

# Wildlife Biology Graduate Student Survival Guide

A guide for grad students by grad students

UPDATED FEB. 2019

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## PEOPLE TO KNOW

### WILDLIFE BIOLOGY PROGRAM

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- Chad Bishop: Wildlife Biology Program Director
  - Office: FOR 313, chad.bishop@umontana.edu
- Lisa Mills: Wildlife Biology Academic Advisor
  - Office: FOR 103C, lisa.mills@mso.umt.edu

All of these people are wonderfully helpful. Jeanne are your go-to people when you have questions about anything. Literally anything. Although Chad is a busy man, his door is always open and he's always ready to help students. If you need funding to travel to a conference or workshop, talk to Chad.

### OTHER ADMINISTRATIVE RESOURCES

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#### Griz Central

- Located on the 2nd floor of the Lommasson Center. It is the central office for the Graduate School, Registrar, Financial Aid, Human Resources, Cashier, and Admissions and is open 8am-5pm, Monday – Friday.

#### IT

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- Kit Edington, Robert Logan, and Sherri McWilliams (CFC): Office- FOR 202; support@cfc.umt.edu
- Jay Bruns (OBE): Office- HS 109; jay.bruns@mso.umt.edu

#### ACCOUNTING

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- Deborah Conroy (Wildlife): FOR 111, Deborah.Conroy@mso.umt.edu
- Tina Anderson (Coop Unit): NS 205, tina.anderson@mso.umt.edu

### GRADUATE STUDENT GROUPS

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#### Wildlife Biology Program Graduate Student Association

The purpose of this association is to represent the needs, interests, and perspectives of graduate students in our program to the faculty and administration.

- Graduate Seminar Coordinator: Brenna Cassidy
  - [brenna.cassidy@umontana.edu](mailto:brenna.cassidy@umontana.edu)
- Administrator: T.J. Clark
  - [tyler3.clark@umontana.edu](mailto:tyler3.clark@umontana.edu)
- Faculty Liaison: Ellen Pero
  - [ellen.pero@umontana.edu](mailto:ellen.pero@umontana.edu)
- Undergraduate Liaison (Wildlife): Alex Kumar
  - [Alexander.kumar@umontana.edu](mailto:Alexander.kumar@umontana.edu)
- Undergraduate Liaison (Fisheries): Zak Robinson
  - [Zachary.robinson@umontana.edu](mailto:Zachary.robinson@umontana.edu)

#### University of Montana Graduate and Professional Student Association

- Executive Team: Jill Farnsworth, Joanna Kreitinger, Rachel Smith, Marci Lewandowski
- Website: <http://www.umt.edu/umgpsa/default.php>
- Wildlife Biology Senator: T.J. Clark

## THINGS TO KNOW (SCHOOL)

### THE ABSOLUTE NECESSITIES: WHEN YOU ARRIVE TO CAMPUS

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- Go get a **Griz Card** at the Griz Card Center (1<sup>st</sup> floor of the University Center). It will cost you \$15 (cash, check, Visa, Discover, or Mastercard) for your first card and you need to bring a photo ID.
  - Your griz card works as:
    - Official ID on campus (keys, Curry Health Center access, etc.)
    - Gym entry
    - Bus pass (Mountain Line)
    - Discounts around town (e.g. 10% off at Goodwill)
- Turn in an **immunization record** to the Curry Health Center
  - New students must provide a completed pre-registration immunization requirement form that shows a physician-validated immunization record for measles, rubella, diphtheria, tetanus, polio and skin testing for tuberculosis. If you were born after December 31, 1956, you must submit a certificate of immunization against Rubella and measles (Rubeola). You will not be allowed to register for classes until the UM's Curry Health Center has received proof of your immunization.
  - The form required is available [here](#).
  - Call your family doctor for a copy of your immunization records to attach.
- Go talk to your advisor and locate your office/lab. To pick-up **keys** to your office/lab/building:
  - Know your office/lab room number
  - Talk to Robin Hamilton (Wildlife Biology Office – FOR 312) or ask a lab mate who you should ask for the slips.

