## BIOL/WLF 694

**LIFE HISTORY EVOLUTION**

**Instructor:** Jim Sedinger  
411 Irving I  
474-6598


**Meeting Time:**  
- M W 9:10-10:10  
- M 2:00-5:00

**Grading Policy:**

<table>
<thead>
<tr>
<th>Component</th>
<th>% of Grade</th>
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<tbody>
<tr>
<td>Midterm</td>
<td>20</td>
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<tr>
<td>Seminar</td>
<td>40</td>
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<tr>
<td>Class Participation</td>
<td>10</td>
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<tr>
<td>Final Exam</td>
<td>30</td>
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<tr>
<td>Topic</td>
<td>Reading</td>
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<tr>
<td>Week 1 Introduction to life history traits/questions</td>
<td>Sterns Ch. 1, Bulmer Ch. 1</td>
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<td>Week 2 Basic Demography</td>
<td>Sterns Ch. 2</td>
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<tr>
<td>Week 3 Quantitative Genetics</td>
<td>Stearns Ch. 3</td>
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<tr>
<td>Week 4 Fitness and Inclusive Fitness</td>
<td>Bulmer Ch. 9</td>
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<td>Week 5 Game Theory</td>
<td>Bulmer Ch. 8</td>
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<td>Week 6 Introduction to Classical Life-History Theory</td>
<td>Bulmer Ch. 5</td>
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<td>Week 7 Basic Tradeoffs among Life-History Traits</td>
<td>Stearns Ch. 4</td>
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<tr>
<td>Week 8 Basic Tradeoffs among Life-History Traits</td>
<td>Stearns Chs. 7, 8</td>
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<td>Week 9 Dispersal as life-history trait</td>
<td>Greenwood 1980,</td>
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<td>Greenwood and Harvey 1982</td>
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<td>Week 10 Body Size as an Integrator of Selection on</td>
<td>Lindstedt and Swain 1983</td>
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<td>Life History Traits</td>
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<td>Week 11 Estimation of Life History Parameters</td>
<td>Lebreton et al. 1992</td>
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<td>Week 12 Phylogeny and Life-Histories</td>
<td>Stearns Ch. 5</td>
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<tr>
<td>Week 13 Life History Experiments and Field Studies</td>
<td>Rose Ch. 3</td>
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<td>Week 14 Life History Experiments and Field Studies</td>
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STUDENT SEMINARS

1. Length - 45 min.

2. Provide 1 or 2 important papers for the remainder of class to read the week before your seminar.

3. Organization:
   - Introduction - explain question, why is it important?
   - Review - what have studies found. Critically evaluate studies relative to the question at hand
   - Conclusion - what is the current state of our knowledge? What needs to be done?

4. Use visual aids, including data.

POSSIBLE TOPICS

- Lack clutch
- Survival-reproduction tradeoffs
- Clutch size-eggsize tradeoffs
- Reproductive effort
- Quality versus quantity of young
- Age of first breeding
- Maternal investment
- Sex ratio of offspring
- Environmental regulation of reproductive effort
- Maternal effects
- Heritability of life-history traits
- Implications of genetic or phenotypic correlations
- Dispersal
- Patterns of growth and maturation
- Measures of fitness
- Body size