

DIVISION OF OCEAN SCIENCES (OCE):

PROPOSAL SUBMISSION GUIDELINES FOR THE INTEGRATIVE PROGRAMS SECTION (IPS)

NSF 04-052

Instructions for the preparation of proposals requesting support for:

- SHIP OPERATIONS
- OCEANOGRAPHIC TECHNICAL SERVICES
- OCEANOGRAPHIC INSTRUMENTATION
- SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT
- SHIP ACQUISITION AND UPGRADE
- OCEAN TECHNOLOGY AND INTERDISCIPLINARY COORDINATION
- OCEANOGRAPHIC EDUCATION
- OTHER OCEANOGRAPHIC FACILITY ACTIVITIES



**National Science Foundation
Division of Ocean Sciences**

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The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASSED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at <http://www.nsf.gov>

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PROPOSAL SUBMISSION GUIDELINES TABLE OF CONTENTS

<i>Summary of Program Requirements</i>	4
<i>Ship Operations Program</i>	10
<i>Oceanographic Technical Services Program</i>	26
<i>Oceanographic Instrumentation Program</i>	41
<i>Shipboard Scientific Support Equipment Program</i>	46
<i>Ship Acquisition and Upgrade Program</i>	50
<i>Ocean Technology and Interdisciplinary Coordination</i>	51
<i>Oceanographic Education</i>	53
<i>Other Oceanographic Facility Activities</i>	54
<i>Appendices</i>	
<i>A: Standard Navy Ocean Area and Region Index Limits</i>	55

Summary of Program Requirements

GENERAL INFORMATION

In 2000, the Division of Ocean Sciences (OCE) was reorganized into three sections. The newly created Integrative Programs Section (IPS) now contains the Oceanographic Technology and Interdisciplinary Coordination (OTIC) Program and Oceanographic Education (OE) Program, as well as the programs pertaining to oceanographic facilities. This document updates the guidelines for oceanographic facilities programs published in NSF 00-39 and adds the OTIC and OE programs.

Oceanographic facility awards are made for the operation, conversion and upgrade of open-ocean, coastal, near-shore and Great Lakes platforms and instrumentation used for research and education programs. Awards are principally directed to support large, costly facilities that lend themselves to shared usage. Most of these facilities also receive partial support from other Federal agencies, state and local governments and private sources. The primary objective of these awards is to ensure the availability of appropriate facilities for NSF-funded investigators and education programs. Individual project-based facilities and instrumentation, limited to one, or a small group of investigators, are supported through appropriate research programs, not IPS programs.

The Federal Oceanographic Facilities Committee's (FOFC) 2001 report entitled, "Charting the Future for National Academic Research Fleet: A Long Range Plan," identifies the strategy for fleet renewal for vessels over 40 meters (130 feet) in length over the next 20 years. FOFC recognizes that the primary source of funding for the acquisition of smaller (local class) ships will continue to be from sources such as state funds, private donations, and academic institutions. NSF intends to continue to support and participate in the implementation of the FOFC fleet renewal plan.

Program Names: Ship Operations, Oceanographic Technical Services, Oceanographic Instrumentation, Shipboard Scientific Support Equipment, Ship Acquisition and Upgrade, Ocean Technology and Interdisciplinary Coordination and Ocean Education

Short Descriptions/Synopses of Programs:

[The following first five programs are considered oceanographic facility programs.]

Ship Operations: Ship Operations awards provide support for direct and indirect costs arising from the maintenance and operation of research vessels. Allowable costs include salaries and related expenses of crew members and marine operations staff; acquisition of minor or expendable equipment; maintenance, overhaul and repair; insurance; and direct operating costs such as fuel, food, supplies, and pilot and agent fees. Shore facilities costs are provided only to the extent that they relate directly to the ship operation. Cognizant Program Officer:

Dr. Linda Goad, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: lgoad@nsf.gov.

Oceanographic Technical Services: The Oceanographic Technical Services Program provides support to enhance the scientific productivity of research programs using major facilities, primarily research vessels. Effective use of such facilities is enhanced by providing institutional technical support services to all users of an institution's facilities. Services encompass maintenance, calibration, quality assurance, scheduling, logistical assistance, and at-sea supervision of the instrumentation and shared-use equipment available to sea-going researchers. Technical support requested must be directly attributable to NSF-sponsored use of the facilities. Cognizant Program Officer: Dr. Alexander Shor, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: ashor@nsf.gov.

Oceanographic Instrumentation: The Oceanographic Instrumentation Program provides support to enhance the scientific capabilities and productivity of seagoing research projects that use major facilities, primarily research vessels. Proposals for shared-use instrumentation may include items for the collection, processing and analysis of oceanographic data. Typical items which qualify are data loggers, water sample rosettes, biological net systems, coring equipment and autoanalyzers. Requested instrumentation must be justifiable in terms of multi-project cooperative utilization. Cognizant Program Officer: Dr. Alexander Shor, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: ashor@nsf.gov.

Shipboard Scientific Support Equipment: The Shipboard Scientific Support Equipment Program provides support to improve safety systems and enhance scientific capabilities and productivity of seagoing research projects that use major facilities, primarily research vessels. Proposals may include permanent installations and equipment required to outfit a vessel to conduct ocean science research. This includes such items as winches, cranes, the entire range of navigation and communication equipment, and safety items. Requests for both replacement and installation of new equipment are considered. Cognizant Program Officer: Ms. Emma (Dolly) Dieter, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: edieter@nsf.gov.

Ship Acquisition and Upgrade: From time to time, OCE makes awards for the design, construction, acquisition, upgrade, or conversion of research vessels. These awards are dependent upon the availability of funds appropriated for this purpose and are made only on strong evidence of scientific need for a new or reconditioned vessel. Most awards in recent years have been for the conversion or upgrade of ships already in service whose age, configuration, or operating costs have impaired their usefulness. Cognizant Program Officer: Ms. Emma (Dolly) Dieter, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: edieter@nsf.gov.

Ocean Technology and Interdisciplinary Coordination: The Oceanographic Technology and Interdisciplinary Coordination (OTIC) Program supports the development of new instrumentation that has wide applicability in the ocean sciences. The Program works closely with the other science programs within the Division of Ocean Sciences and often supports instrument development jointly with them. Cognizant Program Officer: Dr. Alexandra Isern, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: aisern@nsf.gov. OTIC also supports the Coastal Ocean Processes (CoOP) Program and the Field Stations and Marine Laboratories (FSML) Program. CoOP cognizant Program Officer: Dr. Alexandra Isern. FSML Cognizant Program Officer: Ms. Kandace Binkley, Associate Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: aisern@nsf.gov.

Oceanographic Education: The Oceanographic Education program administers a variety of established education programs within OCE, which are NSF or GEO-wide, and have specific proposal deadlines. It also accepts unsolicited proposals for innovative education projects involving the ocean sciences community and the entire spectrum of formal education (K through graduate) as well as informal education activities. There are no specific deadlines for such proposals. Cognizant Program Officer: Ms. Elizabeth Rom, Associate Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: erom@nsf.gov.

Other Oceanographic Facility Activities: OCE supports workshops, research and study projects, and some specialized facility operations related to quality control improvement, facilities enhancement and developmental activities. All projects must focus on shared-use facilities for the ocean science research community. Cognizant Program Officer: Ms. Emma (Dolly) Dieter, Program Director, Room 725, Division of Ocean Sciences, telephone 703-292-8583, email: edieter@nsf.gov.

Applicable Catalog of Federal Domestic Assistance (CFDA) No.: 47.050 — Geosciences

ELIGIBILITY

- Limitation on the categories of organizations that are eligible to submit proposals: OCE support for major facilities is concentrated at a limited number of institutions suitably located to carry out operations in support of ocean science research and education. Ship operator institutions may include colleges and universities, nonprofit research institutions, and associations of colleges and universities. To qualify for an award from the Ship Operations, Oceanographic Technical Services, Oceanographic Instrumentation, Shipboard Scientific Support Equipment, or Ship Acquisition and Upgrade Program, an institution must have a substantial in-house ocean science research program, and must demonstrate the capability to operate the facility effectively and economically with procedures to support qualified researchers from other parts of the oceanographic community. Appropriate quality control, safety, shared-use instrumentation access and technical support procedures must be provided. A concurrent Ship Operations Program award is required to qualify for Oceanographic Technical Services support. There are no special eligibility limitations for Ocean Technology and Interdisciplinary Coordination and Ocean Education Programs.
- PI eligibility limitations: **None**
- Limitation on the number of proposals that may be submitted by an organization: **None**

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

- **Proposal Preparation Instructions**
 - Letter of Intent requirements: None
 - Preproposal requirements: None
 - Proposal preparation instructions: Standard NSF Grant Proposal Guide instructions.
 - Supplemental proposal preparation instructions: See detailed description for each Program.
 - Deviations from standard (GPG) proposal preparation instructions: Oceanographic Technical Services, Oceanographic Instrumentation, Shipboard Scientific Support Equipment, Ship Operations, and Ship Acquisition and Upgrade Programs are exempt from the 15-page project description limit, but have a 45 page project description limit.
- **Budgetary Information**
 - Cost sharing/matching requirements: None
 - Indirect cost (F&A) limitations: None
 - Other budgetary limitations: None

FASTLANE REQUIREMENTS

- FastLane proposal preparation requirements: **FastLane use required**
- FastLane point of contact: **Division of Ocean Sciences, (703) 292-8580; ocefl@nsf.gov**

TARGET DATES

Ship Operations Program	Nov. 1
Oceanographic Technical Services	Nov. 15
Oceanographic Instrumentation	Oct. 15
Shipboard Scientific Support Equipment	Dec. 1
Ocean Technology and Interdisciplinary Coordination	Feb. 15 and Aug. 15
Ocean Education	Contact Program
Ship Acquisition and Upgrade	Contact Program
Other Oceanographic Facility Activities	Contact Program

PROPOSAL REVIEW INFORMATION

- Merit Review Criteria: **Standard National Science Board approved criteria, with additional evaluation criteria for service activities (see detailed description in each program).**

AWARD ADMINISTRATION INFORMATION

- Grant Award Conditions: **Standard Grant General Conditions (GC-1) or Federal Demonstration Partnership Phase III (FDP IV) Terms and Conditions; cooperative agreements also administered in accord with NSF Cooperative Agreement Financial and Administrative Terms and Conditions (CAFATC).**
- Special grant conditions anticipated: **None anticipated**
- Special reporting requirements anticipated: **Specific requirements set forth in OCE contracts and cooperative agreements.**

PROPOSAL REQUIREMENTS AND ELECTRONIC SUBMISSION

Proposals must be submitted electronically using the NSF FastLane system, available at the FastLane Home Page (<http://www.fastlane.nsf.gov>).

General information about NSF policies and procedures on proposals, declinations and awards are in the current Grant Proposal Guide (GPG) provided on the NSF Home Page (<http://www.nsf.gov>). Investigators must use the most up-to-date guidelines. These general provisions apply, except as modified by these instructions.

Instructions for electronic submission can be found on the FastLane Home Page. The Sponsored Research Office (SRO) or equivalent must provide a FastLane Personal Identification Number (PIN) to each Principal Investigator to gain access to the "Proposal Preparation" application.

Proposals to these programs must meet the requirements in this announcement; IPS programs except for Oceanographic Education and Ocean Technology and Interdisciplinary Coordination Programs are exempt from the GPG 15-page limit. The instructions focus on the Project Description of the proposals and the presentation of data on the facility operations and support requirements. Essential forms that must be submitted as part of any proposal can be found in the GPG.

Ocean Sciences has FastLane User Support for questions or problems when submitting a proposal (ocefl@nsf.gov or, office phone at (703) 292-8580).

PROPOSAL FORMAT

All proposals must include the following items as specified in the Grant Proposal Guide (GPG):

- *Information about Project Directors.* This information is automatically submitted to NSF along with your proposal when you submit via FastLane.
- *Cover Sheet.* Project Director (PD) and Authorized Institutional Representative signatures are required.
- *Table of Contents.* (Automatically generated by FastLane).
- *Project Summary.* Proposals must contain a brief summary of the proposed activity suitable for public release.
- *Project Description.* This is the main body of the proposal. See individual program descriptions for format and content.

- *Summary Proposal Budget.* (Automatically generated by FastLane)
- *Biographical Sketch of PD and Co-PDs.* Do not exceed 2 pages per person.
- *Statement of Current and Pending Support.*

RELATIONSHIP TO OTHER NSF PROGRAMS

OCE facility awards are generally limited to support for shared-use facilities. Equipment or other facility requirements generated by a single research project should be included as an integral part of the scientific funding request for that project. Prospective principal investigators seeking scientific support should refer to the NSF Guide to Programs located on the NSF Home Page (<http://www.nsf.gov>) or science program descriptions.

All OCE research proposals and any proposal submitted to NSF requesting support for research ship time must include an "NSF-UNOLS SHIP TIME REQUEST." This form serves several purposes:

- Identifies for NSF program staff and external reviewers projects including field work on research vessels;
- Enables OCE to predict and plan for requirements; and
- Assists ship operators and program managers in preparing ship schedules and cruise logistics.

The ship time request form can be obtained from the UNOLS web site (<http://www.unols.org>). Any investigator who needs assistance in requesting ship time should contact the Executive Secretary of UNOLS at the following address:

UNOLS Office
 8272 Moss Landing Road
 Moss Landing, CA 95039
 Telephone: (831) 771-4410
 Fax: (831) 632-4413
 E-mail: office@unols.org
 Website: <http://www.unols.org>

ADMINISTRATION OF AWARDS

Cooperative agreements and contracts usually specify requirements for administration, reporting, and monitoring. Grants are administered in accord with the terms and conditions of *Grant General Conditions* (<http://www.nsf.gov/home/grants.htm>).

Notification of the award is made **to the submitting organization** by a Grants Officer in the Division of Grants and Agreements (DGA). Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews and/or panel summaries, not including the identity of the reviewer, will be provided automatically to the Principal Investigator.

PROJECT DIRECTION

For most awards, responsibility for general project oversight is vested in a Project Director (PD), named in the award letter. Operating within the policies of his or her parent institution, the PD is responsible for technical direction of the project, overall compliance with the provisions of the award, and preparation of required technical reports. Written prior approval from the NSF Grants Officer is required for a change in designation of Project Director. FastLane should be used to identify and obtain approval for significant change in the level of effort of a previously approved PD.

The term Principal Investigator (PI), as used in this brochure, refers to scientists responsible for the direction of a research or education project and should not be confused with the Project Director (PD) of an OCE facility award.

REPORTS

Specific reporting requirements are set forth in OCE contracts and cooperative agreements. For grants, reporting requirements are given in the *NSF Grant Proposal Guide (GPG)*.

Ship operating institutions must comply with prevailing requirements for the submission of cruise prospectuses, clearance requests, post-cruise reports and final project reports for international cruises (see UNOLS website at <http://www.unols.org>).

SHIP OPERATIONS

Purpose

Ship Operation awards provide support for direct and indirect costs arising from the actual maintenance and operation of research vessels that provide significant support for NSF-funded researchers. Allowable costs include salaries and related expenses of crew members and marine operations staff; acquisition of minor or expendable equipment, maintenance, overhaul and repair, insurance, and direct operating costs such as fuel, food, supplies, and pilot and agent fees. Shore facility costs are provided only to the extent that they relate directly to the ship operation. Budgets should be in accord with standard definitions of operating days, sea days, maintenance days, and days out of service (Appendix B). Support for shipboard technicians, instrumentation and scientific support equipment must be sought directly through the Oceanographic Technical Services, Oceanographic Instrumentation and Shipboard Scientific Support Equipment Programs, respectively. Equipment is defined as an item of property having an acquisition cost of \$5,000 or more and having an expected service life of more than one year.

Content

Proposals are evaluated concurrently and information from all applicants must be arranged and presented in the same format. The name of the institution should be included as a heading on each page. This makes it possible to identify key sections (budget, Table 1, etc.) with data from other institutions for comparative review. Formats and instructions are provided for each of the required sections. The ship-operating year is the calendar year, January through December. Some sections of the proposal require institutions to provide information on 4 calendar years' operations: two years past (200X-3), the past year (200X-2), the current year (200X-1), and the next year (200X). The "next year" is the award year (the operating year covered by the proposal). Thus, for example, proposals for Calendar Year 200(X) operations would be due on 1 Nov 200(X-1). Those proposals would give actual figures for 200(X-3) operations ("two years past"); 200(X-2) operations ("the past year"); a combination of actual figures to date and estimates for the rest of 200(X-1) ("current year"); and estimates for the 200(X) operating year ("next year").

Nature and Duration of Awards

Awards will be made in the form of a five year Cooperative Agreement, with annual proposal submissions for Program Director review and budget negotiations.

Evaluation Criteria

Continuing Ship Operation Cooperative Agreements are evaluated annually by the cognizant Program Director and every five years through an external merit review process. The main criteria (of equal weight) used in the evaluation of ship operation proposals are:

- the amount of scientific utilization of the ship, particularly by National Science Foundation supported investigators;
- the logistic, managerial and quality control capability of the proposing institution as evidenced by ship inspections and operator follow-up actions, analysis of post-cruise assessments, agency site visits and other relevant mechanisms; and
- the configuration, capability and operating costs of the vessel(s).

Proposal Format

**** Effective with the 2005 operating year and beyond, a separate proposal submission will be required for the operation of each ship operated by an institution. ****

Each proposal includes:

- *Information about Project Director (PD).*
- *Cover Sheet.* Enter "Ship Operations" for NSF ORGANIZATION UNIT and "NSF 04-052" for PROGRAM ANNOUNCEMENT.
- *Table of Contents* (Automatically generated by FastLane).
- *Project Summary.*
- *Project Description.* EACH OF THE FOLLOWING SECTIONS SHOULD START ON A NEW PAGE:
 - *Section 1. Description of Vessel.*
 - *Section 2. NSF Projects Requesting Ship Time in Next CY.*
 - *Section 3. Ship Operating Schedules with Cruise Tracks.*
 - *Section 4. Personnel, Quality of Service and Training Data.*
 - *Section 5. Table 1, Ship Time Costs per Project.*
 - Table 1 A. Past CY*
 - Table 1 B. Current CY*
 - Table 1 C. Next CY*
 - *Section 6. Detailed 4 Year Ship Budgets.*
 - *Section 7. Budget, Insurance and Inspection Discussion,*
 - A. Budget*
 - B. Insurance*
 - C. Inspection*

- *Section 8 Technical Merit and Broader Impacts of the Proposed Work*
- *Section 9 Cumulative Summary Budget.*

- *Summary Proposal Budget* (Automatically generated by FastLane).

- *Biographical Sketch of PD and Co-PDs.*(not to exceed 2 pages).

- *Statement of Current and Pending Support.*

The following pages are examples of the required proposal formatting.

(New Page)

(Name of Institution)

PROJECT SUMMARY

Provide a brief description of the overall ship operations and NSF sponsored research projects proposed for support during the proposed award year. Do not use the Project Summary for description of the ship or for general descriptions of institutional structure, required in Section 1. As outlined in the Grant Proposal Guide, please provide information on technical merit and broader impacts of the work described in the proposal.

(New Page)

(Name of Institution)

Section 1

**DESCRIPTION OF VESSEL *
R/V (NAME)**

BUILT/CONVERTED: (year)	SPEED: (knots)
LENGTH: (length over all)	CRUISING:
BEAM: (extreme)	FULL:
DRAFT: (max)	MINIMUM:
GROSS TONNAGE: (tons)	ENDURANCE: (days, limiting factor)
DISPLACEMENT: (long tons)	RANGE: (days, limiting factor)
COMPLEMENT:	FUEL CAPACITY: (gals)
CREW: (number)	LABORATORIES: (sq.ft.)
TECHNICIANS: (number)	MAIN:
SCIENTIFIC PERSONNEL: (number)	WET:
	DRY:
MAIN PROPULSION: (hp)	OTHER:
BOW THRUSTER: (hp)	SEWAGE SYSTEM:
SHIP'S SERVICE GENERATOR(S): (kw)	MSD: (gal/day)
PROPELLER(S): (number and type)	HOLDING TANK:(gal)
OWNERSHIP: Title held by _____	INCINERATOR: (lbs/day)
	DOCUMENT/STATE I.D.#

Nature of operating arrangement, if title held by other than institution _____

Add a narrative description of the ship emphasizing the scientific capabilities. This section should briefly define the capabilities of the ship including special capabilities such as communications, navigation, winches and major support equipment. One example of format follows. Do not exceed two pages total.

SAMPLE DATA

Section 1

(Name of Institution)

DESCRIPTION OF VESSEL Scientific Capabilities

Brief Description:

The R/V *Storm* is a general-purpose oceanographic vessel designed by Tim Sails Associates and built by Smith Builders in 1976, with funds from the National Science Foundation. The ship underwent an extensive mid-life upgrade in 1996 to improve scientific capability, improve the energy efficiency of the vessel and extend its service life. Installed equipment on R/V *Storm* includes:

Navigation:

GPS Two on bridge: Differential correction Receiver for both commercial and USCG transmissions and a Trimble "TASMAN" P(Y) Code GPS receiver.

Speed Log Acoustic Doppler on bridge.

Communication:

Cellular phone 1-Bridge and 1-laboratory

Satellite Inmarsat A: Voice, data, and fax capability in various places on ship.

VHF Marine Band Two fixed units on bridge and 4 hand-held units.

Winches:

Hydrographic Markey DESH-5, 75 HP electric with interchangeable drums holding 10,000 meters of .322 inch EM cable and 9,000 meters of ¼ inch 3x19 wire.

Trawl Markey DESH-6, 40 HP with several interchangeable drums including 6,000 meters of 3/8 inch 3x19 wire, 7,000 meters of 7/32 inch single conductor EM cable.

Deck Equipment:

Main Crane Hydraulic general-purpose crane mounted on 01 deck, centerline.

Air Tuggers Four pneumatic portable units, two with 1,000 pound line pull and two with 2,000 pound line pull for general instrument and equipment handling.

Installed Scientific Equipment:

ADCP 150 and 300 kHz.

Data Acquisition System XMIDAS, provides conventional SAIL loop with enhancements, logs navigational data, as well as meteorological and sea surface parameters.

Vans:

1- portable 8 x 10 laboratory for radioisotope work.

Future Upgrades/Refits:

An upgrade for R/V *Storm* over the side equipment will be proposed for 2004. The upgrade will include replacement of the general-purpose crane and associated support structure and installation of a Dynacon Traction Winch and associated sheaves and wire train.

(New Page)

(Name of Institution)

Section 2

LIST OF NSF PROJECTS REQUESTING SHIP TIME IN NEXT CY

Name of Principal Investigator (PI)	Project Title	NSF Grant or Proposal No.	Effective Dates	Total Award or Request
-------------------------------------	---------------	---------------------------	-----------------	------------------------

Active Awards

List only funded awards that will require ship time in next CY. If a renewal has been or will be requested mark the grant number with an asterisk (*). **The grant number and project title must be accurate and complete.** (PI is assigned a proposal number through Fastlane.)

Grants should be listed for Principal Investigators who intend to use your ship.

Proposals Under Review

List proposals that have been submitted to NSF for review. List only those projects that would require ship time in the next CY operating period. **The proposal number and title must be accurate and complete.** **Each NSF project appearing on the Section 3 schedules for the next CY or listed in Section 5, Table 1C of this proposal should be listed in Section 2. These 3 sections should agree with one another.**

(New Page)

(Name of Institution)

Section 3

**SHIP OPERATING SCHEDULE
W/CRUISE TRACKS FOR CURRENT AND NEXT CY
R/V (NAME)**

Schedule should be in **approved UNOLS** format, with a **summary** of operating days by agency. A schedule with standard navy ocean area map and index codes must be included. See Appendix A. It is not necessary to include cruise tracks for vessels under 100 feet. Cruise tracks for vessels over 100 feet should be displayed on a world chart. Ships operating in coastal or near coastal waters should also include an insert with the proposed work area enlarged.

Transits should be listed separately in schedules.

SUMMARY (EXAMPLE)

Cruise Dates	Map Index/Area/ Purpose	P.I./ Institution/ Ports Proposal number	Days/Agency/ Status/Country Requiring Clearance
-----------------	----------------------------	---	---

Agency	Funded	Pending	Total
NSF	100	10	110
ONR	30	0	30
NOAA	20	2	22
State	5	5	10
OTHER	10	5	15
Total	165	22	187

(New Page)

(Name of Institution)

Section 4

PERSONNEL, QUALITY OF SERVICE, and TRAINING DATA

Part 1. Personnel

This section should list **every position** by name for which ship operations provides support. Indicate the percentage or portion each position is paid from ship operations funds. Personnel costs are provided only to the extent they relate directly to ship operations.

Ship and Shore Facility Personnel: names, titles, and salary totals for each category listed below.

- A. Officers, Crew and Relief Crew (by ship).
- B. Professional and Administrative Marine Operations Staff.
- C. Other Shore Facility Staff, including any Marine Technicians supported by this award.
- D. Indicate (in bold letters) any new positions or change in personnel.

Part 2. Quality of Service

Provide a brief explanation of quality control improvements proposed for year 200(X). This should be operational or scientific support improvements, not maintenance or overhaul. Specifically address how post cruise assessments and non-conformities are handled. Discuss the results of improvements made in the current calendar year.

Part 3. Training

Provide a brief list of crew and management training completed in the current calendar year with cost. List training proposed for year 200(X) with estimated costs. Separate tuition costs from travel.

(Oceanic University)

SAMPLE DATA

Section 4

Part 1

PERSONNEL

Part 1.

<u>Position</u>	<u>Name</u>	<u>Ship Operations Portion</u>	<u>CY 200(X-1)</u>	<u>Ship Operations Portion</u>	<u>CY 200(X)</u>
A. Officers and Crew (by ship)					
R/V HALE					
Captain	James Bligh		1.00		1.00
First Mate	John Elders	1.00		1.00	1.00
2nd Mate	TBD	1.00		1.00	
Chief Engineer	Mark Simon		1.00		1.00
Steward	Ernest Cook		1.00		1.00
Relief Engineer	TBD		<u>0.25</u>		<u>0.00</u>
Total FTE *			5.25		5.00
Salaries **			\$204,982		\$195,725
B. Marine Operations Staff					
Marine Manager	Matt Damon		.75		.75
Port Captain	Sam Smith	.50		.75	
Port Engineer	Ruth Engles		.80		.50
Admin. Assist	Sally Severn		<u>.20</u>		<u>.25</u>
Total FTE *			2.25		2.25
Salaries **			\$145,000		\$135,125
C. Other Facility Staff					
Electronic Tech I	Molly Colder		.33		.33
+ + Marine Facilities Engineer	Bill Crane		<u>.00</u>		<u>.50</u>
Total FTE *			.33		.83
Salaries **			<u>\$16,154</u>		<u>\$40,040</u>
Total Salaries ***			\$366,136		\$370,890

Total Ship and Shore Facility Personnel

- A. Officers and Crew6
- B. Marine Operations Staff.....4
- C. Other3

*FTE (Full Time Equivalent) - equivalent to one full-time position.

**Salaries - all salaries, including overtime, but not benefits.

***Total Salaries for Section 4 should agree with Section 6.

+ + New Position

SAMPLE DATA

(Oceanic University)

Section 4

Part 2 & 3

QUALITY OF SERVICE AND TRAINING DATA

Part 2. Quality of Service

Proposed quality control improvements onboard the R/V Storm for 200(X) include replacement of existing data transmission system with new super speed data transmission system; installation of a new GPS Differential Correction Receiver for science office; and replacement of chemical exhaust hood in main laboratory. Implement post cruise meetings to sort out problems and means of improvement. Quality Control improvements implemented in the current calendar year include improved lighting systems in both the wet and dry lab, and improvements in the management system for scheduling routine preventative maintenance. This new preventative maintenance system has resulted in less days lost due to ship equipment failures.

