

Abstract Form

NOTE: Continuing Projects should enter the internal project number **and** use the project title from the previous year.

Project Number:	900255
Project Title:	Student Developed Instrumentation: Use of the Test Tank Facility
Project Manager/PI:	Geoff Wheat
Lead Scientist:	Geoff Wheat
Lead Engineer:	Bill Kirkwood

Project Description:

One of the critical needs of the ocean community is the development and maintenance of a pool of talented and dedicated engineers that enjoy the challenges of developing instrumentation for oceanic applications. One means to foster and promote the development of such a pool is to integrate young students into the field by involving them in ocean-related projects. For the past five years we have been working with engineering students at Santa Clara University (SCU). Student teams, which are primarily staffed by seniors, work with faculty and me at SCU to design, fabricate, test, and deploy instrumentation for undersea applications. These students have developed several instruments for oceanic applications including three low cost ROVs (300 and 500 m capability), a tether management system, and a “tool sled” that can be deployed as a benthic station. Students work closely with faculty at SCU and have reached out to MBARI engineers and faculty at Stanford University (SU) for additional expertise. The products that have been developed by these students have won several awards at the annual SCU engineering competition and they have presented papers at national meetings. Several of these students have been interns at MBARI and some have continued their education in engineering with an emphasis on ocean-related applications.

This proposal strives to enhance this educational partnership by providing a test tank facility to test new instruments and to deploy the instruments in the environment. Presently students are testing their instruments in a six-foot deep pool. This proposal requests three periods for testing equipment in MBARI’s test tank facility. The first two periods will be for testing instrumentation and to develop ideas for potential modifications. Each of these periods will last 2 days. The third and last period will last one day during which the students will test their equipment and give a “hands on” demonstration to MBARI personnel, interested local scientists, and parents. They will also present a seminar at MBARI at the end of the day. We request to take the students to sea on the Zephyr the following day. There is no substitute for working in the environment.

*2004 Abstract Form – Internal-Only Projects (no external funding).
Deadline for Abstract submission is 8:00 a.m. on June 23rd.*

In addition to the request for three test tank periods (five days total) and the one day of Zephyr time, we request Nik Myers (in Facilities group) to oversee logistical concerns during the first morning of each of these three periods and for several hours at the end of these periods (<five half days total). We also request one of MBARI's ROV pilots during the afternoon of the first two periods using the test tank and for a full day on the Zephyr (total of two half days and one full day). The knowledge offered by a skilled ROV pilot is invaluable to these students. Most of these students have yet to participate in an operational setting. The time frame for these periods will be centered about the SCU academic schedule. I anticipate that one two-day period will be requested during spring break in March, one in April, and the last period in May-June in concert with either graduation or senior design review week.

This proposal is designed to provide engineering students at SCU with a test tank facility and to promote interactions with MBARI personnel. These students have benefited greatly from interactions with engineers and operations personnel at MBARI and I hope to continue these interactions and supplement the students' education. These students have been and will continue to be well-trained, energetic people that will continue to be a good source for possible engineering interns and personnel at MBARI.

5 days use of the test tank and one day of Zephyr.

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Abstract Phase: **LABOR** Resource Request Form

Project Title: Student Developed Instrumentation: Use of the Test Tank Facility
Project Manager/PI: Geoff Wheat
Lead Scientist: Geoff Wheat
Lead Engineer: Bill Kirkwood

Please place an “X” to the left of the resources you expect to need for this project, as well as next to “<10” (less than) or “>10” (more than) to indicate estimated need.

Research: IAG					
	Research: SAD/Software Engineer		< 10 days		> 10 days
Development					
	Development: Electrical Engineer		< 10 days		> 10 days
	Development: Software Engineer		< 10 days		> 10 days
	Development: Mechanical Engineer		< 10 days		> 10 days
	Development: Machinist		< 10 days		> 10 days
ITD					
	ITD: Video Lab/Samples Tech		< 10 days		> 10 days
	ITD: Technical Writer		< 10 days		> 10 days
DMO					
	DMO: Ocean Observatory Tech		< 10 days		> 10 days
	DMO: CTD Instrumentation Tech		< 10 days		> 10 days
	DMO: Diver		< 10 days		> 10 days
COO					
	COO: IS Administrator		< 10 days		> 10 days