

Larval Ecology, Fall 2016
Topics in Oceanography 16:712:596
Tuesday 15:30-17:30 (subject to modification)
Classroom 106 at Haskin Shellfish Research Lab (or via remote link)

Instructors: Daphne Munroe – dmunroe@hsrl.rutgers.edu

Course schedule and lecture topics:

The course is presented as eleven sections, each addressing aspects of larval ecology. We focus strongly on invertebrate larvae, and will not attempt a broad phylogenetic survey of all invertebrate developmental types - there are simply too many and you would miss the unifying themes in such an approach. Young et al (2002)¹ is an extraordinary phylogenetic reference text, if you want a more complete survey. We will cover approximately one section each week, although the schedule may expand or contract any section if interest is strong and time allows. The sections are as follows:

- Section 1. What are larvae anyway?
- Section 2. Developmental patterns and the evolution of the larval form
- Section 3. Timing of spawning and the nature of spawning cues
- Section 4. Limitations on the fertilization process and embryology
- Section 5. Swimming, feeding and energetics in the larval size range
- Section 6. Egg and larval size, and parental investment
- Section 7. Dispersal of larval forms
- Section 8. Mortality in the plankton
- Section 9. Physical versus biological processes in inducing settlement and metamorphosis
- Section 10. Early post metamorphic survival and recruitment to the reproductive population
- Section 11. Larval biology at the extremes: Antarctic biology and hydrothermal vents.

Reading list and reading assignments:

You do not need to buy a dedicated text for the course. The major text that we use is McEdward L. 1995. (Ed) Ecology of Marine Invertebrate Larvae. CRC Press 464 p.

Even though this text is two decades old, it is still the best holistic text on the subject. We will use chapters of this text as the basis of a number of the sections, but additional reading material will also be provided with each of the lectures, most in the form of original contributions in the peer literature. As the course progresses, I will maintain a set of selected readings in the HSRL teaching lab (TIC) if it is not provided as a digital file with the lecture text. You may use both the digital and hard copy material to create an archive as you wish.

All lectures (sections) will be provided digitally in advance of the lecture. **I expect you to read them before you come to the lecture so that you know where we are going – this preparation on your side of the tutor-student conversation is absolutely essential.** Do not try to get by with a cursory examination of the material because (1) it is too complex and detailed, and (2) you will get lost in class. This preparation on your part will allow time in the lecture/class for questions, discussions and diversions.

Work assignments and evaluation (course grading):

There will be no examinations or pop quizzes. This is graduate school and you should be listening, reading and assimilating the material provided, and questioning the instructor (me) if you need additional help. The currencies of the profession that you have joined are engaged constructive discussion, presentation in symposium format and peer review publication. You will use all of these in this course and they will be the basis of your evaluation/grading. There will be no assignments per se, but your grade will depend instead on your level of participation and contribution during class discussions.

¹ Young, C.M., M.A. Sewell and M.E. Rice. 2002. Atlas of Marine Invertebrate Larvae. Academic Press. 626p.