

**Biol 506 STUDENT RESPONSIBILITIES (2006)**

Students registered in B506 give one formal lecture on any subject in Systematics & Evolution that appeals to them. The course is credit / no credit, but don't underestimate the value of peer opinion!

Subject area of lecture: The subject area should be peripheral to your own research area and should not include any of your own data or results. You may choose a subject that has always interested you but about which you would like to learn more. Treat the lecture preparation as an opportunity to indulge your curiosity! In fact, you will likely find it easier to present a lecture on a less familiar topic because you will have a better sense for the level at which to pitch the lecture, which is, of course, the same level you would like if you were a student listening to the lecture.

Focal paper: After you have reviewed the relevant papers and background information, select a recent paper from the primary literature that best illustrates an example of research done in the broader subject area on which you are lecturing. Avoid review papers, as these are often long and don't provide results or specific conclusions that promote useful discussion. The best paper is under 10 pages, has a well-defined question with clear (or at least well-presented) results and conclusions.

Provide an electronic copy (pdf) of your focal paper to the course coordinator at least two weeks prior to your lecture so that it may be posted on the course web site.

Lecture preparation: The most common mistake students make is not to allow enough time to prepare. To assist you, you will be asked to meet with one of the course coordinators to discuss the plan for your lecture at least one week prior to your lecture.

Each lecture should be at the level of a first year graduate course in terms of: a) format of presentation (i.e., it should be a lecture, not just a précis of the focal paper), and b) presentation style. Lectures will be normal length (45 minutes max). Many job interviews now ask applicants to give both a research and teaching seminar. A Biol 506 lecture should be like a teaching seminar. The presenter should also be prepared to lead a discussion following the lecture, as would normally occur in a graduate course.

Potential elements of a lecture:

Delineation of the subject and significance: A clear description of the subject area to be addressed. Why is this subject area interesting/important? Why is the subject area one with which students of systematics and evolution should be familiar? Key questions.

History: A summary of critical contributions to the origin or evolution of the subject area. Give a full citation to the most useful, recent review paper on the subject.

Methods: A basic explanation of methodologies essential to understanding the problem.

Examples/Case studies: A presentation of the methods, results and principle conclusions of one or more case studies, presumably including the focal paper. Be sure to give full citations.

General conclusions: Concluding statements reflecting your own personal evaluation of the subject area (main limitations or values of certain methods, issues still needing attention, what you personally found most interesting or puzzling about the subject area).

Potential format:

Although not required, a PowerPoint is recommended because, increasingly, this is the mode for presenting materials in graduate-level courses. Either bring your own laptop to run your lecture or burn a CD (or use a USB drive) that you know will be readable by a Macintosh computer.

## TIPS FOR PREPARING A LECTURE

**1) Background preparation.** a) Begin with a potential focal paper of particular interest to you and read some related papers. Feel free to pursue papers that seem most interesting to you personally. These likely will be of more interest to the group than struggling to find a paper of 'general' interest.

b) Find a textbook that covers your topic, or a closely related one, to get ideas about possible ways of tackling the topic and to get ideas about useful examples that might help with the lecture.

c) As you read papers and think about the topic, write out a list of potential conclusions / key results. These can be in random order as they occur to you, just write them all down.

**2) Lecture preparation.** After you have assembled the background information, but before you actually start to 'write' the lecture, write down the 3-4 primary conclusions you wish to make (e.g., choose these from the list you created in part 1). In other words, what three or four things would you like a student leaving the class to say to another student in the hall when asked: "What was that lecture about?" These 3-4 conclusions then help define the logical structure to your lecture and make it much easier to decide which information to include or exclude. Choose these carefully.

**3) Lecture content- introduction.** Use those 3-4 conclusions to set up 3-4 questions or puzzles in the introduction that you will 'solve' during the lecture. This helps capture people's interest because everyone likes a good puzzle. Try stating them as questions at the start (for more tips see "[www.biology.ualberta.ca/courses.hp/biol506.hp/WritingBackwards.pdf](http://www.biology.ualberta.ca/courses.hp/biol506.hp/WritingBackwards.pdf)" from the course web site).

When you are unsure what to include or not to include in the lecture -- a common mistake is to include way too much information in too little depth to allow comprehension -- refer back to these 3-4 conclusions. If something seems like it might be relevant, but it does not help you make one of the 3-4 conclusions, then leave it out (or set it aside until you know how much material you have).

**4) Lecture content- body.** For each of the 3-4 conclusions, try to present a single clearly worked example (illustration or diagram) that helps support the conclusion.

The best examples to work from are ones that you personally find the most interesting, informative, or compelling. Do not be afraid to select examples that you feel are too personal . . . if you really like them, and feel they make a point clearly, they will greatly enhance your own pleasure of giving the lecture, and hence your animation and enthusiasm.

**5) Lecture content- format.** Avoid long lists of text items or long paragraphs of text. Except for the introductory questions, and the list of conclusions at the end, overheads should be mainly illustrative material (diagrams/figures) or contrasts of alternative hypotheses or ideas (e.g., a table of pros and cons) that drive home, or make easier to understand, your key points.

Each screen should mainly provide information relating to the 3-4 conclusions, they should not primarily serve as the notes to which you wish to refer during the lecture. If you wish more detailed notes, use the PowerPoint 'Notes' page, and print these off for your own reference.

If technical terms or acronyms are necessary, be sure to define them for the class.

Use PowerPoint animations judiciously. Avoid: flying text, egregious sounds, excessive numbers of animated text elements (i.e., those that don't appear until you click).

**6) Post-lecture discussion.** After spontaneous questions from the audience have subsided, be prepared to lead a discussion. Prepared some questions to put to the audience in advance. These can take the form: "One of the things I found most interesting/puzzling about this subject was . . . [pick a topic] . . . Heather, what did you think about this?". In other words, direct questions to specific individuals in the audience, at least initially, to get things started.