

EELB 605 Population and Quantitative Genetics

Day: MW (Jan 14 – Feb 4)

Location: ILSB 3145

Time: 2:00-3:15

Number of Credits: 1

Instructors:

Dr. Giridhar Athrey, Dept. of Poultry Science, Room 418D, Kleberg Center
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Dr. Michel Slotman, Dept. of Entomology, Room 510, HPCT
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Dr. Charles Criscione, Dept. of Biology, Room 207A, Butler Hall
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E-mail will be the primary means of communication for the course. Check your email often and keep your mailbox below quota!

Course prerequisites: Graduate classification.

Course description: This fifth component of the Core Sequence in Ecology & Evolutionary Biology examines population and quantitative genetics. It is a basic overview of the fields of population and quantitative genetics; fundamental concepts and their applications in research of natural populations.

Course requirements:

- Attend all lectures. Absences for previously scheduled activities will only be excused if they are communicated well in advance. If you have not discussed an absence with the instructor ahead of time, it will be considered unexcused unless proper documentation is provided. See <http://student-rules.tamu.edu/rule07>.
- Read all required material, and complete assigned homework.
- Participate actively in discussions.

Course goals: The goal of this course is to provide an introduction to a few key issues central to the field of population and quantitative genetics. Examples will be drawn from studies involving plants and animals, as well as the interactions between these organisms.

Grading: Letter grades will be assigned based as follows: participation related to in-class discussion: 25%; homework assignment: 50%; online quiz: 25%.

Grade scale: 90-100 A; 80-89 B; 70-79 C; 60-69 D; < 60 F

Americans with Disabilities Act (ADA): The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have

a disability requiring an accommodation, please contact Disability Services, currently located in the Disability Services building at the Student Services at White Creek complex on west campus or call 979-845-1637. For additional information, visit <http://disability.tamu.edu>.

Academic Integrity: For additional information please visit: <http://aggiehonor.tamu.edu>. Please pay close attention to guidelines on avoiding plagiarism: <http://aggiehonor.tamu.edu/Descriptions/Plagiarism.aspx>.

“An Aggie does not lie, cheat, or steal, or tolerate those who do.”

SUGGESTED ADDITIONAL READINGS

Genetics of Populations (Fourth Edition), Philip W. Hedrick (2011)

Stinchcombe, J.R., Hoekstra, H.E., 2007. Combining population genomics and quantitative genetics: finding the genes underlying ecologically important traits. *Heredity* 100, 158–170. doi:10.1038/sj.hdy.6800937

Reed, D.H., Frankham, R., 2003. Correlation between Fitness and Genetic Diversity. *Conservation Biology* 17, 230–237.

LECTURES

1. **Population genetics and detecting selection** (Criscione: Jan 14 & Jan 16)
2. **Genetics/genomics of speciation** (Slotman: Jan 23 & Jan 28)
3. **Quantitative genetics in the wild** (Athery: Jan 30 & Feb 4)

Written assignment associated with assigned reading. One or two papers will be assigned for each Monday lecture. We will discuss these papers in class. For one of the assigned papers, students will do the following: (1) identify the three key take-home messages (no more than 100 characters for each take-home message), (2) write a 200 word summary, (3) identify the paper’s biggest strength (4-5 sentences) and (4) its biggest weakness (4-5 sentences). **This write-up must be submitted to the instructor by eCampus no later than 8 am on the Monday the paper will be discussed.**

A computer take-home quiz will be available through eCampus by noon the day following a lecture and will be due before the start of class the day of the discussion (next Monday).