



**NR581B1 Intro to Natural Resource Research &
Professionalism
COURSE SYLLABUS**

Department of Forest and
Rangeland Stewardship
Warner College of Natural Resources

Instructor

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Office Hours: Wednesday, 1-3 pm

Term: Fall 2021
Class Meeting Days: Tu/Th
Class Meeting Hours: 10:00-10:50 am
Class Location: Forestry 127
Course Credits: 2

Welcome!

I am excited to meet and work with each of you in this class, which was originally co-designed with and for graduate students in the Forest & Rangeland Stewardship Department. My philosophy is that we are all learners and teachers, and this course is a mutual learning journey in which we will explore together diverse perspectives on science and ways of doing research across the natural resource disciplines within the Department of Forest and Rangeland Stewardship. As an experienced researcher in ecological sciences, I aspire to serve as a coach and mentor (in addition to your advisor and other research and professional mentors) to help you develop a strong set of foundational research skills that will serve you throughout your graduate program and beyond. I always welcome feedback and I love to meet with students one on one as well as in class.

Some weeks, there will be opportunities for real-time virtual class meetings via zoom or MS Teams, especially when we have guest speakers. These will be recorded so that students unable to attend during the scheduled class time will have access to them.

Course Overview

This course provides graduate students in research-oriented natural resource degrees an introduction to scientific research and graduate study from an interdisciplinary perspective. Students learn to critically read, analyze and synthesize published research, frame problems, and ask research questions within and across biological, physical and social science disciplines. Students articulate an individual philosophy of science and positionality statement, develop science writing and communication skills, and learn responsible research conduct.

Course Goals and Objectives

This course aims to provide beginning graduate students with foundational research, communication and professional skills to launch a successful graduate program and professional career, while building relationships with fellow students and faculty across disciplines within our department and college.

By the end of the semester, students will be able to:

- 1) Define science and its aims from different disciplinary perspectives. Compare and contrast the different ontologies, epistemologies and methodologies of relevant natural resource physical, biological and social sciences and articulate a personal philosophy of science as a work in progress.
- 2) Critically reflect on their identity and positionality in relation to their research topic and approach as reflected in a philosophy of science and positionality statement.
- 3) Conduct a literature search, review and synthesis, and critically analyze others' published research.
- 4) Ask a research question informed by existing theory and knowledge that is novel, meaningful to science or management, and feasible.
- 5) Demonstrate understanding of research and professional ethics and responsible research conduct, including data management, ownership and sharing; human and animal subjects research; academic integrity and intellectual property.
- 6) Develop basic skills in communicating across disciplines and with non-scientist stakeholders, including visual, written and oral communication, and teamwork.
- 7) Demonstrate understanding of the basic structure and process of writing a research proposal and scientific paper.

Course Prerequisites

Graduate standing

CSU's Land Acknowledgment Statement

Colorado State University acknowledges, with respect, that the land we are on today is the traditional and ancestral homelands of the Arapaho, Cheyenne, and Ute Nations and peoples. This was also a site of trade, gathering, and healing for numerous other Native tribes. We recognize the Indigenous peoples as original stewards of this land and all the relatives within it. As these words of acknowledgment are spoken and heard, the ties Nations have to their traditional homelands are renewed and reaffirmed.

CSU is founded as a land-grant institution, and we accept that our mission must encompass access to education and inclusion. And, significantly, that our founding came at a dire cost to Native Nations and peoples whose land this University was built upon. This acknowledgment is the education and inclusion we must practice in recognizing our institutional history, responsibility, and commitment.

<https://landacknowledgment.colostate.edu>

This is an Inclusive Classroom

Inclusive teaching involves deliberately cultivating a learning environment where all students are treated equitably, have equitable access to learning, and feel valued and supported in their learning. Such teaching attends to social identities and seeks to change the ways systemic inequities shape dynamics in teaching-learning spaces, affect individuals' experiences of those spaces, and influence course and curriculum design.

– Adapted from <http://crlt.umich.edu/node/90467>

CSU's Principles of Community

- **Inclusion:** We create and nurture inclusive environments and welcome, value and affirm all members of our community, including their various identities, skills, ideas, talents and contributions.
- **Integrity:** We are accountable for our actions and will act ethically and honestly in all our interactions.

