# Ocean Studies Board
# Committee on Future Needs in Deep Submergence Science

- **6 month Study**
- **<u>The statement of task:</u>**

  **"Recognizing the likely retirement of the submersible ALVIN, this study will evaluate the future directions and facility requirements for deep submergence science and examine the range of potential applicable technologies that can support basic research in deep sea and seafloor areas.**

# Committee on Future Needs in Submergence Science Website

<http://dels.nas.edu/deepsubmergence/>

- Statement of Task
- Committee membership
- Downloadable presentations that were made to the committee
- Feedback Button and a means to view material others have submitted

# OSB Study - Continued:

**Specifically, the Committee will:**

1. assess the continued role of human occupied vehicles in deep submergence science, within the context of current and projected capabilities of remotely operated and autonomous vehicles, telepresence, seafloor observatories, and other non-human occupied technologies;

2. make recommendations regarding the mix of new facilities needed to continue to carry out world-class deep submergence science; and

3. discuss innovative design concepts and technological advances that should be incorporated into any new submersibles to support current and future research needs.

# OSB Study - Continued:

Recommendations will be made within the constraints (established by NSF) that total construction costs (including related costs such as modifications to support ships) shall not exceed the upper practical limit for the Division of Ocean Sciences' "mid-sized infrastructure" (roughly 10 percent of the division's annual budget or approximately $25M) and total operating costs shall be similar to the operating costs for ALVIN. If multiple types of vehicles are deemed necessary, suggestions will be made concerning the optimal phasing of implementation over several years. Cost estimates will be supplied by the National Deep Submergence Facility, other submersible owners and operators, or outside companies if needed."

# Committee Membership

- John A. Armstrong (Chair), retired from IBM
- Keir Becker, University of Miami
- Thomas W. Eagar, MIT
- Bruce Gilman, retired from Sonsub Inc.
- Mark Johnson, BP Deepwater Production GoM
- Miriam Kastner, SIO
- Dhugal John Lindsay, JAMSTEC
- Catherine Mevel, Laboratoire de Géosciences Marines
- Shahriar Negahdaripour, University of Miami
- Shirley A. Pomponi, HBOI
- Bruce Robison, MBARI
- Andrew Solow, WHOI
- Greg Zacharias, Charles River Analytics Inc.

# First Meeting: May 7 – 8, 2003 - Woods Hole Agenda Items

- **Discussion of Statement of Task - Dan Walker**
  - **NSF Needs - Jim Yoder**
- **Introduction to National Deep Submergence Facility (NDSF)**
  - ***Components and history of the National Deep Submergence Facility (NDSF),*** **Dick Pittenger,**
  - ***NDSF's role in deep ocean research,*** **Dan Fornari**
  - ***Update on ongoing design efforts for an Alvin Replacement,*** **Dick Pittenger, WHOI**
- **Optional dockside demonstration, WHOI Dock, Bob Ballard, University of Rhode Island**

# Agenda Items - continued

- Understanding the future of Deep Ocean Research: An Introduction
  - ***Introduction to DESCEND report***, Bob Embley, NOAA, Deep Submergence Science Committee
  - ***Perspectives from RIDGE 2000 program***, Chuck Fisher, Pennsylvania State University, RIDGE Chair
  - ***Potential for expanding the role of unmanned vehicles in deep ocean research***, James Bellingham, MBARI

# Request for Community Input

**Two key questions:**

**1) What are the compelling science questions that require access to waters from 4500m to 6500m, from 6500 to full ocean depth?**

**2) How do you incorporate HOV, ROV, and AUV technology into your current research efforts (try to be specific, not philosophical)? How do each of these technologies limit or enable you to achieve your scientific goals?**

# Second Meeting

- June 25-26, 2003
- Hotel Monaco, San Francisco
- The agenda will be available in early June.