Deep Submergence Science Committee Activities 2002

Chair's Report for
DESSC Annual Meeting

New DESSC members
Fall 2002

- **Replacements on DESSC**
  Marv Lilley and Joris Gieskes leaving

Replacements:
Debbie Kelley
Heddy Edmonds

Biology Outreach Efforts

- ASLO/AGU Special Sessions, Honolulu February 2002
- DESSC members to be ambassadors at biology meetings

Spring DESSC Meeting
WHOI May 2-3

- Report of Shallow-water Submergence Science Committee (ad hoc UNOLS)
- Other facilities and funding agency reports
- NDSF Chief Scientist replacement

NDSF Operator report

- WHOI Internal Review Committee
- Operations 2001/2002
- Upgrades to Jason 2 and DSL-120
  - Field tests completed
  - 1st science program successful

NDSF Operator report (cont.)

- NDSF Draft proposal for upgrades to sensors and tools (DESSC will seek input from community)

- Scheduling issues

- Replacement for Alvin
  - General design goals
  - Depth capability of New Alvin
  - Science justification for HOV

General Capabilities of Replacement for Alvin

- Greater speed
- Improved science sensors and tools
- Improved maneuverability
- Increased power for propulsion and payload
- Greater endurance and improved ergonomics (longer dive time, especially when being used to maximum depth capability)
- Better visibility and lighting
- Improved navigation
- Improved safety systems

General Capabilities (cont.)

- Improved manipulation ability
- Greater external sample storage and increased science payload
- Better communications
- Improved data collection, logging and interface capability to science instruments
-Comprehensive engineering, operational, and science-utilization documentation
- Depth capability to 6000-7000m (depending on technical feasibility and cost-benefit analysis)

Science Justification for HOV

- Engagement of the operator
- Visibility in 3-D
- Maneuverability/reliability
- Unobtrusiveness
- Capacity for outreach education and recruitment

Recruitment of new scientists

Depth Capability of New Submersible

- "Full" ocean depth (11,000 m) vs ~6500 m
- DESSC recommendations:
  - Concerns regarding effective use of resources
  - Current effort is outgrowth of community-wide discussions and workshops regarding US science community needs.
  - Maintain the deployment capability from the existing support ship (no major modifications to the ship design, or submersible launch-recovery system)
  - Meet the stated needs of scientific community