- **Respect:** We honor the inherent dignity of all people within an environment where we are committed to freedom of expression, critical discourse, and the advancement of knowledge.
- **Service:** We are responsible, individually and collectively, to give of our time, talents, and resources to promote the well-being of each other and the development of our local, regional, and global communities.
- **Social Justice:** We have the right to be treated and the responsibility to treat others with fairness and equity, the duty to challenge prejudice, and to uphold the laws, policies and procedures that promote justice in all respects.

<https://diversity.colostate.edu/resources/principles-of-community/>

Required Texts and Materials

All required and supplementary texts and materials will be provided via Canvas. Full citations to assigned readings and materials are provided below in the course schedule. Additional optional resources will also be posted on Canvas.

Library & Research Help

The CSU Libraries Help Desk provides basic research and technical assistance either in person at Morgan Library or by phone at 970-491-1841. Virtual assistance is also available via the Libraries' Ask Us chat and email services (<http://lib.colostate.edu/help/ask-us>). Jocelyn Boice is the librarian supporting the Forest and Rangeland Stewardship Department and this course. Contact her for in-depth assistance at: jocelyn.boice@colostate.edu.

Important Dates to Remember

Last Day to Add/Drop Classes without an Instructor Override: Sun, Aug 29, 2021

Registration Closes: Wed, Sept 8, 2021

Withdrawal Deadline (50% tuition refunded with 'W' grade): Mon, Oct 18, 2021

Fall Recess: Sat, Nov 20–Sun, Nov 28, 2021

Last Day to Process a University Withdrawal: Fri, Dec 10, 2021

Final Examinations: Mon-Fri, December 13-17, 2022

Useful websites with important dates to remember

<https://calendar.colostate.edu/academic/>

<https://www.online.colostate.edu/faqs/important-dates.dot>

Assignments

Preparation for and Participation in Discussions

Graduate students are expected to do all assigned reading and viewing before class and to engage in discussion each week. This course will be discussion-based with occasional short lectures and guest panels (live or pre-recorded). Students will work in teams and with the instructor to design learning activities and facilitate discussions that deepen all students' understanding of and ability to apply concepts and practices covered in the readings. Participation will be evaluated based on consistency and quality of weekly discussion contributions during the semester.

Short Assignments

There will be several short assignments and reflective writing assignments throughout the semester related to key course topics and larger assignments. For example, for week 2, the short assignment is critical reading of a scientific article. Each short assignment or reflective writing supports students in working towards the larger assignments: the literature review, philosophy of science and positionality statement. Short assignments are graded on completion, completeness and thoughtfulness.

Philosophy of Science and Positionality Statement

Part of becoming a researcher is developing an understanding of the context of our research, including the history of our discipline(s) and our context as a researcher. This context includes our own (and our discipline's) assumptions about the nature of the reality, and how we can know it. It also includes reflecting on our personal identity and life history, and how these shape and are shaped by our research. There are no right or wrong answers to these questions. Rather, an important part of our formation as researchers is to develop awareness of our own beliefs and subjectivities, and how these affect what we study and how we do our research. To facilitate this process each student will develop an individual statement of their philosophy of science (our beliefs about the nature of reality and how we can know it) and positionality (a reflection on how our individual identity and history affect what and how we research, and our relationship to other researchers and/or research participants).

Literature Matrix, Review and PRISMA Diagram

Science is a systematic method of creating knowledge and also a body of existing knowledge derived through the scientific method. Here we are referring to what is sometimes called "modern science" in contrast to Indigenous science, which is a systematic and holistic way of knowing and body of knowledge. In order to develop a research project that contributes new knowledge, and is relevant to theory and/or management, we must first have a solid understanding of existing knowledge and the research that generated it. Searching for, critically reviewing, and synthesizing the scientific literature is therefore an essential skill for any researcher and an early step in any research process. In this series of assignments students will conduct a literature search relevant to their research field, critically read and systematically record notes on at least 20 papers in a literature matrix, and write a concise review and synthesis of this body of work, identifying key findings and methodological approaches, as well as gaps in theory, empirical research or methods. To display the process of systematically including papers in a review, students will create a PRISMA diagram (<http://prisma-statement.org/>). In addition to building a critical skill, this assignment is designed to help students explore an area of research they may want to pursue and to identify where the critical gaps and uncertainties lie that call for additional research.