Part 3. Training

The following is a list of training completed in CY200(X-1), proposed training for CY200(X), and estimated training costs, for the R/V Hale crew:

<u>R/V Hale</u>	<u>CY200(X-1)</u>	<u>CY200(X)</u>			
<u>Trainee(s)(#)</u>	<u>Training Type</u>	<u>Tuition</u>	<u>Trainee(s)(#)</u>	<u>Training Type</u>	<u>Tuition</u>
Marine Superint. (1)	6 Sigma	\$ 900	Captain (1)	6 Sigma	\$ 900
All Crew (12 x \$250)	STCW Basic Safety	\$3,000	New Crew (2 x \$250)	STCW Basic Sfty	\$ 500
Captain (1)	Bridge Resource Mngmt.	\$ 750			
All Crew (12 x \$750)	Basic Fire Fighting	\$9,000	Mates (2 x \$725)	Adv. Fire Fighting	\$ 1,450
	Total	\$13,650		Total	\$2,850

[NEED TO SHOW TRAVEL COSTS SEPARATED OUT]

(New Page)

(Name of Institution)

Section 5

SHIP TIME COST PER PROJECT TABLES GENERAL INSTRUCTIONS

Table 1 is one of the most important elements of the proposal and must be complete and accurate. The purpose of Table 1 data is to relate ship costs to research projects. In the review of the proposal, it is important to know how ship operations funds are used in support of specific projects. This includes the past completed operating year, the current year and the proposed operating year for ship time supported by NSF or other agencies. Section 3 (Ship Operating Schedule), Section 5 (Ship time Cost Per Project) and Section 6 (Detailed Budget) must be consistent.

Because of the complexity of Table 1, both a general format and two samples are provided. Please organize your submission **exactly** as indicated.

Three versions of Table 1 are required:

- **Table 1A**-Ship time costs per project for CY200(X-2). This table is for the past year and should show actual use and cost.
- **Table 1B**-Ship time costs per project for CY200(X-1). This table is for the current CY and is a combination of operations to date and estimated use and cost for the remainder of the year.
- **Table 1C**-Ship time costs per project for CY200(X). This table is for the proposed operating year and is an estimate of use and cost.

In Table 1A and 1B, **the NSF section must include the total NSF ship operations award for that CY as shown in the format example. Supplements should also be listed and the purpose of the supplement provided as a footnote.**

Transits to the area of operations should be shown separately.

Shipyards transits or sea trials are not operating days. The costs of these days should be rolled into the cost of operation as part of the cost/day and charged to all users.

(BASIC FORMAT FOR TABLE 1)
(SEE SAMPLE ON NEXT PAGE)

(Name of Institution)

Section 5

**TABLE 1 (A, B OR C)
SHIP TIME COSTS PER PROJECT CY _____**

Project Identification	Annual Research Support	of Ship	Name (Daily Rate)	per Grant or Contract *	Actual/Estimated costs of Ship time
Project performed using NSF-supported ship time:					
NSF Projects:					
Award No., PI Name, PI Institution (if other than your own) Research support **	\$ _____		# Operating Days _____		\$ _____
Total NSF	\$ _____				\$ _____
Total NSF Ship Operations Award (Table 1A and 1B only)					\$ _____
Projects performed using (agency)-supported ship time ***					
Total (agency).....	\$ _____				\$ _____
Summary Totals:					
Projects performed with ship time supported by:					
NSF	\$ _____		# Operating Days _____		\$ _____
ONR	\$ _____		_____		\$ _____
NOAA	\$ _____		_____		\$ _____
Agency A	\$ _____		_____		\$ _____
etc.***	\$ _____		_____		\$ _____
Total	\$ _____		# _____		\$ _____

* Actual cost for Table 1A; estimated costs for Table 1B and 1C.

** Annual project support rate. Indicate with an asterisk those projects for which funding approval has not been received.

*** Repeat for each agency providing ship support: e.g., ONR, NOAA, USGS, State government, university, or private sources. Please list each federal agency by name.

Section 5

**TABLE 1A or 1B
SHIP TIME COSTS PER PROJECT CY 200 _**

Project Identification	Annual Research Support	R/V MARS Days (\$6,200)	Estimated Costs of Ship Time per Grant or Contract
NSF			
OCE 99-14126 R. Smith	\$172,000	1	\$ 6,200
OCE 99-24695 F. Jones	97,000	15	93,000
*DEB 99-04629 L. Cox	212,000	21	130,200
OCE 99-09648 J. James	51,000	7	43,400
OCE 99-19731 R. Thomas	196,000	1	6,200
OCE 99-26836 T. Rogers	153,000	21	130,200
OCE 99-06429 R. Andrews	173,000	1	6,200
OCE 99-11417 R. Anawait	367,000	1	6,200
OCE 99-10049 J. Simpson	104,000	17	105,400
Total NSF Cost	\$1,525,000	85	\$527,000
*TOTAL NSF SHIP OPERATIONS AWARD			
ONR			
N0014-99-C-0073 R. Williams	\$183,000	20	\$124,000
N0014-99-C-0124 T. Welch	270,000	1	6,200
N0014-99-C-0057 N. Hecker	445,000	10	62,000
Total ONR	898,000	31	\$192,200
NOAA			
14008-0001-13579 A. Brooks	\$406,000	1	\$6,200
14-08-0001-26514 J. Foerster	102,000	12	74,400
Total NOAA	\$508,000	13	\$80,600
STATE			
Student Cruises S. Packard	\$0	30	\$186,000
Fisheries Research T. Rowe	57,000	40	248,000
Total State	\$57,000	70	\$434,000
SUMMARY TOTALS			
NSF	\$1,525,000	85	\$527,600
ONR	898,000	31	192,200
NOAA	508,000	13	80,600
State	57,000	70	434,000
Total	\$2,988,000	199	\$1,234,400

*Includes the following:

- a. Ship Operations Award \$527,000
- b. MOSA Supplement \$100,000

SAMPLE DATA

Oceanic University

Section 5

TABLE 1 C
SHIP TIME COSTS PER PROJECT CY 200(X)

Project Identification	Annual Research Support	R/V MARS Days (\$6,200)	Estimated Costs of Ship Time per Grant or Contract
NSF			
OCE 99-14126 R. Smith	\$172,000	2	\$12,400
OCE 99-24695 F, Jones	97,000	15	93,000
*DEB 99-04629 L. Cox	212,000	21	130,200
OCE 99-09648 J. James	51,000	7	43,000
OCE 99-19731 R. Thomas	196,000	2	12,400
OCE 99-26836 T. Rogers	153,000	21	130,200
OCE 99-06429 R. Andrews	173,000	2	12,400
OCE 99-11417 R. Anawait	367,000	2	12,400
*OCE 99-10049 J. Simpson	<u>104,000</u>	<u>17</u>	<u>105,400</u>
Total NSF	\$1,525,000	89	\$551,400
ONR			
N0014-99-C-0073 R. Williams	\$183,000	20	\$124,000
N0014-99-C-0124 T. Welch	270,000	2	6,200
*N0014-99-C-0057 N. Hecker	<u>445,000</u>	<u>10</u>	<u>62,000</u>
Total ONR	898,000	32	\$192,200
NOAA			
14008-0001-13579 A. Brooks	\$406,000	2	\$12,400
14-08-0001-26514 J. Foerster	<u>102,000</u>	<u>12</u>	<u>74,400</u>
Total NOAA	\$508,000	12	\$86,800
STATE			
Student Cruises S. Packard	\$0	30	\$186,000
Fisheries Research T. Rowe	<u>57,000</u>	<u>40</u>	<u>248,000</u>
Total State	\$57,000	70	\$434,000
SUMMARY TOTALS			
NSF	\$1,525,000	89	\$551,400
ONR	898,000	32	192,200
NOAA	508,000	12	86,800
State	<u>57,000</u>	<u>70</u>	<u>434,000</u>
Total	\$2,988,000	203	\$1,264,400

*Proposals for which final approval has not been received.

(New Page)

(Name of Institution)

Section 6

DETAILED 4-YEAR BUDGET*

Ship Name	Calendar Year			
	200(X-3) Actual	200(X-2) Actual	200(X-1) Current Plan	200(X) Estimate
I. Direct Costs				
A. Salaries & Wages:				
1. Ship's Crew:				
a. Salaries				
b. Overtime				
c. Shore Leave				
d. Fringe Benefits				
Subtotal				
2.& 3. Marine Operations and Facility Staff:				
a. Salaries				
b. Overtime				
c. Fringe Benefits				
Subtotal				
B. Repair, Maintenance & Overhaul:				
1. Normal Maintenance & Repair				
2. MOSA				
C. Other Expenses:				
1. Fuel & Lube Oil				
2. Food				
3. Insurance				
4. Stores, Minor Equipment & Supplies				
5. Travel				
Domestic				
Foreign				
6. Shore Facilities Support (Including utilities)				
7. Miscellaneous				
Subtotal				
Total Direct Costs: _____				
II. Indirect Costs				
III. Total Operating Costs (Direct and Indirect Costs)				
IV. Depreciation or Facilities Surcharge				
TOTAL: _____				
V. Miscellaneous Data:				
A. Number of cruises or legs				
B. Operating Days				
C. Days at Sea				
D. Maintenance Days				
E. Daily Rate				
F. Date of Last Major Overhaul				
G. Expected Date of Next Major Overhaul				

* Same definition of years as used in Table 1.

