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Daniel Grunbaum* (random@uw.edu), School of Oceanography, Box 357940, University of Washington, Seattle, WA 98195. *Unconventional mechanisms of population renewal: Analysis of spontaneous cloning in marine invertebrate larvae.*

Many marine invertebrate populations are undergoing rapid changes due to excessive harvesting, changes in ocean temperature and pH, invasions by exotic organisms and emerging diseases. In many species, larvae can feed and grow while dispersing in the plankton. Typically, larvae from larger eggs develop faster than larvae from smaller eggs, subjecting them to less predation during development. The trade-off between allocating limited maternal resources to fewer, larger, more quickly developing offspring vs. more numerous, smaller, more slowly developing larvae has been analyzed in several evolutionary models of larval life history. In some marine invertebrates, partly developed larvae can spontaneously divide into two smaller, genetically identical clones. Environmental factors such as food availability, pH, predator odors, and temperature can stimulate larval cloning. Clones can themselves clone, significantly altering both individual fitness of cloning larvae and population dynamics of cloning species. I will present the first theoretical analysis of larval life history to consider demographic and evolutionary consequences of cloning, conditions under which cloning is evolutionarily favored, and cloning effects on demographic processes like recovery from catastrophic epidemics. (Received February 28, 2017)