



**University-National Oceanographic Laboratory System**

***UNOLS Report  
to the  
Scientific Committee for Oceanographic  
Aircraft Research***

**Mike Prince  
UNOLS Executive Secretary**

May 24, 2006  
CIRPAS  
Marina, CA



# Outline of Presentation

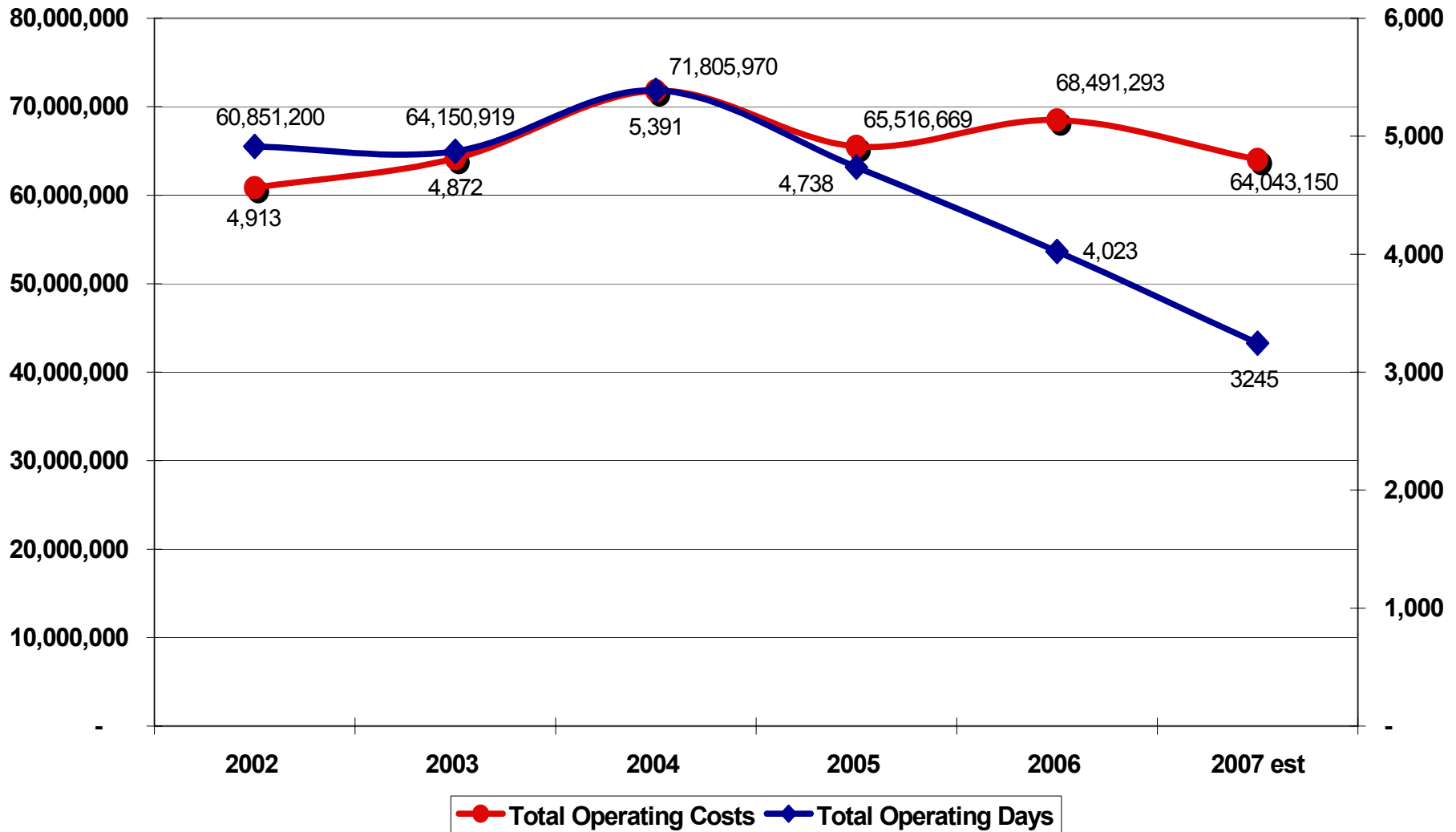
## *University-National Oceanographic Laboratory System*

- I. Budget Shortfalls and Impact on Future Fleet Operations
  - A. Utilization and Cost Trends
  - B. 2006 Fleet Utilization
  - C. 2007 Fleet Projections
  - D. UNOLS Subcommittee Formed
  