(New Page)

(Name of Institution)

Section 7

BUDGET, INSURANCE and INSPECTION DISCUSSION

A. BUDGET

This section provides the justification for operating costs, include an explanation for the following items.

- 1) *Increases in Excess of 10%* - Any increase within a line item in excess of 10% over last year.
- 2) *Personnel* - Any increase or change in personnel. Salaries and wages should agree with personnel and costs itemized in Section 4. Provide an explanation of what is included in shore leave.
- 3) *Maintenance* - Provide details of major overhaul. List items and give a short explanation with estimated cost per item. Narrative should provide an overview of work plan and major cost items.

Provide an explanation and status of the MOSA account.

If a mid-life refit/upgrade will be proposed in the next 3-4 years, include a brief description here.

- 4) *Fuel* - Provide consumption rates and price estimates used to compute next years' fuel requirements. Include consumption rates for full speed and **average operations** in gallons/day. Identify fuel quotes with refueling ports.
- 5) *Minor Equipment* - Identify all items included in Minor Equipment Items and Costs (Section 6, III-D). List items related to science programs, e.g. regulated power supplies, refrigerator for science materials storage, air conditioner for electronics.
- 6) *Travel* - Provide details for both domestic and foreign travel including crew changes (ports and estimated costs), training travel and administrative travel (Section 6, III-E).
- 7) *Shore Facility Support* - Identify items included in Shore facility support (Section 6, III-F).
- 8) *Miscellaneous* - Identify items included in Miscellaneous Costs (Section 6, III-G). Be specific.
- 9) *General and Administrative Expenses (Overhead)* - Provide explanation of how overhead is determined, e.g. MTDC vs. % salaries, rates, etc.
- 10) *Unusual or non-recurring costs* - Identify and give explanation of any projected carry-forward of funds from previous years. Provide explanation of any non-recurring costs, such as lay-up costs.

B. INSURANCE

List type of Insurance (P&I, Towing, pollution, salvage), limits, deductible and cost. Coverage must conform to the NSF/ONR guidelines set forth in the Insurance Policy letter of 18 March 1993.

Provide current Proof-of-Insurance including premium, limits of coverage, deductible, broker, date of expiration, and underwriter as an appendix to your proposal. This information may be found on your insurance certification pages. The proposal cannot be processed without this information.

C. INSPECTION

Attach a "Summary of Recommendations" of the most recent NSF or Navy inspection. Provide a short summary of actions taken to date on each recommendation. For action taken, do not use paraphrases such as "completed" – state what was done.

(New page)

(Name of Institution)

Section 8

Broader Impacts and Technical Merit of the Proposed Work

(New Page)

(Name of Institution)

Section 9

**CUMULATIVE SUMMARY BUDGET
12 MONTH BUDGET**

Ship Operating Costs

Estimated costs for R/V (NAME) for the period:
_____ to _____

Salaries and Wages		\$	
Overtime		\$	
Fringe Benefits		\$	
Other Direct Costs		+	\$ _____
Total Direct Costs		\$	
Indirect Costs (_____ % of _____)		+	\$ _____
Total Cost		\$	
Less Anticipated Support From Other Sources * (itemize below)		-	\$ **
NSF Portion		\$	**

* Itemize other support here:
 e.g. ONR \$ _____
 NOAA \$ _____
 University \$ _____

** The NSF portion and other support shown here should be the same as Ship Support Cost Summary totals shown on Table 1 C, Section 5.

Budget information must be completed in FastLane and should immediately follow Section 8. Only the NSF portion of the requested funds should be included. A Summary Budget Form will be automatically generated in FastLane.

OCEANOGRAPHIC TECHNICAL SERVICES PROGRAM

Purpose

The purpose of the Oceanographic Technical Services Program is to enhance the scientific productivity of research programs that make use of major facilities, primarily research vessels. Effective use of such facilities is enhanced by providing institutional technical support services to all users of an institution's facilities. Services encompass maintenance, calibration, quality assurance, scheduling, logistical assistance, and at-sea supervision of the instrumentation and shared-use equipment available to sea-going researchers. Technical support requested must be directly attributable to NSF-sponsored use of the facilities.

Scope

The primary focus of the Oceanographic Technical Services Program is to provide technical support services aboard academic research vessels that receive operational funding from NSF. To qualify for Oceanographic Technical Services support, the institution should have a concurrent Ship Operations award. The program is limited to technical support activities associated with shared-use oceanographic facilities utilized by NSF-sponsored projects. Shared-use equipment and instrumentation are defined here as tools maintained by the proposing institution to which any NSF-funded scientist has access when using the institution's facilities.

All institutions requesting Oceanographic Technical Services support are to provide minimum basic at-sea and shore-based technical services as described below. The full extent of basic services considered for support will depend on the shared-use instruments made available, the scientific capabilities of the research vessel(s) operated by the institution and the management structure of the technical support activities. Institutions may also include requests for specialized instrument support associated with scheduled, NSF-funded shipboard research projects. To qualify for such support, the specialized shared-use instrumentation must be maintained and operated under the direction of the Oceanographic Technical Services Program.

Basic services include both shore support and sea-going support provided to all ship users. Charges for this support are based on the total annual operating days of each ship and assessed as a daily rate for each ship. Support for basic services provided by NSF will be proportional to the ship time used by NSF-funded investigators.

Specialized instrument support services include use of instruments that normally require extra technical services personnel at sea above the basic level for their successful

operation. Support for these services is not included as part of the daily rate charged to all users of the vessel.

Technical Services Activities

The Oceanographic Technical Services Program has three components: Basic Activities Ashore, Basic Activities at Sea, and Specialized Instrument Support Activities. All proposals for IPS support must have the first two components; the third component is optional.

Basic Technician Activities Ashore:

A. *Communication and Coordination*

In advance of each cruise:

1. Learn cruise objectives and what equipment and services will be required.
2. Advise users and agencies of any costs or fees for equipment and services not covered by basic funding.
3. Coordinate logistics.
4. Inform users of ship layout, capabilities, and availability of shared-use equipment, including computers, communication systems, and procedures to operate user-provided instruments and computers on the vessel.

B. *Maintenance, Repair, Storage, and Calibration*

1. Maintain appropriate quality assurance procedures for all instrument systems including appropriate property control and use records.
2. Perform routine maintenance procedures and coordinate specialized maintenance and calibration tasks requiring service of others.
3. Maintain calibration and maintenance logs.
4. Assure proper storage of shared-use gear when not in service.

C. *Shipping, Staging and Preparation*

1. Prepare shared-use equipment and project-specific gear for shipment to and from ports of call.
2. Accept, prepare and control project-specific gear for staging prior to cruises.
3. Coordinate vessel loading and unloading.

D. *Monitor Hardware and Software Developments*

Monitor scientific hardware and software developments and take appropriate steps to provide modern and effective common-use science capability.

E. *Data Archiving*

Assist researchers in providing digital and sample data acquired with shared-use instrumentation to National Data Centers for permanent archiving in accordance with NSF Data Policy.

Basic Technician Activities at Sea:

The principal activity at sea is to assist with the interactions between the facility operators and the research project personnel. Technicians funded by this Program have broad responsibilities for providing the coordination and assistance needed for the successful at-sea completion of the research projects.

A. *Prior to Departure*

Prior to departure and during initial phases of the cruise, technicians:

1. Assist in stowage of all scientific gear.
2. Assist in assignment of scientific personnel lab and berthing spaces.
3. Assist in setting up laboratories and equipment, giving special attention to safe and effective use at sea.
4. Assist in instructing or updating scientific personnel in proper and safe use of equipment and ensure that established safety and other appropriate ship procedures are observed.

B. *While At Sea*

While at sea, technicians:

1. Assure that facility-provided science instrumentation operates efficiently.
2. Provide liaison between ship's crew and scientific personnel, especially with regard to safety and over-the-side operations.
3. Assist with scientific operations and repair of facility-provided shared-use instrumentation. Assist with repair of researcher-provided scientific gear as primary responsibilities permit.
4. Provide assistance to scientists in maintaining appropriate communication with shore via voice and/or computer communications.

C. *Post Cruise*

Post-cruise activities include:

1. Coordinate necessary off-loading and shipping activities upon completion of cruise.
2. Ensure that data from shared-use instrumentation used during the cruise is available to scientists in a useable format.
3. Maintain adequate inventory of spare parts and supplies for shipboard scientific gear.
4. Take appropriate measures to repair, service and calibrate shared-use scientific gear, and provide information regarding pre-cruise and post-cruise calibration to users when available.

Specialized Instrument Support Activities:

The principal responsibility is to ensure that specialized instrumentation provided by the facility is available, properly maintained and operated, and appropriately calibrated for use in the research program. Normal maintenance and calibration activities fall under the Basic Services component of the Program; specialized activities may include:

- A. Shipping instruments to research vessel.
- B. Installation of instruments on research vessel.
- C. Technician(s) salary and overtime required for operation of specialized instruments at sea.
- D. Extra technician travel to and from the vessel.
- E. Spare parts and expendable supplies required for operation of specialized instruments.

Technical Support Activities Not Included:

While acknowledging that variations in institutional management policies and practices exist and that individual research project requirements vary, the IPS Oceanographic Technical Services Program is not intended to support:

- A. Upkeep and operation of scientific instrumentation that is under development or maintained for individual research projects.
- B. Routine underway watch standing at the detriment of performing primary activities.
- C. Data reduction or analysis. Support is available, however, for activities related to archiving of standard oceanographic data at National Data Centers, when appropriate justification is provided demonstrating that this activity is more appropriately supported via the Oceanographic Technical Services Program rather than by individual investigators.

Evaluation Criteria

The following equally weighted criteria will be used in the evaluation of proposals:

- The likely success of proposed technician activities to provide effective support for scientific research using institutional facilities.
- The extent to which the scope of basic technical support services match the facility, i.e. research vessel operating areas and schedule for the calendar year, size and capability of the vessel, and its scientific outfit and capability.
- The extent of the institution's inventory of shared-use equipment requiring in-house upkeep, calibration, and upgrading.
- The degree to which specialized instrument support activities, if requested, match the capabilities of the institution, vessel and technical support personnel.

The proportion of NSF-sponsored activities supported by the institutional facilities relative to total technical support activities and available funding.

Nature and Duration of Awards

Awards will be made in the form of a three-year continuing grant. Annual reports will serve as Year 2 and 3 proposals. Proposals need only contain one year budget as outyears are dependent upon annual ship schedules.

Proposal Format

Proposals from many institutions are evaluated concurrently and information from all applicants must be similarly arranged and presented. Proposals may be returned if the required format is not followed.

Each proposal includes

- *Information about Project Directors.*
- *Cover Sheet.* Enter "Oceanographic Technical Services Program, GEO/OCE" for the NSF ORGANIZATION UNIT and "NSF 04-052" for PROGRAM ANNOUNCEMENT.
- *Table of Contents.* (Automatically generated by FastLane).
- *Project Summary.*
- *Project Description.*
 - *Section 1. Description of Management Structure.*
 - *Section 2. Inventory of Shared-Use Instrumentation and Services Provided.*
 - *Section 3. Proposed Year Program.*
 - Schedule
 - Table 1.A.
 - Table 2.A.
 - Description of Services
 - Table 3.0
 - *Section 4. Summary 12 Month Budgets.*
 - Basic Technical Services Budget
 - Table 3.1 - 3.x for Specialized Instrument Support Services
 - *Section 5. Progress Report - Current Year Program.*
 - Schedule
 - Table 1.B.
 - Table 2.B.
 - Description of Services
- *Summary Proposal Budget.* (Automatically generated by FastLane).
- *Biographical Sketch of PD and Co-PDs.*
- *Statement of Current and Pending Support*

(New Page)

(Name of Institution)

Section 1

DESCRIPTION OF MANAGEMENT STRUCTURE

Provide a brief (2 pages or less) description and chart of the institutional management structure of which the technician group is a part. This narrative should include information on patterns of supervision, organizational location(s) of the technician function, and any additional information needed to evaluate the proposal.

(New Page)

(Name of Institution)

Section 2

INVENTORY OF SHARED-USE INSTRUMENTATION AND SERVICES PROVIDED

List Institutional holdings of major shared-use instrumentation and equipment maintained and operated by the technical services group with funding requested in this proposal. List separately any instrumentation for which a fee is charged. Provide information on how scientists access information about shared-use instrumentation and services, including electronic access addresses.

List basic services provided with funding requested in this proposal. Indicate normal work hours for technicians at sea, and any costs associated with operations outside of normal work hours. List separately any services that incur a cost to the user. Include a fee schedule for any services for which a fee is charged if not described in Section 3.

(New Page)

(Name of Institution)

Section 3

PROPOSED YEAR PROGRAM

Provide proposed year schedule(s) in a format similar to that used for electronic posting of ship schedules (see EXAMPLE 1), but include a column listing technicians assigned to each cruise for basic technical support requested in Section 3.A. and specialized technical support requested in Section 3.B. DO NOT list technicians covered by individual project support; note with asterisk () those for whom support is requested in Section 3.B.*

A. Basic Technical Services

Provide Table 1.A. Basic Technical Services Per Project (proposed calendar year). See format provided for Table 1. Projects and ship operating days listed in this table should be identical to the Ship Operations proposal Table 1.C. Include the proposed daily rate for basic technical services under the name of each ship listed.

Provide a brief narrative description of basic technical support activities provided for each listed project, including the amount and type of technical services required. Basic at-sea support is generally limited to one or two technicians per cruise. If additional technical support is required for any cruise beyond the basic level, it should be described in 3.B. below.

Technical service support days used for calculation of basic services daily rates should be identical to operating days in the Ship Operations proposal Table 1.C. Operating days include transit and in-port days as per Ship Operations guidelines, whether or not technicians are on board the vessel.

Describe any exchange of personnel with other institutions or personnel training programs scheduled during the year. Include details of these programs and list costs.

Provide Table 2.A. Calendar Months Charged to Basic Oceanographic Technical Services Program (proposed calendar year). See format provided for Table 2. This table includes calendar months charged for all projects, contracts, etc., of all agencies and organizations listed in Table 1.A.

Explain formulas used to compute calendar months charges. Explain any unusual amounts of overtime or sea duty bonus anticipated. If 6 months or less of support is requested for any person, if a person spends less than one month at sea, or if an individual is included in both 3.A. and 3.B., describe that person's duties and activities related to the Oceanographic Technical Services Program. Explain any significant changes in level of effort from levels in the Current Year Plan (Table 2.B. of Section 5.A.).

B. Specialized Shared-Use Instrument Support Services (Optional)

Instrument systems should generally be supported as part of basic technical services if they do not require technical personnel at sea for their operation beyond the shipboard technicians supported in Section 3.A. However, the operator may determine some services are best provided as specialized services owing to special factors. Any given instrument system may be supported by only one method for the duration of an award.

Provide Table 3.0 Summary of Specialized Instrument Support Requested. List full amounts of support requested from all agencies and organizations, amount requested from NSF, and proposed rate for all systems for which support is requested in the subsequent tables. Amounts on Table 3.0 should be identical to totals shown on Tables 3.1 to 3.x. in Section 4.B.

For each system include a brief narrative description of the instrumentation and services provided, including any limitations on use, and relevant information on system resolution, calibration, handling systems, etc. Detail costs of equipment and supplies requested, and describe shipboard and shore-based responsibilities for all individuals for whom salaries are requested. If individuals are included in both basic and specialized services support requests, indicate how effort is to be divided between different responsibilities.

The number of systems for which support is requested should be limited, and follow broad categories rather than many discrete rates for optional subsystems (e.g. it is preferred that CTD services, if to be supported as specialized instrumentation, have one or (at most) two rates for different configurations, rather than separate rates for each sensor, rosette, bottle configuration, etc.). The basis for calculating rates must be consistently applied, and a single method be used for each system. For systems in which technician salaries are a major component of the cost, the unit basis will normally be the vessel operating day, although units such as per cruise, per deployment and per system operating day are acceptable if consistently applied.

EXAMPLE 1

Please note: Each institution's normal format for ship schedules may be used with the addition of a column for technicians assigned to each cruise. The format presented here is an example only.

R/V Insufferable: Cruise Schedule and Oceanographic Technical Services (Proposed Year: 2000) University of Northern California

Cruise Dates	Area Purpose	PI/Inst. Proposal #	Ports	Operating Days	Technicians Assigned
01 Jan 13 Jan	NP9/North Pacific Biology	Bugge/Kansas NSF/OCE9812345	At sea Adak, AK	15	Bumble (ET) Hotshot (MT) Biggerone*
17 Jan 28 Feb	NP9-NP12 Geology	Sanders/Scripps NSF/OCE9954321	Adak, AK Honolulu, HI	47	Bumble (ET) Hotshot (MT) Thinnerman*
04 Mar 13 Mar	NP12/Off Hawaii Phys Oc	Watters/UW ONR	Honolulu, HI Honolulu, HI	12	Turgid (ET) Vigor (CT)
16 Mar 26 Mar	NP12-NP9 Phys Oc	Gummint/NOAA NOAA	Honolulu, HI Salinas, CA	11	Turgid (ET) Vigor (CT)
27 Mar 30 Jun		Maintenance	Salinas, CA		
01 Jul 31 Jul	NP9-NP13 Chemistry	Ketone/UNC NSF/OCE9698765	Salinas, CA Colon, Panama	34	Titratior/MT Bumble/ET
04 Aug 04 Sep	P13/Off Mexico Chemistry	Alkene/Delaware NSF/OCE9698763	Colon, Panama Manzanillo, MX	35	Titratior (MT) Turgid (ET)
10 Sep 30 Sep	NP13-NP9 Chemistry	Ketone/UNC NSF/OCE9698765	Manzanillo, MX Salinas, CA	23	Hotshot (MT) Turgid (ET)
15 Oct 25 Oct	NP9/Off California Phys Oc	Moore/UNC NSF/OCE9756789	Salinas, CA Salinas, CA	11	Bumble (ET) Vigor (MT)
08 Nov 18 Nov	NP9/Off California Phys Oc	Moore/UNC NSF/OCE9756789	Salinas, CA Salinas, CA	11	Bumble (ET) Vigor (MT)
01 Dec 10 Dec	NP9/Off Oregon Instrument test	Builder/UNC State	Salinas, CA Mudhut, OR	11	Bumble (ET) Vigor (MT)
12 Dec 23 Dec	NP9/Off California Phys Oc	Moore/UNC NSF/OCE9756789	Mudhut, OR Salinas, CA	12	Bumble (ET) Vigor (MT)

