

CMG-WH Core Competency - Laboratories

SUMMARY:

This project provides umbrella support that allows for innovation, improvement, and some operational assistance to three Woods Hole laboratory facilities that support research of the CMG Program: (1) Analytical Laboratories (geochemical, sedimentation, and GHASTLI); (2) Graphics Laboratory; (3) Cooperative Agreements (WHOI Core facility, WHOI/USGS Radioisotope Laboratory, MBL library, WHOI/USGS education positions). These three facilities provide most of the Center research projects with some level of analytical and information support, and therefore contribute to the overall scientific health, efficiency, and productivity of the CMG Program. The support requested in this project is to ensure that these facilities can maintain a leadership role. The salary covers time required for routine maintenance of the labs and to find new methodologies that can improve CMGP science. The OE costs cover expenses related to service contracts, equipment replacement costs, certain expendables, and hardware/software maintenance and upgrades that are not realistic, nor practical, to charge to individual projects. The Cooperative Agreements task supports long-term MOU with both WHOI and MBL for sample and core archiving/curation, operation of the joint USGS/WHOI radioisotope lab, access to the internationally renowned WHOI/MBL science library, and WHOI/USGS educational positions (2 WHOI/USGS post-doc positions, partial graduate student support). The second of the post-doc positions and graduate student support were added as a condition of the renegotiated and reduced building lease arrangements in 1999. NOTE: The science projects cover the costs for sample analyses in the labs and all project-related equipment expenditures.



lab photo

INVESTIGATORS:

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DESCRIPTION:

The objectives common to the three tasks are: (1) To meet any and all needs of the science projects; (2) To evaluate the laboratory facilities on a regular basis and respond to the changing technological needs of the science projects, in a timely and cost-effective manner. (3) To develop more efficient strategies and methodologies for supporting science projects; (4) To maintain and diversify state-of-the-art analytical resources available to CMGP; (5) To coordinate Laboratory improvements between the three CMGP teams and other parts of USGS. The strategy for achieving these objectives is to provide partial salary support for technical staff to stay current in their fields and do necessary maintenance and upgrades to equipment that is not funded by individual science projects. The OE costs are also justified as part of the general operations or improvements of the equipment pool and analytical tools. The cooperative agreements offer access to use facilities and education opportunities that otherwise are not readily available to Center and Program staff.

START DATE OF PROJECT:

October 1, 2002

END DATE OF PROJECT:

September 30, 2012

TOPIC:

Maintain and Improve Analytical Facilities and Instrumentation

APPROACH:

The major products that result from this project are that it provides cost-effective and high quality analyses to all that utilize the laboratory facilities. Examples of these products are listed below: o Successfully staged sediment and water

sampling cruises, o Sample analyses completed, through to digital record, for sediment texture and carbonate content, o High-quality sediment samples retrieved at sea, subsampled, processed, and analyzed at collaborative laboratories, o Accurate geotechnical measurements on synthetic and preserved samples of gas hydrates, o High-quality video and still camera recording of shipboard and field sampling procedures, o Professional posters, slides, and graphics in support of Center projects, and o Fact sheets and websites documenting the analytical capabilities of our laboratories.

IMPACT/RESULTS:

The impacts of this project affect many aspects of Center functions: o The quality and efficiency of science is improved by access to modern instrumentation, facilities, and partnering in educational opportunities. o There is lower cost and higher quality of laboratory data and supporting analytical processes. o Overall productivity and morale of staff is enhanced by access to modern technology. o New and innovative techniques and research directions can result from knowledge of current technologies and innovations; o Scientific morale and enthusiasm is supported through post-doctoral opportunities for joint research projects with WHOI.