- Take your slips with your Griz card and some money for a deposit (~\$15-20 per key, you get this money back when you return keys) to the Office of Public Safety (located by the stadium).
- Set up your UM **email**. This is an official requirement by the University, you must use this email for interactions with students and UM staff. This is how professors and, if you TA, your students will contact you.
  - Talk to Kit Eddington or Robert Logan at the CFC IT department (office is in Forestry 2<sup>nd</sup> floor).
  - We also have a UM general IT service located in Social Sciences building for other tech help (this is run mostly by students, for hard questions stick with the CFC guys).
- **Register** for classes.
  - Go to my.umt.edu to look up courses on Cyberbear. The best way to learn about relevant/good classes is to talk to your advisor, and especially other grad students. There are no formal course descriptions available to students.
  - Check out the list of **permanent WBIO grad classes** (page 11) offered (varies by semester and which professors are around) to get an idea of what's available for WBIO grad students.
  - Once you've found the classes you want go to cyberbear.umt.edu to register. You can get course over-ride slips from the Forestry Office (basement level of Forestry Building or at Griz Central in the Lomasson Center). You will need the professor to sign this, and then turn it in at Griz Central.
  - You can pay online in Cyberbear once you have registered.
    - Be aware of optional fees, opt out if you want.
    - Health Insurance of some kind is required by the University, but you *don't* have to use the University's insurance. In fact, it's probably the most expensive option, so check around first. To opt out of UM insurance, just check the box- no proof of insurance needed.
    - If you have a TAship or RAship, you should see your grad student tuition waiver show up on your bill. If you don't, talk to someone before you pay! Refunds take forever!
    - If you're taking fewer than 7 credits, there are many fees that you do not have to pay (you will also not receive those services unless you opt to pay them). These services include use of the rec center, Curry Health Center, and perhaps others (ask around or look at your registration bill).
- You have several names and ID numbers to identify you on this campus.
  - 790 – xxx - xxx: This is your student ID number, it's on your Griz Card.
  - NetID: Use this as your login for UM online services such as CyberBear, Email, Moodle, library services, network computers, etc.
  - Email: This is set up as a first.lastname@umontana.edu. Things get confusing here, because you have an email alias, which is associated with your NetID. Talk to someone for more information.
  - CFC login: This login is special for Forestry buildings and students. Talk with the CFC IT folks to get this login.

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## THE NEXT STEPS: OTHER IMPORTANT THINGS TO COVER

- Locate your **mailbox**. Talk to someone in your building- mailboxes are in different locations depending on your office/lab building.
- Check out your **transportation** options.
  - There is parking on campus that you have to pay for from 8-5 Monday through Friday (unless you are in the 20-minute Quick Stop spots). Even with a parking permit, parking is challenging. Off-campus, the surrounding neighborhood is restricted for neighborhood residents only. More on parking passes here: <http://www.umt.edu/publicsafety/Parking/Parking%20Information/Permit%20Options.php>
  - There are two convenient bus options: the city bus (the Mountain Line) and the UM bus (the U-Dash). Both are free to students and pick up on campus and from park-and-ride locations. More on both bus options here: [http://www.umt.edu/asum/asum\\_agencies/Transportation/bus/default.php](http://www.umt.edu/asum/asum_agencies/Transportation/bus/default.php)
  - Missoula is a great town for walking and biking year round!
- Check out your **health care** options.
  - Student Health Insurance <https://www.bcbsmt.com/Pages/memstudentum.aspx>
    - Approximately \$1,500 per semester
  - Insurance Marketplace
    - Can be (probably is!) cheaper than student health insurance plan (with the subsidy factored in)
  - Curry Health Center <http://www.umt.edu/curry-health-center/>
    - You can use the center regardless of what insurance provider you have but you do have to pay the Curry Health Fee
    - Includes a **dental clinic** (student health insurance does not cover dental expenses) but it's very affordable and convenient.

## INFORMATION ABOUT THE WILDLIFE BIOLOGY PROGRAM: THE IN'S AND OUT'S

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- **Who are you as a "Wildlife Student" on campus?** Unlike other students in *departments* you are in a *program* that is run by different university entities.
  - Wildlife Bio is part of College of Forestry (CFC), the Division of Biological Sciences (DBS), and the Montana Cooperative Wildlife Research Unit (Wildlife Coop Unit). All of these things can be resources for you. Our faculty represents all of these entities (some professors are through CFC, some are DBS, some advisors are part of the Co-op).
  - Therefore, several wildlife labs are comprised of students from various biology related academic departments. For example, Tom Martin's lab has students from Wildlife and Organismal Biology and Ecology (OBE).
  - There is information regarding faculty and students on the Wildlife Biology website. <http://www.cfc.umt.edu/wbio/default.php>
- **Graduate School Regulations:** These are regulations specific for the Wildlife Biology program. These "regs" explain how many credits you need to graduate, what forms need to be filled out and when, what dates you must have presentations completed by, etc. These are things your advisor probably doesn't know/remember. Check this frequently: <http://www.cfc.umt.edu/wbio/files/GradRegs2012.pdf>
- **Funding:** There are many opportunities throughout the semester to get scholarships and grants from University related sources. A good place to begin to look for these is on the wildlife webpage: <http://www.cfc.umt.edu/resources/scholarships/default.php>

