Mammalogy

Fall **2017**

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Class Times

Tuesdays and Thursdays from 1:00 – 1:50 in TNR 170. All labs meet in TNR 457. Section 1: Thurs 8-10 / Section 2: Friday 8-10 / Section 3: Thurs 10-12

Resources

Required textbook: Mammalogy by Feldhammer et al. / Lab: Mammals of the Greak Lakes Region by Allen Kurta / Lecture and lab handouts on D2L course website.

What will we do in mammalogy and what will I learn?

> "The scientist is not the person who gives the right answers, he is the one who asks the right questions." – Claude Levi-Strauss

The lecture portion of the course has two primary objectives. First we will engage the mammals, primarily through lectures and discussions focusing on mammal structure and function, diversity, ecology, behavior, and biogeography. Second we will engage ourselves by working on skills that matter in the marketplace. The laboratory portion of the course will focus on mammalian diversity through the study of museum material, pictures, video, and primary literature. Efforts will be made to cover mammals of Wisconsin, North America, exotic mammals popular in zoos, as well as interesting mammals from around the world. Based on feedback from prior students we will be using Desire2Learn (D2L) to help prepare for laboratory practicals and to organize course materials.

Learning Outcomes

Examine mammal specimens and describe similarities and differences in order to distinguish, classify, and name them.

Solve problems individually and in groups related to laboratory and lecture assignments.

Research, analyze, and organize scientific data.

Communicate effectively, in writing and speaking, how to ask good scientific questions, how to design an experiment and test hypotheses, and how to present results in a public forum.

I love Josh Keyes' art. It is so whimsical and mammaly.

"There have only been about a half dozen genuinely important events in the four-billion-year saga of life on Earth: single-celled life, multi-celled life, differentiation into plants and animals, movement of animals from water to land, and the advent of mammals and consciousness." - Elon Musk (CEO Space X, Tesla)

Mammalogy and the Bigger Picture

UWSP offers one of the few mammalogy courses in the state and one of the largest, in terms of enrollment, in the country. Skills learned in mammalogy are applicable to the fields of wildlife management, epidemiology and zoonotic disease transmission, systematic biology, animal control, and the behavioral sciences.

This course fulfills 3 credits of 300 level course work towards the Forty Credit Rule. The course also fulfills an elective requirement for the Biology Major (advanced animal biology), an elective requirement for the Environmental Education and Interpretation option for the Resource Management Major, an elective requirement for the Wildlife Ecology Major, and an elective requirement for the Wildlife and Conservation Biology Minors.

Grading

Your grade in this class is determined by 3 laboratory practicals, daily notes uploaded to D2L, 10 online quizzes, and 2 exams. The lab practicals are worth 50 points each (50x3=150 points)q. Lecture notes will be graded 20 times during the semester and each be worth 5 points (20x5=100 points). Download note outlines from D2L and use your textbook to fill in pertinent information. You will upload your notes to d2l and can print a copy to bring to class. By completing notes before class everyone should know what we're talking about and be prepared to discuss the topic in class. Notes that are uploaded late will receive 0 points. There will be two non-cumulative lecture exams each worth 100 points (100x2=200 points). Finally, there will be 10 online quizzes worth 5 points each (10x5=50 points). Thus, a total of 500 points can be earned in this class. The final points will be added up, divided by 500, and multiplied by 100; the percentage obtained will determine your grade.

Angela Duckworth defines Grit as perseverance and passion for long-term goals. Related to this are 5 characteristics of gritty people. Do you have grit?

1. Courage – Manage your fear, particularly your fear of failure. We learn best through trial and error, but in education we punish error. Fight that system and learn from errors.

2. Conscientiousness – The achievement-oriented individual works tirelessly, tries to do a good job, and completes the task at hand. Don't just show up for practice. Go for the gold!

3. Follow-Through – Achievement is the product of talent + effort, the latter a function of the intensity, direction, and duration of one's exertions towards a long-term goal.

