Each assignment will be turned in by email to me by 9 am Monday morning on the date listed.

Each reading assignment will be read before the class on which it is listed.

In addition to the “written” assignments, students will be graded on class participation and presentations.

**Class participation means:**

1) Showing up on time. If you must miss a class, e.g., due to illness, conference presentation, etc. Please send email in advance to Dr. Carley. In general, you get a “pass” for up to two missed classes.

2) Attentive listening to speakers. This means use electronic gadgets only to take notes or to identify information on which to ask the speaker a question.

3) Asking questions of each speaker. It is important in interdisciplinary fields to learn to ask and answer questions to/from those outside your specific area. You want to gain confidence in asking and answering questions. So each time in class you hear a different speaker, ask something. You might e.g., ask them about something that confused you in the assignment or to comment on a finding. You might e.g., ask them how they would address the integrative question. You might e.g., ask them to clarify something in their talk or to speculate about different research directions. In general, put your inquisitive caps on and ask questions. No question is unimportant.

Details on what it means to do a lit review, essay and white paper are described below:

**Literature review:** In this class you will be doing a short and an extended literature reviews – mainly to get you aware of research in an area that is relevant to you. Discuss with your advisor what area to choose, and what question to focus on. There are in general 3 kinds of lit reviews:

1) Annotated list of papers – annotations should capture one or more items such as – what the main finding is, what is good, any significant limitation, how it relates to other things

2) Background review for a research paper

3) Detailed review of a corpus of literature in a scientific area that might become a comprehensive article or a detailed background for a book or thesis

While there is no hard and fast limit on the number of papers, you should think of 5 articles as being on the low side and 30 articles as being on the high side for types 1 and 2. Detailed reviews depend on the question and field but may be 2 to 20 times larger. Based on your interest select a set of papers. Note, for many cases it is ok to just “get a feel” for what is out there by reading the abstract, intro and conclusion. In other cases you will want to understand the detailed method and how this paper fits into the broader literature in which case you will read the entire paper.
Paper Critique or Journal Review: Think of this as writing a review of a paper for a journal editor, or reviewing a proposal. In this case you will do 3 papers that you choose in your area. The goal is to be objective and identify strengths and weaknesses of the research and to provide constructive changes. See attached information on what to include in a review. For each, you will write out a journal style review.

Essay: This is a short essay –5 pages, 12 point font, not including references or figures. The key is to: have a thesis, provide supporting information, draw a conclusion. In doing this you should draw on the literature – both academic, and news. In doing this, try and answer these questions:

1) What is the problem being addressed?
2) The hook – why is this important?
3) What has been done?
4) Why can things be done differently now?
5) What is the key research you might suggest?

White Paper: The objective is, by the end of the term to write a white paper proposing research in an area. You should talk with your advisor, if you wish to go beyond the integrative problem and write this white paper with an eye to making it a proposal for a fellowship that is fine. If not, that is fine. This white paper will be a bit longer than the typical white paper (4 pages); you should plan on 6-8. Another difference between this white paper and traditional white papers is that you do not need to provide a budget or a management plan. In this white paper you need to cover:

1) What is the problem being addressed?
2) The hook – why is this important?
3) What has been done? This is where your background lit review comes in.
4) Why can things be done differently now?
5) What is the key research you might suggest?
6) What will be the methodological approach?
7) Why do you think this will work (i.e. results from the proof of concept study)?
8) What is the potential impact of this work? (e.g., who might be impacted how? What new things does this research lay the ground work for? Are there policy, legal, technical implications?)

In doing this, you will need to think about IRB issues. You will write, but need not submit, an IRB proposal and learn about the process. For the proof of concept study, you can use any data you wish; e.g., you might collect new data, or use existing data. The data might be questionnaire, social media, sensor, etc. You will need to go through all CITI training.

Note that over the course of the term, several assignments are associated with this white paper and the associated extended literature review. These will be discussed in class.

Student Presentations: You will be doing a short presentation at the end of the term on your research area and white paper. You will need to construct good powerpoint slides for this. You will be given information on creating a good slide deck. In this presentation make sure you:

• Begin with a short elevator speech –
- Discuss why the area is important
- Discuss why this can be resolved now
- Discuss methodology
- Discuss proposed data
- Discuss if you were successfully what might you find out.