

Plant Biochemistry-BMB 864, Fall 2008

<u>Instructors:</u>	email	phone
Robert Larkin	larkinr@msu.edu	432-4619
Markus Pauly	paulymar@msu.edu	353-4333

Textbook:

Biochemistry and Molecular Biology of Plants Ed. Bob Buchanan, Wilhelm Gruissem, and Russell Jones.

Class meetings:

1:50 pm - 2:40 pm MWF
Room A148 Crop and Soil Science

Class format:

The class will consist of lectures and discussion. Most lectures will be presented by the two instructors, as shown on the schedule. One guest lecture on chloroplast biogenesis will be presented by Dr. John Froehlich, a research assistant professor in the Plant Research Laboratory.

Discussions: The discussions will be centered on recent manuscripts from the primary literature. Most will be led by students enrolled in the class on the dates listed on the lecture schedule. On each discussion day, two manuscripts will be presented and discussed. Students will select, or be assigned, topics on the first day of class. Subsequent changes can be made only with permission of the instructors plus the agreement of another student who is willing to change topics. Each student will make two presentations.

The manuscripts to be presented and discussed will be made available to the entire class, including the presenter, one week before the date of the presentation and discussion. All class members are expected to read the manuscripts and participate in the discussion. The presenters should read the manuscript carefully and be prepared to make a short (~15 minute) presentation summarizing the manuscript. This will include a description of the goals of the research, the experimental strategy, the major results, and the conclusions drawn by the authors. This presentation will be followed by a general discussion that includes all members of the class.

On those class periods that occur before an hour exam, only one presentation will be made when the schedule permits. The remaining time will be used as a review session to answer questions from class members in preparation for the exam in the following class period.

Grading:

Students will be evaluated by their performance on three hour exams, their presentations of the assigned manuscripts, and their participation in discussions. There will not be a cumulative final examination. Each hour exam will be worth 100 points. Each presentation will be worth 50 points.

BMB 864- Fall, 2006 Lecture Schedule

<u>Date</u>	<u>Lecturer</u>	<u>Topic</u>	<u>Readings in Text</u>
M 8/25	Pauly	Course Intro; Structure/Function in plants	Chapter 1
W 8/27	Larkin	Chlorophyll metabolism	pp 572-581, 1057-1060
F 8/29	Larkin	Carotenoid metabolism	pp 572-581, 1057-1060
M 9/1	No class	Labor Day	
W 9/3	Larkin	Light reactions of photosynthesis	pp 568-610
F 9/5	Larkin	Light reactions of photosynthesis	pp 568-610
M 9/8	Larkin	Light reactions of photosynthesis	pp 568-610
W 9/10	Staff	Student presentations on light rxns of photosynthesis	
F 9/12	Pauly	Carbon metabolism of photosynthesis	pp 610-625
M 9/15	Pauly	Carbon metabolism of photosynthesis	pp 630-674
W 9/17	Pauly	Starch metabolism	pp 630-674
F 9/19	Pauly	Sucrose metabolism	pp 758-776
M 9/22	Froehlich	Chloroplast biogenesis	pp 37-45, 164-168
W 9/24	Staff	Student presentation on carbon metabolism and review	
F 9/26		First Hour Exam	
M 9/29	Pauly	Respiration and photorespiration	pp 676-728
W 10/1	Pauly	Respiration and photorespiration	pp 676-728
F 10/3	Pauly	Respiration and photorespiration	pp 676-728
M 10/6	Staff	Student presentation on respiration and photorespiration	
W 10/8	Pauly	Cell wall metabolism	pp 52-108
F 10/10	Pauly	Cell wall metabolism	pp 52-108
M 10/13	Pauly	Cell wall metabolism	pp 52-108
W 10/15	Pauly	Cell wall metabolism	pp 1288-1302
F 10/17	Staff	Student presentations on cell wall metabolism	
M 10/20	Pauly	Lipid metabolism	pp 456-526
W 10/22	Pauly	Lipid metabolism	pp 456-526
F 10/24	Pauly	Lipid metabolism	pp 456-526
M 10/27	Staff	Student presentation on lipid metabolism and review	
W 10/29		Second Hour Exam	
F 10/31	Larkin	Ion transport	pp 110-157
M 11/3	Larkin	Ion transport	pp 110-157
W 11/5	Larkin	Ion transport	pp 110-157
F 11/7	Staff	Student presentations on ion transport	

M 11/10	Larkin	Nitrate assimilation	pp 815-824
W 11/12	Larkin	Sulfate assimilation	pp 824-845
F 11/14	Staff	Student presentations on nitrate or sulfate assimilation	
M 11/17	Larkin	Amino acid metabolism	pp 358-409
W 11/19	Larkin	Amino acid metabolism	pp 358-409
F 11/21	Staff	Student presentation on amino acid metabolism	
M 11/24	Larkin	Natural products	pp 1250-1316
W 11/26	Larkin	Natural products	pp 1250-1316
W 11/28	Thanksgiving break		
M 12/1	Larkin	Natural products	pp 1250-1316
W 12/3	Staff	Student presentation on natural products and review	
F 12/5	Third hour exam		