4. Resilience – It doesn't matter how many times you stumble, what matters is that you get up again and move forward.

5. Excellence – Don't seek perfection, but rather strive for excellence.

Source: Margaret Perlis, Forbes

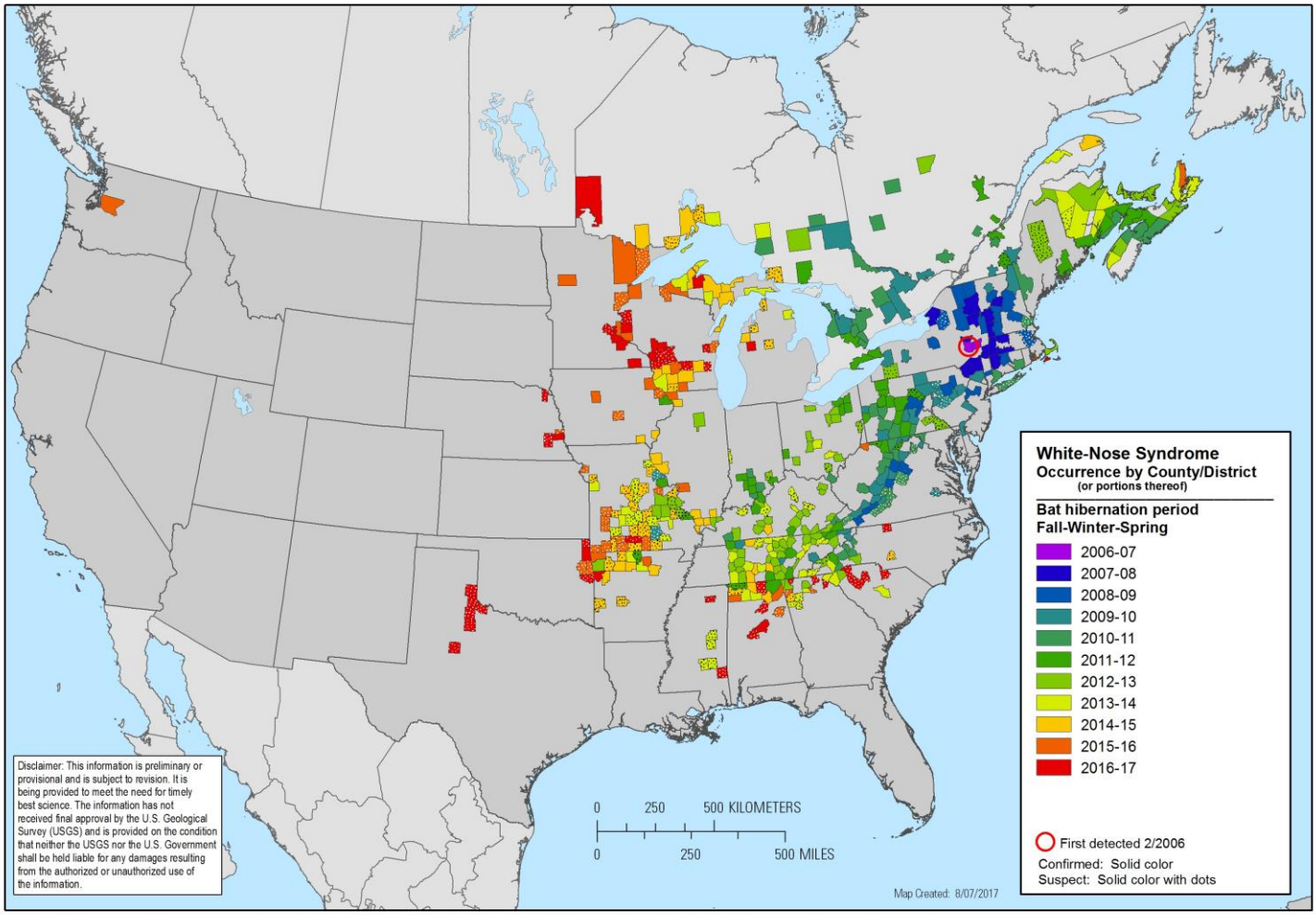
From Darwin's Journal or Researches December 7th, 1834, Chiloe Island, Chile

7th In the morning we stopped for a few minutes at a house at the extreme North point of Isd of Laylec. This was the last house; the extreme point of S. American Christendom; & a miserable hovel it was. — The latitude is about 43° 10′, which is considerably to the South of the R. Negro on the Atlantic coast of America. The people were miserably poor & as usual begged for a little tobacco. — I forgot to mention an anecdote which forcibly shows the poverty of these Indians; some days since, we met a man who had travelled 3 & ½ days on foot, on bad roads, & had the same distance to return to recover the value of an axe & a few fish! How difficult it must be to buy the smallest article, where such trouble is taken to recover so small a debt. —We had a foul wind & a good deal of swell |502| to struggle with, but we reached the Island of S. Pedro, the SE extremity of Chiloe, in the evening. When doubling the point of the harbor, Mrs Stuart & Usborne landed to take a round of angles. — A fox (of Chiloe, a rare animal) sat on the point & was so absorbed in watching their mænœvres, that he allowed me to walk behind him & actually kill him with my geological hammer.

"If you want something done right, then ask a mammalogist to do it."
- James Findley

Academic Misconduct

Any form of cheating on exams, quizzes, home works, or any misrepresentation of your work will result in zero (0) points being recorded for that graded component of the course. **This includes plagiarism of published works. The university policy on academic misconduct can be found in chapter 14 of this document** http://www.uwsp.edu/dos/Documents/CommunityRights.pdf#page=11.



Citation: White-nose syndrome occurrence map - by year (2017). Data Last Updated: 8/07/2017. Available at: https://www.whitenosesyndrome.org/resources/map.

