

Critiquing Scientific Literature

“Criticize the science not the scientist.”

Purpose:

One needs to be able to estimate and assess the value of information in scientific, governmental, and/ or corporate literature.

I. Importance and Interests

- How broad is the interest? Who will find it interesting?
- What’s the purpose of the paper? Is it clearly stated early on? Is it stated clearly and explicitly? Is it placed in the form of a hypothesis?
- Is the main question set clearly in the background/ context?
- Does the paper tell a cohesive story?
- Do the title, abstract, and key words reflect the major points?
- Is the writing concise, interesting, and easy to follow?
- How does the paper break new ground?

II. Length

Should portions be:

- expanded?
- condensed?
- combined?
- deleted?

III. Methods

- Are the methods appropriate?
- Are they current?
- Is the description clear enough and thorough enough that they can be duplicated?*

IV. Data Presentation

- Can results in the text be easily verified by the tables, graphs, etc.?
- Are tables necessary and efficient?
- Are all photos, figures, etc. necessary?
- Are photos, figures, etc. labeled and high quality? Do they have adequate descriptive captions? Are any figures, etc. missing?*
- Are any figures too complex?

V. Discussions/ Interpretations

- Is there an adequate amount of discussion?
- Are conclusions justified by results?
- Are limitations stated clearly?
- Are further studies implicated/ necessary?
- Do interpretations follow logically from the data and observations?

Hints:

** Look for hidden assumptions and biases.

** Question the methods.

** Question conclusions.