Peer Review

To develop the skills of giving, receiving and responding to constructive feedback, each student will conduct a peer review of another student's draft literature review and concept map.

Final Draft of Literature Review and Response to Peer Review

The final project will comprise the revised literature review, potential research questions and approaches, and the final project should address the feedback each student receives in from two reviewers: their class peer reviewer and the instructor. The intent is not to write a full synthesis, but rather to explore a particular topic in depth via the literature review process and to evaluate possible questions and methods, gaining feedback that will help you understand what makes a strong research question and appropriate methodology. Ideally reviews written in this way will match writing requirements for your thesis or dissertation.

Final Presentation

The intent of the presentation is for students to practice presenting their research via an oral and visual presentation (as most students will do in a proposal defense), and to receive questions and constructive feedback from their peers. Specific time allotted for presentations will depend on total number of students in the class.

Basis for Final Grade

Assessment	Percent of Final Grade
Discussion Participation	20%
Short Assignments (5 x 2%)	10%
Literature Matrix and PRISMA diagram	5%
Draft Literature Review	15%
Draft Philosophy of Science and Positionality Statement	10%
Peer Review of Drafts	5%
Final Literature Review and Response to Peer Review	30%
Final Project Presentation	5%
	100%

Grading scale: A 90-100%
B 80-89.9%
C 70-79.9%
D 60-69.9%
F <60%

Plus or minus grades may be added to final course grades at the instructor's discretion. CSU policy does not permit assigning grades of C-, D+ or D-.

Course Schedule

The dates and assignments are tentative and may be changed and adapted at the instructor's discretion.

Week	Topic	Read/Watch	Assignment Due
1 Aug 24	Course Intro	<u>Read:</u> Syllabus	Introduce yourself to the group in class and interact with new students at orientation
Aug 26	FRS Graduate Orientation	Grad Orientation	
2 Aug 31	Getting Started: How to Find and Read Scientific Papers (guest: Jocelyn Boice)	<u>Read:</u> Purruganam & Hewitt 2004 Hart 1998, Ch 1	<u>Short Assignment 1:</u> Critical analysis of one research paper (2%)
Sep 2	Developing an annotated bibliography	<u>Choose 1 of 2 recent research articles to critically analyze:</u> Grenier 2020 Johnston & Gabrowski 2020	
3 Sept 7	Designing a degree program: introduction to GS-forms (Guest: Sonya LeFebre)	<u>Read:</u> The FRS Graduate Student Handbook (https://warnercnr.colostate.edu/wp-content/uploads/sites/2/2017/08/Grad-Handbook.pdf)	<u>Short Assignment 2:</u> Submit literature review topic and short annotated bibliography (2%)
Sep 9	Mapping your degree timeline: research, committees, and coursework		
4 Sep 14	What is (good) science? How does who we are and how we know affect what and how we research?	<u>Read:</u> Creswell 2013 Jafaer 2018	<u>Short Assignment 3:</u> Submit a list of potential committee members and a draft GS-6 form (2%)
Sep 16	Discussion of positionality statements	<u>Read:</u> Cheng and Randall-Parker 2017 Holmes 2020	
5 Sep 21	Literature Synthesis and Concept Maps	<u>Read:</u> Hart 1998 Ch 6 & 7	Draft Philosophy of Science & Positionality Statement (10%)
Sep 23	Introduction to meta-analysis	Borstein et al., Ch 1&2	

