OCN 750 Marine Viral Ecology (1 Credit)
Instructors: Grieg Steward; Alexander Culley
Meeting time: Mondays 10:30-12:00
Prerequisites: Upper division biology or permission from instructor

Course Description
In this seminar course we will survey the scientific literature on the ecology of viruses infecting prokaryotic and eukaryotic marine plankton. We will cover the history of the field, methodological developments, and current views on the evolutionary, ecological and biogeochemical effects of viruses and viral infections.

Week 1 will be used to introduce the course and adjust the schedule, as needed, to a time and format convenient for all participants. Week 2 will consist of an introductory lecture on viruses and viral ecology. In subsequent weeks, students will present and critique original research articles. All students will be expected to read and participate in the discussion of two to four papers per week. Students will take turns summarizing papers and leading discussions of one to two papers every other week.

Course Schedule
Week 1 Aug 24 Introduction to the course/organizing the schedule
Week 2 Aug 31 Introduction to viruses and marine viral ecology (lecture)
Week 3 Sep 07 Holiday – Labor Day

Tentative discussion topic schedule:
Week 4 Sep 14 The nature of viruses
Week 5 Sep 21 Viral phylogeny and evolution
Week 6 Sep 28 Viral mortality of marine bacteria
Week 7 Oct 05 Viral mortality of phytoplankton
Week 8 Oct 12 Counting viruses in seawater and sediments
Week 9 Oct 19 Bacteriophage diversity
Week 10 Oct 26 Protistan viruses
Week 11 Nov 02 Rates and causes of viral decay
Week 12 Nov 09 Measuring virus production
Week 13 Nov 16 Lysogeny and lysogenic conversion
Week 14 Nov 23 Gene transfer agents
Week 15 Nov 30 Metagenomics of marine viruses
Week 16 Dec 07 Models and theory in marine viral ecology

Student Learning Outcomes
After completion of this seminar class students will be:
• able to describe how viruses differ from other forms of life
• familiar with some of the major technical and conceptual developments in the field of marine viral ecology
• able to give examples of ecological, evolutionary, and biogeochemical consequences of viral infections of marine plankton