Operating days by source:

	Funded	Pending	Total
NSF:	188	0	188
ONR:	12	0	12
NOAA:	11	0	11
State:	11	0	11
Total:	222	0	222

(FORMAT FOR TABLE 1 AND TABLE 2)
(SAMPLES ON NEXT PAGE)

(Name of Institution)

Section 3

TABLE 1 (A OR B)
BASIC OCEANOGRAPHIC TECHNICAL SERVICES PER PROJECT, CY _____

Project Identification	Ship Name (Tech Services Daily Rate)	Ship Name ¹ (Tech Services Daily Rate)	Basic Tech Service Days ²	Actual/Estimated Costs of Basic Tech Support per Project
Projects performed using NSF-supported ship time:				
Grant/contract No., PI's Name, PI's Institution	# Operating Days	# Operating Days	# of Days	
Total NSF.....	# _____	# _____	# _____	\$ _____
Total NSF Award ³				\$ _____
Projects performed using (agency)-supported⁴ ship time:				
Total (Agency).....	# _____	# _____	# _____	\$ _____
Total (Agency) Award ³				\$ _____
Summary Totals:				
Technical services supported by:	# Operating Days	# Operating Days	# of Days	
NSF	# _____	# _____	# _____	\$ _____
Agency A	# _____	# _____	# _____	\$ _____
Agency B	# _____	# _____	# _____	\$ _____
Agency C	# _____	# _____	# _____	\$ _____
etc. ⁴	# _____	# _____	# _____	\$ _____
Total ⁵	# _____	# _____	# _____	\$ _____
Total awards ³				\$ _____

¹ Additional column for each ship.

² This number should equal ship operating days.

³ Required for current calendar year (Table 1.B.) only.

⁴ Repeat for each agency providing technical support: e.g. ONR, NOAA, State Government, University, or private sources.

⁵ For Table 1.A. should equal budget listed in Section 4.A.: Summary 12 Month Budget - Basic Oceanographic Technical Services.

TABLE 2 (A OR B)
**CALENDAR MONTHS CHARGED TO
BASIC OCEANOGRAPHIC TECHNICAL SERVICES PROGRAM**

Technician Name	Title	Total Months	Months At Sea	Months Ashore
Total Months Charged for Basic Technical Support				
		# _____	# _____	# _____

SAMPLE DATA

University of Northern California

Section 3

**TABLE 1 A
BASIC OCEANOGRAPHIC TECHNICAL SERVICES PER PROJECT, CY 2000**

Project Identification	R/V Insufferable (\$1,800)	R/V Calmwater (\$800)	Basic Tech Support Days	Actual/Estimated Costs of Basic Tech Support per Project
Projects performed using NSF-supported ship time:				
OCE98-12345 D. Bugge, Kansas	15		15	\$ 27,000
OCE99-54321 S Sanders, Scripps	47		47	\$ 84,600
OCE96-98765 N Ketone, U North Cal	57		57	\$102,600
OCE96-98763 N Alkene, Delaware	35		35	\$ 63,000
OCE97-56789 A Moore, U North Cal	34		34	\$ 61,200
OCE99-13579 L Guy, U North Cal		9	9	\$ 7,200
OCE97-97531 W Coast, CSU Long Beach		30	30	\$ 24,000
* DEB98-65432 E Kologie, Michigan		32	32	\$ 25,600
Total NSF.....	<u>188</u>	<u>71</u>	<u>259</u>	<u>\$395,200</u>
Projects performed using ONR-supported ship time:				
N0014-98-A-0001 B Watters	12		12	\$ 21,600
* N0014-97-B-0002 N Shore		42	42	\$ 33,600
N0014-96-C-0003 N Fredd		28	28	\$ 22,400
Total ONR.....	<u>12</u>	<u>70</u>	<u>82</u>	<u>\$ 77,600</u>
Projects performed using NOAA-supported ship time:				
(Unknown) B Gummint	11		11	\$ 19,800
Total NOAA.....	<u>11</u>	<u>0</u>	<u>11</u>	<u>\$ 19,800</u>
Projects performed using State-supported ship time:				
A Builder	11		11	\$ 19,800
A Sampler		15	15	\$ 12,000
Total State.....	<u>11</u>	<u>15</u>	<u>26</u>	<u>\$ 31,800</u>
Summary Totals:				
Technical services supported by:	# Operating Days	# Operating Days	# of Days	
NSF	188	71	259	\$395,200
ONR.....	12	70	82	\$ 77,600
NOAA	11	0	11	\$ 19,800
State	<u>11</u>	<u>15</u>	<u>26</u>	<u>\$ 31,800</u>
Total	<u>222</u>	<u>156</u>	<u>378</u>	<u>\$524,400</u>

* Proposals for which final approval has not been received.

SAMPLE DATA

University of Northern California

Section 3

**TABLE 2 A
CALENDAR MONTHS CHARGED TO BASIC
OCEANOGRAPHIC TECHNICAL SERVICES PROGRAM, CY 2000**

Technician Name	Title	Total Months	Months At Sea	Months Ashore
Alan Bumble	Electronics Tech II	12.0	6.7 (141 d)	5.3
Lovett Closen	Marine Tech II	12.0	7.4 (156 d)	4.6
Bobbi Hotshot ⁴	Marine Tech I	9.5	4.0 (85 d)	5.5
Anne Turgid	Electronics Tech I	12.0	3.9 (81 d)	8.1
Carl Vigor	Computer Tech I	12.0	3.2 (68 d)	8.8
Kim Titrator ¹	Chemistry Tech II	4.0 ¹	3.2 (69 d)	0.8
Abbie Cuss ²	Office Manager	6.0 ²	0.0 ²	6.0
Harvey Humble ³	STG Director	6.0 ³	0.5 ³ (11 d)	5.5
Total Months Charged for Basic Technical Support		73.5	28.9	44.6

¹Titrator to sail as relief for Hotshot on Chemistry cruise. Normal employment in Marine Chemistry Department.

²Office Manager time shared 50% Ship Operations, 50% Shipboard Technical Group.

³50% of Shipboard Technical Group Director Humble's salary paid by University, 50% from technical support grants.

⁴Hotshot terminates 10/15 to begin M.S. program in Marine Chemistry at UNC. No replacement anticipated until 2000.

(New Page)

(Name of Institution)

Section 3

TABLE 3.0

SUMMARY OF SPECIALIZED INSTRUMENTATION SUPPORT PROPOSED

<u>Table</u>	<u>Total annual cost (all sources)</u>	<u>NSF request</u>	<u>Proposed rate</u>
3.1 (System)	_____	_____	_____ per _____
3.2 (System)	_____	_____	_____ per _____
3.3 (System)	_____	_____	_____ per _____
... etc.	_____	_____	_____ per _____
Total:	_____	_____	

Summary 12 Month Budgets

- A. Basic Technical Services.* Provide a budget for the complete basic oceanographic technical services program in the format provided. This budget must include costs for all grants, contracts, etc. for all agencies listed in Table 1.A. Allocation of costs to various agencies and organizations are detailed in Section 3.A. and are proportional to ship use as proposed in Table 1.A. Do not include costs from Section 3.B.
- B. Specialized Shared-Use Instrumentation Support Services.* Provide budgets for specialized instrumentation support activities described in Section 3.B. in the format indicated for Tables 3.1 to 3.x. These budgets must include costs for all projects from all sources of support for each instrument category. Institutions requesting support for instruments used on more than one vessel should indicate whether separate rates apply for different vessels, and if so, separate tables must be provided.

Allowable costs in Section 4.B. include the following:

- Salary, benefits and overtime for technicians to operate specialized instrumentation at sea.
- Travel for extra technical personnel to and from the vessel.
- Shipping of specialized instrumentation to and from the vessel.
- Mobilization and demobilization costs related to use of specialized instrumentation.
- Costs of spare parts and expendable supplies related to operation of specialized instrumentation.
- Other direct costs related to operation of specialized instrumentation, with justification.
- Appropriate indirect costs.

Costs which are NOT allowable in Section 4.B. include:

- Costs of Technical Services Group management.
- Costs which are otherwise part of the Basic Technical Services daily rate.
- Costs of individuals who are part of the scientific party of the project.
- Costs related to data processing or analysis.
- Costs of routine watchstanding.
- Costs related to projects which are not supported by NSF research grants or contracts.

(Name of Institution)

Section 4

SUMMARY 12 MONTH BUDGET - BASIC SERVICES

I. Salaries and Wages

Name	Title	Months Charged to Basic Services	Total Program Budget
Total Salaries and Wages			\$ _____
Total Overtime			\$ _____
Total Fringe Benefits			\$ _____
Total			\$ _____

II. Other Direct Costs

A. Travel

- 1. Domestic (amount)
- 2. Foreign (List origin & destination of each trip, number of people, and full cost(s)).

Example:

Curacao-Providence and return (2 @ \$469).....	\$ 938
Per diem: 8 days @ \$75.....	\$ 600
Total Travel Cost.....	\$ _____

B, C, D, etc., as required for

repairs, calibrations, tools, parts, supplies,
communication, shipping, rental, etc., directly
related to technician activities.

Sufficient detail must be provided to evaluate requests.