6 Sept 28	Land Grant Legacies, Extension and Engaging Stakeholders in Research (Guests: Marvin Reynolds & Susan Carter, CSU Extension)	<u>Read:</u> Gornish & Roche 2018	
Sep 30	Land Grant Legacies, Extension and Engaging Stakeholders in Research (Guest: Retta Breugger, CSU Extension)	<u>Read:</u> Bruegger et al. 2016	Literature Matrix & PRISMA diagram (5%)
7 Oct 5	Developing a Research Question	<u>Read:</u> Karban and Huntzinger Ch 1 & 2 Gotelli and Ellisonm 2004 Ch 4	
Oct 7	Writing a Research Proposal: where to begin	One proposal RFP (NSF, USDA-NIFA, etc).	<u>Short Assignment 4: one paragraph sample literature review synthesis (2%)</u>
8 Oct 12	Qualitative Methodologies I	<u>Read:</u> Creswell Ch 4	
Oct 14	Qualitative Methodologies II (Guests: Tyler Beeton [CFRI] & Hailey Wilmer [USDA])	Moon et al. 2014	
9 Oct 19	Quantitative Methodologies	<u>Read:</u> Gotelli & Ellison 2004 Ch 6	
Oct 21	Research discussion: FRS faculty (Guests: Carrie Havrilla, Camille Stevens-Rumann, Sarah Hart)	TBD	
10 Oct 26	De-mystifying the Scientific Publication Process	<u>Read:</u> Ayres 2009	
Oct 28	Interpreting and responding to reviews	<u>Read:</u> Taylor et al 2016	Draft Literature Review (15%)
11 Nov 2	Research Ethics I	<u>Read:</u>	

Nov 4	Research Ethics II	NAS 2009 On Being a Scientist Crozier & Schulte-Hostedde 2015	
12 Nov 9	Data Management and Sharing	<u>Read:</u> Gotelli & Ellison 2004 Ch 8	
Nov 11			Peer Review (5%)
13 Nov 16	Mentoring undergraduate students	<u>Read:</u> Hund et al. 2018	
Nov 18	Myers-Briggs and your interactions		<u>Short Assignment 5:</u> Individual Development Plan (2%)
14 Nov 23	FALL BREAK		
Nov 25	FALL BREAK		
15 Nov 30	Working on Interdisciplinary Teams	<u>Read:</u> Goring et al. 2014	
Dec 2	Conflict resolution in research	Cunningham et al. 2018	
16 Dec 7	View Final Presentations		Final Draft Literature Review (30%)
Dec 9	View Final Presentations		Final Presentations (5%)

Description of Classes and Assignments

Week 1 August 22, August 26 Introduction & FRS New Graduate Student Orientation

Welcome! This week we will get to know each other and discuss the rationale and aims of the course, and the course structure and assignment. We'll also spend time during the first class period going over some basics of graduate programs in the Department of Forest & Rangeland Stewardship. During the Thursday meeting class time will be taken by the New Graduate Student Orientation for all on-campus FRS graduate students.

Assignment:

Introduce yourself to the class and interact with peers and faculty at the orientation.

Week 2 August 31, September 2 Getting Started: How to Find and Read Scientific Papers

Learning to read the scientific literature critically and efficiently, and to locate, review and synthesize multiple papers, are essential skills for any emerging scientist. This week will practice critical reading, and learn about the literature search and review process. We will continue to build these skills throughout the semester, one piece

at a time, with the final product being a completed literature review that could form the basis for a thesis, dissertation or grant proposal.

Read:

Purugganan, M., and J. Hewitt. 2004. How to read a scientific article. Rice University, Houston, TX.

Hart, C. 1998. Chapter 1 *in* Doing a literature review: releasing the social science research imagination. London; Thousand Oaks: Sage Publications.

Choose **one** of the 2 following research articles to read critically (using template given in Purugganan and Hewitt):

Johnston, D.B., Garbowski, M., 2020. Responses of Native Plants and Downy Brome to a Water-Conserving Soil Amendment. *Rangeland Ecology & Management* **73**: 19-29.

Grenier, S.M., Grimm, K.E., Waltz, A.E.M., 2020. Managing for Resilience? Examining management implications of resilience in southwestern National Forests. *Journal of Forestry* **118**: 433-443.

Assignment:

Short assignment 1: critical reading of a research article (due September 3)

Week 3 September 7, September 9 Understanding your degree program

You will all work to progress through a degree program; some of this is reflected by coursework and some of your work is reflected by research. There are numerous requirements that the graduate college places on students to fulfill in order to complete a graduate degree, especially a program of study, completing a thesis or dissertation, and passing a defense administered by academic faculty. To be successful at completing these requirements, it is helpful to plan ahead and develop a timeline of coursework and research milestones, and to develop a committee early-on in your program.

