AVS 401: Capstone in Animal Science I

Instructor

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Time and mode of instruction

Location

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Description of course and prerequisites

Students will draw together the knowledge and experiences they have gathered in their undergraduate program to create a Capstone experience. This takes the form of a hypothetical or potential project which reflects the culmination of their degree and the work typical of their academic field of study. Students design a hypothetical or potential research project which investigates a problem in animal or veterinary science, aquaculture, or a related field. The hypothetical project may include scientific research in a laboratory, farm, or field site; literature review; meta-analysis; survey; design problem solving; or other hypothesis-driven testing. Course assignments are designed to teach about research planning, experimental designs, writing research proposals, and presenting their ideas as an oral report to faculty and students. Students are not required to perform research during this course. AVS 401 and AVS 402 collectively serve as the Capstone experience for Animal and Veterinary Sciences students.

Credit hours: 2 in 2024 and 3 in 2025

Prerequisites: Junior standing, and pre- or co-requisite ENG 315 or ENG 317.

Course materials and digital services used.

- Textbook: There is no required textbook for this class.
- Lecture slides: All lectures are provided at the beginning of the semester as pdfs with annotated speaker notes included as comments in the document. These will be updated as needed with corrections.
- Lecture recordings: All lectures are recorded, and audio-only and video files added to Brightspace after class.
- Readings: Reading material will be provided as electronic journal articles or readings.
- Assignments: All assignments can be submitted through Brightspace, and each assignment portal has more detailed instructions, grading rubrics, and the proposal assignment has an optional document template.
- Brightspace Online Learning Software
  - Log into Brightspace. Read the tutorial. Download the Pulse app.
  - Brightspace is the online learning management system used at the University of Maine. In our course Brightspace site, you will be able to access course materials, assignment descriptions, this syllabus, and the course schedule. You will submit your work through Brightspace and will be able to access your grades and feedback as well. You can download a "Brightspace Pulse" app for most mobile devices from your regular app store. Be aware: Some functions in Brightspace work better when accessed through a laptop/desktop than through a mobile device. Support for the website and mobile apps includes video tours, IT Help Desk, and other resources. If you continue to have problems with Brightspace, please let me know as soon as possible.
  - If you wish to retain a personal copy of course materials, please do so before the end of the semester. **You will not have access to a course's Brightspace site after you complete the course.** You can store copies of material you wish to retain on Google Drive, your hard drive, or other media of your choosing. Other materials posted by your faculty may be found at the library.
- Zoom Online Conferencing Software
  - Read the UMaine tutorial.
  - Zoom is an online conference software that students can use to attend class remotely as needed. Students may invite friends and family to watch their presentation using Zoom.

I am happy to provide accommodation to the way course materials are formatted or provided to make them easier to access and understand. Please let me know if you have suggestions to improve the course materials.

Course goals

The student will complete a written project proposal for a real/planned or a hypothetical research project. The proposal will explain the project objectives and the context behind the proposal, and present the proposal to faculty and students. Students completing the general education area of Capstone experience will be able to:

1. Synthesize knowledge, skills, and dispositions gained throughout the student's major of study.
2. Demonstrate competence within the discipline through professional conduct and, as appropriate, critical reasoning, analytical ability, and creativity.
3. Demonstrate effective communication skills.

Student learning outcomes and objectives to meet them:

At the conclusion of this course, students will have the skills to perform the following numbered tasks. Course objectives specific to each learning outcome are provided as lettered explanations.

1. How to find and assess the quality of scientific information.
   a. In assembling background information about their topic, students will learn how to perform a search of scientific databases, how to read scientific literature, and how to assess information for validity and generalizability.
   b. In peer-reviewing other student research proposals, students will learn how to peer-review manuscripts, including reviewing, editing, and scientific critique.
2. How to create a research proposal.
   a. Students will learn how to write a short, informal summary of their project.
   b. Students will learn how to write a scientific project proposal, including how to format documents according to a pre-specified scientific format.
   c. Students will learn how to incorporate instructor and peer-review comments and revisions, and how to progress the maturity of concepts and writing with each successive draft. (Writing Intensive)
   d. Students will learn how to explain their process and controls to ensure the project is rigorously designed, how to present information in a logical and scientific manner.
   e. Students will learn how to build a citation database and use it to create relevant in-line citations and a bibliography.
3. How to present scientific information.
   a. Students will learn how to present a short, informal summary of their project.
   b. Students will learn how to create an oral presentation using software tools and present to a technical audience.

