

## **Project Introduction**

**Due Friday, October 6th**

For this assignment, your goal is to start to plan your course project and to write some text that will ultimately serve as the introduction to the writeup you will submit at the end of the term describing your work.

You will either be doing your own analysis project, or you will choose a published research paper with available data and attempt to replicate its results. Once you have a sense of what you will be doing, for this week you will only need to write about 4-6 paragraphs on the subject. But figuring out what you want to do and defining the project's scope may require spending much more time reading than writing.

It's understandably hard to write the introduction to something before you've actually done the work. But you don't need to know everything yet.

### **Picking one of the suggested papers**

In this case, we have already told you a little about each of the papers and suggested some questions to consider. Here, we'd like you to write an introduction describing the key issues from the paper you've chosen in your own words, and then describe what you plan to do with that paper.

For this option, here is what we are looking for you to submit; plan to write roughly a paragraph or two for each enumerated point:

1. What other background material is relevant to understanding the paper? You may have to read some other references – either cited, or taken for granted by the authors – to explain what is going on.
2. What is the main problem addressed? How is it addressed? Why is this work important?
3. What do you intend to do to add your own contribution to the work? Describe questions you want to answer, other methods or data sources you might use, or what kinds of methods or data you will need to learn about and where you might expect to find them. We want to confirm that you have a feasible proposal and a plan for doing it. If you know the names of specific methods you plan to use, briefly describe them. If you do not yet, describe your intended approach at a high level and explain what you will need to explore to learn what to do next.

## Original research project

If you are proposing your own project, you should consider the scope of what you plan to do for this course, given the time you have for the project. Data availability is also important – if you are using a collaborator's data, make sure they are okay with your using it for this purpose. If you are using public data, make sure it is accessible.

For this option, here is what we are looking for you to submit; plan to write roughly a paragraph or two for each enumerated point:

1. Describe the problem you plan to address. Cite the most relevant background papers. Assume the reader is not already an expert in this particular field of research; write for a general scientifically literate audience, as if you were writing an introduction for a broadly-scoped high-impact journal such as *Science* or *Nature*.
2. Explain why this problem is important. What will be possible once you've addressed it that isn't possible now? Why does this matter?
3. What approach will you be taking in order to solve the problem? This isn't (yet) expected to be a detailed implementation plan, but rather a short description of the kinds of analyses you think you'll need to do. You will refine this in the next assignment in a couple of weeks, and you will refine it further throughout the term. For now, we want to confirm that you have enough of an idea about what you want to do that you will be able to learn about specific methods and packages for doing it. If you know the names of the packages you will need, mention them. If you don't, describe the process at a high level and explain what you will need to explore to learn what to do next.