Read: The FRS graduate student handbook

Assignment: Short assignment 2: a literature review topic and short annotated bibliography (20 articles).

Week 4 September 14, September 16 What is (Good) Science? How Do We Know What We Know?

“What is science?” is a classic PhD preliminary exam question. Many of us do science without thinking about what science is and isn’t. We may assume that other scientists and scientific disciplines share our understanding of what science is, its purpose and method. Yet when we encounter other disciplines, we realize that our philosophies of science—what we believe about the nature of reality, ways of knowing, and the purpose and value of scientific knowledge—vary greatly. This week we begin to discuss what we think science is (and isn’t), and how differing views of reality and theories of knowledge result in different philosophies of science.

September 14 Read:

Creswell, J. W. 2013. Chapter 2 Philosophical assumptions and interpretive frameworks. In, *Qualitative inquiry and research design: Choosing among five approaches*, 3rd Edition. Sage, Los Angeles.

Jafar, A.J.N., 2018. What is positionality and should it be expressed in quantitative studies? *Emergency Medicine Journal* **35**: 323-324.

Supplemental Watching (Optional):

Robin Kimmerer on Science and Indigenous Knowledge (~3 mins)

<https://www.youtube.com/watch?v=L4ryBn7VfcA>

M Jackson TEDEX, Glaciers, Gender and Science (~20 mins) <https://www.youtube.com/watch?v=e4R5-y0Dc1s>

September 16 Read:

Cheng, A.S., Randall-Parker, T., 2017. Examining the influence of positionality in evaluating collaborative progress in natural resource management: Reflections of an academic and a practitioner. *Society and Natural Resources* **30**: 1168-1178.

Holmes, A.G.D. 2020. Researcher Positionality – A consideration of its influence and place in qualitative Research - a new researcher guide. *International Journal of Education* **8**: 1-10.

Assignment Due:

A GS-6 form with course/program timeline and a list of potential committee members

Week 5 **September 21, September 23** **Literature Synthesis, Concept Maps and Organizing a Literature Review**

So, you have read and taken notes on 20+ articles on your topic. Is this enough? How do you make sense of all this material? How do you organize it in a meaningful way, and develop your own critical assessment of the existing research on your topic as a whole body of work? We will also touch on the idea of meta-analysis and some of the basic methods and approaches for conducting a meta-analysis.

Read:

Hart, C. 1998. *Doing a literature review: releasing the social science research imagination*. London; Thousand Oaks: Sage Publications, London. (Chapters 6 & 7, Pp. 143-206)

View freeware for creating systematic review diagrams: <http://prisma-statement.org/>

Assignment Due: Draft Philosophy of Science and Positionality Statement

Week 6 **September 28, September 30** **Land Grant Universities, Extension and Engaging Stakeholders in Research**

Read:

Bruegger, R., Fernández-Giménez, M.E., Tipton, C., Timmer, J.M., Aldridge, C.L., 2016. Multistakeholder development of state-and-transition models: A case study from NW Colorado. *Rangelands* **38**, 336-341.

Gornish, E.S., Roche, L.M., 2018. The value of cooperative extension for involving society in restoration and conservation. *Restoration Ecology* **26**, 1051-1054.

Assignment Due: Literature Matrix and PRISMA diagram

Week 7 **October 5, October 7** **Developing a Research Question and Basics of Proposal Writing**

Picking a research question is a major step in the research process and the ability to ask good questions is a critical skill. Now that you have some idea of what is already known for your topic and where the gaps in knowledge or methods lie, how can use your literature review to identify and justify a research question? Where do research questions come from and what makes a good one? Once you have a question in mind, how do you justify it and propose to answer it?

Read:

Karban, R., and M. Huntzinger. 2006. Chapter 1 Picking a question. *How to do ecology: A concise handbook*. Princeton University Press, Princeton.

