

Northeast Algal Society

Phycology Lab Manual

**Lab Activity: Summarizing Scientific Research Articles**

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### **Learning Objectives**

By the end of this activity, students should be able to 1) dissect the parts of a scientific article, and 2) create a brief overview of the article.

### **Assessment Method**

Students should be able to produce a 1-2 page overview that does not plagiarize the source article. Sites such as turnitin.com can be used to check for similarity and further guide students.

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**Summarizing Scientific Research Articles Handout**

A well-written summary is an excellent way for you to condense a scientific article into a brief (1-2 page) overview you can easily use to remind yourself what the article was about and what information may be useful to use as a reference in your own term papers.

Your summary should be written in simple plain English so it is easy for you to understand. You still need to convey the essence of the article you are summarizing so inevitably some scientific language and jargon will be necessary but try and keep the language as simple as possible. Be sure you do not simply copy phrases or sentences from the article but rather use your *own* words. This will ensure that you fully understand what you are reading, will capture your understanding in a language that will be easy for you to recall at a later date, and will help prevent possible plagiarism if you use the article as a citation in your own paper.

To understand, synthesize, and succinctly and accurately summarize a scientific research article you will need to read the article several times before you try to summarize it. First read through the entire article and note/define any unfamiliar terminology or vocabulary. On the second read through emphasize the methodology and results: make sure you understand what was done, and what the major findings were. On the third read through emphasize the discussion and introduction: make sure you understand why the study was done and what it means and its significance.

After you have read through the paper several times try and write a 1 or 2 (at most) sentence summary of what the paper was about without referring back to the paper. This is a good test to see if you really understand the article. This will also serve as the first paragraph of your written summary.

Once you can write a good summary sentence, ask yourself and answer the questions below. When answering these questions, use your own words and try to refer back to the article just to remind yourself of key points but don't paraphrase the article; also answer the questions initially as bullet points. These bullet points will become sentences in your summary but bulleting first will reduce the tendency towards paraphrasing.

1. Why was this work done? Why is it important? What's the point?

Answer this with 2-3 bulleted points. The answer to this question will usually be found in the introduction and discussion sections.

2. What questions were asked?

Make a bulleted list. These will usually be summarized at the end of the introduction section.

3. How did the authors try to answer these questions?

What methods, techniques, experimental procedures were used for each question on your list? Try and summarize each question with one sentence. This information will be found in the methods section.

4. What were the major findings?

List these. This information will come principally from the results and discussion sections. Some papers may also have a conclusion which summarizes these major points but don't just default to this to answer this question. Be sure you review the results section to ensure you understand what the major findings were

5. What questions remain unanswered, what new questions arose?

List these. Sometimes these questions will be addressed directly by the authors at the end of the discussion section, but not always. Either way, be sure to ask yourself what questions remain unanswered for **you** and whether the article generates any new questions for you. Your perspective, interest, and knowledge base may be different than the authors and therefore you may have different questions than the authors. This is an important thing for you to think about as you read the scientific literature as it can help generate new research questions and ideas for future study and also provide added perspective to your own work.

Once you have gone through and answered these questions, you can now sit down and write your summary. If you have done a thorough job answering the questions above, you should not need to refer back to the article when you write your summary. Rather you will use your bulleted answers to the questions above. Again, this is a good way to reduce the possibility of paraphrasing and plagiarism.

This seems like a lot of effort, and it is, but scientific papers are detailed and dense and to really understand what you are reading you need to read them several times and translate them into your own words. Don't try to take short cuts and just lift important conclusions or points out of a paper: this can easily lead to improper use of the information in a citation or plagiarism.