- II. Academic Fleet Renewal
  
- III. Other UNOLS Activities
  
- IV. UNOLS Committee Activities



# 2002 – 2007 UNOLS Fleet Operating Days and Costs

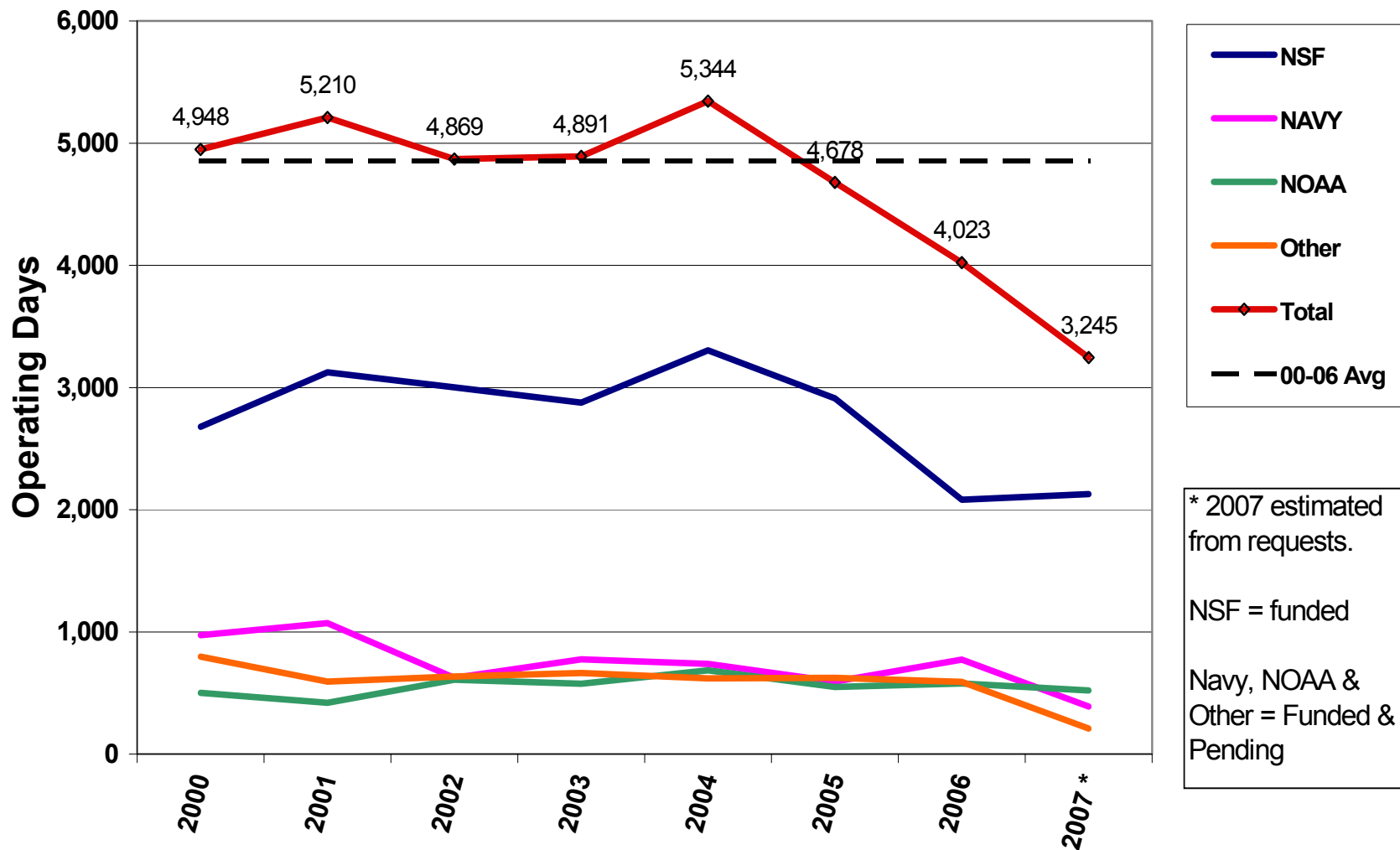
## University-National Oceanographic Laboratory System





# Fleet Utilization by Federal Agency

## University-National Oceanographic Laboratory System



\* 2007 estimated from requests.

