

INTRODUCTION TO THE InterRidge SPECIAL ISSUE

BY COLIN W. DEVEY, CHARLES R. FISHER, AND KRISTEN M. KUSEK

More than 2000 members from 27 countries fuel InterRidge (IR) with energy and diverse expertise in the study of one of Earth's most dynamic features: oceanic spreading centers. International and interdisciplinary collaboration is a part of daily life for many oceanographic research groups, but IR is a bit different by virtue of the extent to which it brings together so many scientists who speak so many different languages: geophysics, chemistry, genetics, engineering, microbiology, physical oceanography, physiology, petrology, ecology, and others, all spoken in the dialects of modelers and empiricists, observationalists, and experimentalists. Since its inception in 1992, IR has coordinated and enhanced what used to be limited partnerships and raised the international profile of ridge

research in the process. In the last four years, IR fostered development of new national ridge programs in China, Korea, India, and Germany; played an instrumental role in launching the exploration and study of the Arctic, Southwest Indian, and southern Mid-Atlantic ridge systems; and spearheaded an education outreach program.

It has been a privilege for IR to produce this volume of *Oceanography*. Our hope is that it communicates the diversity and excitement of the latest in oceanic spreading-center research and reflects the interdisciplinary, international spirit of InterRidge. The issue is especially timely, as 2007 marks the 30th anniversary of the discovery of hydrothermal vents on the Galápagos Spreading Center. Indeed, the last 30 years have seen tremendous growth and change in the way we study these fascinating oceanic systems.

Seafloor-spreading axes directly link Earth's deep interior with the ocean and life—from the mantle to microbes. This issue covers the latest research and understanding on many aspects of this connectivity. **Fisher et al.** discuss the biology of hydrothermal vents from the physiological and ecological perspective of the microbes and animals, while **Ramirez et al.** review the diversity of vent

life from a biogeographical viewpoint. **Tivey** examines the dynamic links among the deep mantle and vent life forms, fluids, and structures, and **Schulte** discusses the possibility that life on Earth originated within Earth's crust and was fueled by vent fluid. **Ildefonse et al.** present insights gained by significant advances in deep-ocean drilling in recent decades, and **Langmuir and Forsyth** underscore the strides made in understanding how the mantle melts and how this melt is delivered to the seafloor to form oceanic crust.

While much understanding about mid-ocean ridges stems from decades of research on the East Pacific Rise, the Juan de Fuca Ridge, and the Mid-Atlantic Ridge, they are not typical of all the world's spreading centers. **Snow and Edmonds** discuss ultraslow-spreading ridges such as the Southwest Indian and Arctic ridge systems, **Martinez et al.** consider the unique features of back-arc spreading centers and what they can teach us about the geodynamics of seafloor spreading, and **Dyment et al.** review hotspot-influenced spreading centers. You will also find a number of special features in the issue, such as those by **Juniper et al.**, **Yoerger et al.**, **Ishibashi et al.**, and **Le Bris**, which describe the

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most recent technological developments that will guide the next decade of ridge research. Finally, **Kusek et al.** provide a glimpse into our success at communicating the excitement of ridge science to younger audiences and the general public, and **Devey et al.** outline IR's recently released statement of responsible scientific practices and the ongoing efforts to protect hydrothermal vent ecosystems from human encroachment.

We wish to thank the suite of authors who contributed to this issue, especially those who came through on short time lines and with such dynamism, a testament to the vibrancy of the IR community. We owe a million thanks to Ellen Kappel and the rest of the *Oceanography* staff for inviting this issue, and for the patience and sweat involved in seeing it through to such an attractive final product. We are particularly grateful to the National Science Foundation, the National Oceanic and Atmospheric Administration's Ocean Exploration program, the InterRidge member nations, the Biogeography of Deep-Water Chemosynthetic Ecosystems (ChEss) program of the Census of the Marine Life, the German DFG, Woods Hole Oceanographic Institution, and Ridge 2000 for financing the production of this issue. 

THE InterRidge MISSION

The mission of InterRidge (www.interridge.org) is to:

- promote interdisciplinary, international studies of oceanic spreading centers
- coordinate scientific exchange (information, technology, facilities) between national research groups
- promote a unified voice for ocean ridge researchers worldwide
- encourage the protection and management of the oceanic ridge environment
- promote communication between nonscientists, scientists, educators, and policy-makers
- spearhead education outreach efforts to raise awareness of the oceanic ridge environment