

# A Short Guide to Critically Reading and Presenting Research Articles

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- A. Quick check
1. In which journal did the paper appear?
    - a. Not all journals are peer-reviewed
    - b. Peer-reviewed journals vary greatly in their selectivity.
    - c. What is the journal's "Impact factor" (What is the impact factor? Is it important?)
    - d. If a paper is in a very selective journal this *should* increase chance it is novel and major defects have been corrected (but does not eliminate them!)
  2. Who are the authors and where are they from?
    - a. Beware of discriminating against new researchers and less known institutions!
    - b. However, it is also true that
      - (1) Some authors can *usually* be counted on for high quality work
      - (2) The reputation of institution *may* provide some insight into the investigators
- B. Which questions are addressed?
1. What is the broad question that the authors *wish* to address?
  2. What questions do they *actually* ask? (What is the difference?)
- C. **Methods** and **Results** sections: How did the authors go about asking the question?
1. Are the methods sufficiently sensitive and specific to justify the reported data, or
  2. ...is there a possibility for over-interpretation?
  3. (You may need to seek expert advice if the methods are new to you.)
  4. Remember that good data cannot come from bad methods.
  5. What do the authors report?
  6. Are their statistical approaches valid? (Again, an expert may be required.)
  7. How do their data compare with literature values?
- D. **Discussion** section
1. How would *you* interpret the results? (Try to think about this *first* before going to...)
  2. How do *they* interpret their results?
- E. Your analysis
1. How do the results and interpretation fit into the existing literature?
  2. What are the major weaknesses of this paper?
  3. What can be learned from this paper?
  4. How significant is this?
  5. As a reviewer, what would you do?
    - a. Accept (how urgently? top 10%, 10-25%...)
    - b. Reject
    - c. Ask for revisions (if so, which?)
  6. What would you recommend that authors do next?
  7. Do you have any concerns about responsible conduct?

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## A Format for 30 min "Journal Club" Presentation

- A. Chose and distribute the paper at least a week in advance.
- B. Make selection on basis of broad interest to group and yourself, quality, recency, interest, and what you can contribute to the analysis.
- C. Present background (5-10 min).
- D. Follow the outline above (10-15 min). Use visual aids to show figures.
- E. Allow time for general discussion ( $\geq 10$  min).