ABSTRACT FORM (for new projects only)

Project Title: 901507 OASIS5 Controller

PI	Project Manager	Lead Scientist	Lead Engineer
Jim Barry	Craig Okuda	Jim Barry	Bob Herlien

(Indicate individuals appropriate for your project. Not all projects need all four positions filled in.)

Project Description: The OASIS3 Mooring Controller, designed in 2002 with a 5 year expected life, has been the workhorse of the mooring program. OASIS4, designed in 2009, was intended primarily as a controller for the Barry Lab's Benthic and Robison Lab's Midwater Respirometer systems; but has also become the hardware platform for the Chavez Lab's Ocean Acidification Moorings and PCO2 controller.

The Persistor CF2 used in oasis3/oasis4 is now at end of life. While Persistor Instruments intend a replacement, internally dubbed CF3, that project is uncertain. The oasis3 and oasis4 mooring controllers have many other discontinued parts, and would need to be redesigned or replaced in any case.

We propose building an oasis3/oasis4 replacement to serve the following institutional needs:

- The Chavez lab's needs for Ocean Acidification type moorings, PCO2 drifters and similar mooring and drifter needs.
- The Barry lab's need for a replacement for the BRS controller, which as noted has discontinued parts, defeating the ability to build additional or replacement controllers.
- The Robison lab's need for a replacement for the MRS controller, with similar comments as above.
- Replacement for the M1 mooring controller, if required.
- Allowing us to more easily and inexpensively export OASIS technology to other institutions, e.g. Cawthron. Currently, we can't support them for any additional plans, as neither we nor they can build the oasis3 controllers.
- Potential use in the Wave Glider program.

The new controller would use updated parts and port as much of the OASIS4 and Respirometer code as possible. The new version would leverage the years lessons learned and design elements from the previous versions of the OASIS control system.