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SEA FLOOR SAMPLES LABORATORY

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Long-Term Goals:

The principal purpose of this proposal is to provide support for personnel who are involved in the distribution of samples from the WHOI collection to investigators in the marine scientific community around the world; who sustain the implementation of established curatorial procedures to insure ready and efficient access to archived materials; and who manage the preparation of sea floor sampling tools employed in field acquisition programs. These field programs include many operations led by non-WHOI P.I's and may be executed from any vessel in the UNOLS consortium.

Accomplishments and Results:

Over the past year we have focused on three major efforts:

- Multi- sensor Core Logger [GEOTEK]
- New software for data management and publication

• Curation of new sample suites

In the spring of 1995 we took delivery of a new multisensor core logger [funded by an NSF grant] that allows us to make a variety of nondestructive measurements on cores; either at sea just after recovery, or after the samples are returned to shore. We prepared a new lab facility for the tool which measures: bulk density by gamma ray absorption, magnetic susceptibility, and P-wave velocity in an automated fashion over a long core's entire length. Calibration, standard preparation, and software for manipulation and presentation of the data were the main tasks we completed after setup. The MSCL is fully operational, at work in the lab, and heading for sea in January.

This year we set a goal to create an integrated software system to totally overhaul the methods by which we enter new station data into our system, manage and retrieve that data, and most importantly automate the way we will prepare lithologic core information for our core lab publications. The resultant tool which utilizes SYBASE as its root processing software, and SAIPENS VISION as a "front end" was custom built by members of WHOI's IPCL computer group working closely with core lab personnel. Data input takes place in a new "windows-like" environment with many pull-down menus for frequently used parameters. Visual core description and smear slide data are entered in a similar manner. Finally, via a graphics interface, all the information is combined and a camera ready, editable, post-script document is produced. The output, in the familiar WHOI format, is ready for publication, or via networking, available for downloading for user specific functions. The software is adaptable and simple to modify, and is sure to evolve with our needs and applications. The system is fully tested and on-line, and we are currently exploring the inclusion of a plotting and display capability [GMT] to enhance the output of sample request inquiries, as well as future Volumes [IX is in the works] of published descriptions.

Principal curatorial activities included the splitting and archiving of cores from recent cruises including: the Blake Bahama Outer Ridge, and several JGOFS legs from the Arabian Sea. These new suites of cores are all stored in the lab's new refrigerated facility to preserve their critical chemical and physical properties. Response to sample requests was, of course, part of our regular routine.

Continuing support of the WHOI sea floor samples lab by the Office of Naval Research allows us to sustain our commitment to providing the best information and easy access to our invaluable collection to ONR users and the community at large.

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1995 Publications:

Source Signature Measurements of Underwater Explosives at Very High Ambient Pressures: John A Collins, James E. Broda et al. Submitted to Journal of the Acoustical Society of America: Oct. 1995.

Panels:

National Science Foundation SBIR Panel Sept. 1995

ASA/NSF Antarctic Research Vessel Oversight Committee Oct. 1995