



**National
Science
Foundation**

***Division
of Ocean
Sciences
(OCE)***

March 14, 2006





Context of FY 2007 Request

- Positive budget climate, with overall NSF annual growth projected at ~7% for the next decade
- Exciting opportunities in GEO this year and beyond
- Important steps forward in FY2007 in research and infrastructure



Budget Request by Division

Geosciences Funding

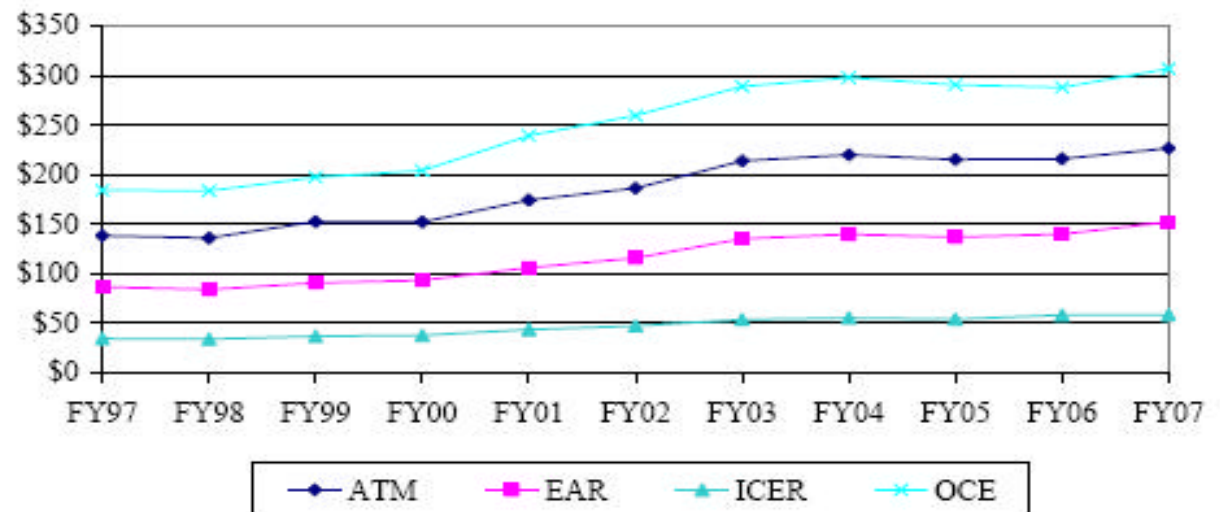
(Dollars in Millions)

	FY 2006			Change over	
	FY 2005 Actual	Current Plan	FY 2007 Request	FY 2006 Amount	Percent
Atmospheric Sciences (ATM)	215.32	216.09	226.85	10.76	5.0%
Earth Sciences (EAR)	136.95	140.12	152.30	12.18	8.7%
Ocean Sciences (OCE)	290.79	288.25	307.13	18.88	6.5%
Innovative & Collaborative Education and Research (ICER)	54.11	58.37	58.57	0.20	0.3%
Total, GEO	\$697.17	\$702.83	\$744.85	42.02	6.0%

Totals may not add due to rounding.

GEO Subactivity Funding

(Dollars in Millions)





Budget Authority

	2006	2007	2008	2009	2010	2011
NSF	5,706	6,145	6,573	7,031	7,521	8,046
\$ inc.		439	428	458	490	525
% inc.		7.7%	7.0%	7.0%	7.0%	7.0%
% over 2006		7.7%	15.2%	23.2%	31.8%	41.0%
NOAA	3,911	3,684	3,564	3,546	3,500	3,542
\$ inc.		-227	-120	-18	-46	42
% inc.		-5.8%	-3.3%	-0.5%	-1.3%	1.2%
% over 2006		-5.8%	-8.9%	-9.3%	-10.5%	-9.4%
Energy	21,045	20,660	20,683	21,104	21,072	21,713
\$ inc.		-385	23	421	-32	641
% inc.		-1.8%	0.1%	2.0%	-0.2%	3.0%
% over 2006		-1.8%	-1.7%	0.3%	0.1%	3.2%
DOE Sci.	3,596	4,102 ?				
Interior	9,277	9,055	12,455	9,146	9,644	9,008
\$ inc.		-222	3,400	-3,309	498	-636
% inc.		-2.4%	37.5%	-26.6%	5.4%	-6.6%
% over 2006		-2.4%	34.3%	-1.4%	4.0%	-2.9%
NASA	16,624	16,794	17,313	17,624	18,041	18,474
\$ inc.		170	519	311	417	433
% inc.		1.0%	3.1%	1.8%	2.4%	2.4%
% over 2006		1.0%	4.1%	6.0%	8.5%	11.1%



