Schedule:
Aug 26 — Miquel Gonzalez-Meler & Hormoz BassiriRad - Intro
Aug 28 — Miquel Gonzalez-Meler & Hormoz BassiriRad - Context Statement

Sept 2 — Stefan Green – Metagenomics and root microbiomes
Sept 4 — Alan Molumby – Academic careers with an emphasis on teaching

Sept 9 — Emily Minor – Landscape and urban ecology
Sept 11 — Emily Minor – Landscape and urban ecology
Sept 16 — Emily Minor – Landscape and urban ecology
Sept 18 — Emily Minor – Landscape and urban ecology

Sept 23 — Miquel Gonzalez-Meler – Ecosystem & Isotope Ecology
Sept 25 — Miquel Gonzalez-Meler – Ecosystem & Isotope Ecology

Sept 30 — Miquel Gonzalez-Meler – Ecosystem & Isotope Ecology
Oct 2 — Miquel Gonzalez-Meler – Ecosystem & Isotope Ecology

Oct 7 — Hank Howe - Community Ecology, Plant/Animal Interactions & Professional development
Oct 9 — Hank Howe - Community Ecology, Plant/Animal Interactions & Professional development

Oct 14 — Hank Howe - Community Ecology, Plant/Animal Interactions & Professional development
Oct 16 — Hank Howe - Community Ecology, Plant/Animal Interactions & Professional development

Oct 21 — Hank Howe - Community Ecology, Plant/Animal Interactions & Professional development
Oct 23 — TBA
Oct 28 — TBA
Oct 30 — Hormoz BassiriRad - Global Climate Change, CO2, N deposition and Extreme Events

Nov 4 — Hormoz BassiriRad - Global Climate Change, CO2, N deposition and Extreme Events
Nov 6 — Hormoz BassiriRad - Global Climate Change, CO2, N deposition and Extreme Events

Nov 11 — Hormoz BassiriRad - Global Climate Change, CO2, N deposition and Extreme Events
Nov 13 — David Wise - The Space-Time Continuum: Ecological Perspectives

Nov 18 — David Wise - The Space-Time Continuum: Ecological Perspectives
Nov 20 — David Wise - The Space-Time Continuum: Ecological Perspectives

Nov 25 — TBA
Nov 27 — No Class - Thanksgiving

Dec 2 — Review Paper Final Presentation
Dec 4 — Review Paper Final Presentation
**Grading:**
Grading is based on attendance, participation and a major Review Paper. Attendance is mandatory except in cases of emergency. Participation includes, but not limited to contributing to class discussions and leading of the journal club papers. Although journal clubs are not explicitly listed on this syllabus, most lecturers will assign a paper or two which will be lead by students. You will be asked to send a summary of the assigned paper to Miquel and Hormoz prior to the period when discussion will take place. Finally, a large portion of the grade (75%) will be based on the review paper project as described below:

**Review Paper, Products and Deadlines** - You are required to turn in written report no more than 5 single space by Dec 2. You are also required to present an oral presentation of your review paper project. During the class period on Dec 2 and 4. The Oral presentation should be 15 minutes long followed by a 2-3 minute period for Q&A. You should talk to Miquel and Hormoz about your selection as soon as possible, but we expect you to select your topic by Sept 9. We also expect that a solid outline along with a list of references to be used in the review by Oct 9.

**Review paper, Guidelines** - The work must follow the general guidelines provided below

**Rationale:**
The goal of researching and writing this Review Paper is to help you define a central problem to be addressed by your Master’s or Doctoral research. In doing the reading for this paper, you will undoubtedly refine its scope, but at the beginning you should have a clear structure for the paper in mind. You might think of this paper as the first chapter of a dissertation/thesis; and in a much condensed version, as the background section of the research proposal that you will write next semester in BIOS 532. Thus, the Review Paper will cover a topic broader than the specific research problem you will address during your graduate career, but will be directly related: it will describe the generalizations, theories and unanswered questions in the broader scientific context of your own (possible) research (“possible”, because researching and writing this Review Paper may lead you to refocus your graduate research program). Literature reviews are often referred to as “synthesis research” (as oppose to “original research” where new data is used to address a problem) and may include formal data analyses (meta-analyses, pattern descriptors...).

