

AEC 592 - Landscape Genetics
Meetings on Monday 1 to 2:15pm, DCL 139

Course Description

The graduate seminar on landscape genetics exposes graduate students to combining landscape ecology and genetics to address management, conservation, or other applied problems in ecology. The graduate students will each lead a discussion combining chapters from *Landscape Genetics: Concepts, Methods, Applications* and contemporary topics.

Optional Text

Landscape Genetics: Concepts, Methods, Applications

Edited by: Niko Balkenhol et al. on Amazon.com for ~\$58

(https://www.amazon.com/Landscape-Genetics-Concepts-Methods-Applications/dp/1118525299/ref=sr_1_1?ie=UTF8&qid=1470851868&sr=8-1&keywords=Landscape+genetics)

Note: you can get each of these chapters online for free here

(<http://onlinelibrary.wiley.com/book/10.1002/9781118525258>)

Website

<http://burfordreiskind.com/teaching/landscape-genetics/>

Instructor

Dr. Martha Burford Reiskind

David Clark Labs 126

Email: mbreiski<at>ncsu.edu

Office hours are also available by appointment!!!

Objective

Grading

I. Discussion Leader (100 points):

For one week this semester you will sign up to be discussion-leader with another person. This will include a chapter from the book mentioned above and either one long or two short contemporary papers. You'll need to choose this paper the week before your discussion so that other members of the seminar have time to read and review it. We will have all papers uploaded to a share drive, which already has several landscape genetic papers in it.

As a discussion leader, we expect you to have a thorough knowledge of the papers, which may mean reading additional papers referenced in the discussion paper. All tables and figures should be understood and you should be able to explain them. You will be expected to (1) provide a brief overview of the paper or chapter including important contributions or results and/or applications (2) provide how both papers are connected, and (3) have several discussion points "in your pocket"

that will start and keep discussions going throughout the seminar. Often discussions will take on a life of their own and the discussion leaders will occasionally re-direct the discussion with leading questions.

You will be graded on the three points above and on your ability to keep the discussion on topic and productive. This part of the course is worth 100 points. The points will be assigned in the following manner:

100 points: *Provides a brief and clear overview, able to summarize the important points of the readings, show how discussion readings are connected and excellent discussion points.*

50 points: *Partially provides information on the aforementioned topics*

0 points: *Does not provide any of the aforementioned topics*

II. Discussion participation (100 points):

Participants in this course should read all the papers assigned and be prepared to discuss these papers. Each student should bring 3 or more questions per reading that can be used to contribute to the discussion, anything from open-ended questions about the topic to specific questions. These will be turned into Dr. Reiskind at the end of the discussion.

This part of the course is worth 100 points. The points will be assigned in the following manner:

100 points: *Regularly contributes to class discussions by raising thoughtful questions, providing examples from the readings or text, building on others' ideas, expanding the class' perspective, and appropriately challenging others' assumptions and perspectives*

50 points: *Sometimes contributes to class discussions in the aforementioned ways*

0 points: *Never contributes to class discussions in the aforementioned ways*

Tentative Schedule Fall 2016:

Week	Date	Subject	Chapter	Reading	Leaders
1	M: 22 Aug	Introduction to the course; effective discussion leading and participation; overview of the field of Landscape Genetics	Chapter 1		MB Reiskind
2	M: 29 Aug	Basics of Landscape Ecology for landscape genetics	Chapter 2		
3	M: 5 Sep	<i>Labor Day, No class</i>			
4	M: 12 Sep	Basics of Population Genetics for landscape genetics	Chapter 3		
5	M: 19 Sep	Study Design for landscape genetic studies	Chapter 4		
6	M: 26 Sep	Linking landscape and genetic data for landscape genetic studies	Chapter 5		
7	M: 3 Oct	Simulation modeling in landscape genetics, past, present, and future	Chapter 6		
8	M: 10 Oct	Clustering and assignment methods and analyses in landscape genetics	Chapter 7		
9	M: 17 Oct	Resistance surface modeling in landscape genetics	Chapter 8		
10	M: 24 Oct	Genomic approaches to landscape genetics and applications to climate change	Chapter 9		
11	M: 31 Oct	Graph theory and network models in landscape genetics	Chapter 10		
12	M: 7 Nov	Application of landscape genetic approaches to both contemporary and historical plant population genetics	Chapter 11		
13	M: 14 Nov	Applications of landscape genetics to connectivity research in terrestrial animals	Chapter 12		
14	M: 21 Nov	Waterscape Genetics – applications of landscape genetics to aquatic systems	Chapter 13		
15	M: 28 Nov	Current status, future opportunities, and remaining challenges in landscape genetics	Chapter 14		

Personal Information Sheet
Please fill out and turn in

Name: _____

Student ID Number: _____

Graduate Program: _____

Career Goals: _____

Research Interest: _____

What would you like to know more about in regards to landscape genetics: