

NATIONAL SCIENCE FOUNDATION  
4201 Wilson Boulevard  
Arlington, VA 22230

DIVISION OF OCEAN SCIENCES

February 25, 2005

Dr. Peter Wiebe  
Chair  
University-National Oceanographic Laboratory System  
c/o Woods Hole Oceanographic Institution  
Woods Hole, MA 02543

Dear Peter:

I am writing to seek your assistance, and that of the UNOLS membership, in addressing an urgent matter confronting the NSF Division of Ocean Sciences (OCE) and other agencies that sponsor ocean research and the facilities needed to effectively conduct that research. The recent release of the NSF FY 2006 budget request to Congress, coupled with the known reductions in the FY 2005 allocations from FY 2004 levels and trends in UNOLS operational costs over the past few years, indicate that significant reductions must be realized in overall UNOLS fleet costs. UNOLS was established in large part to manage efficient and cost effective scheduling and to provide advice to federal agencies in the area of ship operations. OCE is seeking community advice on how best to implement the needed reductions beginning with the 2006 operating year.

Several charts and tables are attached to illustrate the issues. In part, these suggest that the cost of operating the fleet, as measured by the overall day rate, has been increasing by about 5% per year over the past seven years (Figure 1). For NSF, the total annual cost has increased by 11.5% per year over the same period (Table 1), while the NOAA cost has slightly increased (2% annually), and the Navy cost has significantly decreased (8% annually). The result is that the NSF percentage of the total costs has risen from 53% to 72% (Table 1). The six Global class ships alone require over half of the total NSF contribution to fleet operations. Figure 2 shows total operating days distributed among sponsors.

For calendar year 2004, about \$42M of the \$49M for ship operations (not including marine technicians, deep submergence, etc.) came from OCE's Ship Operations budget. The Integrated Ocean Drilling Program, the Office of Polar Programs, and the Biocomplexity in the Environment program provided the balance. This all time high in ship operations costs was a result of inexorable yearly increases in operating costs and an unusually high demand for ship days

resulting from three successive years of NSF budget increases from FY 2001 - FY 2003. The FY 2004 budget was flat and, therefore, provided no increase to accommodate the increased shiptime demand. Consequently, several major cruises were deferred to reduce by half the projected \$10M increase in ship operations in FY 2004 over the FY 2003 amount. Nonetheless, science programs had to absorb the resulting \$5M shortfall in ship operating funds.

Despite a budget decrease, ship operating day projections for calendar year 2005 are about level with 2004, because cruises deferred from 2004 are being accommodated in 2005. The cost is projected to be at least as much as in 2004, even though the R/V Alpha Helix and the R/V Seward Johnson II are laid up, and there will be no Lamont-Doherty Earth Observatory ship operations this year once the R/V Ewing retires in March. With these lay-ups and with other ships having reduced schedules, there is an over-capacity in the fleet that will only be exacerbated with foreseen budget constraints.

The Directorate for Geosciences budget has not increased since FY 2003 (Table 2). The OCE FY 2005 operating budget for core research programs is likely to be at least 5% lower than in FY 2004. Current wisdom suggests that the budget outlook will at best be flat over the next couple of years (i.e. lower than in FY 2004). Under this scenario, NSF ship day requirement projections will continue to fall over this period as science funding is impacted.

Contributing to this ship operations dilemma, but at the same time being in response to strong community advocacy, OCE is committed to a program of fleet renewal over the next few years. This renewal program includes a series of Regional class ships, a scientifically more capable seismic survey ship, and a deeper diving replacement for the submersible Alvin. Expenditures for design and construction of these facilities, which will go on for the next four to eight years, will be funded from the base budget of the Division of Ocean Sciences. Only the Alaska Region Research Vessel, currently scheduled for initial funding in FY 2007, will utilize funds from outside the Division budget.

The outcome of these dynamics is reflected in the "Facilities" section of the NSF FY 2006 Budget Request to Congress, <http://www.nsf.gov/about/budget/fy2006/toc.htm> <<http://www.nsf.gov/about/budget/fy2006/toc.htm>> , in the table titled "Academic Research Fleet Funding Profile" (page 332). The FY 2005 Current Plan total is shown as being the same as the FY 2006 Request, i.e. \$83.2M. The total is made up of two components: 1) Implementation and 2) Operations and Maintenance (Table 3). The former includes the costs of fleet renewal and increases in FY 2006 and beyond. The latter, which includes everything else OCE supports under Operations and Maintenance (Ship Operations, Marine Technicians, Shipboard Scientific Support Equipment, UNOLS Office support, etc.), shows a balancing decrease of \$5M from FY 2005 to FY 2006 (Table 3). It is unlikely that other agencies will make up the shortfall in their future requirements.

OCE can provide you with further details on trends and our estimate of the reduced resources available for OCE-funded ship operations for FY 2006. NSF, with the other funding agencies, is able and prepared to decide on and take appropriate steps to reduce ship operations costs by at least \$5M to \$8M in FY 2006 and beyond. However, we are asking for community advice through the UNOLS Council and UNOLS membership on how best to implement the required reductions in a fair and open process.

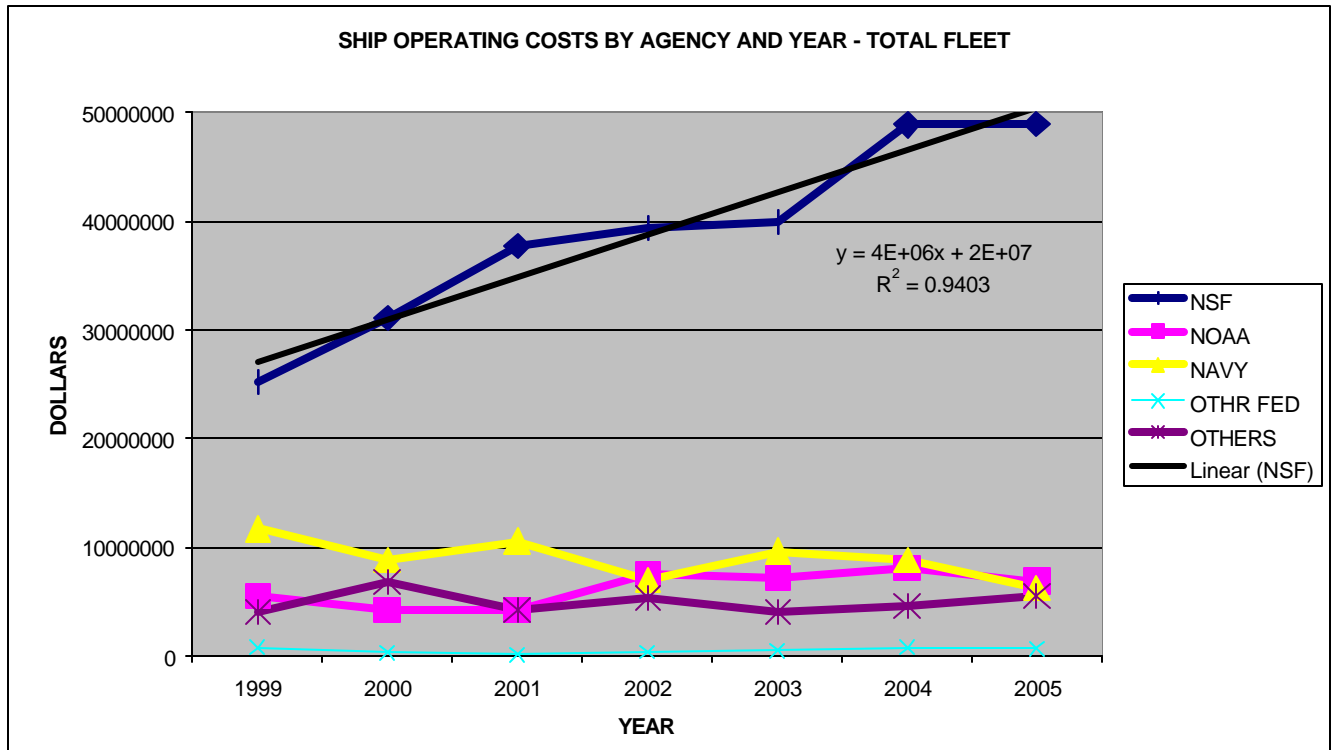
We encourage you to explore all options. We know that laying up coastal and intermediate ships and partial lay-ups do not save much, and we believe there is evidence for current and projected over-capacity, suggesting that a reduction in fleet size might be a consideration. To be most effective, and to have input into preparation of the FY 2007 NSF budget request, we need your advice and input prior to this summer's UNOLS ship scheduling meeting.

Thank you for considering this request. Please contact me at 703-292-8580 if you have any questions.

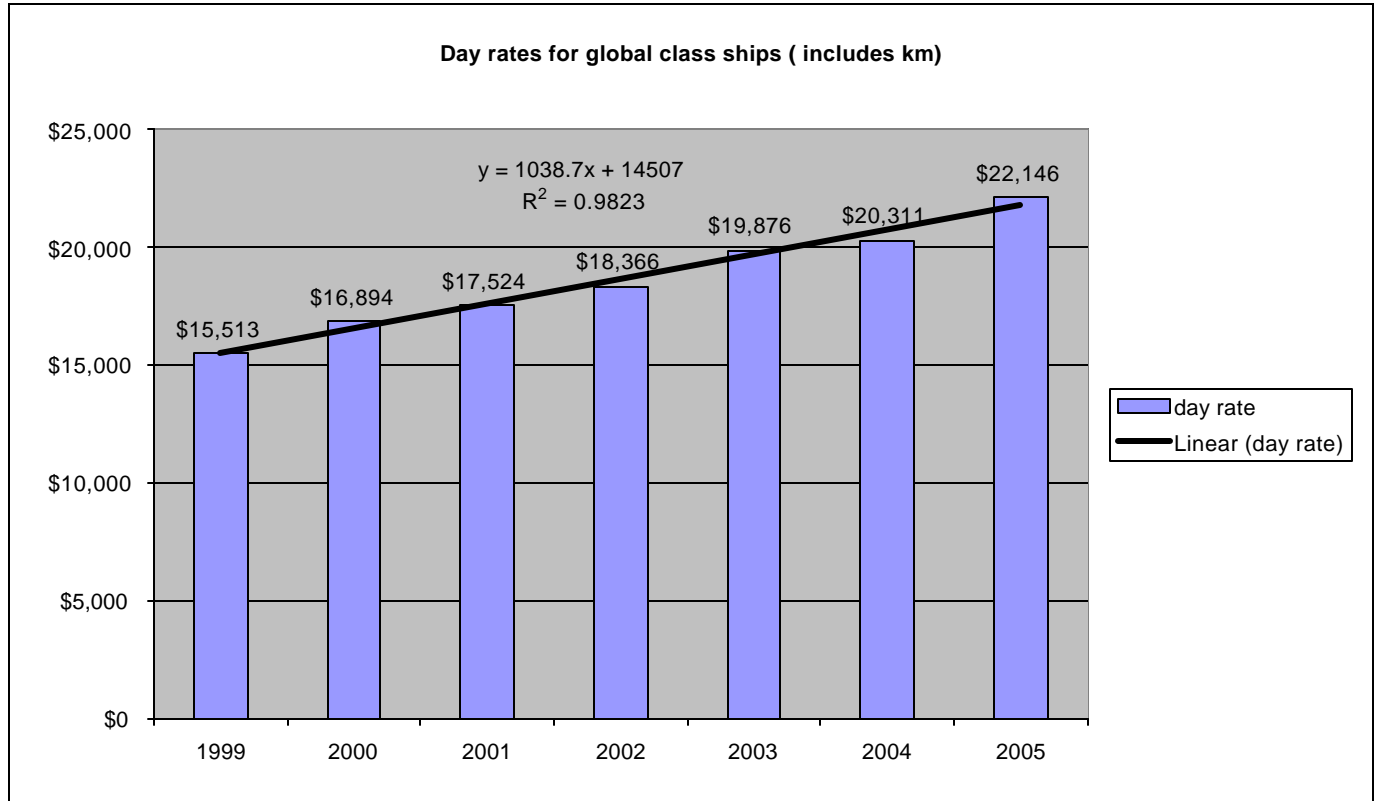
Sincerely,

H. Lawrence Clark  
Acting Director  
Division of Ocean Sciences

**Figure 1**



**Table 1**



**TABLE 2**

**GEOSCIENCES**

**\$709,100,000**

The FY 2006 Budget Request for the Directorate for Geosciences (GEO) is \$709.10 million, an increase of \$14.94 million, or 2.20 percent, over the FY 2005 Current Plan of \$694.16 million.

