

**PART 2, Tuesday May, 11: Microplastics & Marine Shellfish** (J.E. Ward & S. Shumway)

10:00 – 10:10	Introduction to Bivalve Shellfish and Microplastics (also see Part 1)
10:10 – 11:00	Husbandry of Experimental Bivalves
11:00 – 11:45	Measuring Bivalve Suspension Feeding in Bioassays
11:45 – 12:00	Wrap up

### Microplastics and Marine Shellfish

The second part of this short course will focus on the use of bivalve shellfish in experimental bioassays with nano- and micro-plastics. Many laboratory studies have examined the ingestion, uptake and elimination of microplastics by bivalves, and have investigated potential impacts of plastic particles on various biological processes. Unfortunately, the current literature has been inundated by inappropriate husbandry, experimental designs, and methodologies. Authors of many published studies demonstrate little if any knowledge of molluscan biology or physiology. Indeed, many do not feed the animals during extended experimental protocols, or recognize when the animals are stressed, feeding unnaturally, or not at all. It is also clear that many researchers do not know the anatomy and function of the animals, or recognize the difference between feces, pseudofeces, and general debris. Consequently, published results are questionable. This workshop will focus on two components of experimental methodologies that frequently contain critical mistakes: a) husbandry of experimental bivalves, and b) calculation of various feeding rates.

To participate in Part 2 of the course, all you need is a calculator or spread-sheet program. We will be asking participants to do some calculations of food concentrations and feeding rates to demonstrate various points. Working as a group, we will also look at a few mock bioassay experiments and discuss the problems and pitfalls of each. We will end with a discussion of best practices for maintaining experimental bivalves and for running feeding rate experiments. We hope that the workshop will be enjoyable and you come away with a better understanding of how to work with bivalves in bioassays with nano- and micro-plastics.