- **Printing:** Every semester each wildlife student can use \$30 (appx. 200 b & w pages, color is \$1 per page) of free printing in the Stone Hall computer labs (STON 106 and STON 107). You can buy more credit in the Forestry Office. You can also pay to print in the library, as well as at Campus Quick Copy in the UC (this is a private company, but they do really nice stuff if you need something fancy).
- **Seminar:** Wildlife seminar is an event where students, faculty, and invited speakers meet weekly to present their work. This seminar has various degrees of formality, from student defenses, to professor career stories, and a few big shot invited speakers. Look forward to this on Friday afternoons (we usually go out for happy hour afterwards). Link to [seminar schedule](#).
  - You *must* register for at least 2 semesters of wildlife biology seminar, check the grad regs for more information.
  - Similarly, OBE has seminars on Wednesdays. Currently they have a noon (usually grad students) and a 4:00 pm (usually invited speakers) seminar series. This is a good place to meet peers, other professors (possible committee members), and get exposed to other research on campus (they also go out for happy hour afterwards). OBE is a large department, and these topics are really broad.

## THINGS TO KNOW (LIFE)

### HOUSING

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- **ASUM:** The University has a lot of great resources for housing. Check out their [Guide to Renting in Missoula](#) and their [list of available rentals](#). They also have a Renter's Center that will help you defend your rights as a renter, should you need it.
- **Good ol' Craigslist:** Craigslist.org. Tried and true. Beware of scams. But you were smart enough to get into grad school, so you're probably smart enough to avoid scams.
- **Emails on the WBIO or DECS grad list serve:** Occasionally professors or others associated with the university will have a house for rent that they don't want to broadcast to the entire student population of Missoula. They're usually looking for respectful and responsible renters, so they send announcements out to just the grad students. If you're not yet hooked up to these list serves yet, have a current grad student keep an eye out for you.

### FURNISHING ETC.

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- **Freecycle:** Get free stuff. Get rid of stuff for free (by giving it to real people not charity organizations that have billionaire CEOs). <https://groups.freecycle.org/group/Missoula-Freecycle/posts/all>
- **Tool Library (MUD):** Rent *almost any tool* you need for pretty cheap. <http://mudproject.org/tool-library/>
- **Home ReSource:** Excellent resource of recycled and used home building materials. <http://www.homesresource.org/>

## LOCAL BANKS

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- **Missoula Federal Credit Union (MFCU)**
  - Local, free checking, ATMS on campus. <https://www.missoulafcu.org/>
- **First Interstate Bank**
  - Multiple locations in Missoula (including a few open on Saturdays). Branches in Montana, Wyoming, and South Dakota. <https://www.firstinterstatebank.com/>
- **First Security Bank**
  - Montana-wide bank. <https://www.ourbank.com/>
- **Wells Fargo**
  - Nationwide bank. I'm sure you've heard of it. <https://www.wellsfargo.com/>

## FUN

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This list barely scratches the surface of the amazing opportunities for fun in and around Missoula. Take it as a starting point and remember that you're lucky to live here as a student!

### **Sports and outdoor opportunities abound!**

You probably already knew this if you chose University of Montana. Get a guidebook or make some friends who know the area and go out and explore! You can rent equipment for very cheap through the [outdoor program](#) on campus (you just need your Griz card). There are also some great gear swaps (at the UC through the outdoor program, SOS ski swap, etc.). There are tons of fun [adult sports leagues](#) in Missoula, a lot of which are offered through Missoula Parks and Rec or the [Glacier Hockey League](#).

### **Farmer's Markets**

This is one of the best parts of weekends in Missoula. There's both a [summer](#) (May through October) and a [winter](#) market. Don't miss the summer market, which is downtown at Caras Park on Saturday mornings (in the specified months).

