

BIOL 7020: Special Topics in Cell & Molecular Biology
Spring Semester 2016, Section A (CRN# 21612, 2 Credit hours, 2-0-2)
 Department of Biology, College of Arts & Science, Valdosta State University

Lecture/Discussion (BC 1202): M 5:00 p.m. – 6:50 p.m.

Instructor: Dr. Brian C. Ring
 Office: BC 2084
 Office hours: **M** 3:00 p.m. – 5:00 p.m.
 Phone: 249-4841 (Dept. office 333-5759)
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Pre-Requisites: Acceptance into the graduate program in biology or permission of the instructor.

Course Description: Advanced study of cellular and molecular biology requiring reading of the current literature and student presentations. Topics will change each time the course is offered. Course may be taken twice for credit, with permission of the instructor.

Course Objectives: Upon completion of this course the student should be able to:

- 1) Explore the current literature relating to cellular and molecular biology at various biological levels;
- 2) Analyze and present data presented in cell and molecular literature to peers;
- 3) Prepare and write a summary review of assigned papers.

These objectives support the Department of Biology Selected Educational Outcomes for the Masters # 1 & 2 as listed in the VSU Graduate Catalogue.

Required Materials: None. Primary research articles assigned in lecture.

Graded Course Components: Your final grade will be based on completion of paper summaries, group participation, and a final paper. Course design, schedule, due dates, and BlazeView posts/assignments will be detailed further in class while guidelines are presented below.

Grade Calculation		Grade Distribution	
Category	Possible %	Letter	Percentage
Paper Summaries	60%	A	89.5 – 100%
Participation*	20%	B	79.5 – 89.4%
Final Paper	20%	C	69.5 – 79.4%
		D	59.5 – 69.4%
		F	≤ 59.4%
Total	100 %		

* **Note:** Missed lecture or inadequate participation on a lecture day results in -5%.

Course Guidelines: We will break the topic of Cell & Molecular into two major biological levels or categories: Organismal vs. Population Levels. Each category will be covered sequentially through the semester. **The goal is to find primary research papers related to both the categories and your own research area**, so that what we discuss has meaning to your own area of research. Therefore, each student will discuss their own research area and identify X papers first, and then we will all read, provide written paper summaries, and discuss these papers in class sequentially across the semester. A schedule will be developed by the second day of class.

Second, each student will serve as discussion leader of their individual papers in class based on the schedule and provide access of their chosen papers on BlazeView or by hard copy. During each discussion, the other participants will provide two copies of their written paper summaries, one for the discussion leader and the other to be assessed by the instructor. Details of the one page *paper*

summaries are provided below. We will use our paper summaries to drive our discussion of the papers and the discussion leader will lead the charge.

Finally, each student will write a final paper due the week prior to finals (**April 29, 2016** by email or hard copy; early papers also accepted) summarizing how the papers relate to the categories and your own research. Each student will use their own paper summary and those of their peers to help guide their writing of the final paper. All proper citations and a works cited section must be included. Details are provided under *final paper* below.

Paper Summaries: Each of the 24 total papers (24 papers / Y students = X papers / student) will require you read and provide a written paper summary before we meet to discuss. No late paper summaries will be accepted.

Each paper summary will include a brief summary and you can use the following questions to guide your summary:

- What is the basic premise of the research being presented by the authors?
- What is the significance of the research the authors present (e.g. hypothesis driven, observational study, and implications toward organismal or population mechanism)?
- What type of research do the authors present in both their materials and methods and results?
- What do the authors claim the results of their research means (e.g. does it support their hypothesis or significance or paradigm shift in the field)?
- Your opinion on how the results support their claims. Do the experiments (data) support their claims?
- What types of experiments or future research are proposed by the authors (if applicable)?
- How is the research the authors present related to your own research (if applicable)?

Finally, each student will provide at least two questions they encounter when writing the summary (at the end) that we can use in our discussions and that may be useful in your final paper.

Final Paper: Your final paper is a summary of the primary research articles you presented in our discussions. Use your summary and those of your peers to direct your writing. Try to split your review into the two categories of cell & molecular and compare them. Also include a closing paragraph relating the research papers to your own research or possible future research if not directly applicable. Make sure you use the standard citation style in your paragraphs and final bibliography. An example is provided below:

A set of core bin markers were used to identify sorghum BACs to cytogenetically map their position in the maize genome (Figueroa et al., 2011).

As an example, your citation in the bibliography would follow:

Figueroa DM, Davis JD, Strobel C, Conejo MS, Beckham KD, Ring BC, Bass HW. The selection and use of sorghum (*Sorghum propinquum*) bacterial artificial chromosomes as cytogenetic FISH probes for maize (*Zea mays* L.). *J Biomed Biotechnol.* 2011; 2011:386862.

See the CSE citation style for more information: <http://library.osu.edu/help/research-strategies/cite-references/cse> or PubMed: <http://www.ncbi.nlm.nih.gov/pubmed/>

Academic Dishonesty (e.g. cheating or plagiarism): A student cheating or plagiarizing will be penalized by receiving a zero for the assignment and will be reported to the dean of students. Refer to the Student Code of Ethics in the VSU Student Handbook.

Privacy Act (FERPA): The Family Educational Rights and Privacy Act (FERPA) prohibit the public posting of grades by Social security number or in any manner personally identifiable to the individual student. No grades can be given by email or over the telephone, as positive identification cannot be made by this manner.

Students with Disabilities: Students requesting classroom accommodations or modifications because of a documented disability must let me know and must also contact the Access Office for Students with Disabilities located in room 1115 Nevins Hall. The phone numbers are 245-2498 (voice) and 219-1348 (tty).