

# Bio 360 Avian Biology

## Spring 2019

**Instructor:** Ryan Terrill  
**Your TA:** Miles Collins  
**Attending Experts:** James Maley, Whitney Tsai Nakashima, John McCormack, Jessica Oswald Terrill  
**Class Website:** <http://www.ryansterrill.com/teaching.html>

**Lectures:** ROOM TBD, Tues & Thurs 1:30pm – 2:55pm  
**Lab (normal day):** Biol 310 Tues 9:30am – 11:25am  
**Lab (field trip):** Meet in front of BioSci, Tues or Thurs TBD (very early) – 2:55pm

**Office Hours:** Mon 3:00pm – 4:30pm & Wed 8:30am – 11:00am  
**Location:** South Trailer D

## Course Overview

---



Birds are among the most distinctive and diverse life forms on Earth and have fascinated humans since the dawn of civilization. Students in Avian Biology will gain a holistic understanding of the vertebrate class Aves, including evolutionary origins, physiology, behavior, communication, adaptation, and conservation. This course will place particular emphasis on North American bird diversity and understanding avian biology in the context of the evolutionary relationships of living birds. Students will leave the course being able to: (1) identify the major families of North

American birds with the help of the unrivalled collection of bird specimens in the Moore Lab collection; (2) identify local birds by sight and sound aided by field trips to local birding areas and lab study time; (3) place the wide diversity in plumage, morphology, and behavior among species in an evolutionary context. Students will leave the course with a better appreciation for birds as part of the natural world around them.

## Text

---

You must buy a field guide to birds (see below). Most other readings will be provided over the class website or Moodle.

### Field Guides:

Whichever field guide you choose from the list below, you need to have it on you and usable during all field trips. I encourage note-taking in field guides, for example writing the date a location where you first saw a bird on the plate.

-**Sibley Guide to Birds** (paperback, iOS or Android app): This book is the most popular guide to birds out there, and many think it's the best guide to North American Birds; though with the updated 7<sup>th</sup> edition, National Geographic is now comparable or better.

-**Sibley Birds West** (the same as the above, but only covers western birds. It's a little cheaper, and adequate for this class)

-**National Geographic Field Guide to the Birds of North America**: If you purchase this book, I highly recommend the 7<sup>th</sup> edition. Earlier editions are ok if you already have one, but the 7<sup>th</sup> edition is much better.

**National Geographic Field Guide to the Birds of Western North America**: This scaled-back version of the above is a bit cheaper, and acceptable for this class, though the full guide is not much more and it is more recently updated. I'd recommend it over this one.

If you already have a field guide, consult the professor to see if it works for the class. Note that there are lots of guides out there that don't really cut it, and a whole bunch of apps that aren't great. Apps like iBird plus, iKnow birds, etc, are not comprehensive or authoritative enough for this class. The only acceptable smart phone app is Sibley Birds.

## iOS/Android Apps

---

**Sibley Birds**: The Sibley guide is available as a smart phone app and you may download it and use it instead of purchasing one of the field guides above (it costs about the same). It comes with vocalizations, which is great for use in the field and studying for lab. If you only have the app, you will be expected to have your phone charged enough to use it on field trips. A dead phone is not an excuse to not have a field guide.

**Merlin**: If you see or photograph a bird and have no idea what it is, this app can be very helpful (especially compared to just randomly flipping through the book). This app is not a field guide and is not required for this course, but it is a nice little app that can guide you through identification of a bird you are looking at or have a photo of. It's available from the Cornell lab of Ornithology for iOS and Android.

**iNaturalist**: This is an optional app (also available without the app online) where you can upload and search sightings of birds and other life. It's a huge database, and fun and useful.

## eBird

---

**eBird:** You must sign up for an eBird account at [ebird.org](http://ebird.org) so that we can share the checklists with you from the field trips. You also have the option of downloading the eBird app for free, but you can use eBird on your computer or phone without the app. The app does make taking notes in the field easier. The eBird website also contains photographs, recordings, and range maps of species that will act as great study tools for you for lab. I especially recommend looking around the “explore species” section of the website.

## **Equipment & Field Trips**

---

Moore Lab will provide binoculars on loan to anyone who needs them. Your binoculars should be at least 8x magnification. **You are responsible for lost or stolen binoculars. They cost \$300 to replace.**

**For every minute you are late for field trips, you will lose one point from your Participation/Attendance Grade. We need to leave on time for field trips, and if we have to leave without you, you will not get credit for that field trip.**

**Field trip make up:** You may miss one field trip without losing points. If you need to miss a field trip, you will be required to go for a morning of birding, and submit a detailed list of the birds you observed, with notes on habitat and weather, as well as notes on how you identified each species. These notes will be expected to be in the same format as the field notebook assignment, but with a complete list of the birds you saw.

**Weather:** We will go to a variety of habitats with varying weather. The desert may be very warm during the day and very cold early in the morning. The pelagic trip and the mountains may be cold. You must dress appropriately so that you can spend hours outside birding. Lack of warm clothes is not an excuse to sit in the van during trips. Check weather forecasts in advance, or feel free to ask for recommendations

## **California Birds Labs**

---

In this course, you will learn how to identify local birds by plumage, and by song. You will be provided with a list of the birds you are expected to know by sight, and recordings of vocalizations you are expected to know by sound. We will see and learn other species on field trips, but these are the birds you are required to know for the lab final. You need to learn the common name and the family name for each. You do not need to learn the scientific name. However, you may choose to take the lab final in scientific names. If you do so, you will receive an extra 10% added to your lab final grade. However, if you answer in scientific names, all of your answers will need to be in scientific names, a common name,

even if correct, will be marked wrong if you are using scientific names. No mixing on the lab final.

