

Biol 498 Capstone Seminar**Fall 2009**

Objectives: This course is intended to bring together in some meaningful way the many threads of your undergraduate education in biology. We will conduct the course primarily as a “journal club”, meaning we will be reading and discussing original research articles. Each week, one person will present an article and the rest of us will respectfully listen and ask insightful questions (see below for more details). Good research articles typically combine a variety of techniques and concepts in biochemistry, molecular biology, cell biology and/or organismal biology. Reading, discussing and understanding such articles is an excellent way to integrate different aspects of biology.

Instructor: Dr. James Barron, **Office:** 132 Science Hall, **Phone:** 657-2918
Email: jbarron@msubillings.edu

Tentative Schedule of Presentations

<u>Date</u>	<u>Presenter</u>
Sept. 15	Class Business/Introduction
Sept. 22	Barron – Dace Project?
Sept. 29	Barron – Wund et al., Am Nat. 172:449-462 – Stickleback Evolution?
Oct. 6	
Oct. 13	
Oct. 20	
Oct. 27	
Nov. 3	
Nov. 10	
Nov. 17	
Nov. 24	
Dec. 1	
Dec. 8	TBA – Amaya? Science Paper?? Bryant et al., Science 317:523-526.

Responsibilities of the presenter:

Choose an **original research article** on a contemporary topic in biology. You can choose your own article from the following sources: Science, Nature, Evolution, Ecology, American Naturalist, Eukaryotic Cell, Journal of Virology, Infections and Immunology, Applied and Environmental Microbiology. You may choose from another journal, but only the “top tier” journals are acceptable, see me before you spend much time looking elsewhere. Your article should be a feature article (not a short communication or note).

The article must be approved by me prior to distribution to the rest of the class.

Distribute copies of the article to the entire class at least **one week prior** to the presentation.

You must preview the presentation for me no later than the Friday before you are scheduled to present.

Give a clear and logical presentation of the article. The presentation must be in PowerPoint and should take approximately 20-30 minutes.

Meet with me sometime after class to discuss your presentation.

Use the following format as a general guideline for your presentation.

I. Brief Introduction to Article.

- Why did you choose this article?
- relevant background.

II. Discuss the question or hypothesis of the article (What are the authors trying to find out?).**III. Discuss each experiment described in the article.**

- What is the specific question the experiment is designed to address?
- What is the experimental design (experimental groups, control group etc.)?
- What experimental methods/techniques are used?
- What are the results of experiment?

IV. Discuss the authors' interpretation of the data.

- What did they conclude?
- Are their conclusions justified?

V. How can this work be extended? What is the next step?**VI. Answer questions from the audience.**

Responsibilities of the audience:

On the weeks that you are not scheduled to present, you will write a one-page synopsis of the article.

In the synopsis you must address the main scientific question or hypothesis, description of experiments, data and conclusions.

Also, you must include at least one substantive question to ask the presenter.

The synopsis must be type-written.

The synopsis must be turned in the day we discuss the article in a folder. Keep ALL work from the semester in the same folder for the duration of the class.

Assessment/Grading:

Your grade will be based on the quality of your presentation, the quality of your weekly synopses and class participation.

Attendance:

Attendance is mandatory, as missed classes cannot be made up. You will be docked one full grade for each unexcused absence.