Editorial Preface

Dear Reader:

This second issue of *Scientific Drilling* covers a truly diverse and global array of drilling experiments conducted on land, in lakes, and in the sea. Two missions in particular exhibit a remarkable overlap of fundamental scientific goals, despite targeting two very different natural settings on opposite sides of the Pacific Ocean. In 2005, the International Continental Scientific Drilling Project (ICDP) drilled through the San Andreas Fault at a depth of 3 km below the surface (p. 32), and, in 2007, the Integrated Ocean Drilling Program (IODP) will begin drilling even deeper into a part of the subduction zone east of Japan that has generated several devastating earthquakes in historical time (p. 23). These two projects will push the limits of scientific drilling technology well beyond those of traditional coring and sampling to include instruments that will monitor seismic activity and the changing physical, chemical, and fluid conditions directly within the boreholes. Such ambitious scientific drilling experiments, spanning decades and involving hundreds of scientists, should bring us closer to understanding the mechanisms of large earthquakes.

We also wish to highlight the exciting new research frontier of the deep biosphere, as emphasized in the IODP Initial Science Plan and during the recent ICDP science conference (p. 43). In addition to sampling routinely for microbiology during drilling, the IODP last year specifically investigated the possible links between microbial activity and the formation of cold-water carbonate mounds (p. 11). The ICDP has begun to examine subsurface microbiology as part of the Chesapeake Bay Impact Structure Deep Drilling Project (p. 60), and a workshop report (p. 56) concerns conditions for early life. Furthermore, a drilling and sampling strategy for the exploration of the deep biosphere is the focus of a major international workshop to be held later this year (p. 58), and manifests the importance of this new research challenge in future scientific drilling.

Finally, we welcome your contributions to Scientific Drilling as well as your suggestions on how we may better serve your needs. You may contact us at: journal@iodp-mi-sapporo.org.

We wish you pleasant reading,

Hans Christian Larsen
Editor-in-Chief

Jeffrey D. Schuffert
Editor

Emanuel Soeding
Managing Editor

Ulrich Harms
Editor

Front Cover: Drilling operations at the ICDP site of the San Andreas Fault Observatory at Depth Project (SAFOD), California, U.S.A. Photo by Lothar Wohlgemuth, ICDP, GFZ Potsdam.

Scientific Drilling

ISSN 1816-8957 (printed version)
1816-3459 (electronic version)

Scientific Drilling is a semiannual journal published by the Integrated Ocean Drilling Program (IODP) with the International Continental Scientific Drilling Program (ICDP). The editors welcome contributions on any aspect of scientific drilling, including borehole instruments, observatories, and monitoring experiments. The journal is produced and distributed by the Integrated Ocean Drilling Program Management International (IODP-MI) for the IODP under the sponsorship of the U.S. National Science Foundation, the Ministry of Education, Culture, Sports, Science and Technology of Japan, and other participating countries. The journal's content is partly based upon research supported under Contract OCE-0432224 from the National Science Foundation.

Electronic versions of this publication and information for authors, can be found at http://www.iodp.org/scientific-drilling/ and http://www.icdp-online.org/scientific-drilling/. Printed copies can be requested from the publication office.

IODP is an international marine research drilling program dedicated to advancing scientific understanding of the Earth by monitoring and sampling subsea-floor environments. Through multiple drilling platforms, IODP scientists explore the program's principal themes: the deep biosphere, environmental change, and solid earth cycles.

ICDP is a multi-national program designed to promote and coordinate continental drilling projects with a variety of scientific targets at drilling sites of global significance.

Publication Office
IODP-MI, CRIS Building-Room 05-101,
Hokkaido University, N21W10 Kita-ku,
Sapporo, 001-0021 Hokkaido, Japan.
Tel: +81-11-738 1075,
Fax: +81-11-738 3520.
e-mail: journal@iodp-mi-sapporo.org,
url: www.iodp.org/scientific-drilling/

Layout & Design
Mhley/Davis and Associates,
Rockville, MD, U.S.A.
and
Advanced Earth Science and Technology Organisation (AESTO), Tokyo, Japan.

Production and Printing
Saneatsu Saito, Mika Saido (IODP-MI),
and
SOHOKKAI, Co. Ltd., Sapporo, Japan.

Copy Editing
Glen Hill, Sapporo, Japan.

IODP-MI
Washington, D.C., U.S.A.
Sapporo, Japan
www.iodp.org
Program Contact: Nancy Light
nlight@iodp.org

ICDP
GeoForschungsZentrum Potsdam
Potsdam, Germany
www.icdp-online.org
Program Contact: Ulrich Harms
icdp@gfz-potsdam.de

All figures and photographs courtesy of the IODP, unless otherwise specified.

The next issue of *Scientific Drilling* will be distributed in:
September 2006.