Gotelli, N. J., and A. M. Ellison. 2004. Chapter 4. Framing and testing hypotheses. *A primer of ecological statistics*, second edition. Sinauer Associates, Sunderland, MA. **Pages 79-90 only**

Find a one proposal RFP to read (e.g., NSF, USDA-NIFA, and others. A focus on graduate-student proposals is probably best). Example: <https://www.nsf.gov/pubs/2005/nsf05607/nsf05607.htm>

Assignment Due: Sample literature synthesis (one paragraph)

Week 8 **October 12, October 14** **Qualitative and Participatory Methodologies**

This week we will dive into qualitative social science and participatory methodologies in natural resource research. We will discuss the broadly some different qualitative methods and the standards for rigor and validity in qualitative research. We will also introduce the concept of participatory research—where the boundaries between the research subject/participant and researcher are loosened or dissolved and researchers work in partnership with stakeholders to frame and answer questions.

Read:

Creswell, J. W. 2013. Chapter 3 Designing a qualitative study. *Qualitative inquiry and research design: Choosing among five approaches*, 3rd Edition. Sage, Los Angeles.

Moon et al. 2016. A guideline to improve qualitative social science publishing in ecology and conservation journals. *Ecology and Society* 21(3):17.

Article by guest author TBD

Watch/Join:

Guest panel research discussion (October 14)

Assignment Due: None, work on literature review

Week 9 October 19, October 21 Quantitative Methodologies

Quantitative methodologies are most often associated with natural resource research, especially in ecological and physical science fields. This week we discuss three dominant quantitative approaches to natural resource research: observational field studies, field experiments and simulation modelling.

Read:

Gotelli, N. J., and A. M. Ellison. 2004. Chapter 6. Designing successful field studies. Pages 137-161 in *A primer of ecological statistics*, second edition. Sinauer Associates, Sunderland, MA.

Reading by guests TBD

Watch/Join:

Guest panel research discussion (October 21)

Assignment Due: None, work on literature review

Week 10 October 26, October 28 Demystifying the Scientific Peer-Review and Publication Process

A researcher's job is not done until their findings become part of the scientific record through the peer review and publication process. How does this process work? How can we make sure that our results are available to future researchers and avoid ethical pitfalls, conflicts over authorship, and other potential barriers to publication?

Read:

Ayres, M. 2009. How to write a peer review. URL:

<https://www.dartmouth.edu/~mpayres/teaching/gradprogram/HowToReview.pdf>

Taylor, B. W. 2016. Writing an effective response to a manuscript review. *Freshwater science* 35:1082-1087.

Assignment Due: Draft Literature Review (October 29)

Week 11 November 2, November 4 Research and Professional Ethics

Scientific integrity is the foundation of the social contract between science and society. If we cannot trust the people and process that produce science, we have little trust in the results of their efforts. This week we begin our discussion of standards of scientific conduct, a theme which will run through the next several weeks.

Read:

National Academy of Science. 2009. On being a scientist, a guide to responsible conduct in research. National Academy of Sciences, Washington, D.C.
Crozier, G. K. D., Schulte-Hostedde, A. I. 2015. Towards improving ethics of ecological research. *Sci Eng Ethics* 21: 577-594.

Assignment Due: None

Week 12 November 9, November 11 *Data Management, Access and Ownership*

Data curation and management is a critical element of good research practice. This week we will learn about best practices in data management.

Read:

Gotelli, N. J., and A. M. Ellison. 2004. Chapter 8 Managing and curating data. Pages 207-236 in *A primer of ecological statistics*, second edition. Sinauer Associates, Sunderland, MA.

Watch/Join:

Guest

Assignment Due: Peer Review (November 12)

Week 13 November 16, November 18 *Mentorship: how to maximize your relationships*

Being a good mentor and a good mentee are important to your progress in science. Not only should you maximize your relationship with your advisor, but you will also likely have the opportunity to mentor undergraduates and research technicians. Effective mentorship will help you to advance your career and provide you with important experience in management, however, many ecologists receive no formal training in mentorship. This week, we will discuss some approaches to mentoring and to being mentored.