### **Beer (or cocktail) drinking opportunities abound!**

- **Happy Hour:** The WBIO grad students and faculty usually hold a happy hour after grad seminar on Fridays. It's at Brooks and Browns (at the Holiday Inn downtown) at 5 PM every Friday, unless otherwise stated.
- **Bars in Missoula:** There are plenty and they're a lot of fun. Here's a [short list of some of the main ones downtown](#). And here's a more comprehensive list of the [ones all over town](#).
- **Breweries in Missoula:** There are now seven (and rumor has it two more in the works). Check them out! <http://www.destinationmissoula.org/breweries>

### **Alcohol**

Speaking of beer, you should know that beer and wine are available for purchase in grocery stores but liquor is only available in liquor stores or casinos.

### Dog parks

Missoula is a pretty dog-friendly place. Check out Missoula's website for a complete list of dog parks where dogs can be off leash: <http://www.ci.missoula.mt.us/623/Where-Can-My-Dog-be-Off-Leash>

### Festivals etc.

Missoula has a pretty impressive lineup of festivals and other entertainment events. Your best bet to figure out what's going on around town are [Missoula Events](#) and the [Independent](#) (print copies are available for free around town). Check out [Weird Missoula](#) or [Missoula Punk News](#) for updates on the less mainstream stuff.

## UNSOLICITED ADVICE ON GRAD SCHOOL

This next section is a collection from different sources of advice on how to get through the program here in the WBIO department. Remember, this is advice; you might not agree with it all, but it comes from people thoughtfully looking back at their experience and trying to use that knowledge to help the people who come after them. So take it or leave it – your choice.

### WRITTEN PROPOSAL

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- **Dates:** You need to submit your written proposal to your committee a minimum of 10 working days before your scheduled proposal presentation. You should have gone through many drafts and talked about different parts with your committee by the time you submit this to your committee.
- **Content:** You need to be able to defend it; it needs to be specific enough that you know enough about your topic to back it up. The broader your topic is, the more you need to be able to defend. The general idea is to get your ideas out there, but be aware that you do not need to disclose everything, at least one person will say that you are doing too much and one other person will ask if you have thought about adding such and such. Get your ideas out, don't over extend yourself, use some strategy and play the game.
- **Format:** There are no official guidelines from the program on how this should go. Ask fellow grad students for examples – they'll be happy to help. Here are a few tips:
  - **Chapter format:** Write the proposal in chapter format. Have an Introduction and then several chapters. It's a good idea to start thinking about publications, and therefore write your chapters based around the idea of pubs. If you start now, your work will likely already be organized and partially written when it comes time to submit.
  - **Intro and Background:** Provide the context. This chapter should be well-developed. Many of us have been told to write using the hour glass analogy where we begin very broad and continue to get more and more specific until we get past our results and then we relate back to the large context. The introduction is intended for you to state your case within a large contextual framework which you will relate your work back to when you have results.
  - **Chapter content:** Each subsequent chapter will address a very specific question; each chapter should correspond with a paper you'll be writing/publishing.
    - An example of a bad (i.e. too broad) question is: "Spatial trends in ducks in boreal Canada". A better (i.e. specific) question might be: "The use of GLMs in predicting mallard population fluctuations in response to weather trends".
    - Each chapter should be written in approximate manuscript format, i.e., with an Introduction, Methods, Anticipated Results, and Discussion section.



- It's a good idea to have anticipated results, since it's unlikely that you will have a typical "Results" section at this stage in your PhD. There are at least three options: 1) Present the different likely outcomes that you'd expect to find and how you'd deal with each of those outcomes; 2) make up data and analyze it; 3) analyze a subset of your dataset, or some preliminary data, to get an idea of what you might expect (i.e. a "pilot study").
- It's a good idea to have a section at the end of each chapter dealing with potential problems, potential trouble-shooting steps, and future directions. This shows that you're thinking ahead. For example: "If this works, then I'll do ..., and if it doesn't work then I'll do ...."
- Include lots of figures (e.g., data, anticipated results), because they will make your proposal easier to understand. Make sure all of your figures will be understandable when they are printed in black and white (i.e., use patterns, not just shades of gray).
- **Be organized and professional.** It's good to have a table of contents, a list of figures, etc.
  - MS Word can make a table of contents automatically
  - Use citation managers (Zotero, EndNote, Mendeley, etc); the citation & reference format is up to you, but consider this: using full citations (e.g. Bob & Johns 2004) takes up more room than subscript citations<sup>1</sup>, so...
  - Keep your style consistent throughout.

