

UWSP Biology 490 Senior Seminar: Pollination Biology (Spring 2019)

Fridays, 10-12, CBB 271

Instructor: Dr. Stephanie Pimm Lyon

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Office hours: Mon/Wed 11AM – 12PM or by appointment

Course Description:

Capstone course for senior biology majors, organized around discussions of recent primary and secondary literature on a variety of topics in pollination biology. Topics will include pollinator-mediated speciation, specialized pollination systems, interaction networks, and conservation of pollinator diversity and pollinator services. Students will both present and lead discussions on papers, write a review paper on a pollination biology-related topic, and engage in a peer review process with their classmates.

Course Learning Objectives:

- Locate, critically read, synthesize, and discuss the primary literature
- Demonstrate the ability to write and orally present biological information that is articulate and grammatically correct with properly documented and organized ideas and data, and is appropriate to the specific audience
- Evaluate your own and others' written and oral communication skills by providing and applying useful feedback

Schedule:

January 25: Introductions & Recent Trends in Pollination Ecology

February 1: Pollination syndromes [**Preliminary topic due**]

February 8: Extremely specialized plant-pollinator relationships

February 15: Workshop on using library resources

February 22: Pollination and angiosperm diversification

[Final topic and annotated bibliography due]

March 1: Geographic mosaic and diverse coevolution

March 8: Plant-pollinator interaction networks

March 15: Mating systems, sex allocation, and tradeoffs

March 29: Deceptive pollination

April 5: Pollinator foraging behaviors

April 12: Peer review session

[Rough drafts due, Peer Reviews due by end of weekend]

- April 19:** Effects of invasive species on plant-pollinator interactions
- April 26:** Landscape effects on pollinator diversity and pollination services
- May 3:** Climate change and plant-pollinator interactions
- May 10:** Restoration of pollinator habitats and pollination services

[Final paper due]

Course Structure, Requirements and Grading:

Most classes will take the form of discussions of papers surrounding a common theme. A list of suggested papers (typically one primary research paper, and one review paper) for each topic will be provided separately. If you wish to substitute other suitable papers related to that topic, you may do so—but please let the class know at least a week in advance.

Paper presentation:

For each discussion session, a student will be assigned the role of “presenter”. This student should expect to thoroughly read the assigned papers, and put together a roughly 20-30 minute introduction to the topic and an overview of the assigned papers, introducing the authors, explaining their hypotheses and methods (when relevant), displaying and interpreting the important figures in each paper, and presenting the conclusions of each paper.

Discussion leaders:

For each discussion session, a second student will be assigned to organize the questions and comments submitted by their peers, and lead a discussion based on the class-submitted questions, the common points of confusion, the bigger ideas presented in the papers, and the implications of this research for science and society. This person will also submit a **one-page summary** of the discussion, due one week after a given session.

Participation:

Everyone is expected to read all papers and contribute discussion questions for each session. Questions should be submitted to the appropriate Canvas forum **before midnight** prior to the discussion. **You should submit at least 2 questions per discussion session**—one clarifying question, and one question relating to the ideas addressed in the paper. There will be a discussion forum on Canvas for each class session—submit your questions there.

Academic Review Paper and Peer Review:

Students will write a review paper on a topic of their choice. At least 5 primary and 2 secondary references must be used in writing the rough draft. Students will then peer-review drafts by two other students* and suggest an additional article to incorporate into each manuscript. Students will write a written response to the peer reviews and complete the final draft of their paper, incorporating at least 2 *additional* sources. The main goals of this assignment are to explore a topic of your choice in depth and communicate what you have learned about that topic. You will also gain skills in finding relevant resources, writing, and editing.

Note: Because students peer review each other's rough drafts for a grade, **late rough drafts will not be accepted.*

Comprehensive Exam:

Satisfactory completion of this 490 course requires the completion of the Biology Department's comprehensive exam. Test scores are used to compare class averages among various populations of biology majors to assess general student learning. Scores will not be made available to you nor your instructor and will have *no bearing on grades*. However, *your 490 grade will be withheld until the exam is taken*. The exam will take approximately 60 minutes and will be offered at the following times:

Wednesday and Thursday **1-2 May, 6-7 PM** in TNR 464.

Please register for an exam time on the sign-up sheet with your instructor. If you cannot attend either of these examination times please contact Nancy Shefferly (Nancy.Shefferly@uwsp.edu) to schedule an alternative time.

Grading scale:

93% and above = A
90-92% = A-
88-89% = B+
83-87% = B
80-82% = B-
78-79% = C+
73-77% = C
70-72% = C-
68-69% = D+
60-67% = D
below 59.5% = F

Grade components (100 points total):

Topic & Annotated Biblio	5 points
Paper Presentation	15 points
Discussion Leadership	15 points
Discussion Participation	15 points
Academic Paper Draft	10 points
Peer Reviews (2)	10 points
Academic Paper Final	30 points

Accommodations & Absences:

Much of this class is based on discussions, which require your presence and participation. However, a **single absence from a discussion in which you are a participant** (i.e. not a Presenter or Discussion Leader) **will be excused for each student**. If you need to miss a discussion in which you are a Presenter or Discussion Leader, you must reschedule to lead a different discussion *prior to that discussion*. Once your single excused absence has been used up, unexcused absences will result in point deductions. (Exceptions can be made in extraordinary cases: If you need to be absent for illness or personal reasons, please let me know in advance and I will try to be accommodating. I will keep any requests confidential.)