This is the most recent map of white-nose syndrome, a disease that is decimating cave-hibernating bats throughout the eastern United States. Infected caves experience a 70-100% mortality rate. Since the arrival of the disease in Wisconsin in 2014, it has been found in 24 of 27 counties with known hibernacula. The rapid decline in foraging bats has changed the nocturnal aerial insectivore guild. For example, how is this affecting nighthawk population numbers? Are we seeing an increase in mosquito-borne diseases like dengue and West Nile Virus? Are we seeing more crop and tree damage by caterpillars? How do you inoculate bats if we can develop a vaccine?

How do I succeed in this course?

The first key to success in this course is getting into the rhythm of assigned reading, upload class notes to D2L, attend and participate in lectures, download and read lab materials, attend and participate in labs, take weekly quizzes. This rhythm alone will get you 150 "free" points. This might be short of the axiom that 95% of success is simply showing up, but it's a start.

The second key to success is embracing the material and the assignments. If you grudgingly work at a class you are probably interested in, what will happen when your employer gives you a task that does not challenge you? Attitude matters and college is a relatively safe place to work on attitude.

Finally, you will probably have to study - [stupid college classes☺!] Organismal biology courses like this have lots of names to memorize. With each specimen in lab, think about potential questions I could ask. I give essay exams in lecture so look for 2 or 3 big ideas from each lecture that could be the basis of an essay question.

Date		Topic	Chapter
September	5	Introduction	
	7	Phylogeny and Diversification of Mammals	
	7/8	Lab 1: Handling and use of museum collections Bones and dental formula	
	12	Monotremes and Marsupials	11
	14	Foods and feeding	7
	14/15	Lab 2: Monotremes and Marsupials	
	19	Insectivores	12
	21	Locomotion	6
	21/22	Lab 3: Insectivores	
	26	Echolocation	13
	28	Communication, aggression, spatial relations	21
	28/29	Lab 4: Chiroptera	
October	3	Environmental adaptations	9
	5	Reproduction	11
	5/6	**Lab 5: Lab Practicum I**	
	10	Dillos, anteaters, sloths, pangolins, and aardvarks	
	12	Biological Rhythms	
	12/13	Lab 6: Pilosa, Cingulata, Pholidota, Tubulidentata	
	17	Sexual selection, parental care, and mating systems	2
	19	**EXAM I**	
	19/20	Lab 7: Marine mammals	
	24	Carnivora	16
	26	Conceptual blending demonstration	
	26/27	Lab 8: Carnivora	
	31	Social behavior	23
	2	Dogs and More Dogs Video	
	2/3	**Lab 9: Lab Practicum 2**	
November	7	Primates	
	9	Dispersal, habitat selection, and migration	24
	9/10	Lab 10: Primates	
	14	Rodentia and Lagomorpha	18
	16	*Where do good ideas come from?*	
	16/17	Lab 11: Rodentia and Lagomorpha I	
	21	Populations and life history	25
	23	Thanksgiving Break	
	23/24	Lab 12: Thanksgiving Break	
	28	Community ecology	26
	30	Parasites and Diseases	
	30/1	Lab 13: Rodentia and Lagomorpha II	
December	5	Perissodactyla and Artiodactyla	
	7	Parasites and diseases (On the trail of a killer virus)	
	7/8	Lab 14: Perissodactyla and Artiodactyla	
	12	Zoogeography	5
	14		
	14/15	**Lab 15: Final Lab Practicum**	
	19	**Final Exam – 8:00 – 10:00 (Tuesday)**	

The top 10 skills employers say they seek in college graduates in order of importance.

1. Ability to work in a team.
2. Ability to make decisions and solve problems.
3. Ability to plan, organize and prioritize work.
4. Ability to communication with people inside and outside an organization.
5. Ability to obtain and process information.
6. Ability to analyze quantitative data.
7. Technical knowledge related to the job.
8. Proficiency with computer software programs.
9. Ability to create and / or edit written reports.
10. Ability to sell and influence others.

Source: The National Association of Colleges and Employers (NACE)

"Individual commitment to a group effort - that is what makes a team work, a company work, a society work, a civilization work."
- Vince Lombardi

If updates are made to this syllabus the most recent syllabus will be posted on D2L. I will also send any updated syllabus to the class via email as an attached file.

Is College Worth It? It depends on what Gallup refers to as the "Big Six". Graduates who had the following six experiences perform better on measures of long-term success compared with graduates who missed the mark on these experiences:

1. A professor who made them excited about learning.
2. Professors who cared about them as a person.
3. A mentor who encouraged them to pursue their goals and dreams.
4. Worked on a long-term project.
5. Had an internship where they applied what they were learning.
6. Were extremely involved in extra-curricular activities.

Source: "Big Six" College Experiences Linked to Life Preparedness by Sean Seymour and Shane Lopez, April 2015, Gallup.com.