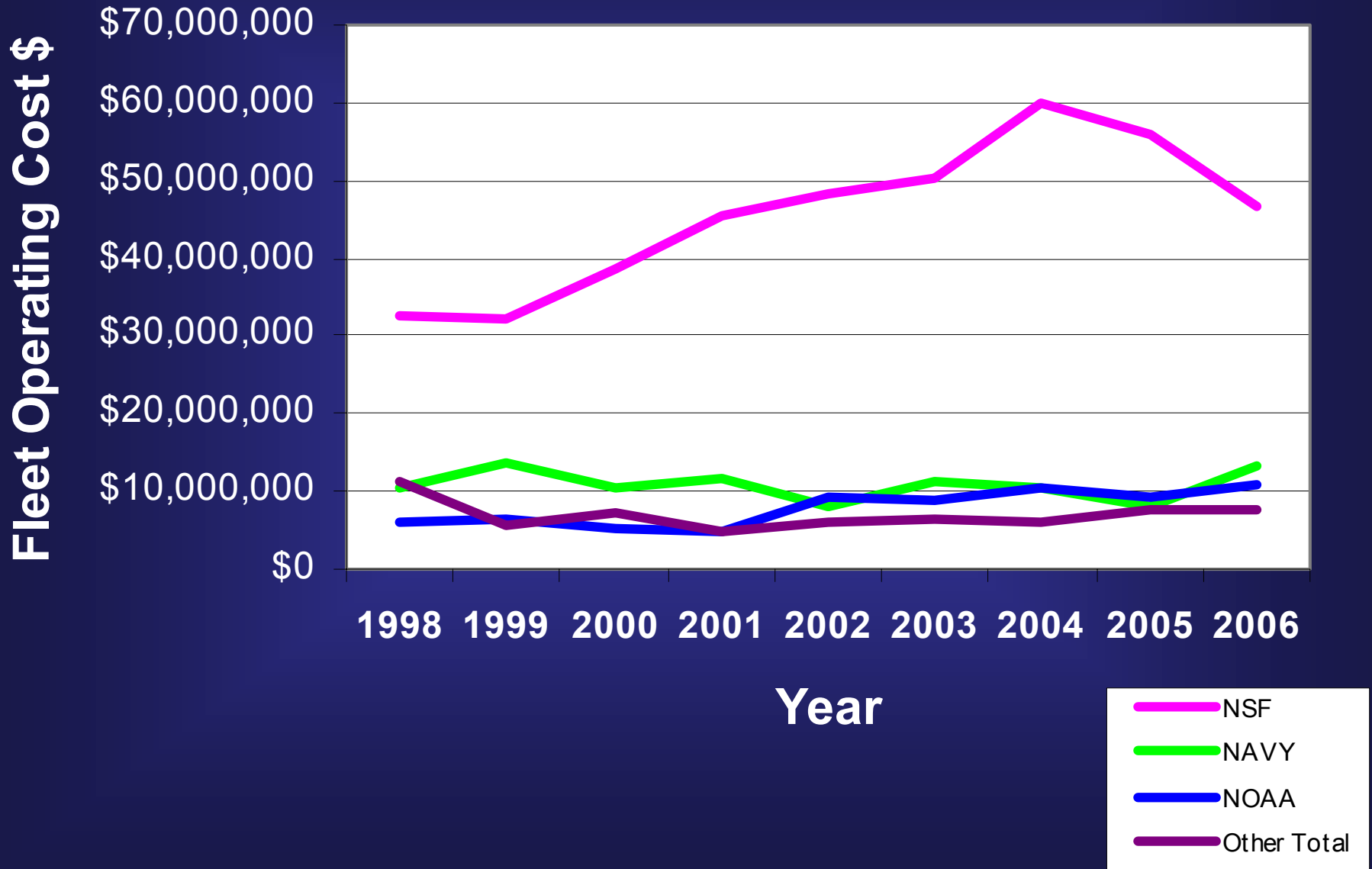
NSF = funded

Navy, NOAA & Other = Funded & Pending



# Fleet Costs by