

**“Behavioral Mechanisms” Study Questions for *Ordinary Extraordinary Junco* Movie**

**Chapter 1**

Prior to Rowan's experiments, what cues did people think birds used to time their migrations?

What hypothesis did Rowan test, and how did he test it? Make sure to describe the control and experimental group.

What was a physiological parameter that changed in his experimental group? What was a behavioral parameter?

**Chapter 2**

Other than hormone levels, what kind of information does Ketterson's lab group obtain from blood samples? List at least two things.

Ketterson's lab has been very interested in a few main aspects of behavior in males that may represent trade-offs (i.e., if a male does more than one, he can probably do less of another). Describe, such that the trade-off is clear.

Ketterson's lab has also been interested in the adaptive consequences of expressing a different behavioral phenotype than what the birds naturally express. Describe the control and experimental manipulations that they use to change behavioral phenotypes.

Males with higher testosterone sing more and also change what other aspect of their territorial behavior?

Why was DNA fingerprinting used in conjunction with the experimental approach described above? And what did it show?

What are the fitness benefits of having higher testosterone?

What are the costs, and how were they measured?

**Chapter 3**

Mitochondrial DNA accumulates mutations at fairly regular rates, providing a clock that is useful for dating evolutionarily recent splits in lineages. Mila's group looked at mitochondrial DNA in the various subspecies of dark-eyed juncos in an attempt to learn their relationships to each other. The answer was unexpected. What was it? And how long ago did the subspecies originate?

**Chapter 4-5, just enjoy**

**Chapter 6**

Juncos that live on the UCSD campus appear to have originated from an ancestral population that breeds where?

Relative to that ancestral population, UCSD juncos exhibit very different breeding schedules and clutch numbers. Describe.

Relative to the ancestral population, UCSD juncos exhibit numerous differences in physical, behavioral, and physiological traits. List two of each.

Describe the common garden experiment that was conducted.

Based on that experiment, which physical, behavioral and physiological traits likely have a genetic basis?