

Ground Rules for the Discussions, Critiques, and Research Papers

Each of you will lead a discussion about a particular scientific paper for class. After reading and discussing the paper, you will write a short summary/critique about the paper and you will write a longer research review paper about a specific aspect of the discussion paper.

Questions:

Everybody NOT leading the discussion must turn in three typed (or **legibly** written) questions pertaining to the week's discussion. **Your questions must be thoughtful and should deal mostly with the concepts and conclusions.** Think of questions about the broad meaning of the paper, but still on topic (e.g., *If pumpkinseed adjust growth rates in the presence of bluegill, do bluegill do the same in the presence of pumpkinseeds? Why don't all fish evolve faster growth?*), questions about methods (*Given the size and number of fish, were the enclosures large enough to prevent crowding? Given differences in sizes of bluegill and pumpkinseed used, could this bias the results?*), questions about assumptions (*Was it safe to assume that all the populations had equal time to evolve fast growth rates?*). **DO NOT** base all your questions about details of the methods, and there should be no questions about the presentation in the paper (e.g., *Why did they write it this way? Why didn't they make Figure 3 easier to understand? What does Table 2 mean?*). Do not ask questions that are too broad (e.g., *What does this mean for management?*). By taking the time to write good questions, you can ask them in discussion.

Question grading (per question, plus 1 pt. for turning in the assignment):

- 3 pt. – excellent – specific, well phrased, and thoughtful question; not covered in paper
- 2 pt. – fair – vague or poorly worded; question moderately beyond scope of paper; only briefly mentioned in paper; 2nd question about method details (unless conceptual)
- 1 pt. – poor – unintelligible question; answer is clearly in paper; question unrelated to topic; too broad; 3rd question about method details
- 0 pt. – no question.

Discussion:

The leader will lead a discussion of a particular scientific paper. Below is timeline of what should happen to conduct an effective discussion. **At any stage, feel free to ask me for clarification or insight into the paper's topic.**

1. Read the paper **well in advance** of your discussion
2. Generate a list of discussion points and/or questions
3. Identify and **collect other papers** related to your discussion paper for additional background or contrasting views (you can use these papers for your research paper, too)
4. **Review** the other papers you collect to fill in gaps or provide additional information

At the beginning of the class, the leader will present a brief (approximately 5-10 min) summary of the discussion paper. This is a summary, so **do not go into exhaustive detail!** Focus on the general background and conclusions of the paper. **DO NOT** worry about providing details of the experiments – this can be covered in the discussion. Next, you will lead a more in depth discussion of the paper and topic. You can go back to specific details in any section and ask questions of other students. Your questions will be more effective if you introduce each one by giving some background first. For example, if you think that the experiments were in containers that were too small, don't just ask "Were the containers too small?" Instead, discuss how small containers might constrain the swimming and then ask: "Do you think these containers were too

small given the size of the fish?" Your discussion points/questions should pertain to the methods, assumptions, and ecology. Try to highlight contrasting results from other studies, other species, or different ecosystems. **Bring in results from other scientific papers to support or refute your ideas!**

Summary/Critique paper:

The leader will prepare a written summary of the paper one week after the discussion. **The summary should review and critique only the discussion paper** and provide suggestions for improvement and/or future research. Like the actual discussion, start with a brief summary of the paper (i.e., **a one paragraph summary**, kind of like an abstract). Then discuss the positive and negative aspects of the methods and of the authors' conclusions. Do not get hung up on minor details (e.g., graphs were hard to read) – focus on the main methods and concepts. You should not bring in other studies for the summary. Your summary must be 2-3 pages long, with 1" margins, double-spaced, and 12 pt. times or times new roman font.

Review paper:

Your paper need not be on the exact topic your discussion paper covers. It might be only a portion of the paper, the broader topic addressed, or a related topic. But, the paper you read should somehow be involved in the review. Ask me if you need help deciding on a topic.

The goal of a review paper is to discuss and synthesize what is known about the ecological question(s). **It is NOT a critique of your discussion paper.** Therefore, you should thoroughly explore the literature to find papers related to your topic and provide a synthesis of the topic (you read other papers for the discussion, right?). **DON'T** review the contents of each paper one at a time (e.g., one paragraph for each paper you read). Instead, draw comparisons or contrast multiple studies in each paragraph. In other words, your paragraphs should focus on topics and ideas, not specific studies (the studies just provide background and support). Nothing is more deadly than simply reviewing each study in detail without actually synthesizing material from multiple studies. See the Skulason and Smith (1995) paper on the course web site for an example of a good review paper.

Your review paper must have at least five peer-review references. The discussion paper may be the focal paper for the review, **but you must include four other peer-review references from journals or scholarly books (NO internet references, agency reports, or textbooks are allowed!).** Having trouble finding other papers? Start with the literature cited section of your discussion paper or look for references in your textbook. You might find a useful paper on the computer in the Ichthyology lab (password: oncorhynchus). Find your papers early, in case you need to order them on interlibrary loan. To make sure you are on the right track, you will be required to turn in a literature cited section for your paper early in the semester (follow proper formatting – see below), although I do not expect you to have fully read the papers at that time. **MAKE SURE TO OBTAIN AND READ** your cited papers. I can often tell if people only have read the abstracts.

Your review paper should be 5-8 pages, 1" margins, double-spaced, in 12 pt. times or times new roman font. Follow TAFS format for citations unless you have a different format approved by me. **See the writing tips and TAFS formatting instructions** on the course web site.

Keep in mind that five references and five pages are MINIMUMS. You won't get an excellent grade by only doing the minimum.