**Geosciences Funding**

(Dollars in Millions)

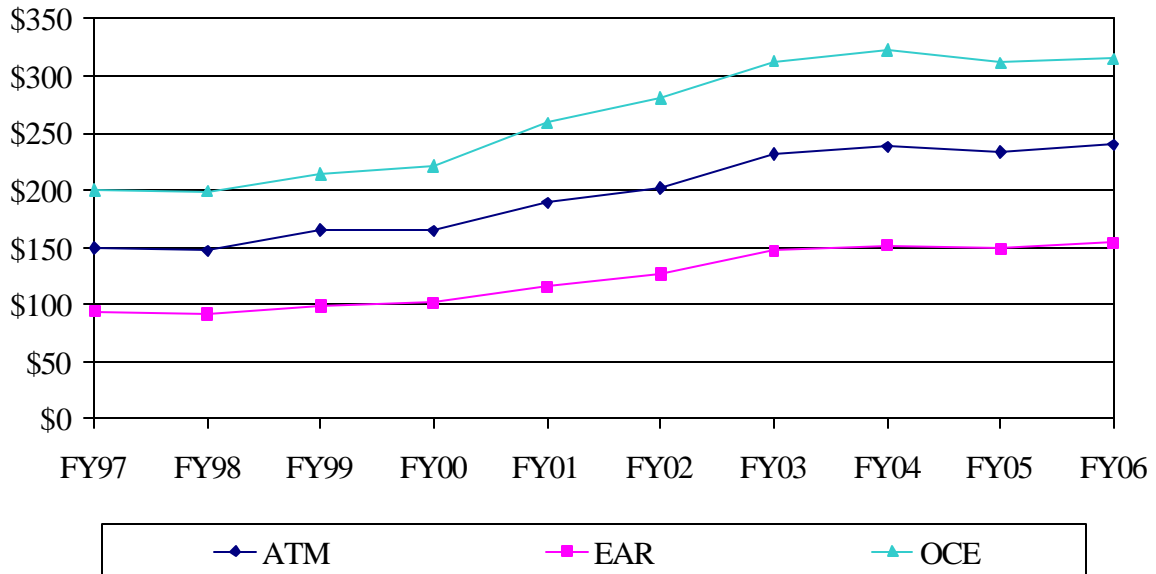
|                            | FY 2004<br>Actual | FY 2005<br>Current<br>Plan | FY 2006<br>Request | Change over<br>FY 2005 |             |
|----------------------------|-------------------|----------------------------|--------------------|------------------------|-------------|
|                            |                   |                            |                    | Amount                 | Percent     |
| Atmospheric Sciences (ATM) | 238.40            | 233.43                     | 239.79             | 6.36                   | 2.7%        |
| Earth Sciences (EAR)       | 152.03            | 148.96                     | 154.07             | 5.11                   | 3.4%        |
| Ocean Sciences (OCE)       | 322.98            | 311.77                     | 315.24             | 3.47                   | 1.1%        |
| <b>Total, GEO</b>          | <b>\$713.41</b>   | <b>\$694.16</b>            | <b>\$709.10</b>    | <b>\$14.94</b>         | <b>2.2%</b> |

Totals may not add due to rounding.

The Directorate for Geosciences (GEO) supports the research, infrastructure, and education in the atmospheric, earth, and ocean sciences needed to advance our understanding of the integrated Earth system.

**GEO Subactivity Funding**

(Dollars in Millions)



**TABLE 3****OCEAN SCIENCES****\$315,240,000****Ocean Sciences Funding**

(Dollars in Millions)

|   | FY 2004<br>Actual | FY 2005         |                    | Change over FY 2005 |             |
|---|-------------------|-----------------|--------------------|---------------------|-------------|
|   |                   | Current<br>Plan | FY 2006<br>Request | Amount              | Percent     |
| Ocean Section                                       | 120.35            | 115.98          | 117.28             | 1.30                | 1.1%        |
| Integrative Programs Section                        | 118.40            | 113.70          | 114.97             | 1.27                | 1.1%        |
| Marine Geosciences Section                          | 84.23             | 82.09           | 82.99              | 0.90                | 1.1%        |
| <b>Ocean Sciences</b>                               | <b>\$322.98</b>   | <b>\$311.77</b> | <b>\$315.24</b>    | <b>\$3.47</b>       | <b>1.1%</b> |
| Major Components:                                   |                   |                 |                    |                     |             |
| Research and Education Grants                       | 194.85            | 181.64          | 190.61             | 8.97                | 4.9%        |
| Long-term Ecological Research Centers<br>Facilities | 3.63              | 3.63            | 3.63               | 0.00                | 0.0%        |
| Academic Research Fleet                             | 82.50             | 83.20           | 83.20              | 0.00                | 0.0%        |
| Integrated Ocean Drilling Program (IODP)            | 35.10             | 32.10           | 30.00              | -2.10               | -6.5%       |
| Other Ocean Sciences Facilities                     | 6.90              | 11.20           | 7.80               | -3.40               | -30.4%      |