Project idea selection

The project idea should reflect the University of Maine Capstone experience goals:

1. The experience must be of significant depth and require innovation, creativity, reflection and synthesis of prior learning.
2. The experience must result in a thesis, report, presentation, or performance that demonstrates mastery of the subject matter.
3. Faculty/student interaction should be an integral part of the experience.
4. The minimum student effort in the capstone should reflect the equivalent of three credits of work.
5. Interdisciplinary experiences and opportunities for group participation in the capstone experience should be encouraged.

Re-using other research project ideas.

The Senior Paper research topic should not be the same as that required for any other regular course, but:

- Students performing research for the UMaine Student Symposium organized by the Center for Undergraduate Research (CUGR) can use the same research for these classes.
- Students in the Honors Program can use their honors research project to satisfy the proposal requirements of AVS 401 and will present their results as part of the requirements for AVS 402. "An Honors Thesis (HON498 and HON499) on an approved AVS topic and advised by an appropriate faculty member is able to be used as a student's project in the AVS capstone courses. Students must still enroll and participate in the AVS capstone courses (AVS 401 and AVS 402), but they are able to dually use their Honors thesis project, both in the capstone courses as their capstone project, as well as to fulfill their Honors requirements. The thesis proposal form must also be approved by the Director of the School of Food and Agriculture."

Expectations of students and university policies

Attendance and Participation

You *should* attend every class, because you paid for this learning opportunity and *being present in class helps you learn* – even when you are tired and stressed. But, I understood that life, jobs, or farm work might prevent you from getting to class. To help, I have recorded lectures to help you keep up with materials. Students who will miss a significant number of classes, or who require additional accommodation, may contact me to make alternate arrangements. Students who are lactating or caring for young children may bring them to class (see section on Pregnancy, lactation, and parenting).

Students are expected to participate in discussions in class, or on Brightspace. I strive to create inclusive discussions, but if students still find it challenging to participate, please notify me and I will alter the discussion format as needed. Supporting inclusion and community is an active process that involves both invitation, and support to ensure that the learning community is and remains an equitable and inclusive place. Students are expected to conduct themselves in a professional, courteous manner and abide by university policies.

Late Assignments

I will accept assignments for a certain period after the due date, however, the assignments in this class build on one another and their due dates are specifically set to help you achieve the end goals of this class. You will not receive a grade reduction for late assignments, but you waive the right to receive feedback which might impact the quality of successive drafts and your next grade. Regular assignments will not be accepted after the last day of class and the final draft will not be accepted after the finals period of the semester. If you cannot complete all assignments within the semester, please contact me about taking an Incomplete instead of a letter grade and setting up deadlines to complete the coursework after the semester in order to receive a letter grade.

Campus Policies

"The University of Maine is an EEO/AA employer, and does not discriminate on the grounds of race, color, religion, sex, sexual orientation, transgender status, gender expression, national origin, citizenship status, age, disability, genetic information or veteran's status in employment, education, and all other programs and activities." Follow the links for more information.

Course Schedule Disclaimer*
Observance of Religious Holidays/Events*
Sexual Discrimination Reporting (Long)*
Sexual Discrimination Reporting (Short)*
UMaine Land Acknowledgement

Academic Honesty Statement* Academic honesty is very important. It is dishonest to cheat on exams, to copy term papers, to submit papers written by another person, or generated by software or systems without the explicit approval of the instructor, to fake experimental results, or to copy or reword parts of books or articles into your own papers without appropriately citing the source. Students committing or aiding in any of these violations may be given failing grades for an assignment or for an entire course, at the discretion of the instructor. In addition to any academic action taken by an instructor, these violations are also subject to action under the University of Maine Student Conduct Code. The maximum possible sanction under the student conduct code is dismissal from the University. Please see the University of Maine System's Academic Integrity Policy listed in the Board Policy Manual as Policy 314 (*Date Issued: September 1, 2020).

