

# Science Synthesis and Communication - FOR 546

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## Course Description:

Learn together about synthesizing science for application in management. We emphasize fire science. Extensive writing and reading required. In this online course students become informed users of science, learn best practices for synthesizing science, and deepen their understanding of the science-management interface and how to communicate science effectively. We address advocacy. Students complete multiple science briefs and syntheses.

## Course Learning Outcomes:

I designed this course so that we can learn together to

1. Understand best practices for science synthesis (e.g. focused, clear, transparent, evidence-based, compelling) and communication.
2. Effectively synthesize scientific knowledge, and in doing so demonstrate thoughtful analysis, critical thinking, and effective communication.
3. Understand the need to bridge between scientists and managers.

This course contributes to the following FireMNR program outcomes:

1. Effectively synthesize scientific knowledge
2. Analyze and interpret data scientifically
3. Demonstrate critical thinking skills
4. Communicate clearly and effectively
5. Work effectively and ethically with others
6. Plan projects and solve problems integrating ecological, social and political perspectives

## Format:

This course is taught online. We'll learn from multiple short presentations, reading and critiquing syntheses written by others, and then each of you will work individually and in small teams to write and present a synthesis focused on a particular management or science issue.

## Required Textbook:

Schimmel, J. 2011. Writing Science: How to Write Papers That Get Cited and Proposals that Get Funded. (Cost is ~\$30).

You must also read extensively in science literature. Whenever possible, I will choose assigned readings that are available electronically through the University of Idaho library. To learn how to find articles and to access them for free through the University of Idaho, take the short [tutorials](#) available from the UI library (I advise focusing on the Articles Intro, MJTL and Topics video tutorials). You will also find Google Scholar and other internet search engines useful.

## Writing:

You must use the [CNR writing guide](#). The College of Natural Resources [Learning Resources Center](#)

(<http://www.cnr.uidaho.edu/learn>) may also be very helpful to you in writing research papers and in remembering statistical, math and ecological concepts -- these were developed with funding from Joint Fire Science Program specifically for fire professionals taking online courses.

**Accommodations for disabilities:**

Reasonable accommodations are available for students who have a documented disability. Please notify the instructor during the first week of class of any accommodations) needed for the course. Late notification may mean that requested accommodations might not be available. All accommodations must be approved through

[Disability Support Services](#) located in the Idaho Commons 303, 208-885-6307, [dss@uidaho.edu](mailto:dss@uidaho.edu).

**Academic Honesty, including plagiarism:** [Academic honesty](#) is expected of you at the University of Idaho.

**Plagiarism will NOT be tolerated:** In this class, you must summarize, paraphrase, quote and reference sources to avoid plagiarism in your writing. Plagiarism violates the code of academic conduct at the University of Idaho. Under [UI policy](#), regulation O-2, "Consequences for academic dishonesty may be imposed by the course instructor. Such consequences may include but cannot exceed a grade of "F" in the course". If you are accused of plagiarism, you must meet with the course instructor and the chair of the department to discuss the evidence, circumstances, and consequences. If you have indeed plagiarized text, you will receive 0 points on the assignment, you may fail the course and your unethical behavior will affect recommendations for jobs and graduate school. You must cite sources to support and lend credibility to your writing. Please be careful in citing sources for your ideas when you write. You should be aware that web-based searches for plagiarized text have become quite sophisticated. Even a sentence or two plagiarized in a long document is inexcusable. It is very tempting and easy to copy text directly, but it works against the educational process and is a form of theft. There are some good examples of plagiarized text as well as acceptable alternatives on the [Department of Forest, Rangeland, and Fire Sciences web site](#) and elsewhere on the World Wide Web.

