Course Syllabus

Instructor Information

- **Instructor:** Dr. Tonia Schwartz Tedy
- **Office Location:** Bartram Hall (BAR) 0342 (Gainesville campus)
- **Office Hours:** Tuesday/Thursday 10:30 am – 12:00 pm or by appointment
- **Phone:** 352-294-3282
- **Email or Webcourses:** use the Webcourses or UF email address to contact me.

Course Information

- **Lecture Hours:** Tuesday/Thursday 9:30 – 10:45 am
- **Lecture Location:** Online via Webcourses
- **Class Meeting Time:** 9:00 am - 10:50 am
- **Lab Hours:** Tuesday/Thursday 11:00 am – 12:50 pm (Zoom section is lab-part)
- **Course Website:** Canvas/Webcourses
- **Course Materials:** Course materials will be posted on Webcourses or Dropbox (Dropbox will be used for large files). Course materials include:
  - Synthesis/reasoning notes (checklist) Meaning that the instruction could contain that students should be able to synthesize information, reason, and make connections. Be sure to check for all instructions in the reasoning/synthesis notes.
  - Extension use of videos, whether live feed or captured
  - Powerpoint presentations
  - high-end of educated guess/reasoning (what we guess, or hope, students must have access to and proficiency in the use of website and online reading space.
  - Instructions for Lab, Quiz, Exam, Paper, Presentation
- **Course Evaluations Requirements:** This course will use the Canvas/Webcourses assignments, groups, exchanges and evaluations. Familiarity with these topics will likely improve your understanding and success in this course.
- **Webcourses:** Canvas/Webcourses is an electronic device which stores assignments, and video, and has chat/discussion boards.
- **Computer Labs:** For this course, computer lab will be performed using a Virtual Machine during another class (Genomics). Instructions for installing the software (Virtual Box) will be provided in the lab-part of Zoom.

Course Description

This course will explore how genomics advances now is and will, questions in ecology and evolutionary genetics to be answered in ways not previously considered. The current field of wildlife genomics utilizes genetic and genomic approaches to answer questions in ecology, evolution, and conservation biology. Genomics is a rapidly growing field with potential for great impact and applications. Thus this course will focus on how genomics approaches and advances in genomics and genomics technologies provide new tools with which to evaluate, monitor, and conserve wildlife populations and their habitats. Genomics approaches and technologies have the potential to provide unique and advanced under-pinnings to wildlife conservation and management. Genomics approaches and methods are applied to problems in wildlife biology with an emphasis on vertebrate and arthropod species in conservation, ecology, and evolutionary biology. Topics will include genomic approaches to population genetics, and population bottlenecking and extinctions, and how genomics should be prepared to cope with wildlife problems (diseases, disease and parasite impacts, climate change, and anthropogenic stressors, and how genomics can be used to mitigate these problems.

Course Objectives

- Understand how genomics advances now is and will, questions in ecology and evolutionary genetics to be answered in ways not previously considered. The current field of wildlife genomics utilizes genetic and genomic approaches to answer questions in ecology, evolution, and conservation biology. Genomics is a rapidly growing field with potential for great impact and applications. Thus this course will focus on how genomics approaches and advances in genomics and genomics technologies provide new tools with which to evaluate, monitor, and conserve wildlife populations and their habitats. Genomics approaches and technologies have the potential to provide unique and advanced under-pinnings to wildlife conservation and management. Genomics approaches and methods are applied to problems in wildlife biology with an emphasis on vertebrate and arthropod species in conservation, ecology, and evolutionary biology. Topics will include genomic approaches to population genetics, and population bottlenecking and extinctions, and how genomics should be prepared to cope with wildlife problems (diseases, disease and parasite impacts, climate change, and anthropogenic stressors, and how genomics can be used to mitigate these problems.
- Understand Genomics approaches and methods.
- Understand Genomics technologies.
- Understand Genomics Bioinformatics.
- Understand Genomics Ethics.
- Understand Genomics Policy.
- Understand Genomics Pitfalls.
- Understand Genomics Pitfalls.
- Understand Genomics Pitfalls

Thu Oct 8, 2020	Lab 3: DNA sequence Mapping and Assembly	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Oct 13, 2020	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Oct 15, 2020	Lab 4: Population Genomics	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Oct 20, 2020	Lab 2: An Introduction to the Command Line	due by 8:59am
	Paper Summary 6 - Faherty et al. 2016 - Transcriptomics	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Oct 22, 2020	Paper Summary 7 - Reilly et al. 2019 - Leap frogging	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Oct 27, 2020	Lab 5 - Transcriptomics	due by 8:59am
	Paper Summary 8 - McCulloch et al. 2019 - Speciation/Ecological Genomics	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Oct 29, 2020	Paper Summary 9 - Johnson et al. 2018 - Koala Genome Sequencing	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Nov 3, 2020	Paper Summary 10 - Zhang et al. 2019 - Conservation Genomics	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Nov 5, 2020	Paper Summary 11 - Andrade et al. 2019 - Lizard Color Polymorphisms	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Nov 10, 2020	Paper Summary 12 - Nash et al. 2018 - Pangolin Conservation Genomics	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Nov 12, 2020	Paper Summary 13 - Franchini et al. 2017 - Blackbird Gene Expression	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Nov 17, 2020	Paper Summary 14 - Meröndun et al. 2019 - Lynx epigenetics	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Nov 19, 2020	Paper Summary 15 -Al-Breiki et al. 2018 - Spiny lobster gene flow	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Nov 24, 2020	Paper Summary 16 - Salvador et al. 2019 - Elk mycobacterium	due by 8:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Nov 26, 2020	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Dec 1, 2020	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Thu Dec 3, 2020	Final Presentation: Genome Sequencing Competition	due by 6:59am
	Wildlife Genomics	9am to 10:15am
	Wildlife Genomics Office Hours	10:30am to 12pm
Tue Dec 8, 2020	Quiz 2: Post Quiz	due by 5pm
	Exam 1	
	Exam 2	
	Graduate Student Paper Presentations	
	Lab 1 Questions: Navigating NCBI Databases	