

## **SIOB 278 Winter 2021: Seminar in Ocean Biosciences: Fisheries and Conservation Genomics (2 Units)**

Instructor: Ron Burton

Welcome to Fisheries and Conservation Genomics! Our first meeting will be January 4, 3:00 - 4:50pm.

I will lead an introductory discussion that will give an overview of methods and applications of genomics relevant to ecology and specifically to fisheries and conservation biology. This should give some background for the rest of the course. If at all possible, please read the introductory chapter from "Population Genomics: Marine Organisms" which I have posted to this website under Module 1.

The goal is to stimulate some discussion - think about how you might use genomic tools to address your own research questions or interests. Also, since we are a small class (8 students), I hope you will all keep your video on - it's difficult to have a discussion (and overall depressing) if we all can't see everyone.

After two introductory lectures that I will lead, our weekly meetings will be discussions led by one or two class members focused on 1-3 papers from the primary literature. Each week one or more of these papers will be assigned in advance as "primary" readings (all PDFs will be posted on the Canvas website) - I expect that all class members will read and be prepared to discuss the primary readings each week!

Week 1 Introduction - Ron Burton

[READING: Population Genomics Part 1 Introduction.pdf](#)

Week 2 January 11 - Ron Burton

- [READING: Gaitan-Espitia and Hobday, Global Change Biology 2020.pdf](#)

Week 3 - January 18 MLK Holiday

Week 4 January 25 Discussion Leaders: Gabriella and Melissa

Gabriella's discussion

Primary reading: Benestan et al. 2020 Evol Appl.pdf

- Benestan\_et al. 2015 Mol Ecol.pdf  
Benestan\_et al. 2015 Mol Ecol.pdf  
Fisheries Chapter\_PopulationGenomicsMarineOrgani.pdf

Melissa's discussion

- Primary Reading: Whitehead et al 2017 Evol Applications.pdf  
Reid et al 2016 Science.pdf  
Fisher and Oleksiak 2007 BMC Genomics.pdf

Week 5 Feb 1 Discussion Leaders: Fernanda and Ariel

Fernanda's discussion

Primary: Morin et al 2020. Reference genome and demographic history of the most endangered marine mammal, the vaquita.pdf\_Attachment

Cehida et al 2020. Mitochondrial genomics reveals the evolutionary history of the porpoises (Phocoenidae) across the speciation continuum.pdf

Ariel's Discussion

PRIMARY: Dixson et al 2015.pdf

Barshis et al. 2013 Genomic Basis for Coral Climate Change Resistance.pdf

van Oppen et al. 2015 Coral Assisted Evolution.pdf

Filbee-Dexter and Smajdor 2019 Ethics of Assisted Evolution.pdf

Week 6 February 8 Discussion Leaders: Abby and Michaela

Michaela's discussion

Primary reading: Salter 2019.pdf

Wang 2021.pdf

Jerde 2019.pdf

Abby's discussion

Primary reading: Gold et al eDNA preprint.pdf

Closek et al 2019.pdf

Week 7 February 15 President's Day Holiday

Week 8 February 22 Discussion leader: Allison

Yoon et al. 2017.pdf

Chen et al 2019.pdf

Parker2002\_GeneticVariationAmongPops.pdf

Week 9 March 1 Discussion leader: Nathan

Pespeni et al 2013.pdf

Garrett et al 2020.pdf

Evans et al 2015 Review.pdf

Week 10 March 8: Lightning talks!

Fernanda: Adaptive genomic variation in conservation and fisheries management

Abby: How fisheries management can benefit from genomics?

Allison: Krill genetic structure.pdf

Melissa: Sex steroids and steroidogenesis-related genes in the sea cucumber

Nathan: Population genomics of yellowfin tuna.pdf

Ariel: Ocean Genome.pdf

Gabriella: Mislabeling of fish from artisanal fisheries in La Paz.pdf

Michaela: Conservation genetics of the bonnethead shark.pdf