

MBARI Education Strategic Plan

Mission Statement

MBARI's educational mission is to build upon our unique strengths in science and technology to provide advanced knowledge and understanding of the ocean.

Principles

With any proposed strategy, it is important to keep in mind the following principles:

- **MBARI's primary mission is oceanographic research and development and the content for our educational effort should be provided by our R&D activities.**
- **Education is a part of our mission and should permeate the entire organization; i.e., education is not the responsibility of a small subset of the staff.**
- **MBARI's educational activities should place a priority on supporting the Monterey Bay Aquarium's educational mission where appropriate.**
- **MBARI must exchange information and technology as well as build relations with other research and education communities; MBARI needs to enhance collaborations to leverage the institute's limited resources.**

We expect MBARI staff to continue their excellent efforts to publish in high quality journals, make presentations at professional meetings, and disseminate information and products to our research peers. The purpose of this plan is to encourage educational activities that would not otherwise be the norm for a non-degree-granting research institution. MBARI researchers agree that graduate students bring great value to the institution and that the current situation for support of students is unsatisfactory. Recognizing that this issue extends beyond the scope of this committee, we provide some thoughts on the topic in the Appendix.

MBARI is involved in many education and outreach efforts (e.g. open house, seminars, internship program) and it is the intent of the education committee to review and evaluate existing efforts as part of the implementation of this strategic plan. To leverage the institute's limited resources, the committee identified priority target audiences where MBARI's unique assets will have the greatest impact and where there is a need for our contributions.

Audiences

Policy makers/resource managers

The priority is to reach state and national policy makers and resource managers. Novel technologies and sustained research programs developed and tested in the Monterey Bay region have regional, national, and global applications.

Teachers/students

MBARI's efforts will focus on teachers and students at the fifth and sixth grade levels (the last grade levels for which California state standards require Earth sciences) and the eighth and ninth grade levels (where the focus will be on providing content on careers and conducting research). These grade levels are the critical juncture points in students' lives where MBARI can best stimulate engineering, science, and technology interests and influence future career choices. MBARI's efforts will focus on teachers and collaborations with the Monterey Bay Aquarium to reach the students traditionally underrepresented in science and engineering.

Public

Our direct outreach targets Monterey Bay and Central California area residents, although it is likely that the web-based components of these efforts will also be useful in reaching people throughout the U.S. and internationally.

Implementation

Once this strategic plan draft is approved, MBARI should convene a working group that will review these recommended actions and seek additional staff input in order to generate a fundable implementation plan. This group should also review the education and outreach summaries requested for the 2006 annual report as well as all existing education and outreach activities.

Goals, Objectives, and Actions

Goal: MBARI becomes a trusted and well-utilized ocean information source for resource managers and policy makers.

Objective: Transfer knowledge to inspire, inform, and enable resource managers and policy makers to make educated decisions.

- **Strategy** (Target audience: Policy makers/resource managers): Participate in the Center for Ocean Solutions, collaborate with the Aquarium's Center for the Future of the Ocean, Stanford University, and Hopkins Marine Station.
- **Strategy** (Target audience: Policy makers): Develop liaisons and specific points of contact with local congressional staff and other key political offices for communicating with decision makers.

Objective: Develop guidelines and support to encourage MBARI staff involvement in providing expertise and information for advanced understanding of ocean issues.

- **Strategy:** Educate MBARI staff on best practices for communicating with state and national decision makers and resource managers (working with partners like COMPASS); encourage participation on relevant panels and committees.

Goal: Stimulate interest in science, engineering, technology, and ocean literacy by showcasing MBARI's cutting-edge technology and research.

Objective: Develop guidelines and support to encourage MBARI staff involvement in providing information necessary for advanced understanding of the oceans and the value of research.

- **Strategy** (Target audience: Teachers/students): Develop and provide “toolkits” and training for staff and teachers with a focus on MBARI Earth science research (for grades five and six) and on careers and research (for grades eight and nine).

Objective: Use our knowledge and experiences to inspire and inform students and the public.

- **Strategy** (Target audience: Eighth and ninth grade teachers/students): Contribute to the success of the Monterey Bay Aquarium's *Mary Campo* program reaching underrepresented high school students in our area.
- **Strategy** (Target audience: Eighth and ninth grade teachers/counselors/students): MBARI staff participate in annual career days.
- **Strategy** (Target audience: Public): Enhance our annual Open House with new activities and displays to showcase MBARI technology and socially relevant research.
- **Strategy** (Target audience: Teachers and the public): Provide access to current research (MBARI and others).
- **Strategy:** Produce publications (online or in hard copy) for broad distribution to the public.

Appendix: Education Program for Students

“Students are important sources of new ideas and research agility to explore new directions. We encourage MBARI to make a search of suitable partners (including UC and Stanford, for example).”

—*Report of the Visiting Committee for MBARI – March 2005.*

MBARI's intern program provides short-term opportunities for graduate students, although the program is also open to undergraduates and teachers. Additionally, MBARI should investigate how best to foster and fund long-term graduate student support in collaboration with suitable academic institutions. Given our current size and resource limitations, it is essential to develop formal and sustained agreements with academic institutions with more balance of costs and benefits to students and partnering institutions. MBARI provides its graduate students with space, access to unique resources (such as ships, vehicles, laboratory facilities, and staff), and often part-time employment as research assistants. MBARI often supports graduate students on external grants. It seems unreasonable for MBARI to additionally bear the responsibility for graduate student fees and tuition payments to the student's academic institution.

MBARI researchers are in agreement with the Visiting Committee on the issue of academic education.

“We note that academic education is not a high priority at present. It is well appreciated in many research environments that students and postdoctoral workers contribute enormously to the scientific output of an institution at modest cost – and they are a chief means of disseminating information and technology, as they move on to other locations. We urge MBARI to provide continued access for postdoctoral researchers to the engineering talents and facilities that are unique among oceanographic institutions. (Exchange of young researchers was identified as the most efficient way of transferring technology, in a multi-year study of federal labs of a major industrial country in Europe.) Interactions with students and postdoctoral workers also provide continual rejuvenation of onboard staff by challenging both thinking and practice.”

—Report of the Visiting Committee for MBARI – March 2005.

Recommendation: The Education Strategic Planning Committee urges MBARI to work with our regional academic partners to resolve the tuition and fee dilemma, perhaps as a function of the newly developing Center for Ocean Solutions.