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Department of Marine Sciences
Presents a Seminar by

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Toward a Sensor-Laden Future Ocean

The ocean plays a critical role in the transport and sequestration of our planet's carbon. Carbon dioxide that is absorbed at the sea surface may be directly subducted or fixed into organic form and transported to depth via the biological carbon pump (BCP). To advance understanding of the ocean's role in the carbon cycle, new technologies are needed to quantify carbon fluxes and measure their variability with horizontal distance, time/season, and depth. I will describe our lab's development of a novel water-following (Lagrangian) float called MINION that will enable widely distributed observations of the BCP throughout the twilight zone (beneath the sun-lit surface layer).

The miniature, low-cost MINION is equipped with pressure, temperature, and oxygen sensors, data telemetry as well as time-lapse imaging of sinking particles. Future developments will include subsurface acoustic geolocation, autoballasting, and measurements of vertical current velocity. Achieving widely distributed and high-density observations will represent significant progress in the understanding of carbon flux variability, particle identity, subsurface dispersion, and the fate of carbon once it enters the twilight zone of the ocean.

Host: Leonel Romero

Time & Date: 11:00 am, Friday, October 8, 2021

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