

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

Abstract Form

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

Project Number:	900250
Project Title:	A Quantitative Low-Light Imaging Module for Mbari's AUV
Project Manager/PI:	Kim Reisenbichler (B. Robison and S. Haddock, Co PIs)
Lead Scientist:	Kim Reisenbichler
Lead Engineer:	Lance McBride

Project Description:

The project goals for 2003 have been to investigate the feasibility of developing an AUV payload for a Dorado class vehicle that is capable of imaging a known volume of water, with: 1) sufficient sensitivity to detect stimulated bioluminescence, and 2) sufficient resolution to allow visual identification of animals, comparable to what we can currently achieve with MBARI's ROVs.

Our investigations have identified suitable candidate technologies for imaging (both low-light and bioluminescence), video/data processing and data storage necessary to meet the scientific requirements. We have clearly demonstrated that we can easily provide the illumination required for the imaging and stay within the calculated power budget for the longest proposed scientific mission. We have a concept for vehicle configuration that will allow us to position our light sources for optimum illumination for low-light missions, as well as support a stimulation screen for bioluminescence missions. A general overview of our accomplishments may be seen in our Day of Science and Technology poster that is displayed in the upstairs lobby area. We will present a project update on July 14th and will have a system concept review prior to the submission of the Phase 1 proposal.

For 2004, we will continue the development, integration and testing of the module subsystems; design and test the lighting/splat screen boom design; work on vehicle control issues; and build the module nose and midsections. Full integration and field-testing of the complete system will be concluded in 2005.

The primary change from our 2003 project proposal is to extend the project timeline into 2005. While it is feasible to complete the project in 2004, we feel that in order to field an optimized system, the time required to adequately test the subsystems prior to module assembly would preclude the primary participants in this project from meeting existing commitments to other projects.

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Abstract Phase: **LABOR** Resource Request Form

Project Title: A Quantitative Low-Light Imaging Module for Mbari's AUV

Project Manager/PI: Kim Reisenbichler (B. Robison and S. Haddock, Co PIs)

Lead Scientist: Kim Reisenbichler

Lead Engineer: Lance McBride

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