

ENT 291 Current Topics in Medical & Veterinary Entomology

Title: A review of Patrik Nosil's book "Ecological Speciation"

CRN ~~22998~~- 53418

Winter Quarter 2013 (January 9 – March 20, 2013)

2 UNITS

Instructors: Gregory Lanzaro, 752-5652; gclanzaro@ucdavis.edu

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Day, Time & Place: Wednesdays, 1:10-3:00, Location: 1006 Haring Hall

This seminar will revolve around a reading, review and discussion of the book "Ecological Speciation" (details below). The goal is to become familiar with the basic concepts presented in the book and with methodologies and applications of population genetics and ecology to understanding problems in insect biology. Each participant will be assigned a section of the book to summarize and discuss during the class meetings in an oral presentation. At the end hopefully we will be at least conversant in the topics covered.

Students will need to purchase a copy of the book: "Ecological Speciation" (Oxford Series in Ecology and Evolution) by Patrik Nosil. Students should have a copy of the book prior to the first class meeting on Wednesday, October 3. Paperback version of the book can be purchased on amazon.com at \$43.10.

Description: "Ecological Speciation" (Oxford Series in Ecology and Evolution) by Patrik Nosil.

The origin of biological diversity, via the formation of new species, can be inextricably linked to adaptation to the ecological environment. Specifically, ecological processes are central to the formation of new species when barriers to gene flow (reproductive isolation) evolve between populations as a result of ecologically-based divergent natural selection. This process of 'ecological speciation' has seen a large body of particularly focused research in the last 10-15 years, and a review and synthesis of the theoretical and empirical literature is now timely.

The book begins by clarifying what ecological speciation is, its alternatives, and the predictions that can be used to test for it. It then reviews the three components of ecological speciation and discusses the geography and genomic basis of the process. A final chapter highlights future research directions, describing the approaches and experiments which might be used to conduct that future work. The ecological and genetic literature is integrated throughout the text with the goal of shedding new insight into the speciation process, particularly when the empirical data is then further integrated with theory.

ASSIGNMENTS

READING: Two required papers and one section of the book will be assigned for each class meeting. Each student will be expected to read these. Each student (including the student presenting the day's topic) will submit 2 questions based on each required paper (a total of 4 questions). Questions must be sent by e-mail (gclanzaro@ucdavis.edu) to Dr. Lanzaro by NO LATER THAN 12:00PM ON DAY OF PRESENTATION.

PRESENTATION: Each student will give one 45 minute Powerpoint presentation based on: (1) an assigned section of the book; (2) the 2 required papers and (3) at least one source in addition to those provided. Citation to this source(s) must be provided on the title slide of your Powerpoint presentation. Presentation must be sent by e-mail (gclanzaro@ucdavis.edu) to Dr. Lanzaro by NO LATER THAN 12:00PM ON DAY OF PRESENTATION.

PRESENTATION FORMAT

- Each presenter should create a Powerpoint presentation to illustrate and guide the discussion on his/her chapter. You may use illustrations directly from the book and/or from other sources, including relevant papers or from sources on the internet.
- Each presentation should begin with a list of vocabulary words (terms) and their definitions that are relevant to the topic being covered. The presenter should be prepared to discuss the meaning of these terms if listeners have questions.
- Presenters should arrive at least 10 minutes early to set up the projector and access on-line information, if needed. If you can't make it, identify someone who can do this for you. Speakers will be expected to begin their presentations on-time, without fumbling around getting the presentation set up.

GRADING

Letter grades will be given. Grades will be based on:

I. ORAL PRESENTATION. (65%) Oral presentation grade will be based on the following criteria:

- **System Defined:** Explained the system covered in the presentation, defined its limits, defined terms.
- **Substance:** Separated fact and opinion; provided information based on data rather than regurgitating rhetoric.
- **Relevance of supplementary paper(s):** Each presenter will select at least one paper related to the presentation topic, in addition to the assigned material. This student-selected material should provide insights into the topic.
- **Presentation:** Well prepared, well delivered, high quality visuals

II. SUBMITTED QUESTIONS. (25%) Two questions based on each of the two assigned papers (total =4) must be submitted to the instructor by e-mail by noon prior to each class meeting. Questions submitted late will not be accepted.

III. ATTENDANCE. (10%) Attendance is mandatory. Only absence in the case of emergency is acceptable. If you cannot attend each class meeting don't enroll.