Federal Agency

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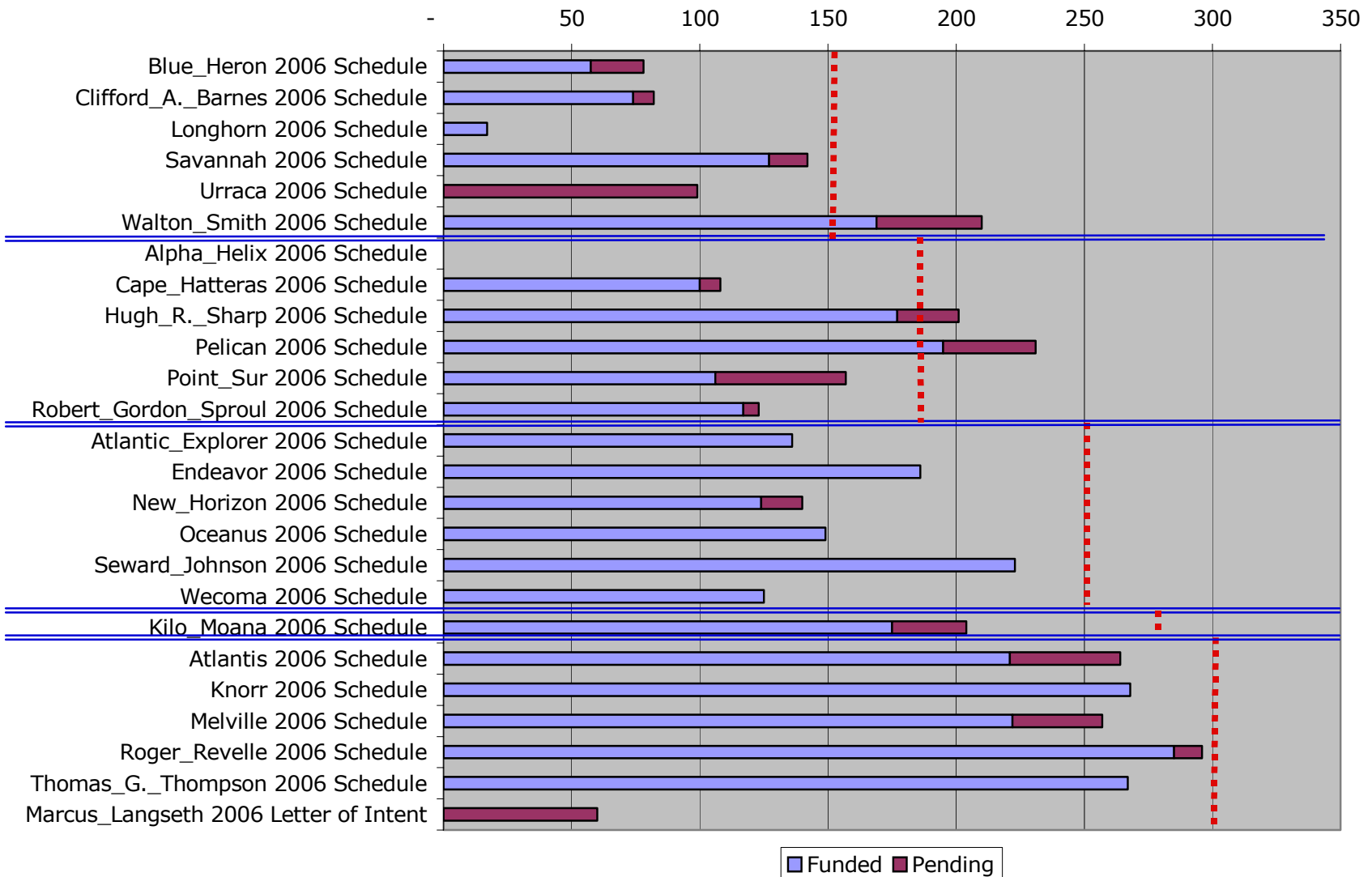