Students Accessibility Services Statement*: If you have a disability for which you may be requesting an accommodation, please contact Student Accessibility Services, 121 East Annex, um.sas@maine.edu, 581.2319, as early as possible in the term. Students may begin the accommodation process by submitting an accommodation request form online and uploading documentation. Once students meet with SAS and eligibility has been determined, students submit an online request with SAS each semester to activate their approved accommodations. SAS creates an accessibility letter each semester which informs faculty of potential course access and approved reasonable accommodations; the letter is sent directly to the course instructor. Students who have already been approved for accommodations by SAS and have a current accommodation letter should meet with me (the instructor of the course) privately as soon as possible.

Assignments and Assessment: Detailed instructions (written and audio) and rubrics on Brightspace.

20 points total	*In-Class Assignments and Quizzes* – We will have in-class activities after most lectures which allow you to brainstorm, form ideas, and plans. These assignments will be submitted to Brightspace for grading, and can used again as the basis for your proposal. For the quizzes, read a short document provided in the quiz and answer a few questions to test your understanding. Quizzes are on Brightspace, are not timed, and may be taken twice. Quizzes are auto graded, contact me if you feel there has been an error.
10 points, 2 pt each	*Research Compliance Trainings* – Take online trainings for research compliance through CITI, which can be found though the Mainstreet Launchpad. **Everyone should take:** General RCR. **choose 4 more relevant to the type of research you would want to do, these are recommended:** Animal Biosafety, Wildlife Research, Introduction to Biosafety, OSHA Personal Protective Equipment Training, Select Agents, Biosecurity and Bioterrorism, Social & Behavioral Research, Working with Mice in Research, CITI Health Information Privacy and Security (HIPS) for Students and Instructors.

5 points	*Project summary (abstract)* – The Abstract is a short, easy-to-read summary of the project. You will use this Abstract in successive drafts of your proposal, so revise as needed.
	This should include:
	• The (draft) title of your project
	• The list of researchers on the project, including you, your mentor if you have one, and any other students or people directly involved.
	• A 200 - 300 word paragraph summary of the project which must include 1 - 2 sentences describing each of the following:
	  ○ What you are studying and what the problem is,
	  ○ The long-term and short-term goal,

	○ the research question being posed and your hypothesis, ○ objectives ○ a brief or vague explanation of the methods or analysis to be used, ○ and the impacts or the anticipated results of the project.
30 points (5 pts for outline, 10 pts for second draft, 15 pts for final draft)	*Project proposal* – A proposal describes the research you will do, how you will set up your experiment/information collection, what you will do with it, and what you hope to get out of it. Even if you have already completed the research, you will write the proposal as if you are describing what you will do in the future. This proposal is to be written as if you were trying to obtain grant funding to support this research. Information on the structure and content of different types of project/grant proposals will be given in class, and detailed instructions on what information to include and how to format your proposal, examples, and grading rubrics are available on Brightspace. • Outline: Include the proposal Abstract you already wrote, and then outline your project to start organizing the flow of your document. You will receive detailed instructor feedback. • Draft 1: Include more information and begin refining the content of your proposal. Give more detailed information on the background, your research question, your methodology, and what you think will happen. You will receive detailed instructor and peer review feedback, but this draft won't be graded (see peer review, below). • Draft 2: Now that you have incorporated feedback, submit the more polished version for grading and for broad instructor feedback. • Final draft: This will be a polished version of your proposal. You will not receive detailed instructor or peer feedback. Since this is a writing intensive class, these drafts will be returned to you as quickly as possible for revision and resubmission by the end of semester. For each successive submission, students will incorporate revisions from their faculty advisor, the instructor, and for two of the drafts, the peer review comments.
10 points for doing it, and 5 points for submitting your proposal for review	*Peer review* – Students will perform three reviews of other students' research proposal draft one. Details on performing a review will be provided in class, but generally reviewers should comment on how well the information is presented: if the proposal makes sense, if the objectives of the study are clear, if the scientific approach is easy to understand, and if you notice spelling, grammatical, or formatting errors. Students also write a 1-paragraph summary to obtain the grade.
5 points	*Elevator Speech* – Give a 2-3 min (timed), non-technical summary of your project or topic. You can use notes, but do not prepare slides or visuals. The goal of the elevator speech is to describe your project conversationally, to get someone interested.
10 points	*Final proposal presentation* – Give a 7-10 minute oral presentation of your project proposal to the class at the end of the semester, using one - three slides. The presentation will be graded live. Your slides can include anything, such as images, a video, or text (try not to have only text). Your presentation should include the title, your name and your mentor's name if you have one, a quick description of the problem and who might be helped by the results of this research, and what aspect the project will focus on trying to solve. You need to give an