Major Facility Investments

- HIAPER
 - Construction complete, initial operations began in 2005
- EarthScope
 - Construction continues on time & on budget
 - \$27.4 million requested in FY 2007 to complete construction
- Scientific Ocean Drilling Vessel
 - FY 2007 request of \$42.88 million to complete construction
- Ocean Observatories Initiative
 - \$309.5 million over six years; FY 2007 request includes \$13.5 million to begin construction
- Alaska Region Research Vessel
 - \$98 million over two years; FY 2007 request includes \$56 million to begin construction



Major Resource Agency for Ocean Sciences

- OCE provides about 70% of federal funding for *Academic Ocean Research*.
- OCE provides about 65% of funding for the *Academic Research Fleet* operations to support NSF-sponsored sea-going research and education projects.
- OCE provides all of the U.S. funding, which amounts to about 60% of the support, for the *Scientific Ocean Drilling* programs.



Ocean Observatories Initiative

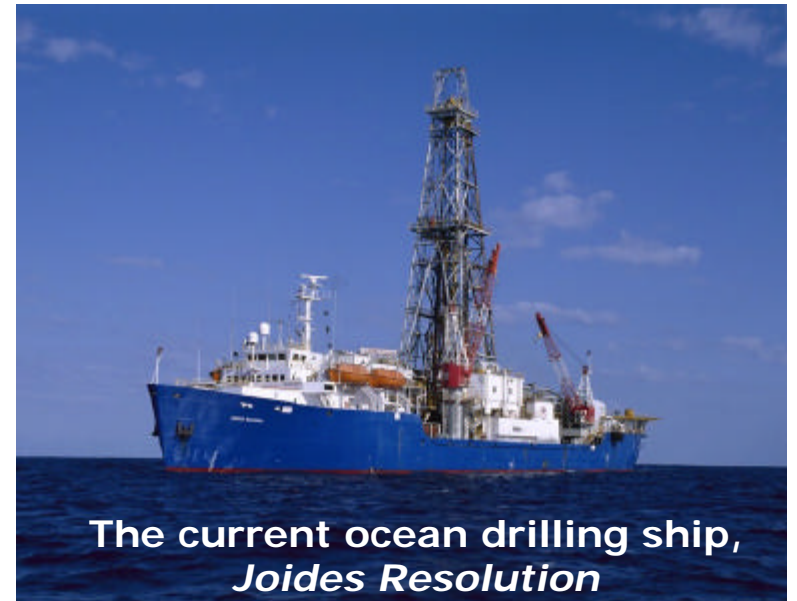
- The OOI will have three elements
 - deep-sea buoys
 - a regional electro-optical cabled network
 - network of coastal observatories
- Construction phase requested to begin in FY 2007 with funding from NSF's MREFC Account
- Budget Request
 - FY 2007 – \$13.5M
 - FY 2008 – \$48.0M
 - FY 2009 – \$77.0M
 - FY 2010 – \$78.0M
 - FY 2011 – \$53.0M
 - FY 2012 – \$40.0M





Scientific Ocean Drilling Vessel

- Contracting, conversion, outfitting and acceptance trials of a deep-sea drilling vessel
- Vessel conversion to begin late 2006
- Scientific operations to begin late 2007
- MREFC Budget Request
 - FY 2005 ~ \$15M
 - FY 2006 ~ \$57M
 - FY 2007 ~ \$43M
 - Total ~ \$115M



