
Woods Hole Oceanographic Institution
Biology Department Seminar



Thursday, November 19, 2015
Redfield Auditorium – 12:00 Noon

Evolution and development of stinging nettle jellyfish

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Many organisms live complex lives with juveniles that look strikingly different from adults. However, some species have evolved simplified life cycles, forgoing one or more larval stages. How do these simplified life cycles evolve? What are the developmental changes associated with the evolution of direct life cycles? I use jellyfish as a model system to explore these questions. Most jellyfish begin life as a swimming planktonic larva, which settles into a small benthic stage that resembles a sea anemone (called a polyp). When conditions are right, polyps asexually produce one or more juvenile jellyfish, the sexual stage of the life cycle. However, the species *Pelagia noctiluca* has lost the polyp stage and develops directly from a larva into a jellyfish. I will share my research on the development of *P. noctiluca* and related species. I describe new evidence for a conserved molecular pathway for jellyfish formation, and will discuss the developmental changes that may have facilitated the evolution of a direct life cycle in *P. noctiluca*. These results have implications for our understanding of how life cycles evolve, and the developmental shifts associated with the evolution of simplified life cycles.