	overview of what the project will look like, what info or samples you will be collecting and how they will help you answer your research question, and you should mention the methods you'll be used to analyze info/samples.
5 points	Attending other students' presentations is expected. Choose 10 presentations you watched and write down one thing you learned from each of these.
Bonus, 1 pt each	*Complete more of the online compliance trainings offered through UMS Academy. Details on Brightspace.*

Grading (out of 100 points): A = 93–100; A− = 90–92; B+ = 87–89; B = 83–86; B− = 80–82; C+ = 77–79; C = 73–76; C- = 70–72; D+ = 67–69; D = 63–66; D- = 60–62; F = 0–59. The completion of both AVS 401 and 402 with grades of C minus or higher is required for graduation. Grade fractions (ex. 92.5) are rounded up if >.5.

Schedule of lectures and assignments.

Each row is one class, and all the associated materials (lecture notes, readings, assignments, rubrics, links) are included in a Brightspace module with the name of the lecture and the order they are presented in.

Day	Title, Description, Assignments for each module
Week 1	
T 1/16	Lecture 0: "*Intro to the class*", syllabus and course expectations, finding course materials.
T 1/16	Lecture 1: "*What is research?*" An introduction to the scientific method, different types of research and literature. In class activities on cos-playing scientists. ➢ **In class assignment that you later submit to Brightspace**: list your skills, strengths, and what makes you awesome. Revise into a paragraph that talks about the qualifications that you bring to the table, submit to Brightspace under the "Project Roles" assignment. ➢ **Video (choose 1) on career path to science**, and combining science with other aspects of your identity. Links to videos on Brightspace (~1 hour each): ○ *"Deconstructing the individual: how science can materially advance using queer and feminist theory", Dr. Patricia Kaishian, PhD* ○ *"20 important questions in microbial exposure and social equity + recent work on urban greenspace microbiomes", Dr. Jake Robinson, PhD* ○ *"Decomposition as Life Politics", Dr. Kristina Lyons, PhD* ○ "An Indigenous Micro- to Meta-Narrative: Microbes and Social Equity", Dr. Nicole Redvers, ND, MPH ○ "What Connects Us: stories of working across difference with humans and microbes", Dr. Maya Hey, PhD ○ WeTalkScience podcasts (15 – 30 min each) about life as a scientist,
R 1/18	Lecture 2: "*Types of research and finding a project you identify with*." Different styles of research, how do we start forming research questions, and goals. In class activity on forming questions for different styles of research. ➢ **In class assignment that you later submit to Brightspace**: generate research questions for different styles of research, submit to Brightspace under the "questions" assignment. ➢ **Quiz online (5 pts)**: "Types of scientific writing" Available on Brightspace, recommended time ~ 30 min but is not timed, have 1 month to complete. ➢ **Reading**: Roberts_2021_better_numbers_through_ethnography ➢ **Reading**: "Module 1: Introduction: What is Research?", U.S.DHHS.