The current ocean drilling ship,
Joides Resolution



Alaska Region Research Vessel



R/V Alpha Helix



ARRV

- Replacement for the R/V Alpha Helix, 39 year old, less capable vessel
- Ice-strengthened ARRV would operate in the seasonal ice covered Alaskan waters, expanding current capabilities for oceanographic research in the region
- Vessel design package complete
- Approved by the National Science Board as an MREFC project in August 2003; in June 2005, identified by NSB as first priority item; included in the FY 2007 President's Budget to Congress
- Identified in the 2001 FOFC Fleet Renewal Plan as #1 replacement priority



Regional Class Research Vessels

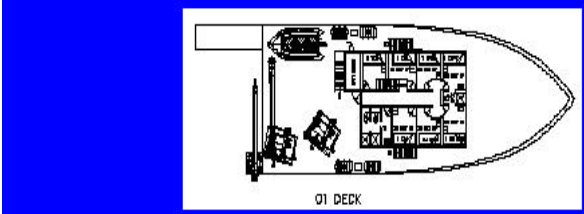
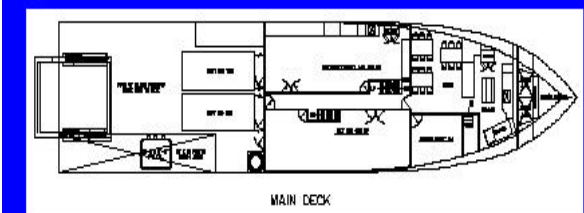
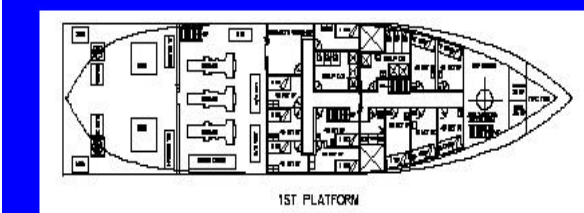
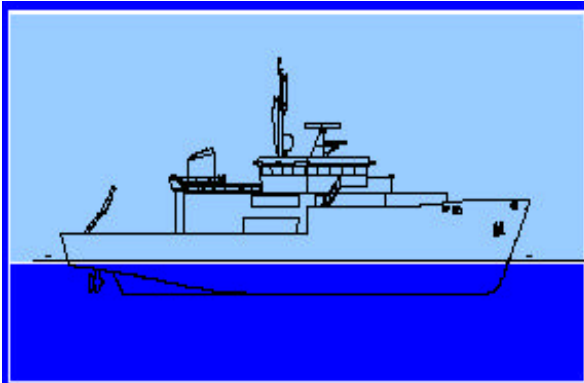
Process for Ship Acquisition:

- Phase I:

- October 2005 - NSF/NAVSEA signed Acquisition Strategy.
- October 2005 – RFP for “Design Team” Competition RFP released.
- January 2006 – Design Team proposals received.
- April 2006 – Design Teams selected.

- Phase 2: May 2007 - Select winning ship design

- Detailed Design & Construction
- Ship 1 – 2007-2008
- Ship 2 – 2009-2010
- Ship 3 – 2011-2012





R/V LANGSETH

- Seismic vessel purchased August 2004, renamed the R/V MARCUS LANGSETH
 - R/V MAURICE EWING sold September 2005
 - Conversion Oversight Committee active in modification designs
 - UNOLS Science Oversight Committee being formed
- 
- Bids for conversion currently under review
 - Seismic science equipment currently being purchased
 - Vessel anticipated to be in service late 2006

