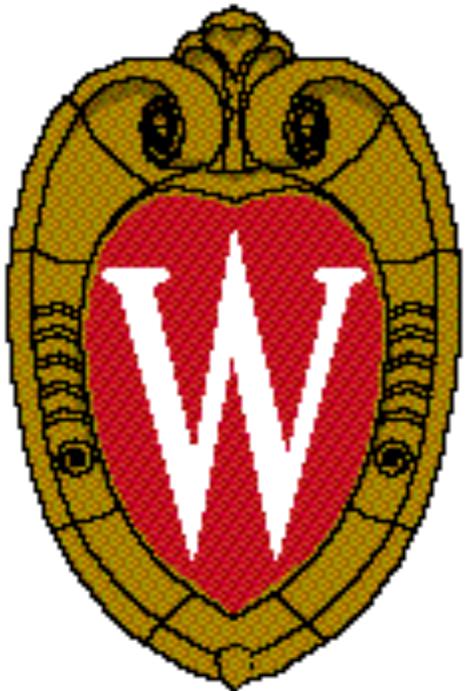


# Reviewing Papers: Evaluating Methods

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# Disclaimer

I am not sure what  
conflicts I could have.

# Are the Methods Sound?

- We will assume you are an expert on the topic or you would not have been asked to review.
- Some questions to ask as you read the paper:
  1. Does what the authors do make sense?
  2. Are derivations sound – Can you connect all the steps?
  3. Are quantities defined? (Do the authors use existing standard terminology?)
  4. Are experiments described so they could be reproduced?

# Some More Questions

5. Do the experiments prove what the authors claim?
6. Do the authors consider uncertainties?
7. Do the experiments prove what the authors claim *within the uncertainties?*

# A Common Situation

## ■ Monte Carlo

- Everyone and his brother do Monte Carlo these days.
- There is a fine line in the Methods for this, where the authors tell as much as needed so a knowledgeable reader understands what they did, but not going into details all knowledgeable readers would know.
- Have the authors benchmarked their manifestation of the program?
- Were their simulated conditions appropriate?

# Another Common Situation: Significance

- Authors frequently use “significant” when things are not.
- It should be avoided if not in the statistical sense.
- Just having enough histories in MC does not make the results significant.
- Just using a standard statistical package and finding  $p < 0.05$  does not make the results significant.

# What to do about Issues

If you think that the paper is good but has some problems, make suggestions:

- General sweeping comments do not help the authors or the editor.
- Keep suggestions limited – don't suggest revising the experimental work (see the premise above).
- Do make suggestions on different interpretations.

# What to do about Issues

If you think that the paper is seriously flawed:

- Give specific reasons. The editor will need that information.
- Reject the paper rather than call it Major Revision.