Week 2	
T 1/23	Lecture 3: *"Identifying audiences and funding sources".* Research funding is competitive, so you need to demonstrate a need for that research and an audience who will benefit from it. We'll use this to form the Background, Impact, and Info Dissemination and Outreach sections of a proposal. ➢ **In class assignment that you later submit to Brightspace:** In one sentence, list your project idea or any project idea**.** List at least 1 group/entities/organizations that might be impacted by the possible results or outcomes of this study and how. Who might be helped by this? How will you get the results to them? How would you get feedback from them? List at least 1 group/entities/organizations that might be impacted while this work is being conducted or samples are being collected, and how. Is there a way you could minimize negative impacts? This may include animal or human participants, personnel or other people at research sites, or people who work in an industry that may be interested in your research. If you are doing a literature review with low impact, this could include your roommates who are sharing internet access with you. Submit to Brightspace under "Info dissemination and Outreach" assignment. ➢ **Reading (choose 1):** o Neef-Neubert_2011_StakeholderParticipationInAgriculture o Microbes and Social Equity 2022 Symposium Session 4: "Community engagement and collaboration", ~ 90 minutes. Speakers: ▪ Dr. Pajau (PJ) Vangay, PhD. Science Community Manager, National Microbiome Data Collaborative, Lawrence Berkeley National Laboratory, "Advancing microbiome science, in partnership with communities" ▪ Dr. Rosie Alegado, PhD., Associate Professor, Oceanography; Director, Sea Grant Ulana 'Ike Center of Excellence; Director, School of Ocean and Earth Science and Technology Maile Mentoring Bridge Program at the University of Hawai'i, Mānoa, "Community-embedded microbiology in Indigenous spaces" ▪ Dr. Arbor Quist, PhD., Postdoctoral Fellow in Environmental Justice & Community-Driven Epidemiology in the Department of Population and Public Health Sciences at the University of Southern California, "Partnering with Communities in Environmental Disaster Research" ▪ Dr. Aidee Guzman, PhD., NSF and UC Chancellor's Postdoctoral Fellow in the Department of Ecology and Evolutionary Biology at UC Irvine, "Building agricultural resilience from the ground up."
R 1/25	Lecture 4: *"In-class assignment: Let's build the perfect sandwich"* We will co-write proposals to build the perfect sandwich. We will start as a class and then break into groups of ~3. Can be done in class, on Zoom, or asynchronously on your own. This should be ~1.5 pages in length, and can be bullet points or sentences for each of the bolded headings. ➢ **Assignment** (5 points), submit your Perfect Plan to Brightspace, if you worked in a group, each person should submit that same copy. ➢ **Reading***: "*How to read a scientific paper", Adam Ruben, Jan 20, 2016. 1200 words. ➢ **Reading**: "How to (seriously) read a scientific paper", Elizabeth Pain, Mar 21, 2016. 3300 words. ➢ **Video:** "Using the library resources.", Anne Marie Engelsen, Sept 2020, former Science Librarian at Fogler Library at UMaine. ~ 1 hour 10 min if at 1X speed. ➢ **Try listening to papers instead of reading them with:** Word Read-Aloud Function under the Review tab, @Voice e-reader or other apps for your phone.
Week 3	

