

## Cooperative Control and Mobile Sensor Networks in the Ocean\*

Naomi Ehrich Leonard  
Mechanical and Aerospace Engineering  
Princeton University  
<http://www.princeton.edu/~naomi>

I will describe recent, collaborative work in cooperative control and ocean sampling using mobile sensor networks comprised of sensor-equipped autonomous underwater vehicles. Coordination of the relative motion of vehicles makes possible the design of sensor networks to follow and sample features and to provide useful sampling coverage of large areas with time-varying, spatially distributed fields. We design cooperative feedback control strategies that enable coordinated motions, patterns and formations well suited to ocean sampling. I will describe application to design of an underwater glider network for adaptive ocean sampling and present results from field experiments in Monterey Bay, California including the Adaptive Sampling and Prediction (ASAP) field experiment held in August 2006.

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