient tissue samples but are not scientifically involved in the project.

C. HOLISTIC APPROACH

The PI in Lab C feels that the lab's research is interconnected and that all members of the lab contribute to the success of the lab in one way or the other. The PI also recognizes that it can sometimes be difficult to quantify the relative contributions of one author over another and to track all of the experiments done over the lifespan of a project. So, this PI applies a simple rule: ***if someone was in the lab at any time over the lifespan of a project, they become an author***. The driver of the project is still recognized as first author.
In papers coming from this lab:

- All lab members (and former members if present at any time during the project) are included as co-authors on all papers without regard to job title.

- The rank order of authors emerges from an entire lab discussion chaired by the PI.
- Author contribution designations to satisfy journal requirements are decided in these meetings as well.
- All core facility technicians that did any work for the project are authors, as well as the core directors.
- The numbers of co-authors per paper tends to be higher than average.
- Lab alumni on average appear as an author on more papers than their career stage peers coming from other labs.

D. DECISIONS ARE RESULTS OR CAREER PATH DRIVEN

The PI in Lab D feels that authorship is a reward for successfully executed experiments or great ideas that moved a project to publication. If there are author disputes about the order of author appearance, the PI might decide based on who "needs the paper more".

In papers coming from this lab:

- Any lab member or collaborator, irrespective of job title, who completes experiments or provides materials that results in a part of a figure for the manuscript becomes an author.
- Contributors that worked on the project, but whose experiments failed or whose ideas were not supported by the data are generally not given authorship.
- Contributors to the project are sometimes dropped from the final list of authors if the research went in a different direction from their contribution by the time the manuscript is drafted.
- The PI sometimes uses career goals of an individual as a factor in ranking the author list. For example, a postdoc who is applying for faculty positions is felt to need first authorship more than the PhD staff scientist or the technician who is applying for graduate school needs third authorship more than the long-term career technician.