## PROPOSAL PRESENTATION

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- **Dates:** Sign up for a time slot in graduate seminar (<https://www.cfc.umt.edu/wbio/seminar.php>) early on in the semester. Although it doesn't technically have to be scheduled during grad seminar, the vast majority of graduate students present during seminar. The feedback from faculty (who are more likely to attend during seminar because they already have the time set aside) and your grad student peers is the best reason to make sure you schedule it during seminar.
- **Length:** PhD proposals should be about 40-45 minutes and MS proposals should be about 35-40 minutes. You'll have 50 minutes in total regardless, so don't go over! There are often seminars scheduled back to back, so it's seriously not ok if you go over your time limit.
- **Content:** Think carefully about what you're putting in your presentation.
  - You should assume that your profs may not have had time to read your proposal very thoroughly, so your presentation should be thorough enough that they will have some idea of what your plan is.
  - Your presentation should also be **interesting** so that your committee members become engaged and interested in your work. Ideally, the committee defense that follows (see below) should then turn into a brainstorming session where you will receive suggestions and questions about the research you're about to carry out. At the other extreme, the committee will just drill you and your ideas for hours, so make it interesting.

## COMMITTEE DEFENSE

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- **Content:** After you present your proposal you will meet with your committee for an hour (at a minimum) and talk about your proposal. Here are some things you should know about that process.
  - At the end of the committee defense, you leave the room and they bring you back in with a pass or fail.
  - Your questions can range from specific to broad, but they'll be generally related to your project. Therefore, if you're asked a very broad question, you can bring it back to your own system. For

example, if you're asked about "density dependence", you can talk about how density dependence affects the system you're working on.

- For many of us, the biology is the easiest thing to understand. Use the biology to answer many of the questions you face; having a comfortable context for your answer will help you work out the answer to a question you have not previously thought about. Always talk about what you know.
- There will be questions about stats; that's just the way these things work.
- If you do not know an answer, that is ok, don't freak out, just acknowledge that you do not know the answer and talk about what you do know, don't BS the BS'ers.
- **Logistics:** Take initiative and be self-sufficient; plan everything ahead of time. You should be the one to schedule everything about this whole process (from a presentation date that works for everyone, to food, to booking a room, to making sure projectors or other technical equipment works, etc.).
  - You don't have to have the defense right after your proposal presentation, but that's usually easiest for everyone (since they're all already in one place). See what works best for your committee.
  - For the committee defense pick a room that has the facilities you want/need, and book it yourself (i.e., don't rely on others). A lot of people use the conference room in the forestry building (FORS 314) but it can fill up quickly, so book early.
  - **Book and test any technology** (e.g., projector) **ahead of time** and make sure you have it ready on the day of your meeting.
  - Bring a copy of your proposal and a notepad for yourself; you can take notes when your committee members ask questions and make suggestions.
  - Consider what you can do to make the meeting a pleasant experience for everyone involved, such as **bringing water (or coffee) and food**. Keep in mind the meeting will last a while.

## COMMITTEE

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You pick your committee, usually with guidance from your advisor. If some of your committee members are not in the wildlife program or associated with the University of Montana, make sure they understand what the format of the process will be – make sure they understand what their role is, and what is expected of them.

## GENERAL TIPS FOR SUCCESS (PROPOSAL AND THESIS/DISSERTATION DEFENSES)

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- When writing your proposal, ask your supervisor for examples of proposals s/he's liked.
- When you're writing your proposal, don't write down anything that you don't necessarily understand or believe; if you include other people's ideas in your proposal, you won't be able to defend them when you're asked questions about them.
- If at all possible, run some preliminary data through an example of what you're planning for your final project. This will give you an idea of the kinds of results you might expect, but more importantly it'll give you practice with the tools and it'll give you an idea of how each step will be completed (e.g., timeline, etc) and how you'll trouble-shoot when you encounter problems. Also, working with actual (or made up) data will give you a more thorough understanding of your project than you will get from just reading other people's papers.
- **It's a really good idea to practice** with some colleagues, for both your proposal and thesis/dissertation defense. Practice giving your presentations and have them ask questions which you have to answer.
- When you're being questioned about something, say what you know and leave it at that, especially if you know you're weak in a certain area. It's better to say "I don't know" to something than it is to make up (i.e. "bullshit") an answer.