# 2006 Scheduled Ship Time

## University-National Oceanographic Laboratory System

### 2006 UNOLS Operating Days

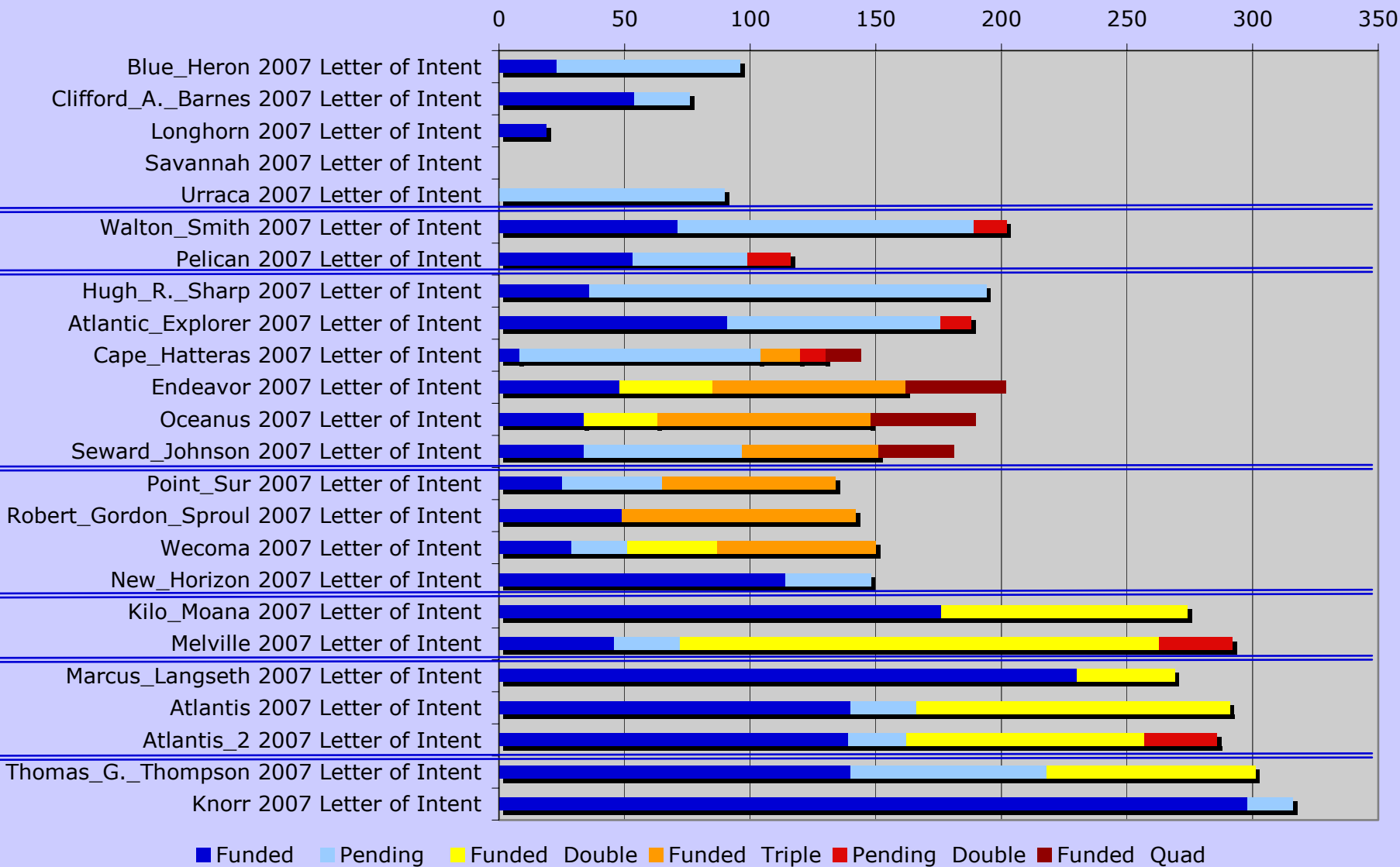




# 2007 Ship Time

## University-National Oceanographic Laboratory System

### 2007 Schedules - Showing Double, Triple & Quadruple Bookings





# UNOLS Subcommittee Formed

## *University-National Oceanographic Laboratory System*

- March 2006 – Council forms subcommittee to prepare guidelines that would be used by the Council to make recommendations regarding ship lay-ups or retirements from the Fleet
- Subcommittee:
  - Marcia McNutt (MBARI), Chair
  - Wilf Gardner (TAMU)
  - Peter Ortner (U. Miami)
- Subcommittee Charge: Develop a short white paper to focus UNOLS Council discussion and agreement upon an equitable and defensible process to be followed by UNOLS to arrive upon a recommendation by July 2006 as to which UNOLS vessels would be laid up in 2007 or beyond or retired.





# Subcommittee Questions to Operators

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1. Is there any difference in the operations or maintenance costs of the older Global-class ships (*Melville* and *Knorr*) versus the younger ones (*Thompson*, *Revelle*, and *Atlantis*)? Is there any difference in the science that can be accommodated on the older ones versus the younger ones?
2. Can the special purpose ships, such as the *Atlantis* and the *Langseth*, conduct in a cost effective manner the same programs that are usually put on the other global class ships? Or is there a major penalty paid by "filling out their schedules" with general purpose work?
3. Are there any arguments for maintaining a geographic distribution of global class ships, or is the home port immaterial in terms of meeting the community's needs?



# Subcommittee Questions to Operators

## *University-National Oceanographic Laboratory System*

4. What are the tradeoffs, financial and otherwise, of having many versus fewer ship operators? e.g., Is there any indication that multi-ship operations are most cost effective? Does having more operators bring in more state and other funding to the fleet?
5. What are the nominal retirement dates for each of the Intermediate class ships and how many of them are likely to be replaced?
6. Are there other values or criteria that should be used as factors in recommending lay-ups or retirements?



