**In-class: Peer Review II**

Peer review is a critical component to the scientific method in the current research climate. It is designed to be a process for providing constructive criticism to improve the quality of published scientific work. All scientists are involved in the peer review process and many times are asked to serve as peer reviewers for various journals or grant awards.

In this lab and homework assignment, you will have the chance to write a peer review for the final project of one of your colleagues. Your formal response will be graded based on completion, level of thought and thoroughness. (see the end of this document for full instructions)

**Additional resources that may be helpful:**

Nicholas, K. A.; Gordon, W. *Eos, Trans. Amer. Geophys. Union.* **2011**, *92*, 233.

Nature has a useful site that summarizes important aspects of the peer review process:

<http://www.nature.com/authors/policies/peer_review.html>

**In class:**

As you read through your colleague’s manuscript answer the following questions:

1. Who will be interested in reading the paper and why?
2. What are the main claims of the study?
3. What is novel in this work?
4. Are the claims appropriately discussed in the context of previous literature? If you are not an expert in the specifics of the experiment, this requires you to look up relevant literature, including some of the cited sources.
5. Are any aspects of the work confusing?
6. Is the manuscript clearly written?
7. Are there additional data that would be helpful for understanding the work?
8. What additional experiments are needed to support the claims?
9. Have sufficient methodological data been provided that the experiments could be reproduced?

**Writing your formal response (homework)**

As you write your formal response, keep in mind that it should be written in a professional and constructive manner. The authors are your scientific colleagues, and the professionalism of your response reflects upon you. An accusatory or highly negatively written response can affect your scientific career.

Your reviewer response must include the following sections:

1. **Summary:** This section is a one-paragraph summary of the paper including a brief statement of strengths and weaknesses of the work.
2. **Significance:** This section includes one paragraph that puts the work into context and discusses the novelty, quality, and thoroughness of the work.
3. **Recommendation:** Short statement as to whether or not you would recommend the work for publication, and whether or not revisions are recommended.
4. **Changes (major):** Suggested changes are typically listed as numbered points. Major changes would include significant additional experiments that could change the conclusions of the work.
5. **Changes (minor):** Suggested changes are typically listed as numbered points. Minor revisions include, additional references, minor errors in writing or analysis, quick additional experiments. These typically should not significantly affect the general conclusions of the work.