Read:

Hund, A. K., Churchill, A. C., Faist, A. M., Havrilla, C. A., Stowell, S. M. L., McCreery H. F., et al. 2018. Transforming mentorship in STEM by training scientists to be better leaders. *Ecology and Evolution*

Assignment Due:

Individual development plan (November 19)

Week 14 November 25, November 27 *FALL BREAK, NO CLASS*

Enjoy the week off.

Assignment Due: None, work on final paper and presentation

Week 15 November 30, December 2 *Working on Interdisciplinary teams and conflict resolution in research*

Increasingly many scientists are choosing to collaborate across disciplines to address ‘wicked’ problems with large or far-reaching impacts in society. However, there are challenges and considerations to working in large interdisciplinary teams, and it is fundamental for researchers from different fields to understand one another’s strengths and limitations. In addition, working closely with others either in a lab or as part of a larger interdisciplinary team is likely to lead to conflicts in some situations—accordingly, it is important for graduate students and advisors to have some methods for dealing with conflicts in a professional manner.

Read:

Cunningham, W. A., Gruber, J., Van Bavel, J. J., Lewis, Jr., N. A. 2019. Conflict in your research group? Here are four strategies for finding a solution. *Science*, doi:10.1126/science.caredit.aba2636

Goring, S. J., Weathers, K. C., Dodds, W. A., Soranno, P. A., Sweet, L. C., Cheruvilil, K. S., et al. 2014. Improving the culture of interdisciplinary collaboration in ecology by expanding measures of success. *Frontiers in Ecology and the Environment* 12:39-47.

Assignment Due: None, work on final paper and presentation

Week 16 **December 7, December 9** **Final Presentations**

This week we will watch and provide feedback on final presentation of literature reviews.

Assignment Due: Final presentations and review paper

Course Policies

Late Work Policy

Assignments turned in late will be assessed a penalty: a half-letter grade if it is one day late, or a full-letter grade for 2-7 days late. If you anticipate that you will not be able to meet a deadline, please contact me in advance to request an extension.

Extra Credit Policy

There are no planned extra credit assignments. The instructor may offer extra credit opportunities during the semester at their discretion.

Grades of "Incomplete"

Per university policy, an instructor may assign temporary grade of Incomplete to a student who demonstrates that he or she could not complete the requirements of the course due to circumstances beyond the student's control and not reasonably foreseeable. A student must be passing a course at the time that an Incomplete is requested unless the instructor determines that there are extenuating circumstances to assign an Incomplete to a student who is not passing the course. When an instructor assigns an Incomplete, he or she shall specify in writing using the Department Incomplete Grade Form the requirements the student shall fulfill to complete the course as well as the reasons for granting an Incomplete when the student is not passing the course. The instructor shall retain a copy of this statement in his or her grade records and provide copies to the student and the department head or his or her designee. (Section I.6 of the *Academic Faculty and Administrative Professional Manual*). For more information: <https://registrar.colostate.edu/incomplete-grades/>

Disability Access

Colorado State University is committed to providing reasonable accommodations for all persons with disabilities. Students with disabilities who need accommodations must first contact the Student Disability Center before requesting accommodations from the professor. The Student Disability Center (SDC; <https://disabilitycenter.colostate.edu/>) is located in room 121 of The Institute for Learning and Teaching (TILT) building. Their phone is (970) 491-6385 (V/TDD). Students who need accommodations in this course must contact the professor at the beginning of the semester to discuss needed accommodations.

Attendance Policy

This class will be delivered primarily in-person but may have some instances where remote (synchronous) attendance is more convenient or appropriate. Attendance at both in-person and synchronous online sessions is encouraged but attendance will not be recorded. Student should make an effort to attend and interact in order to receive full marks for 'participation'.

University Policy Statement:

Students who will miss class due to participation in University-sanctioned extracurricular/co-curricular activities must inform their instructors prior to the anticipated absence and take the initiative to make up missed work in a timely fashion. Instructors must make reasonable efforts to enable students to make up work which must be accomplished under the instructor's supervision (e.g., examinations, laboratories). In the event of a conflict in regard to this policy, individuals may appeal using established University procedures.