# Outline of Presentation

## University-National Oceanographic Laboratory System

### I. Budget Shortfalls and Impact on Future Fleet Operations

### II. Academic Fleet Renewal

A. Regional Class

B. Ocean Class

C. Alaska Region Research Vessel

D. New Construction/Conversions

E. Global Science Mission Requirements

F. Fleet Improvement Plan

### III. Other UNOLS Activities

### IV. UNOLS Committee Activities



# Regional Class Acquisition Status

## University-National Oceanographic Laboratory System

- April 27, 2006 - Contract awards for Phase I of the Regional Class Research Vessel (RCRV) program:
  - Dakota Creek Industries, Anacortes, WA
  - Nichols Brothers Shipbuilders, Freeland, WA
- Phase I is preliminary/contract design - twelve month period and a firm fixed price of ~ \$1 Million each.
- Phase II is detail design and construction.
- Based on proposals submitted by the two Phase I Contractors, a single Phase II contract for detailed design and construction is anticipated to be awarded at the end of Phase I (second quarter CY2007). The Phase II contract will be for a lead ship with options for up to two more.



# Ocean Class - Timeline

## University-National Oceanographic Laboratory System

- 7/2002** Ocean Class SMR Community Workshop
- 3/2003** Ocean Class Science Mission Requirements (SMRs) finalized
- 4/04-7/04** Ocean Class Concept Definition Task
- 10/04-3/05** Hull Evaluation (Monohull, SWATH, X-Craft)
- 3/05** UNOLS provides hull recommendation to Navy (monohull)
- FY2006** Funds Appropriated for Ocean Class Design
- Spring 06** Navy forms Naval Research Advisory Committee to provide recommendation regarding Navy's role in acquisition of Ocean Class

