THE RAMON MARGALEF SUMMER COLLOQUIA
A view of the ocean from Barcelona

Conference Title:

Microbial Ecology and Biogeochemistry across Pelagic Oxygen Boundaries

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Abstract:

Marine ecosystems have obvious boundaries, such as coastlines, the sea surface and the seafloor, and many, more subtle boundaries, such as fronts, pycnoclines, nutriclines and oxyclines. In many marine systems, dissolved oxygen levels can be partially or completely depleted below the mixed layer when *in situ* microbial oxygen demand surpasses physical ventilation. In such cases, an oxycline is established which can have dramatic effects on organizing biological communities and biogeochemical processes. Oxygen-deprived waters tend to exclude most species of invertebrates and vertebrates and energy is diverted away from higher trophic levels into microbial metabolism, significantly altering the cycling of major elements, especially carbon, nitrogen and sulfur. Lecture will explore relationships of oxygen-deprived pelagic ecosystems to climate change, biogeography, food web structure, microbial ecology, and major biogeochemical cycles. Recent observations that challenge long-standing marine biogeochemical paradigms, such as the potential roles of microniches and symbiosis will also be examined.