ZOO 4513 ANIMAL BEHAVIOR
FINAL EXAM REVIEW TOPICS

The final exam will be approximately two thirds material since the mid-term; one third prior material. Topics since the mid-term are listed below.

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1. Understand the ecologically relevant features and sensory signposts of Y-axis orientation and short range homing (and how they differ).

2. Be able to explain how the sun compass mechanism operates, including time compensation and the link to polarization cues; know other important orientational cues (stimuli) and their operational features..

3. Know what is meant by compass, map, navigation, migration, and long distance homing?

4. Contrast between behavioral questions of function vs. proximate cause.

5. Know a range of different types of predators and counter adaptations of prey.

6. Understand predation and foraging as economics (optimality, costs, benefits).

7. Be able to graph and interpret territory size models (cost vs. benefit).

8. What can be generallized about aggressive behavior (typical encounter, threats, escalation) across many species?

9. What are the functions of aggression (dominance, resources, territory, etc.).

10. Understand modeling aggression according to benefits and costs - J. Maynard Smith's game theory.

11. What is an Evolutionary Stable Strategy? Mixed Strategy?

12. What model and biological conditions are associated with fatal, violent fighting?

13. Know the types and characteristics of mating systems; implications of unequal investment (egg vs. sperm); intermale competition, female choice, protecting investments specifically by males vs. females.

14. What happens to mating systems if resources greatly increase?; decrease? (eg., in wildebeest).

15. Know sexual selection; its features and theories; Darwin, Fisher, Hamilton, Zahavi.

16. What indicates a high level of social coordination and altruism in termites, ants, bees and naked mole rats; explain why these critters are considered eusocial.

17. What are the benefits and costs of living in conspecific groups? Know some examples.

18. What are the theorized mechanisms for the evolution of cooperation (also define cooperation in evolutionary terms) and know an example for each.

19. Define altruism, kin selection, inclusive fitness (as distinct from individual fitness) and how they are theoretically linked to high levels of sociality.

20. How does kin selection appear to relate to male cub-killing in lions and the absence of cub defense by lionesses.

21. Know how to properly cite a scientific paper and be prepared to discuss an important issue from the 'readings.'