- Look professional when you're presenting (avoid jeans, for example).
- As soon as you complete the proposal presentation or committee defense, sit down at your computer and write down any questions and suggestions you received. Not only will this help prepare you for the next stage of your degree, but it will also help out your fellow lab members.
- Think to the future: As you're brainstorming ideas for your research, and as you continue working through your dataset, you should be making a list of ideas for additional questions and problems you can address with your dataset. These questions might not be included within your thesis, but you might be able to use your dataset to answer them after you have completed your degree.
- **The reviewers will find the limits of your knowledge**, this is part of the exercise and is expected, don't get flustered by it.
- Think about the strategy of presenting and defending a topic. For example: If you know of a new technique that looks really promising for answering your question, but you don't understand the first thing about it, you might plan to keep that technique in the back of your mind, but present a method in your proposal that you know more about and can defend readily. Note: Professors will likely disagree with this statement because it undermines the system, but we are free to play the game as we see fit and work within its limitations. Use the rules to your advantage; do not let them handicap you.
- If you fail, the world will not end, assuming you have put a good effort forth you will likely being given another chance or remedial steps to complete.

### Wildlife Biology Graduate Courses

These are the permanent course in the WBIO program as of Fall 2015. The instructors and frequency are typically pretty consistent, but of course subject to change based on professor's availability. Courses offered intermittently are often hidden under 595 "special topics" so be sure to check that out every semester.

Autumn	Spring
<b>WILD 540 Research Design (plus lab WBIO 595) - 4 Credits</b> Instructor(s): Eby/Hebblewhite or Lukacs Frequency: Offered every year	<b>WILD 595 Communicating Science - 2 Credits</b> Instructor(s): Luis Frequency: Offered even years
<b>WILD 545 Conducting Strong Inference Science (also known as "Tea") - 1 Credit</b> Instructor(s): Martin Frequency: Offered every year	<b>WILD 595 Applied Population Genetics - 3 Credits</b> Instructor(s): Whiteley Frequency: Offered odd years
<b>WILD 595 Integrated Population Modeling - 3 Credits</b> Instructor(s): Lukacs Frequency: Offered odd years	<b>WILD 562 Wildlife Habitat Modeling - 4 Credits</b> Instructor(s): Hebblewhite Frequency: Offered odd years
<b>WILD 595 Estimation of Demographic Parameters - 4 Credits</b> Instructor(s): Lukacs Frequency: Offered even years	<b>WILD 595 Statistical Applications in Wildlife Biology - 1 Credits</b> Instructor(s): Lukacs Frequency: Offered every year
	<b>WILD 595 Theoretical Ecology - 4 Credits</b> Instructor(s): Luis Frequency: Variable – last taught Fall 2018
Year-Round	
<b>WILD 470 Conservation of Wildlife Populations (Luis/Lukacs) – 4 credits</b>	
<b>WILD 596 Independent Study – Typically for graduate students doing a special topics paper for someone other than their advisor.</b>	
<b>WILD 599 Professional Paper – For MS students doing a non-thesis degree.</b>	
<b>WILD 697 Research – For graduate students during their research.</b>	
<b>WILD 699 Thesis – For graduate students while writing their thesis.</b>	
<b>WILD 594 Grad Seminar – Required to attend every semester, must register for it at least twice.</b>	

## Other Useful Graduate Courses

These are courses in other departments that may be useful to WBIO grad students. The instructors and frequency are typically pretty consistent, but of course subject to change based on professor's availability.

### Ecology/Biology

<b>BIOB 506 (OBE Core Course) Adv. Population and Community Ecology - 4 Credits</b> Instructor(s): Maron/Lowe/?? Frequency: Offered every Autumn?	<b>BIOM 460 Ecology of Infectious Diseases – 3 credits</b> Instructor(s): Luis Frequency: Offered in Spring
<b>BIOB 518 Plant-Consumer Interactions – 3 credits</b> Instructor(s): Maron Frequency: Offered in Spring	<b>BIOB 524 Physiological Plant Ecology – 3 credits</b> Instructor(s): Sala Frequency: Offered in Autumn of even years
<b>FORS 595 Landscape Ecology – 3 credits</b> Instructor(s): Dobrowski Frequency: Offered in Spring of even years	<b>BIOS 532 Ecosystem Ecology – 3 credits</b> Instructor(s): Cleveland Frequency: Offered in Autumn
<b>BIOS 534 Integrated Systems Ecology – 3 credits</b> Instructor(s): Kimball Frequency: Offered in Spring	<b>BIOB 595 Ecological Models and Data – 3 credits</b> Instructor(s): Hall Frequency: Offered in Spring

