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# GUEST EDITORIAL

## Scientific ocean drilling: Opportunities for organic geochemistry

Unique opportunities for organic geochemists are available from the activities of the Ocean Drilling Program (ODP) and its predecessor, the Deep Sea Drilling Project (DSDP). These opportunities are of several types. They are principally access to samples of the seafloor and a chance to participate in cruises of the drilling ship. Also, involvement in the planning of future drilling objectives is possible.

The seafloor cores obtained by DSDP and by ODP are an impressive resource for organic geochemical research. Virtually all of the material has been dated and has been characterized for its sedimentological contents. In most of the core intervals, the microfossil assemblages are described and some geochemical measurements, such as organic carbon concentration, are available. These data are readily accessible in the Initial Reports of the DSDP and the Proceedings of the ODP. Because the samples originate from the floor of the deep sea, their organic matter is typically thermally immature, even though their geologic ages range from Holocene to Triassic, a span of 200 million years. Some samples, however, have experienced heating from igneous intrusions or from the high geothermal gradients found near spreading centers, making their organic contents thermally mature. The source character of organic matter can be nearly totally marine, such as in sediments from beneath zones of high oceanic productivity, it can be a mixture of marine and continental, or it can be predominantly continental. Organic carbon concentrations range from less than a tenth of a percent to over ten percent, the latter occurring primarily in Cretaceous black shale deposits.

These samples of sediments and sedimentary rocks have been carefully collected and stored by DSDP and ODP since scientific deep ocean drilling began in 1968. Some samples have been designated specifically for organic geochemical study. These have been collected to minimize chances of contamination, and they have been stored in freezers to preserve the labile constituents of organic matter. All other core samples have been refrigerated. This collection of samples, from a broad geographic distribution and a range of water depths, is especially suitable for studies of biomarker sources and diagenesis, organic matter production and preservation during different periods of geologic time, transport and depositional processes affecting organic matter, and thermal maturation, to name a few possibilities. Samples are provided at no cost to qualified investigators, but with the proviso that the analytical results be published.

Interested individuals can participate as shipboard organic geochemists on cruises of the drilling ship, the *Joides Resolution*. These cruises, which average two months in duration, provide unparalleled opportunities to sample firsthand new areas of the seafloor and to learn about the paleoceanography of the drilling locations. Each is staffed with an international group of typically 28 scientists from a range of disciplines. The ship is equipped with modern laboratory facilities, allowing many analyses to be completed at sea. Those who have participated in past cruises have found them to be memorable experiences.

The development of future drilling plans is done by a hierarchy of panels whose members come from a wide segment of the earth science community. A need exists for organic geochemists on several of these panels, and an imminent reorganization of the panel structure is likely to expand this need. Anyone concerned about the future of organic geochemistry and interested in learning about the history of oceanic sediment accumulation should consider participating in this planning structure.

More information about these opportunities can be obtained from several sources. For general information about ODP activities, contact Joint Oceanographic Institutions (JOI), Inc., 1755 Massachusetts Avenue, N.W., Suite 800, Washington, DC 20036. To learn about the availability of samples, write to Ms Chris Mato, Assistant Curator, Ocean Drilling Project, Texas A&M University, 1000 Discovery Drive, College Station, TX 77840. Dr Audrey Meyer, Manager of Scientific Operations at the Ocean Drilling Project, can provide information about future cruises and participation in them. Information about panel membership is available from Joint Oceanographic Institutions Deep Earth Sampling (JOIDES) Office, Hawaii Institute of Geophysics, University of Hawaii, 2525 Correa Road, Honolulu, HI 77840. The *JOIDES Journal* and the *JOI Newsletter*, both available free from JOI, Inc., are particularly useful sources of current information.

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