# Alaska Region Research Vessel (ARRV)

Length: 236 feet

Beam: 48 feet

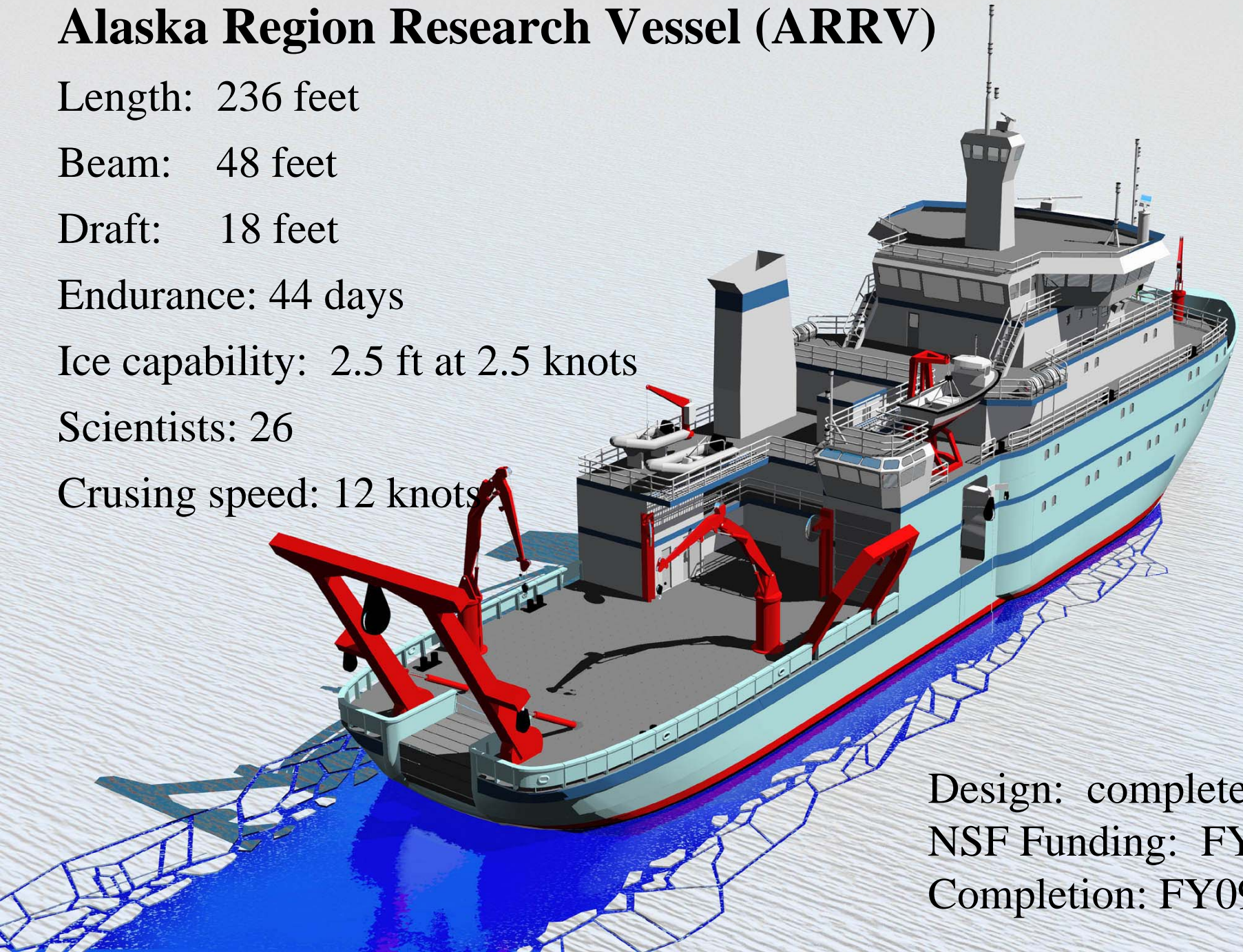
Draft: 18 feet

Endurance: 44 days

Ice capability: 2.5 ft at 2.5 knots

Scientists: 26

Crusing speed: 12 knots



Design: complete  
NSF Funding: FY07?  
Completion: FY09+



# Global Class SMRs and Mid-Life Considerations

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2006 - *THOMPSON*

- Steering Committee formed to update Global Vessel General Purpose SMRs.
- Incorporate Heavy Lift considerations to address ocean observatory and long coring needs.
- Community On-line Survey regarding science needs – coming soon.



2011 - *REVELLE*



2012 - *ATLANTIS*



# New Ships Recently Constructed or Converted

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### **R/V Marcus Langseth (LDEO)**

- Owner = NSF
- Length = 235 feet
- Ready for Service in late 2006.
- Will operate Globally in support of seismic operations and general purpose research.
- Geophysical capabilities include a sound source array towed in four "strings" that can be configured either as a single, 2D source or dual, alternating 3D source arrays.

### **R/V Hugh R Sharp (U. Delaware)**

- Owner – U. Delaware
- March 2006 – entered UNOLS Fleet
- Length = 146 feet
- Modular design to enhance flexibility of use.
- Design also may allow for testing and fitting to incorporate new fuel-cell technologies.
- Designed for quiet operation.







# Ship Transfer and Retirements

## University-National Oceanographic Laboratory System

### *R/V Atlantic Explorer begins operations at Bermuda Biological Station for Research*

- BBSR acquired *R/V Seward Johnson II* from HBOI in October 2005.
- The ship underwent a modification and maintenance period
- April 2006 – *Atlantic Explorer* began operations from BBSR.



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### Ships Retired from UNOLS Fleet:

*Gyre* – August 2005

*Cape Henlopen* – October 2005

*Weatherbird II* – December 2005



# **UNOLS Fleet Improvement Plan Outline**

## **University-National Oceanographic Laboratory System**

- **Executive Summary / Intro**
- **Identify Future Science Initiatives** – includes Major Science Disciplines, Education/Outreach, and Cross cutting initiatives.
- **Current Fleet Composition and Utilization Trends** - includes updated vessel retirement dates and SLEP estimates.
- **Future Fleet Projections**
  - Evaluate other future facility projections (Ocean observatory, Event Response, etc)
  - Other Facilities – aircraft, deep submergence facilities
  - Define Future Fleet Composition
- **Fleet Budget Projections and Requirements**
- **Recommendations**

**Final Draft – Fall 2006**



# Outline of Presentation

## *University-National Oceanographic Laboratory System*

- I. Budget Shortfalls and Impact on Future Fleet Operations
- II. Academic Fleet Renewal
- III. Other UNOLS Activities
  - A. ADA Committee
  - B. UNOLS Briefing Package
  - C. HOV Safety Standards
- IV. UNOLS Committee Activities



# **ADA Guidelines for RVs**

## **University-National Oceanographic Laboratory System**

# **Americans with Disabilities Act (ADA)**

## **Guidelines for Research Vessels**

### **Background:**

- NSF has indicated the need for new ship construction and ship conversion efforts to address ADA requirements.
- Vessels that support Federally funded academic research should be equipped and arranged as feasible to accommodate persons with disabilities.
- In turn, procedural guidelines to carry out shipboard operations by persons with disabilities are needed.



# ADA Guidelines for RVs

## University-National Oceanographic Laboratory System

### Tasks:

- Draft Preliminary ADA Guidelines for the Regional Class Acquisition effort. (Need ASAP)
- Convene a Workshop (if needed) to define shipboard and procedural guidelines required to accommodate sea-going scientists with disabilities.
- Establish General ADA Guidelines for new ship construction/conversion.
- Draft procedural guidelines for at-sea research operations by seagoing scientists with disabilities.