## **Course Responsibilities**

---

(1) **Attend all classes and all field trips.** Exam questions will come from in-class lectures and in-class discussions. Other graded material will occur during class time. Therefore, attendance for lecture, lab, and field trips is required if you want to learn something.

(2) **Be attentive and participate.** This spans activities from taking notes on lecture material to participating in discussions and group work.

(3) **Complete assignments on time.** All assignments must be submitted in class or through Moodle (as requested by the professor) on their due dates.

## **Assignments and Evaluations**

---

Lecture Tests	200
Lab Practical	200
Research Paper	50
Field Journal	100
Paper Discussion Leader	30
Discussion Paper Write-Ups	50
Bird Family Presentation	20
Participation/Attendance	50
Field Notebook assignment	30

### Grades

A = 90-100%

B = 80-89%

C = 70-79%

D = 60-69%

F = below 60%

## **Key Dates**

---

Field Trip 1	Feb 5
Field Trip 2	Feb 19
Exam 1	Feb 28
Field Trip 3	Mar 19
Field Trip 4	Mar 23

Weekend Field Trip	Apr 19-21 (Saturday and Sunday)
Mini Research Paper Rough Draft	Apr 23
Exam 2	Apr 30
Mini Research Paper Due	April 30
Field Journal Due	April 30
Lab Practical	May 9, 1-4pm

## **Student Conduct**

---

Occidental College supports generally accepted conventions of academic honesty and considers cheating and plagiarism to be serious offenses against the academic community. Students should become familiar with the college's definitions of cheating and plagiarism as defined in the Student Handbook in the section on "Academic Ethics" (<http://www.oxy.edu/x8000.xml>), as well as the procedures and penalties associated with academic misconduct.

## **Lecture Schedule**

---

**Fowler 302 Tues and Thurs 1:30 - 2:55pm**

Date	Topic	Other
Jan 22 -T	Overview, Syllabus, Why Birds?	Discussion leader sign Up
Jan 24 - Th	Campus bird walk	Discussion: Ologies - Ornithology

Jan 29- T	Modern Bird Evolutionary History	Field Notebook assignment
Jan 31 - Th	Key Adaptations: Feathers	Discussion - Leeza
Feb 5 - T	<b>Field Trip</b> Bolsa Chica (No Lecture)	
Feb 7 - Th	California Birds Lab	
Feb 12 - T	Key Adaptations: Physiology	
Feb 14 - Th	Key Adaptations: Flight	Discussion - Rylan
Feb 19 - T	<b>Field Trip</b> Malibu Lagoon (No Lecture)	
Feb 21 - Th	<b>Jessica Oswald guest lecture: Bird Origins</b>	
Feb 26 - T	<b>Hazlehurst Seminar: Pollinator Networks</b> Key Adaptations: Senses & Intelligence	Decide on Research Project/ Seminar Discussion
Feb 28 - Th	<b>LECTURE EXAM 1</b>	
Mar 5 - T	Annual Cycle/Molt	
Mar 7- Th	Migration	Research proposals due Discussion - Tomoe
Mar 12 - T	<b>SPRING BREAK</b>	
Mar 14 - Th	<b>SPRING BREAK</b>	
Mar 19 – T	<b>Field Trip: Channel Islands Pelagic</b>	
Mar 21 - Th	California Birds Lab	
Mar 26 - T	California Birds lab/Campus birding	

Mar 28 - Th	Citizen Science – David Bell guest lecture	
Apr 2 - T	Evolution and Diversification – John McCormack guest lecture	
Apr 4 - Th	Sex, Nesting & Incubation	Discussion - Anna
Apr 9 – T	<b>Field Trip: Condor Recovery Program</b>	Condor Trip
Apr 11 - Th	Kirk Johnson guest lecture	Discussion - Rowdy
Apr 16 - T	Mating Behavior	Discussion - Bryce
Apr 18 - Th	The Bird Genome	Discussion - Austin
Apr 19 – 21 Sat - Sun	<b>WEEKEND FIELD TRIP Kern River Preserve/Butterbredt springs</b>	
Apr 23 - T	<b>Field Trip: Angeles Forest</b>	Discussion - Josh
Apr 25 - Th	Conservation	Discussion - Erica
Apr 30 - T	<b>LECTURE EXAM 2</b>	

### Lab Schedule

Normal Labs 9:30 – 11:25 Tues or Thurs  
 Field Trips early TBD – 2:55 Tues or Thurs

Date	Topic	Other
Jan 29	External Anatomy/California Birds Lab	Binoculars, species ID and song list
Feb 5	<b>Field Trip: Bolsa Chica</b>	

Feb 12	Moore Lab Tour with James Maley	
Feb 19	<b>Field Trip: Malibu Lagoon</b>	
Feb 26	Internal Anatomy / Specimen Prep	
Mar 5	California Birds Lab	Field Notebook assignment
Mar 12	<b>Spring Break</b>	
Mar 19	<b>Field Trip: Channel Islands Pelagic</b>	
Mar 26	California Birds/Campus birding	
Apr 2	California Birds/Egg & Nest Collection	
Apr 9	<b>Field Trip: Condor Recovery Program</b>	
Apr 16	Individual Variation / California Birds Lab	<b>Weekend Field Trip: Kern River Preserve and Butterbreyt Springs</b>
Apr 23	<b>Field Trip: Angeles National Forest</b>	
April 30	Lab Practical Review	
Tues May 7 1-4pm	<b>LAB PRACTICAL</b>	Field Journal Due, Research Paper Due