Defining the framework and context for your question will be your first task for this term project. An initial context statement (3-4 sentences) on what you are interested in (why should we care? How it relates to other fields of ecology or evolution?) is due by Aug 28th to get the conversation started.

Writing science technical documents is not easy. Short sentences, language precision (i.e. not vague), conciseness, and connecting statements that link paragraphs are key components of successful scientific technical writing. You should use the advice and guidelines of this Reference Book: *Writing Science in Plain English* by Anne E. Greene, University of Chicago Press, 2013, 136pp, to guide you through the writing of this review.

**Structure:**
Use the Annual Review format (plant biology; ecology and systematics) as a model. If you prefer to use another format, please contact with 531 instructors for approval.

**Title:** Should clearly describe the central scientific problem that the Review Paper addresses

**Abstract:** No more than 250 words. Pose the central problem, your primary conclusions, and your recommendations for future research.

**Introduction:** Clearly describe the issues that the Synthesis Review Paper will address. Define the context, the central problem that needs to be addressed and the specific aspects of the focused problem that you will specifically cover in your review. This introduction will present the reader to the structure of the paper and the context and need for the synthesis.

**Body:** This section should be an in-depth synthesis of the literature as it relates to the central problem and its clearly demarcated components. This section should have a clear structure and logical flow, with headings and sub-headings. It should NOT be a string of summaries of the papers being reviewed and cited literature should be used to provide solutions to the problem identified in the introduction and/or to suggest lines of future research. Some papers you will refer to once, whereas others will likely be discussed at several points in your review. The use of scientific names gives authority to your writing, so their use is preferable.

**Future Research:** An extremely important section, one to which you will want to give a lot of thought. Which questions have been adequately answered; which ones need more research, and what approaches should be taken; and what new questions emerge from your review? You can use tables to structure the future research component.

**Logistical Details:**

- No more than **FIVE** single- or **EIGHT** double double-spaced pages, exclusive of References, which can be single-spaced). You should use a minimum of **25 References** (give preference to historical early work, conciseness, targeted examples that illustrate your point, other reviews for important related aspects not covered by your central question, etc).
- Margins: 1” all around
- Font: 12 pt.
- Figures and Tables: Think about copyright issues when borrowing figures from publishers and other authors. They will not be counted within the 20 page limited. Figure and table legends should be informative to understand them without the use of the text (spell abbreviations, sources, statistics and add units if warranted).
- Citations:
  - **Option I:** Use the (Author, year) format as found in the journal Ecology for citing papers in the text. Follow Ecology for the format to use in listing references (i.e. full bibliographic information, including inclusive pages and the full name of journals).
  - **Option II:** Numbering system as it is used in Annual Reviews. Follow Annual Reviews for the format to use in listing references (i.e. full bibliographic information, including inclusive pages and the full name of journals).
• Paragraph structure: Each one should have a clear topic sentence. The ideal paragraph will have a transitional sentence leading to the next paragraph (not always needed, depends upon the structure of the section you are writing, but a good general rule to follow).

• Headings and sub-headings: Use them to organize your paper – the structure should be clear throughout

• Editing: **Do it!!!** After you’ve written a draft, go back through it and mercilessly cut extraneous phrases, un-needed adjectives and **repetitious material.** Your writing should be concise and the development of your main points clearly linear. After you’ve carefully edited your draft, do it again.

**FOR WHOM ARE YOU WRITING THIS REVIEW PAPER?**

You are not writing this Review Paper for your instructor. I will give you constructive feedback along the way (as will your colleagues), and will grade the paper (required by custom and University regulations), but you are writing the paper for yourself, for the audience you wish to reach with your research, and for your class colleagues.