

## Homework 7. Due by 5pm on Thursday 10/24.

### Collaborative research & Human participants and animal subjects

Most statisticians do not have to worry directly about running large scientific research groups and dealing with the bureaucracy of ethical data collection. Yet, most collaborate sometimes with scientists who do. In addition, there are increasing opportunities for statisticians to lead data science research groups. Read pages 24–28, 39–42 and 48–49 of *On Being a Scientist*. Write brief answers to the following questions, by editing the tex file available at <https://github.com/ionides/810f19>, and submit the resulting pdf file via Canvas.

1. What is an IRB? Does a project studying aggregated observational data on human subjects (say, the total number of road accident injuries per state per year) need IRB approval to receive federal funding?

YOUR ANSWER HERE

2. Suggest some ingredients which could lead to successful collaboration between two statisticians and/or between a statistician and a scientist.

YOUR ANSWER HERE

3. Collaborative group sizes can be small or large. Identify some strengths and weaknesses of larger collaborative groups relative to smaller collaborative groups.

YOUR ANSWER HERE

4. What are the advantages and disadvantages of being a conscientious collaborator who makes careful, thoughtful but timely contributions to the project, reads widely and takes the time to understand as much of the project as possible.

YOUR ANSWER HERE

5. Would you expect a PhD thesis adviser to act like the conscientious collaborator of question 4 on your own thesis research?

YOUR ANSWER HERE

6. What are some advantages and disadvantages of joining a project and then making a minimal contribution? Can this be responsible behavior? Consider the following example: you help a scientist carry out a statistical procedure and you help write up the paragraph describing it; you accept coauthorship on the resulting paper, while ignoring all other aspects of the paper.

YOUR ANSWER HERE

7. How can one maintain a reasonable level of agreement within a collaboration on the expected involvement of each collaborator?

YOUR ANSWER HERE