

Lesson Plan: Lecture 2

Timing

Course # and Title: GENE460: Conservation Genetics

of students: 16

Length of session: 75 minutes

Theme for Today's Class: Mutation & Migration

Instructional Objectives: At the end of this session students will be able to:

1. Discuss conservation relevance of mutation & migration
2. List types of mutations
3. Describe neutrality
4. Discuss interplay between selection/mutation/migration

Agenda/Outline

Our class today will center on a video about mice (http://media.hhmi.org/biointeractive/films/natural_selection.html). We'll introduce the species and the environment with the video and then discuss how mutation, migration, and selection play out on the landscape.

Beginning

We'll have a short (5 minute) quiz and then I'll have the video set up to play and I'll let them know that we'll work our way through bits of it through the class period.

Content:

7 minutes

1. Video – Intro of Species & Environment

We'll watch up until minute 3:00 on the video. Then we'll sum up what we saw. There's a stretch of black rock in an otherwise brown environment where black mice live.

5 minutes

2. Lecture – Types of mutations

I'll show them different types of mutations on the powerpoint

15 minutes

3. Think/Pair/Share –

I'll ask the groups to discuss a series of questions that stem from the video then we'll come together as a group to answer them.

7 minutes

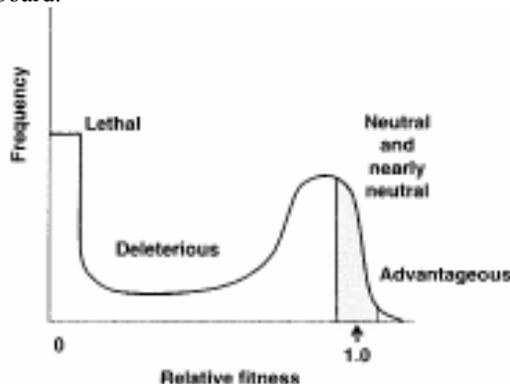
4. Video - Finish

Watch the rest of the film to see that our predictions are correct.

10 minutes

5. Group Discussion – Relevance in Conservation

Use lead questions on the power point. When it gets to “are all mutations bad” have them create this graph on the board.



Timing

5 minutes

6. Lecture – Migration & Clines

Use power point to lead discussion.

5 minutes

7. Think/Pair/Share

What has to be true to maintain a cline?

Summary/Closure

7 minutes

End comment – human disruption alters the balance of mutation/selection/migration, how do we fix it?
Check in with groups to see how they're doing on their paper selection. Suggest setting a time to meet. If time allows, give them some time to talk with their groups about their projects.

Resources and Strategies:

White board, video, powerpoint

This point in semester, where are students? What process can you use? At what level of Challenge?

This is the 9th meeting of the semester. At this point, we've just introduced the factors influencing evolution (selection, mutation, migration, drift). The students are now being challenged to think about how mutation, migration, and selection effect wild populations. They are also being challenged to read and interpret scientific journals.