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<b>6. AUTHOR(S)</b> Thomas B. Sanford	<b>5d. PROJECT NUMBER</b>
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<b>7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)</b> Applied Physics Laboratory, University of Washington 1013 N.E. 40th Street Seattle, WA 98105	<b>8. PERFORMING ORGANIZATION REPORT NUMBER</b>
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Approved for public release; distribution is unlimited.

**13. SUPPLEMENTARY NOTES**

**14. ABSTRACT**  
The PI attended three ONR workshops to discuss and help define the future integrated observational program for the "Quantifying, Predicting and Exploiting Uncertainty (QPEU), more specifically to help formulate an experiment to study the Kuroshio intrusion, nonlinear internal waves (NLIWs), internal tides, inertial waves, and turbulence mixing resulting from the Kuroshio-topography interaction. The resulting plan is briefly discussed.

**15. SUBJECT TERMS**

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# FINAL TECHNICAL REPORT

## Comprehensive Environmental Measurements from Autonomous Profiling Floats

ONR grant N00014-07-1-0242

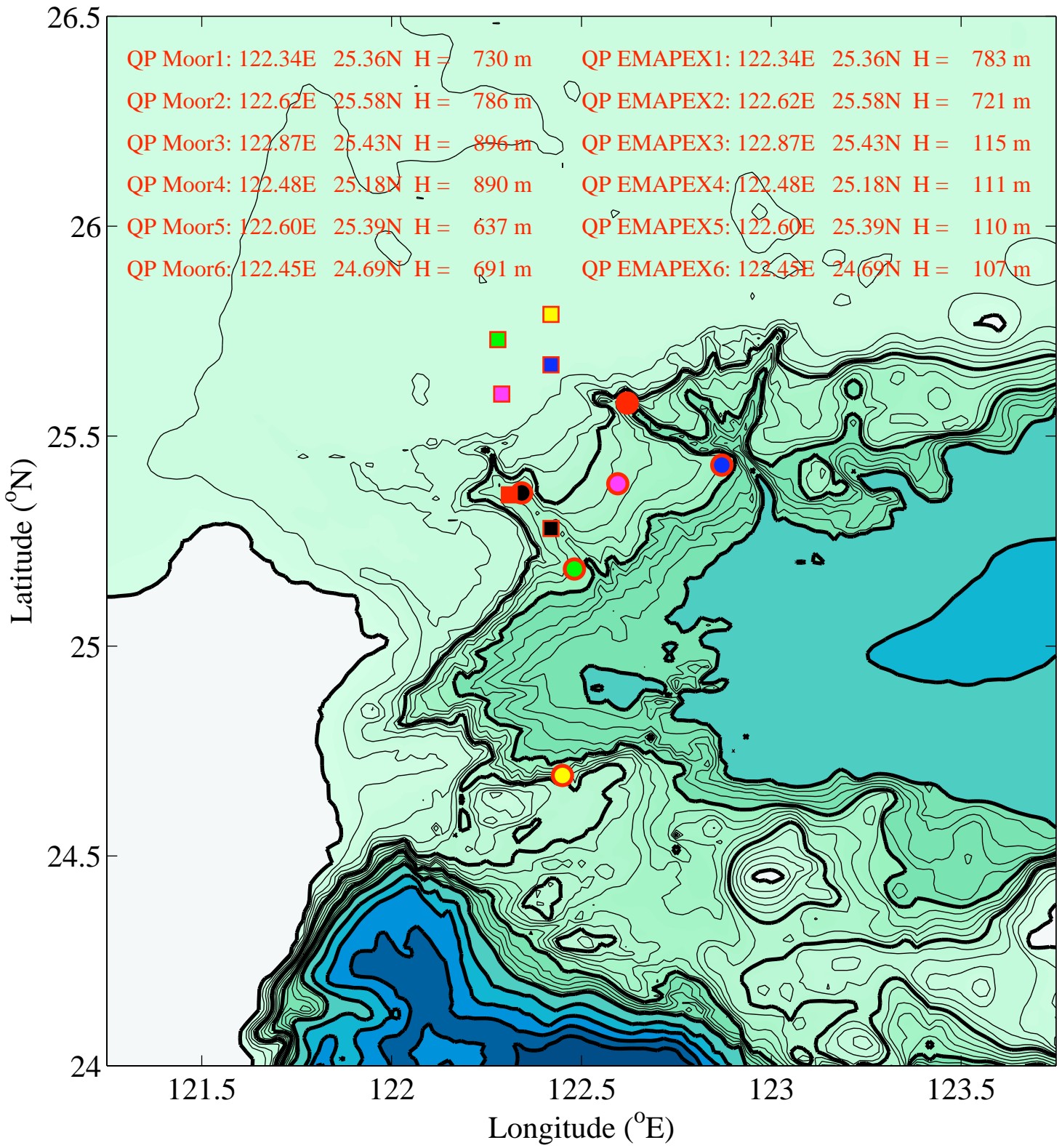
Performance Period: 12/01/06-11/30/08

Thomas B. Sanford, Principal Investigator

The PI attended three ONR workshops to discuss and help define the future integrated observational program for the “Quantifying, Predicting and Exploiting Uncertainty (QPEU), more specifically to help formulate an experiment to study the Kuroshio intrusion, nonlinear internal waves (NLIWs), internal tides, inertial waves, and turbulence mixing resulting from the Kuroshio-topography interaction. The workshops were in San Francisco in December 2006, in Washington DC in June 2007, and in Kirdwood, Alaska in August 2007. A total of \$39,711 was provided and spent in support of this meeting participation and planning effort. See the attached figure for an illustration of the deployment locations.

The PI collaborated with Ren-Chieh Lien and other QPE investigators to plan at-sea operations aboard the R/V Melville and Taiwanese vessels and future deployments of EM-APEX floats and other ocean instruments. The PI’s involvement will be specifically with four EM-APEX floats; discussions and planning determined that, for the Intensive Observing Period, two will operate along the Mien-Hua Canyon and two in the Cold Dome, to quantify internal tide energy and the Kuroshio Intrusion within the canyon, and to capture the Cold Dome structure.

A separately-costed option of \$33,218 was provided to support the PI’s effort to prepare and give presentations about the EM-APEX floats and to prepare a manuscript, Upper Ocean Response to Hurricane Frances by T. Sanford, J. Price and J. Girton. This manuscript is about to be submitted for publication to the *Journal of Physical Oceanography*.



All six moorings have one 75-kHz ADCP looking upward from about 650-m depth, and have 8-9 CTD sensors between 30 and 600 m below the sea surface.