AEC 592 – Evolution in a Changing Environment
Meetings Monday TBD

Course Description

This graduate seminar will explore the genetic tools used to identify and monitor rapid evolution in a changing environment. The changing environment could be due to abiotic or biotic conditions. Considering the evolutionary trajectory of a species in the context of global climate, they can either "move," "perish," or "adapt." Here we will focus on evidence of adaptation in place. Alternatively, we can also think about rapid evolution of a species that arrives in a new environment, in which it interacts with novel abiotic and biotic conditions. We will investigate current papers that address these questions. The goal is for graduate students to explore the application of these approaches to their own research and/or gain a deeper understanding how this approach is used in an applied context.

Website

http://burfordreiskind.com/rapid-evolution-in-changing-environments/

Instructor

Dr. Martha Burford Reiskind
David Clark Labs 237
Email: mbreiski<at>ncsu.edu

Office hours are also available by appointment!!!

Objective

- **Describe** & **Discuss** the genetic and genomic characteristics of invasive species and the response of native species to introductions
- **Lead** discussions based on topics in the genetic characteristics and conservation genetic approaches to understanding species invasion
- **Produce** a plan for a review manuscript on several topics addressed during the seminar

Grading
I. Discussion Leader (50 points):
For one week this semester you will sign up to be discussion-leader with another person. This will include one review or more theoretical-based paper and one shorter contemporary paper, which can include genetic methodologies or case studies. You'll need to choose these papers 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 organized in different categories. If you have a paper that is not listed in one of these folders, make sure that it is in a peer reviewed journal and if it is from 2016 or earlier that it has been cited at least 3 times.

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 (50 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 before the discussion, via email. Typically students turn their questions in the evening before or the morning of the discussion. I provide these questions to the discussion leader so they can see what topics the class is interested in.

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

80 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*

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

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

Tentative Schedule Fall 2019:

Week	Date		Subject	Readings	Leader
1	Week of the 26yh of August		Intro to Rapid Evolution in a Changing Environment – Course Climate Identified & Topics Picked		MB Reiskind
2	2 Sep	*Labor Day*			
3	9 Sep				
4	16 Sept				
5	23 Sep				
6	30 Sep				
7	7 Oct				
8	9 Oct				
9	14 Oct				
10	21 Oct				
11	28 Oct				
12	4 Nov				
13	11 Nov				
14	18 Nov				
15	25 Nov	Last week of class			

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 rapid evolution in a changing environment: