

**NOAA**  
**Office of Ocean Exploration**

**Windows to the Deep Expedition**

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**Cruise dates:** July 22 – August 3, 2003

**Cruise Overview:**

This summer, with the use of the WHOI *R/V Atlantis* and the deep-sea manned submersible *Alvin*, a multidisciplinary team of scientists will explore the biology, physics, and chemistry of seafloor methane seeps at water depths of 2000 m to 2800 m off the Atlantic coast of the Southeastern U.S.A. These seeps occur where methane hydrate deposits—a solid form of methane and water stable at high pressures and low temperatures—rise to shallow depths beneath the seafloor and break down to produce methane gas. The *Alvin* dives will explore three seafloor features where scientists expect to find chemosynthetic communities that live on or near the seafloor emission sites.

In most of the study area, the top of the gas hydrate probably lies more than 100 m below the seafloor. Under the geologic, thermal, and other conditions that prevail near cold seeps, seafloor chemosynthetic communities mark “windows” that provide unusual access to the top of the gas hydrate zone and methane venting system. At three such windows, the “Windows to the Deep” expedition is undertaking an interdisciplinary program to compile marine inventories, develop high resolution seafloor and shallow subseafloor maps, describe seep habitats, and contribute to an understanding of gas hydrates (an ocean-based resource) through a 7-dive exploration and discovery program using the *Alvin submersible* and such tools as the *Atlantis’* swath bathymetric system and a Chirp subbottom profiling system.

Outreach and education products from this cruise will include detailed lesson plans that can be accessed via the Ocean Explorer web site, which will be updated every few days during the cruise with logs, images, and essays from the field so that students and the general public can follow the expedition. There will also be a link on the Ocean Explorer web site so that the general public can ask questions near-real time during the mission. The ship will also be used as an educational platform for undergraduate and graduate students from various universities, and the new Education Specialist for the Southeast Center for Ocean Science Education Excellence (SECOSEE) will also participate in the expedition.

Please follow this exciting expedition on the Ocean Explorer website at [www.oceanexplorer.noaa.gov](http://www.oceanexplorer.noaa.gov).

**Participating Institutions:**

Georgia Institute of Technology; College of William and Mary; SECOSEE ; NOAA OE; Savannah State University; University of Wyoming; University of Virginia; Massachusetts Institute of Technology; Woods Hole Oceanographic Institution; crew of the R/V Atlantis and DSV Alvin

**Media Involved:**

TBD

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