T 1/30	Lecture 5: *"Experimental design."* How to go from research question to hypothesis to tests/experimental design, to assessing success. In class activity. ➢ **In class assignment you later submit to Brightspace:** design a hypothetical animal study, and state the Example Research question, Hypothesis, Long-term goal, Project Aim or a short-term goal, Background, Impact/Significance, Methods (# animals, what measured controls), Alternative strategies, Anticipated outcomes. 1 page in length, submit to "example study". ➢ **Reading**: "Module 2: Introduction: Research Design", U.S. DHHS. ➢ **Reading:** "Examples of Previous Capstone Proposals" on Brightspace
R 2/1	Lecture 6: *"Reducing bias through good experimental design"* Research never goes the way we think it will. This lecture goes over "alternative strategies" and how to make your project successful even when the main objective goes wrong. How to balance experimental designs, identify controls, reduce selection bias, and integrate equity. ➢ **In class assignment you later submit to Brightspace:** designate positive and negative controls, create criteria to reduce bias, design alternative strategies for the projects. Submit to "Controls and Alternatives" assignment. ➢ **Online Quiz (5 pts)**: "What is plagiarism?" Available on Brightspace, recommended time ~ 30 min of time but is not timed, have 1 week to complete. ➢ **Reading**: Pannucci_2010_avoiding_bias_science
Week 4	
T 2/6	Lecture 7: *"Project management."* More on composing a proposal, with the focus on timelines, project roles, information dissemination and outreach. How to show you can handle this project/role. In class activity. ➢ **In class activity that you later turn in to Brightspace:** make a Gantt chart, and create a role/responsibility for everyone on your project team. List any other expertise that might be needed. submit to Brightspace under "Timeline and Team" assignment. ➢ **Reading (choose 1):** Cheruvelil_2014_creating_collaborative_research_teams o Bennett_Gadlin_2012_collaboration_team_science
R 2/8	Lecture 8: "*Good spreadsheets make better data collection"* In class activity on spreadsheet design and how to make graphs. ➢ **Reading**: Schwartz_2008_feeling_stupid_in_science, ~990 words. ➢ **Reading**: "Module 4: Methods of Information Collection", U.S. DHHS ➢ **Reading**: "Module 5: Handling Information", U.S.DHHS
Week 5	
T 2/13	*Lecture 9: In-class workshopping time, write an elevator speech.* ➢ **Assignment:** come up with a 2 - 3-min Elevator Speech/Project Pitch to give today or next class. If you don't have your project finalized, give an overview of your research interests and how it might relate to your future career. ➢ **Reading** (video or pdf): *"Giving a scientific presentation",* recorded lecture on Brightspace ➢ **Reading**: "How to give a dynamic scientific presentation", Marilynn Larkin, Aug 4, 2015. ~2300-word blog post. ➢ **Option to give your elevator speech at the end of class.**
R 2/15	➢ **Assignment due in class (5 pts)**: Elevator Speech
Week 6	
T 2/20	*Lecture 10: "How to write an abstract."*

	Tips on writing a great abstract that can help you focus while writing the rest of your proposal, followed by an in class working session where we workshop our ideas, write our abstracts, and get feedback from each other. ➢ **Assignment (5 pts)**: Project Abstract, submit to Brightspace by Friday, 9 am
R 2/22	*In class workshopping of project ideas*, experimental design, and more. Bring your project ideas and questions and we will work through them in class together. There is also a discussion board space on Brightspace to facilitate giving each other feedback. ➢ **Due tomorrow at 9 am:** Project Abstract ➢ **Reading**: "Module 3: Elements of Research", U.S.DHHS
Week 7	
T 2/27	*Lecture 11: "How to write a research proposal"*. How to go about condensing information from many sources, citations styles, manager software, and info on peer-reviewing. Together in class, we will start writing our outlines, talk through our ideas, and get feedback from peers. ➢ **Assignment (5 pts):** Outline of the proposal, OK to reuse submissions to the in-class activities. submit to Brightspace by Friday at 9 am. ➢ **Reading:** AVS401_scientific writing, available as pdf or video ➢ **Suggested Reading:** AVS401_other_parts_proposals as a pdf or video ➢ **Suggested Reading:** check out the example documents of a research proposal for federal funding, to give you an idea of how all the pieces come together.
R 2/29	*In class workshopping of project ideas*, experimental design, and more. Bring your project ideas and questions and we will work through them in class together. There is also a discussion board space on Brightspace to facilitate giving each other feedback. ➢ **Due tomorrow at 9 am:** Outline of the proposal, submit to Brightspace by Friday at 9 am.
Week 8	
T 3/5	No class – pre-recorded content *Microbes and Social Equity 2022 Symposium Session 3: "Transforming your research for policy engagement"* – 90 minutes if at 1X speed. Speakers: • Dr. Caitlyn Hall, PhD., Assistant Professor of Practice, University of Arizona, "The Elephant in the Lab: How can scientists engage in policy and advocacy?" • Dr. Kathleen Treseder, PhD., Howard A. Schneiderman Endowed Chair and Professor of Biology at the University of California Irvine; Climate Activist; Irvine City Council Candidate (later elected), "My experience advocating for environmental policy with local policy makers: What worked, what didn't." • Dr. Sonja Birthisel, Ph.D., Director, The Wilson Center at the University of Maine; Councilor, Orono Maine Town Council; Faculty Associate, University of Maine School of Forest Resources, "Public Policy Engagement & Personal Sustainability: What's Your "Sparkle Zone"?"
R 3/7	No class – pre-recorded content *Lecture 12: "Ethics in research and compliance training"* **Assignment**: Take online trainings for research compliance through CITI, which can be found though the Mainstreet Launchpad. **Everyone should take:** General RCR. **choose 4 more relevant to the type of research you would want to do, these are recommended:** Animal Biosafety, Wildlife Research, Introduction to Biosafety, OSHA Personal Protective Equipment Training, Select Agents, Biosecurity and Bioterrorism, Social & Behavioral Research, Working with Mice in Research, CITI Health Information Privacy and Security (HIPS) for Students and Instructors
Week 9	

