

Collaborative Science

Thomas Huser
Ramsey Badawi

Horribly Dull Book on Research Ethics:

- Responsible Conduct of Research

- - Adil E. Shamoo
and David B. Resnik

Learning Objectives

- Learn what defines a research collaboration
- Learn the do's and don'ts by sharing experiences and discussing cases

Why collaborations?

- Research - especially in the life sciences - is becoming increasingly inter-disciplinary and often also multi-institutional
- Relatively independent validations of your findings
- Unique research instrumentation
- Funding agencies appear to be moving more and more towards "Team Science" approaches
- Sharing of materials: e.g. you'd like to do a specific experiment, but only one group has developed the right model...
- It's fun!

How to initiate collaborations

- A cornerstone of all collaborations is trust. Choose your collaborators wisely...
- Do a “background check” (check their publications, talk to others that know them, etc.) if necessary...
- The first step is always to simply ask if they would be willing to share something, then see what their terms are...
- How valuable would such a partnership be for your own research? Does the collaborator provide unique capabilities?

How to maintain collaborations

- ◆ BOTH parties must have career benefits (esp for junior collaborators)
- ◆ Good communication
- ◆ Do you LIKE your collaborator?

Up-front discussions

- ◆ How is the work funded?
- ◆ Who does what? Who actually does the work?
What are your responsibilities?
- ◆ How are results handled?
- ◆ How is authorship on papers handled?
- ◆ Intellectual property - how is this handled?
- ◆ Does anyone on your team have a potential conflict?

How is the work funded? - Scenarios

- ◆ Established funds by the collaborator
- ◆ Small grants / mini-grants
- ◆ Spare time - with the promise of developing preliminary data for future grants?
- ◆ Other sources? (Industry, etc.)

Discussion

- ◆ What defines a good collaboration...
- ◆ Cases of how collaborations can go wrong and how to best resolve this...

Cases of collaborations gone bad...

- ◆ What if the collaborator doesn't deliver?
- ◆ You have a research grant and someone written in as sub-contractor. He receives the funds, but doesn't produce any results (by simply not doing the work).
- ◆ What do you do?

Cases of collaborations gone bad...

- ◆ What if you are unhappy with the **QUALITY** of your collaborator's work?
- ◆ What do you do?

Cases of collaborations gone bad...

Making Enemies!

- ◆ Things to avoid if possible:
 - ~ nasty emails?
 - ~ public personal criticism?
- ◆ Consequences:
 - ~ grant reviews?
 - ~ manuscript reviews?

Collaborations with Industry

- ◆ Limitations to your ability to publish?
- ◆ How could you best handle this?
- ◆ Doing work that can't be published (yet) - waste of time?
- ◆ Classified results

Mentoring...

- ◆ What is the goal of the Mentor?
 - Develop the career of the “mentee”?
 - ~ Help the mentee define his/her goals?
- ~ Other ideas?

Mentoring...

- ◆ What to do with a student who is not following through??
- ◆ Lacking motivation? Lack of talent?
- ◆ Can you, should you fire them?

The Mentee...

- ◆ What do you do when your advisor is not providing enough support?
- ◆ How do you deal with conflict with your advisor?

Mentoring...

- ◆ Any recent cases experienced by participants?
- ◆ K30?

Scientific Misconduct

Shamoo and Resnick

Page 44, Case 2

Authorship

- First author
- Authorship order
- Senior author

Questionable Authorship

- Gift authorship
- Honorary authorship
- Prestige authorship
- Ghost authorship

Large collaborations

Badawi RD, Domigan P, Johnson O, Kemp B, Kudrolli H, Rempel T, Rohatgi R, Romanov LV, Surti S, Worstell WA and Zimmerman RE. Count-rate dependent event mispositioning and NEC in PET.

IEEE Trans. Nucl. Sci. 51(1): 41-45, 2004

Similar experiments performed at 4 different sites. How to resolve authorship?

Authorship – after graduation!

- Shamoo and Resnick, page 65, case 2

Peer Review

- The worst possible system of assessing quality of grants and papers (apart from all the others) ...

Peer Review

- You are organizing an international conference. The local arrangements chair suddenly tells you there is not enough room for all the posters – the rejection rate must increase from 5% to 25%. According to the reviewers' rank ordering, papers from several of your collaborators and friends, several very senior scientists including co-organizers of the conference and members of your NIH study section should be rejected.
- What do you do?

Peer Review

- You are organizing an international conference. The reviewers are not blinded to the authors of the abstracts. When you get the reviews back, you notice that although oral presentations are hard to get, every single submission from your own lab has been awarded an oral presentation. According to the reviewers, your lab should be giving about 12% of all the orals at the conference.
- What do you do?

Peer Review

- Shamoo and Resnick, Page 89 case 5

Peer Review

- You are on a study section, and you are asked to review a proposal from a competitor who suggests an approach very similar to one which you just got funded yourself.

What should you do?

Peer Review

- You are asked to review a paper. The first thing you notice is that the author is someone who really upset you up a couple of years ago – you were co-organizing a conference with him and he rejected your perfectly good paper. It occurs to you that revenge is a dish best eaten cold!
- What do you do?

Examples from the book

• Often their examples are not truly focused on just collaborative science, but more on ethics, so we will select just a few examples...

• Case 1

• Case 2

• Case 3

• Case 7