### Evolution/Genetics

<b>BIOB 505 (OBEE Core Course) Genetics and Evolution - 4 Credits</b> Instructor(s): Good/?? Frequency: Offered every Autumn?	<b>BIOB 480 Conservation Genetics – 3 credits</b> Instructor(s): Whiteley Frequency: Offered in Spring
<b>BIOB 595 Population Genetics Data Analysis – 3 credits</b> Instructor(s): Luikart Frequency: Offered in Sept?	<b>BIOB 595 Advanced Population Genomics – 3 credits</b> Instructor(s): Luikart Frequency: Offered in Autumn of even years
<b>BIOB 561 Population Genetics Seminar – 1 credit</b> Instructor(s): Luikart/Whiteley Frequency: Offered in Autumn and Spring	<b>BIOL 595 Advanced Evolutionary Genetics &amp; Genomics (AEGG) – 1 credit</b> Instructor(s): Fishman/Good or Miller/McCutcheon Frequency: Alternating semesters
<b>BIOB 486 Genomics – 3 credits</b> Instructor(s): McCutcheon Frequency: Offered in Autumn	<b>BIOB 491 Programming for Genomics – 3 credits</b> Instructor(s): McCutcheon Frequency: Offered in Spring
<b>BIOL 483 Polygenetics and Evolution – 3 credits</b> Instructor(s): Miller Frequency: Offered in Spring of odd years	<b>BIOB 595 Landscape Genetics – 3 credits</b> Instructor(s): Landguth Frequency: Offered in Spring of even years

### Stats/Math

<b>STAT 451 Statistical Methods I - 3 Credits</b> Instructor(s): Graham/Patterson Frequency: Offered every year in Fall	<b>STAT 543 Applied Multivariate Statistical Analysis – 4 Credits</b> Instructor(s): TBD Frequency: Offered in even years
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<b>STAT 452 Statistical Methods II - 3 Credits</b> Instructor(s): Graham/Patterson Frequency: Offered every year in Spring	<b>STAT 547 Applied Nonparametric Statistics – 3 Credits</b> Instructor(s): TBD Frequency: Offered in Autumn of odd years
<b>STAT 457 Computer Data Analysis I - 1 Credit</b> Instructor(s): Staff TBD Frequency: Offered every year in Autumn	<b>STAT 549 Applied Sampling – 3 Credits</b> Instructor(s): TBD Frequency: Offered in Autumn of even years
<b>STAT 458 Computer Data Analysis II - 1 Credit</b> Instructor(s): Staff TBD Frequency: Offered every year in Spring	<b>STAT 445 Statistical, Dynamical, and Computational Modeling – 4 Credits</b> Instructor(s): Graham/Bardsley/Kalachev Frequency: Variable
<b>STAT 542 Applied Linear Models – 1 Credit</b> Instructor(s): TBD Frequency: Offered in Autumn of even years	<b>STAT ____ Spatial Statistics – 4 Credits</b> Instructor(s): Graham Frequency: Variable
<b>Others</b>	
<b>FORS 504 GIS: Methods and Applications I – 3 Credits</b> Instructor(s): Dobrowski Frequency: Offered in Fall	<b>CSCI 577 Computer Simulation and Modeling – 3 Credits</b> Instructor(s): TBD Frequency: Offered intermittently
<b>FORS 504 GIS: Methods and Applications II – 3 Credits</b> Instructor(s): Dobrowski Frequency: Offered in Spring	<b>FORS 538 Ecological Statistics – _ Credits</b> Instructor(s): Dobrowski/Afflec Frequency: ?
<b>PTRM 500: Conservation Social Science Methods</b> Instructor(s): Borrie Frequency: Offered in Autumn	<b>NRSM 574: Human Dimensions of Natural Resources – 3 Credits</b> Instructor(s): Metcalf/Metcalf Frequency: Offered in Autumn
<b>BIOB 595 ST: Using R for Biostatistics – 1 credit</b> Instructor(s): Art Woods Frequency: Offered in Spring of even years	<b>BIOB 452: Conservation Ecology</b> Instructor(s): Luikart Frequency: Offered in summer