T 3/12	No class – spring break
R 3/14	No class – spring break
Week 10	
T 3/19	No class – Perform online training and work on your proposals **Assignment:** Take online trainings for research compliance through CITI, which can be found though the Mainstreet Launchpad. **Everyone should take:** General RCR. **choose 4 more relevant to the type of research you would want to do, these are recommended:** Animal Biosafety, Wildlife Research, Introduction to Biosafety, OSHA Personal Protective Equipment Training, Select Agents, Biosecurity and Bioterrorism, Social & Behavioral Research, Working with Mice in Research, CITI Health Information Privacy and Security (HIPS) for Students and Instructors
R 3/21	*Lecture 13: In class workshopping time: writing an IACUC or IRB application* Together as a class, we'll go through an IACUC application and steps to proposing animal research, and then an IRB application, and proposing human-related research, and getting approval from UMaine on and off campus. ➢ **Reading: "**What Is Ethics in Research & Why Is It Important?", David B. Resnik, Dec 23, 2020. ~1000-word blog post. ➢ **Reading (video):** r17_Portalatin_UMaine_research_Compliance. This recorded lecture describes ethical research, how to get research approval if your project will need it. Featuring guest lecture by Paula Portalatin, Office of Research Compliance at UMaine. ➢ **Action Item (if relevant):** Perform online training for IRB or IACUC if your project involves human/animal subjects. Checklist on Brightspace.
Week 11	
T 3/26	*Grad student panel* Hear from some graduate students in animal science, microbiology, nutrition, and biomedical sciences talk about how they knew they wanted to go into research, how they applied and found mentors, and what their day-to-day looks like. ➢ **Reading**: Demystifying the Graduate School Application Process, Estein et al. 2022
R 3/28	*Lecture 14: Now what? Finding a project for AVS 402.* We will talk about how to manage your project after the semester, planning for AVS 402, and how to reach out to research mentors if you will be working with someone on a project. Guest lecture from UMaine student scholarship funds ➢ **Assignment due (5 pts):** Proposal draft 1 (a more polished but not finished draft) for peer review. Submit to the Google Workspace page for this class, which can be accessed through Brightspace. Putting them on Google Docs means that all the proposals are visible to the rest of the class and it is easy for everyone to make comments. ➢ **Assignment (15 pts):** Peer review starts now, due by April 4. Choose three proposal drafts to read, and add comments or suggested edits to those three google docs. When you are done, write up a short paragraph for each proposal you read, in which you describe the proposal, what you liked best, and what you thought could be improved. Detailed instructions for making comments and for writing summaries can be found on Brightspace. ➢ **Readings (choose 1)**: ○ "Tips to Find a Quality Research Mentor", UC Denver, pdf online as well ○ "How to ask someone to mentor you", Yale ○ "How to ask your mentor for help", Javid Jamae

	➢ **Optional Action item:** If you plan on working on a mentored project, reach out to potential research mentors with similar research topics. A draft email is available on Brightspace for you
Weeks 12 -15	
T 4/2	***Student proposal presentations in class (10 pts) from now until end of semester. Signup here.***
R 4/4	*Student proposal presentations in class* ➢ **Due tomorrow at 9 am:** Peer review comments due on Google Docs, and summaries due on Brightspace, Friday by 9 am.
T 4/9	*Student proposal presentations in class* **Assignment due today (15 pts):** Proposal Draft 2 (for grading), submit on Brightspace by midnight
R 4/11	*Student proposal presentations in class*
T 4/16	*Student proposal presentations in class*
R 4/18	*Student proposal presentations in class*
T 4/23	*Student proposal presentations in class*
R 4/25	*Student proposal presentations in class*
F 4/26	**Last day of classes and last day late assignments will be accepted (not including the final draft)**
R 5/3	Finals week **Assignment due (20 pts):** Final Draft of Project Proposal Due by midnight.