For the purposes of this regulation, University-sanctioned activities include competitions, events and professional meetings in which students are officially representing the institution. Appropriate sanctioned activities include:

- a. Intercollegiate athletics;
- b. Collegiate club sports and competitions;

- c. Conferences and workshops recognized by the University not related to academics;
- d. Commitments on behalf of the University (ASCSU, band, etc.); and
- e. Professional activities recognized by the University related to academics.
- f. Department heads or their designated representatives must approve sanctioned professional and departmental activities. Other sanctioned activities must be approved by the appropriate program director on record with the Division of Student Affairs offices or the Department of Athletics.

Religious Accommodation

Participation in official University activities, e.g., an out-of-town athletic event, or special religious observances may provide a legitimate reason for an excused absence. The student is responsible for discussing this with the instructor at the beginning of the semester.

Academic Integrity

The Department of Forest and Rangeland Stewardship takes academic integrity seriously. At minimum, academic integrity means that no one will use another's work as their own. You can find an overview and CSU's definition of plagiarism on the CSU Writing Center website found here:

<https://writing.colostate.edu/guides/page.cfm?pageid=311&guideid=17>.

If you plagiarize in your work you could lose credit for the plagiarized work, fail the assignment, or fail the course. Each instance of plagiarism, classroom cheating, and other types of academic dishonesty will be addressed according to the principles published in the CSU General Catalog (under "Academic Integrity/Misconduct": <http://catalog.colostate.edu/general-catalog/policies/students-responsibilities/>)

This course will adhere to the CSU Academic Integrity [Policies and Guiding Principles](#) as found in the General Catalog and the [Student Conduct Code](#).

Academic integrity lies at the core of our common goal: to create an intellectually honest and rigorous community. Because academic integrity, and the personal and social integrity of which academic integrity is an integral part, is so central to our mission as students, teachers, scholars, and citizens, I will ask that you affirm the CSU Honor Pledge as part of completing your work in this course.

Further information about Academic Integrity is available at CSU's Practicing Academic Integrity:

<https://tilt.colostate.edu/Integrity/StudentResources>

Title IX Information

CSU's Student Sexual Harassment and Violence policy, following national guidance from the Office of Civil Rights, requires that faculty follow CSU policy as a "mandatory reporter" of any personal disclosure of sexual harassment, abuse, and/or violence related experiences or incidents shared with the faculty member in person, via email, and/or in classroom papers or homework exercises. These disclosures include but are not limited to reports of personal relational abuse, relational/domestic violence, and stalking. While faculty are often able to help students locate appropriate channels of assistance on campus (e.g., see the CSU Health Network link below), disclosure by the student to the faculty member requires that the faculty member inform appropriate CSU channels to help ensure that the student's safety and welfare is being addressed, even if the student requests that the disclosure not be shared.

For counseling support and assistance, please see the CSU Health Network, which includes a variety of counseling services that can be accessed at: <http://www.health.colostate.edu/>. And, the Sexual Assault Victim Assistance Team is a confidential resource for students that does not have a reporting requirement and that can be of great help to students who have experienced sexual assault. Some helpful websites:

<https://safety.colostate.edu/sexual-assault-information/>
<https://wgac.colostate.edu/support/sexual-assault/>

Non-Discrimination Statement

Colorado State University does not discriminate on the basis of race, age, creed, color, religion, national origin or ancestry, sex, gender, disability, veteran status, genetic information, sexual orientation, gender identity or expression, or pregnancy. The University complies with the Civil Rights Act of 1964, as amended, related Executive Orders 11246 and 11375, Title IX of the Education Amendments Act of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, Section 402 of the Vietnam Era Veterans' Readjustment Assistance Act of 1974, as amended, the Age Discrimination in Employment Act of 1967, as amended, The Pregnancy Discrimination Act of 1978, Americans with Disabilities Act of 1990, the Civil Rights Act of 1991, the ADA Amendments Act of 2008, the Genetic Information Nondiscrimination Act of 2008, and all civil rights laws of the State of Colorado. Accordingly, equal opportunity of employment and admission shall be extended to all persons. The University shall promote equal opportunity and treatment in employment through a positive and continuing affirmative action program for ethnic minorities, women, persons with disabilities, and veterans. The Office of Equal Opportunity is located in 101 Student Services. Source: <http://oeo.colostate.edu/non-discrimination-statement>