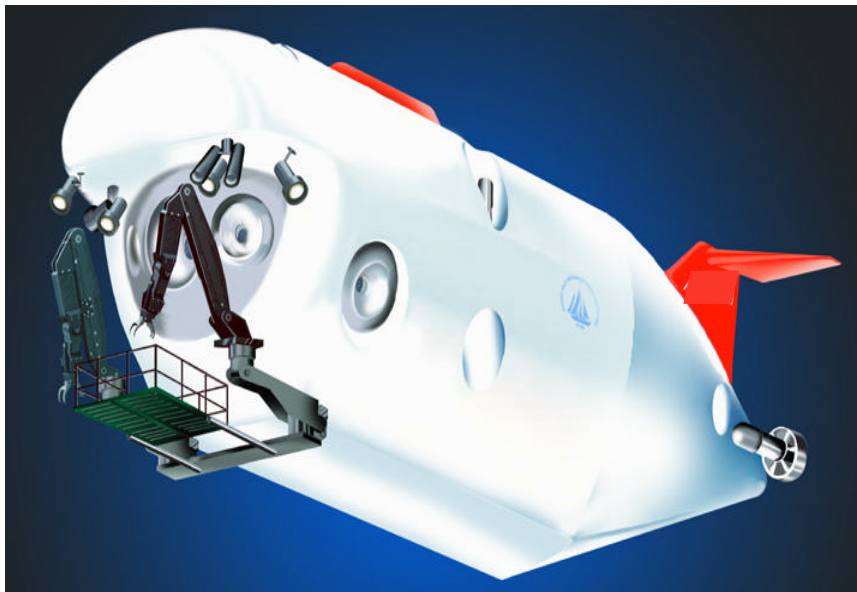


HOV Replacement

Phased Development Approach (6 year award)

Phase I (in progress):

- **Oversight Committee established and active in design process**
- **Contract finalized (October 2005) between WHOI and Southwest Research Institute (SwRI) for the design of the personnel sphere**
- **Solicitation for actual vehicle being prepared**

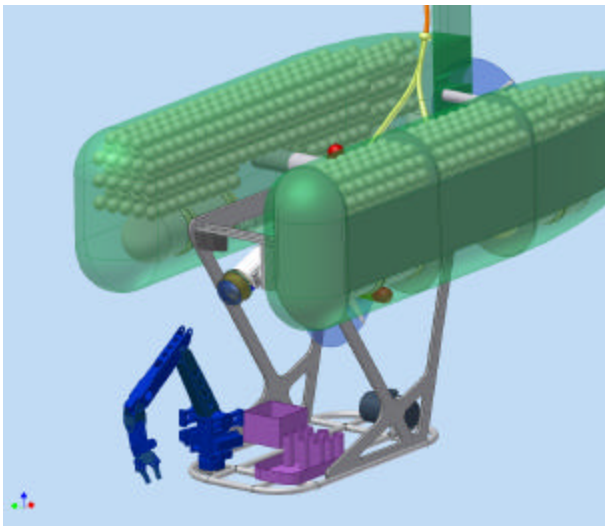


- **Phase II (*dependent on Successful Phase I*):**
 - **Vehicle construction (anticipated completion in 2009)**



Hybrid Remotely Operated Vehicle

- HROV capable of operating in ROV (tethered) and AUV (untethered) mode
- Multi-agency Developmental Program (NSF, NOAA, Navy)
- Sea trials scheduled in early 2007
- Vehicle Characteristics/Technology:
 - 11,000 meter depth capability (full ocean depth)
 - Microfiber Optic Tether for real-time data transmission (Navy technology)



- Flotation – High performance ceramic pressure casings
- Energy Storage – 2000 small pack, rechargeable Lithium Ion batteries
- Lightweight/Small Vehicle – Allows for deployment from Intermediate, Ocean and Global Class size ships
- Sampling Capability, 75lb payload
- Mission duration = 36 hours



OCE Staff Updates

Marine Geology and Geophysics Program

- *Howard Spero, Associate Program Director*

Biological Oceanography Program

- *Mary-Elena Carr, Associate Program Director*

Physical Oceanography Program

- *Elise Ralph, Associate Program Director*

Sea Grant Fellow

- *Li Zhang*



OCE Staff Updates

- ***Julie Morris, Division Director
(starting April, 2006)***

- ***Bill Lang, Environmental Officer***



Ocean Research Priorities Plan

- **National Science and Technology Council's Joint Subcommittee on Ocean Science and Technology is developing an Ocean Research Priorities Plan**
 - A National Plan
 - Present science and technology vision, challenges, needs and benefits
 - Identify areas of highest priority and opportunity
- **Public Comment Period**
 - 45 days following release in Federal Register mid-March
- **Public Workshop 18-20 April 2006 in Denver**
 - Open to all interested parties

<http://ocean.ceq.gov>