

## **Biology 490 Senior Seminar Old World Fruit Bats**

### Instructor information

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### Course information

When: Friday 11:00-11:50

Where: TNR 460

### **Course Description and Objectives:**

Faculty may have a variety of ideas regarding what to emphasize in a 1-credit senior seminar course. My approach is to do something different every year depending on what is current and what I'm interested in learning more about. This is the first time I've done a seminar on Old World fruit bats, and most of the papers I've selected I will be reading for the first time along with the rest of you. This means the lecture could drag on if nobody comes prepared. Each week one student will lead a paper. This should include preparing an introduction to the paper and the paper's authors, as well as any relevant background information on the topic.

### **Grading**

The format of the course will include two components. Component 1 (worth 50 points): Each week we will discuss a speaker and their area of research. Each student will be assigned a speaker and will be responsible for leading the discussion. Component 2 (worth 100 points): In addition to leading a paper, each student will write a species account on a fruit bat for Animal Diversity Web. UWSP students in my courses have written more than 200 accounts for this online encyclopedia of animals. My publication rate is somewhere around 60%, which means that 40% of students that write an account never get it published. Let's shoot for 100%. These accounts serve as a writing sample for future employment or graduate school applications. There is incentive for you to do a good job. Bring laptops or tablets if you have them as we can use a portion of the class time to work on research and writing. Online instructions can be found at [http://animaldiversity.ummz.umich.edu/teach/contributor\\_guidelines/](http://animaldiversity.ummz.umich.edu/teach/contributor_guidelines/).

### **Hints for Presenters**

Critical reading of primary literature is not an easy thing to master, and the only way to get good at it is to do it often. It is a skill that many of you will carry on into your professional careers. If you go on to graduate school, you may find yourself in a journal club with faculty and other graduate students doing exactly what we're doing in this seminar – reading and discussing current research in our field. If you work for a government agency, you will be expected to keep abreast of current research in your field of expertise, and you should be able to identify how these studies fit into your study, what are the strengths and weaknesses of the study, and how you might even improve or add to the study.

The most challenging part of reading primary literature is identifying the important points in the paper. As a presenter, it is your task to more or less summarize

the paper and prioritize what should be discussed. Below is a rough sketch of how to go about this, but every paper is different so you want to keep an open mind. Summarizing can be approached by taking notes on the following points:

1. *What questions (hypotheses) are being asked in the paper? What is the paper about?* This information is typically found in the introduction.
2. *How did the authors go about answering these questions? What is the experimental design?* This is found in the methods section. The biggest problem students have is figuring out how much time and effort to spend here. The short answer is don't focus too much time here. You do want to mention what they did (modeling, field studies, lab studies) and a bit of detail regarding design and statistics. As a presenter you don't need to go into too much detail on the model or statistics. However, this may be an important area of discussion later on if you identify flaws in the methodology, so all students should do their best to understand the experimental design.
3. *What were the findings of the paper? What are the broader implications of this research?* This information is found in the results and discussion section.

To summarize the paper for the class you want to spend about 15-20 minutes. You should assume that all other students read the paper and have a copy of the paper in front of them. However, it is still beneficial to use overheads of the tables and figures you'd like to incorporate into your summary. Many students like to prepare a powerpoint presentation to organize this information.

Leading the discussion involves preparing a list of discussion questions and topics for the rest of the class. Ideally, the class will run the discussion, because each person will have read the paper and will have written notes and questions they have regarding the paper. Nevertheless, it is on the presenter to fill in the lulls with new discussion topics. Broad topics include:

- Was the methodology appropriate for the questions being asked? How could the experimental design be improved?
- Did the conclusions follow from the data clearly? Could other conclusions be drawn from the data that the authors did not mention?
- What are the backgrounds of the authors? How could this impact the study?

Date	Paper
Jan 25th	Introduction and assignment of papers
Feb 1	Stier and Mildenstein. Dietary habits of the world's largest bats. <i>Journal of Mammalogy</i> 2005.
Feb 8	Roberts et al. Long-distance and frequent movements in the flying fox <i>Pteropus poliocephalus</i> . <i>PLoS One</i> 2012.
Feb 15	McConkey and Drake. Flying foxes cease to function as seed dispersers long before they become rare. <i>Ecology</i> 2006.
Feb 22	Nyhagen et al. An investigation into the role of the Mauritian flying fox, <i>Pteropus niger</i> , in forest regeneration. <i>Biological Conservation</i> 2005.
March 1	Monson et al. Conservation implications of Chamorro consumption of flying foxes in Guam. <i>Conservation Biology</i> 2003.
March 8	Leroy et al. Human ebola outbreak resulting from direct exposure to fruit bats in the Congo, 2007. <i>VBZD</i> 2009.
March 15	Almeida et al. Evolutionary relationships of the old world fruit bats: Another star phylogeny? <i>BMC Evolutionary Biology</i> 2011.
March 22	Barclay and Jacobs. Differences in the foraging behavior of male and female Egyptian fruit bats. <i>Canadian Journal of Zoology</i> 2011.
April 5	O'Brien et al. Multiple colonizations of the western Indian Ocean by <i>Pteropus</i> fruit bats. <i>Molecular Phylogenetics and Evolution</i> 2009.
April 12	Weber et al. A first assessment of home range and foraging behavior of the African long-tongued bat. <i>Acta Chiropterologica</i> 2009.
April 19	Amitai et al. Fruit bats fuel their metabolism rapidly and directly with exogenous sugars. <i>Journal of Experimental Biology</i> 2010.
April 26	Hayman et al. Demography of straw-colored fruit bats in Ghana. <i>Journal of Mammalogy</i> 2012.
May 3	Riek et al. Thermobiology, energetics and activity patterns of the Eastern tube-nosed bat. <i>Journal of Experimental Biology</i> 2010.