**Grading:**

For all written assignments, 10% of the your grade will be based on organization, clarity of reasoning, grammar, and spelling. Further, each assignment I provide a rubric that I will use in evaluating your work and assigning a grade – I recommend that you review the rubric before you complete your assignment. No late papers will be accepted. Your final grade will be assigned according to the University of Idaho scale (90-100%=A, 80-89%=B, etc.) based on points earned out of total available:

Course grading system:

COURSE ACTIVITY	TOTAL POINTS	% of Total
<b>Assignments: Elevator Pitch (Module 1)</b> Record and post an elevator pitch -----Provide feedback on 2 of your peer's elevator pitches	100 50	15%
<b>Assignments: Effective Synthesis (Module 2)</b> Critique two syntheses	50	5%
<b>Assignments: Brief synthesis (Module 3)</b> Write and post a brief ----- Provide feedback on 2 of your peer's briefs Write and submit a mid-course reflection	100 50 30	18%
<b>Assignments: Synthesis done in teams of 2-3 (Modules 4-7)</b> Part A: Proposal Part B: Objective(s) and methods Part C: Poster of initial findings -----Part C: Provide feedback on 2 of your peer's posters Part D: Final written version Part E: Brief for public/policy makers about this topic Part F: Elevator pitch	50 50 75 50 200 75 50	55%
<b>Assignments: Communicating Science (Module 7)</b> Share your views on communicating effectively Share your learning goals for this class	50 20	7%
<b>TOTAL POINTS</b>	<b>1000</b>	<b>100%</b>

Your grade for class discussion assignments will be subjectively assigned based on how frequently you make substantive contributions (questions and comments) that further the discussion. I am looking for specific and constructive contributions.

### Example schedule

#### Module 1 Elevator Pitch

- **(due Thur)** Post Elevator Pitch Video (individuals POST to discussion)
- **(due Sat)** Provide feedback for (2) elevator pitches (individuals QUOTE via discussion)

Professor will provide feedback via discussion to individuals by the following Tuesday

#### Module 2 Best Practices

- **(due Thur)** Post Elevator Pitch Video (individuals POST to discussion)
- **(due Sat)** Provide feedback for (2) elevator pitches (individuals QUOTE via discussion)

Professor will provide feedback via discussion to individuals by the following Tuesday

### Module 3 Brief

Use the provided *Synthesis Assignment discussion* to select a topic and self-select the 2-3 members of your Synthesis Assignment team which you will work on throughout the rest of the semester.

- **(due Sat)** Post a brief you have written (individuals POST via discussion)
- **(due Thur)** Provide feedback for (2) briefs (individuals QUOTE via discussion)
- **(due Sat)** Post mid-course reflection (individuals POST via discussion)
- **(due Sun)** Have your Synthesis Assignment team and topic identified (self-select via discussion)

### Module 4 Evidence-Based Systematic Reviews

**LIVE (Tues)** (4:00-5:30 pm PST): Live Collaborate session where your instructor is available for you to ask questions and get advice regarding the Synthesis Assignment. *Optional*, but recommended.

**LIVE (Thur)** (10:00-11:30 am PST): Live Collaborate session where your instructor is available for you to ask questions and get advice regarding the Synthesis Assignment. *Optional*, but recommended.

- **(due Sat)** Post *Synthesis Part A: Proposal* (teams POST via discussion)
- **(due Tues)** Provide feedback for (2) *Synthesis Part A: Proposal* (individuals QUOTE via discussion)
- **(due Sat)** Post *Synthesis Part B: Objective & Method* (teams POST via discussion)
- **(due Tues)** Provide feedback for (2) *Synthesis Part B: Objective & Method* (individuals QUOTE via discussion)

### Module 5 Meta-Analysis

- **(due Thur)** Post *Synthesis Part C: Poster* (teams POST via discussion)
- **(due Sat)** Provide feedback for (2) *Synthesis Part C: Poster* (individuals QUOTE via discussion)

### Module 6 Science and Management

- **(due Sat)** Post *Synthesis Part D: Final Written* (teams POST via discussion)
- **(due Tues)** Post *Synthesis Part E: Brief* (teams POST via discussion)
- **(due Thur)** Provide feedback for (2) *Synthesis Part E: Brief* (individuals POST via discussion)
- **(due Sat)** Post *Synthesis Part F: Elevator Pitch* (teams POST via discussion)

### Module 7 Communicating Science Effectively

- **(due Tues)** Provide feedback for (2) *Synthesis Part F: Elevator Pitch* (individuals QUOTE via discussion)
- **(due Thur)** Post effective communication between scientists and managers (individuals POST via discussion)
- **(due Sat)** Complete University of Idaho student evaluation (individuals)