In this course we will explore together the primary research literature in areas selected by mutual consent. Sample topics from past years include fertilization ecology, symbiotic relationships, migration and dispersal, larval ecology, responses to pollutants, causes and consequences of biological invasions, and the impact of ocean acidification on marine organisms. The course has a strong focus on developing critical reading skills and effective writing skills through frequent, short assignments. This course will give you skills that will serve you well in any area of biology. It is also excellent preparation for graduate school and for professional careers in just about anything I can think of. 

What I try to accomplish in Bio 179:

1. …to teach you how to interpret data critically and productively.
2. …to give you practice in reading the formal scientific literature and in asking yourself useful questions about it, questions that might lead you to challenge the author’s conclusions or might lead to interesting new research projects.
3. …to improve your ability to summarize and synthesize information, to organize ideas into logical and convincing arguments, and to express those arguments clearly and concisely.
4. …to give you practice in presenting information orally.
5. …to build a sense of community in which people can be supportive and still give useful advice and criticism.
6. …to show you that the fun part of being a biologist is asking new questions and designing experiments to address those questions.

Attendance: Class participation is essential to the success of this course. Please don't miss class. We can't have good discussions if you aren't there.

Assignments: No late work will be accepted.

All assignments must be typed double-spaced, with 1.5” margins at the left and right sides of each page.

Please put your NAME and the DRAFT DATE at the upper right of the first page of each assignment.

Number all pages.

Always turn in the original and keep a copy for yourself.

When turning in revisions of previous assignments, please append the previous draft so I can see what you have changed.

Term Project: A research proposal on any topic in Marine Biology. The proposal must contain at least 5 references from the primary literature, discussed in detail sufficient to demonstrate thorough understanding.
**Student responsibilities:**

1) Come to class with a thorough understanding of the assigned reading; you serve as the day's local authority on that topic.

2) Proofread your work carefully before you turn anything in to me or to fellow students.

3) Come to class prepared to ask questions about anything that you found puzzling in the readings.

4) Ask questions if you don't understand or don't agree with something that anyone (including me) says during class.

**Journals** to keep an especially careful eye on:

- *Aquatic Biology*
- *Biological Bulletin* (call number: QH 301 .B38)
- *Ecology* (QH 540 .E3)
- *Evolution* (QH301 .S753)
- *Invertebrate Biology* (QL362 .I564)
- *Journal of the Marine Biological Association of the United Kingdom* (QH301 .M2)
- *Marine Ecology Progress Series* (QH 541.5 .S3 M26)
- PLoS ONE (online only)
- Current Biology (online only)

Looking through current issues of these journals is a great way to find viable topics and references for research proposals. All are accessible online; we also have older issues of many of these journals available downstairs at the Tisch Library (see call numbers listed above). Sometimes you will also find papers about marine animals in the journals *Animal Behavior* and *Behavioral Ecology*.

**Possible major topics for the semester:**

- Effects of Ocean Acidification
- Biological Invasions—causes and consequences
- Latent and maternal effects
- Effects of pollution
- Predation—on embryos, larvae, adults
- Inducible defenses
- Larval dispersal
- Control of metamorphosis