



Joseph J. Torres, Biological Oceanography

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My work mainly focuses on physiological adaptation of organisms to the pelagic environment. My students and I have approached the study of oceanic organisms from two different perspectives: the vertical and the latitudinal. In the first instance, we compare the adapted characteristics of species living in the deep sea with those living in surface waters. In the second, we compare suites of similar species from widely differing climatic regimes: the subtropics and the Antarctic. By melding the two perspectives we gain a broad-scale understanding of the basic physiological characteristics of oceanic species and the ecological factors that helped to shape them.

Our current research projects include: (1) determination of metabolic rates, enzymic activities and compositional attributes of Antarctic zooplankton and micronekton as a function of season, depth of occurrence, and relationship to the Antarctic pack ice; (2) in-situ measurement of metabolism in gelatinous zooplankton using the Sea Link submersible; (3) the role of air-breathing in the early life history of tarpon; (4) energy utilization in larval fish; and (5) adaptation to salinity and cold temperature in Arctic intertidal crustacea.