UMaine resources related to research, statistics, writing, and careers:

- Career Center, https://umaine.edu/career/; help with resumes, applications for vet/grad/med school, interviews, and job negotiations
  - Biomedical specialist: Samantha M. Wheeler, M.Ed., CCSP, GCDF (she, her, hers), Career Counselor, STEM/Health Professions, Career Center, University of Maine, 300 Memorial Union, Orono, ME 04469, Work: 207-581-2587; samantha.wheeler1@maine.edu
- CUGR research fellowships, https://cugr.umaine.edu/fellowship-opportunities/, money for salary or supplies
- Fogler Library
  - OneSearch, https://library.umaine.edu/; find scientific literature
  - Research Data Management: https://libguides.library.umaine.edu/datamanagement
  - Creating a research poster: https://libguides.library.umaine.edu/confposters
  - Creating a research presentation: https://libguides.library.umaine.edu/confposters/presentations
  - Presentation Practice Room, https://library.umaine.edu/use/presentation-practice-room/
- Writing Center, https://umaine.edu/wcenter/; tutoring, editing, skills development

There is always someone on campus to help you

My door is always open and I am always willing to help students, however, as a university employee I am also required to keep the community safe by disclosing information on crimes. This means I am a "mandatory reporter". If you disclose something to me, including in assignments, I am obligated to provide this information to the campus Title IX office. The Title IX Office will contact you discretely, and offer you support services, guidance, and help you choose if you want to take action.

For confidential resources on campus: Counseling Center: (207) 581-1392; Cutler Health Center: (207) 581-4000; Rape Response Services: 1-800- 871-7741' Partners for Peace: 1-800-863-9909.
For support services on campus which may have to report the incident to others who can help: (Emergency and nonemergency) Title IX Student Services, (207) 581-1406, or University of Maine Police: (207) 581-4040 or 911. Or (non-emergency) Office of Community Standards: (207) 581-1409.
Support services off campus: Mabel Wadsworth Center, Bangor: reproductive health care, abortion, addiction help, etc.

Free food and clothing: Black Bear Exchange's Food Pantry, Orono campus; Old Town Crossroads Ministry

University Rainbow Resource Center: The Rainbow Resource Center located in Memorial Union, Room 224, empowers and increases the visibility of Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) people by promoting equality and inclusiveness. We strive to maintain an open, safe, and supportive environment for students, staff, faculty and alumni and provide educational opportunities, information, and advocacy services.

Pregnancy, lactation, and parenting: I am happy to provide accommodation for students based on pregnancy, lactation, and parental needs, as well as work with the Office of Equal Opportunities (E.O.). The state of Maine and UMaine policies allow students to breastfeed in any space, including in class. If a lactation space is required, please contact E.O. for arrangements. The Pregnant on Campus Initiative provides pregnancy and parenting resources in Orono.

University Veterans Education and Transition Services (VETS): University of Maine's VETS Center serves student veterans as they apply to, attend and advance beyond UMaine. The Veterans Center connects student veterans with the resources they need to successfully transition from combat to classroom to career. This includes help navigating the admissions process, applying for financial aid and U.S. Department of Veterans Affairs education benefits, academic assistance and preparing to re-enter the workforce. The VETS Center is located in Room 143 of the Memorial Union.

University Counseling Services: If you are experiencing a mental health emergency: Dial 911. You can also call campus Police Services at (207) 581-4040. For urgent help, please check: https://umaine.edu/counseling/need-urgent-help/. Counseling Services provides mental health and social support for all currently enrolled students. Staff follow strict legal and ethical guidelines concerning the confidentiality of counseling. Counseling services is located in Cutler Health Center, Room 125 and can be reached by phone at (207) 581-1392.

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