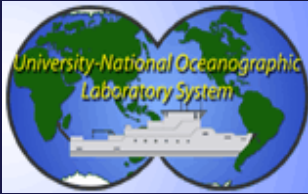


# ADA Guidelines for RVs

## University-National Oceanographic Laboratory System

### Membership :

- FIC Member - Terry Whitledge (UAF) [Chair]
- Risk Manager - Dennis Nixon (URI)
- Marine Superintendent & FIC – Al Suchy (WHOI)
- *Langseth* Conversion Rep & FIC – Jim Cochran (LDEO)
- RVTEC Representative – Joe Ustach (Duke)
- Seagoing scientists with disabilities – Amy Bower (WHOI) and Terry Glover (contributing member)
- Ship Master – Eric Buck (SIO)
- UNOLS Safety Committee Rep – Matt Hawkins (UDel)
- David Chapman (UDel)
- Ex-officio members – agency reps



# UNOLS Briefing Package

## University-National Oceanographic Laboratory System

- 1) What is UNOLS? Description of UNOLS. Committee structure and tasks. Ships descriptions, distribution, and utilization.
- 2) Status of the UNOLS fleet today and challenges in terms of:
  - 1) Funding shortfalls and consequences
  - 2) Future oceanographic scientific community needs: OOI and IOOS etc.
- 3) Fleet Renewal – Plans and Status
- 4) Discussion topics:
  - 1) How to stay on top of the planning process



# Outline of Presentation

## *University-National Oceanographic Laboratory System*

I. Budget Shortfalls and Impact on Future Fleet Operations

II. Academic Fleet Renewal

III. Other UNOLS Activities

IV. UNOLS Committee Activities

I. RVOC

II. RVTEC

III. AICC

IV. DESSC

V. MLSOC





# RVOC and RVTEC

## University-National Oceanographic Laboratory System

### Research Vessel Operators' Committee

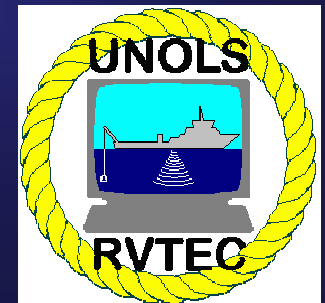
- Annual Meeting – April, 25-27, 2006 at U. Washington (Deb Kelley guest speaker)
- Issues addressed and activities:
  - Update of Research Vessel Safety Standards
  - Security plans, Safety, and ISM
  - Uniformity for port and EEZ fees (who pays for what – science v.s. operator)
- Alcohol, Drugs, and Sexual Harassment Policies



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### Research Vessel Technical Enhancement Committee

- Annual Meeting and INMARTECH 2006 – October 16-19, 2006, WHOI
  - Includes session on Advanced Instrumentation and Vehicle Systems.





# Arctic Icebreaker Coordinating Committee

## *University-National Oceanographic Laboratory System*

- Arctic Icebreaker Coordinating Committee
  - HEALY U/W for 2006 Field program
  - AICC providing prioritized recommendations for instrumentation, science support and science space utilization based on debriefs with PI's
  - Starting to think about long term upgrades such as multibeam replacement



## DEep Submergence Science Committee

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- Meeting on May 24-25, 2006 at Woods Hole Oceanographic Institution – The agenda includes:
  - Feedback from science users of the National Deep Submergence Facility vehicles
  - NDSF Operator report on vehicle upgrades, improvement plans, schedules, and operations.
  - New Facility Updates:
    - Replacement Human Occupied Vehicle (2009 estimated completion)
    - Hybrid ROV – (Ready for service in 2007)
    - AUV *Sentry*
- Other DESSC Activities:
  - Establishing Criteria for Adding Assets to the NDSF
  - Formed Subcommittee to establish HOV Safety Standards



# Marcus Langseth Science Oversight Committee

## *University-National Oceanographic Laboratory System*

- **New UNOLS Standing Committee – Formed in October 2005**
- **Membership:**
  - Dr. Steven Holbrook, U of Wyoming (MLSOC Chair)
  - Dr. Michael Enachescu, Memorial University of Newfoundland
  - Dr. Graham Kent, Scripps Institution of Oceanography, UCSD
  - Dr. Nancy Grindlay, University of North Carolina at Wilmington
  - Dr. Mitch Lyle, Boise State University
  - Dr. Ray Schmitt, Woods Hole Oceanographic Institution
  - Dr. Peter Tyack, Woods Hole Oceanographic Institution
  - Dr. H. Paul Johnson, University of Washington
  - Dr. Peter Littlewood, Shell International Exploration & Production, Inc
  - Dr. Tom Shipley, University of Texas IG
- **First Meeting - 31 May and 1 June at the Shelburne Nova Scotia shipyard. (Joint with ERROC)**