Total Other Direct Costs.....	\$ _____
III. Total Direct Costs (I. + II.).....	\$ _____
IV. Indirect Costs (_____ % of _____).....	\$ _____
V. Total Program Budget.....	\$ _____
Less Funds from Other Sources (List by agency or organization)	\$ _____
VI. Total NSF Request.....	\$ _____

(BASIC FORMAT FOR TABLES 3.X)
(SEE SAMPLE ON NEXT PAGE)

(Name of Institution)

Section 4

Table 3.X

SPECIALIZED INSTRUMENTATION SUPPORT, CY _____

(Name of Research Vessel(s))

X. (Type of Specialized Instrumentation)

(Use separate page for each system; may be used for multiple ships if same rate to apply to all.)

Usage Summary:

<u>NSF Projects</u>	<u>Ship Operating Days</u>	<u>Technician Name</u>	<u>Start, End Ports</u>
Grant/contract No., PI Name, Institution			
Project 1	_____	_____	_____
Project 2	_____	_____	_____
...etc.	_____	_____	_____
Total NSF Usage	_____	_____	_____
<u>Non-NSF Projects</u>			
Project 1	_____	_____	_____
...etc.	_____	_____	_____
Total Non-NSF Usage	_____	_____	_____
Total Usage (NSF + Non-NSF)	_____	_____	_____

Summary of annual costs: (Instrument type)
(Include projects from all funding sources)

	<u>Effort, months</u>	<u>Amount</u>
Salaries and Wages		
Technician 1	_____	_____
Technician 2	_____	_____
...etc.	_____	_____
Total salaries and wages	_____	_____
Overtime		_____
Fringe benefits		_____
Total salary, wages, OT, fringe		_____
Materials and supplies		_____
Equipment		_____
Travel, domestic		_____
Travel, foreign		_____
Other costs		_____
Total direct costs		_____
Indirect costs		_____
Total project costs		_____
Fraction of cost allocated to NSF (%) _____		
(= NSF operating days/total operating days)		
Total requested from NSF		_____
(= Total project costs x NSF fraction)		
Daily rate for system operation		
(= Total project costs / total operating days)		_____

SAMPLE DATA

Pacific University of America

Section 4

**TABLE 3.1
SPECIALIZED INSTRUMENTATION SUPPORT, CY 2000**

R/V Ocean Cruiser

1. Multibeam Echosounder

<u>Usage Summary:</u>			
<u>NSF Projects</u>	<u>Operating Days</u>	<u>Technician Name</u>	<u>Start, End Ports</u>
OCE-9876543			
Baldwin, Old Dominion	28	Thinnerman	Valp'o, Manz'o
EAR-9910101			
Ankleworst, SLU	30	Thinnerman	San Diego, San Diego
Total NSF Usage	58		
<u>Non-NSF Projects</u>			
<u>ONR</u>			
Admiral, ODGO	19	Thinnerman	San Diego, San Francisco
<u>NOAA</u>			
Climateguy, OSU	23	Biggerone	Corvallis, Seattle
Total Non-NSF Usage	42		
Total Usage (NSF + Non-NSF)	100		

Summary of annual costs: Multibeam echosounder

(Include projects from all funding sources)

	<u>Effort, months</u>	<u>Amount</u>
Salaries and Wages		
Thinnerman	7.0	
Biggerone	2.0	
Total salaries and wages	9.0	\$39,500
Overtime		8,200
Fringe benefits		10,250
Total salary, wages, OT, fringe		\$57,950
Materials and supplies		3,500
Equipment		16,000
Travel, domestic		3,800
Travel, foreign		2,600
Other costs		-0-
Total direct costs		\$83,850
Indirect costs (@ 17% MTDC = \$66,850)		11,365
Total project costs		\$95,215
Fraction of cost allocated to NSF (%)		58.0%
(= NSF operating days/total operating days)		
Total requested from NSF		\$55,225
(= Total project costs x NSF fraction)		
Daily rate for system operation		\$952/day
(= Total project costs / total operating days)		

PROGRESS REPORT - CURRENT YEAR PROGRAM

Provide current year schedule(s) in the format used in Section 3.

A. Basic Technical Services

Provide Table 1.B. Basic Technical Support Activities for (current calendar year). Use same format as for Table 1.A. Include the approved current year daily rate for basic technical services under the name of each ship listed. Give a brief narrative description of basic technical support activities required for each project listed, including the amount and type of technical services provided. If deficiencies are cited in cruise assessment submittals during the most recent July 1 - June 30 period, indicate cruise number, nature of basic technical support problem, and measures taken to correct it.

Show amount of funding received from each agency or institution, and any expected carry-forwards from current NSF award increment (surplus or deficit).

Carry-forward is defined as $CF = (drf \times odf) - (dra \times oda)$

where drf = daily rate funded,

odf = operating days funded (NSF only),

dra = daily rate actual, and

oda = operating days actual (NSF only).

In general, $drf = dra$; explain change in daily rate between funded and actual, if any.

Describe any exchange of personnel with other institutions or personnel training programs scheduled during the year. Include details of these programs and list costs.

Provide Table 2.B. Basic Technician Activities in (current calendar year). Use same format as for Table 2.A. in Section 3.A. Explain formulas used to compute calendar month charges only if different from that used in Section 3.A. Explain any significant differences in Table 2.B. from effort anticipated at time of current year award, including personnel changes, substantial changes in level of effort required, etc.

B. Specialized Shared-Use Instrumentation Support Services (Optional)

Provide Table 4.0 Summary of Specialized Instrumentation Support Awarded, using same format indicated for Table 3.0 in Section 3.B. List actual amounts of support received from all agencies and organizations, and approved rates for all systems for which support was awarded. Explain any differences between amounts shown in Table 4.0 and amounts in Table 3.0 of current year award.

For each system, include a brief narrative description of any problems or special circumstances during the current calendar year which affected or will affect operations or costs in current or proposed year. A narrative discussion of any problems identified in cruise assessment submittals during the most recent July 1 - June 30 period is required along with discussion of measures to resolve the problems. If significant changes in anticipated effort or costs for a system occurred or are expected in the current year, include updated versions of Tables 3.1 to 3.x from current year award, renumbered and updated as Tables 4.1 to 4.x here, and address the nature of problem in the narrative.

OCEANOGRAPHIC INSTRUMENTATION PROGRAM

Purpose

The purpose of the Oceanographic Instrumentation Program is to enhance the scientific capabilities and productivity of oceanographic field research projects that use existing major facilities, primarily research vessels. A principal criterion for this Program is that the instrumentation requested is for “shared-use,” available to all NSF-funded researchers. It is generally expected that costs associated with maintenance and operation of instrumentation acquired under this program will be proposed under the Oceanographic Technical Services Program.

Scope

Proposals for shared-use instrumentation may include items for the collection, processing and analysis of oceanographic data. Separate listings and prioritizations should be provided for instruments that are considered, (1) “Shipboard Instruments,” predominantly or exclusively used from one or more of an operating institution’s existing University National Oceanographic Laboratory System (UNOLS) research vessels and (2) “Portable Instruments,” commonly used or deployed from other research vessels.

Examples of items that qualify as “Shipboard Instruments” are most CTD systems and related sensors and samplers; shipboard computer networks; acoustic current profilers; echosounders; biological net systems; coring equipment and nutrient autoanalyzers. Items that would qualify in the “Portable Instruments” category include large piston core systems that are used on a variety of research ships and require specialized staff for operation; towed instruments such as undulating profilers or side-scan sonars that are not associated with a single vessel; instruments such as current meters (acoustic or mechanical), moored current profilers, surface buoy systems and associated instruments. Both Shipboard Instruments and Portable Instruments must be justified in terms of multi-project cooperative utilization (“shared use”). Instrumentation which is project-specific in nature, i.e. justifiable in terms of a single project or principal investigator, is not eligible for support from the Oceanographic Instrumentation Program.

Portable instruments should be justified as pools of instruments to enable cost-effective access by individual researchers for their funded projects. However, the Oceanographic Instrumentation Program does not provide support to initiate such research facilities. Proposals for the acquisition or upgrading of major items of specialized multi-user instrumentation for laboratory-based research, e.g. mass spectrometers, department computer systems, etc., are not eligible for support under the Oceanographic Instrumentation Program. This type of proposal should be submitted to the appropriate research program in the Division of Ocean Sciences or to the NSF Major Research Instrumentation (MRI) program.

Proposals for instrumentation may include costs associated with design or fabrication if it is demonstrably more efficient to build them in-house than purchase them commercially. Appropriate documentation should be provided to address this, if fabrication is planned. Costs associated with installation may also be included, but costs of instrument operation are not appropriate for the Oceanographic Instrumentation Program. For shipboard instruments operated from UNOLS vessels, the Oceanographic Technical Services Program is available to support personnel for operating and maintaining such systems.

Content

Proposals must contain sufficient detail to justify the requested acquisitions on the basis of (1) effective shared use, (2) need for maintaining and/or updating present capabilities, and (3) need for increased capability to support NSF-funded ocean sciences research. Proposals that include acquisition of major electronic and mechanical systems should demonstrate that necessary technical expertise has been considered, and will be available to maintain and manage the system.

Evaluation Criteria

All NSF proposals, including those for Oceanographic Instrumentation, must address the two NSF Merit Review Criteria (Intellectual Merit and Broader Impacts) explicitly, both in the Project

Summary and in the Project Description. Proposals that do not adhere to this requirement will be returned without review.

In addition to these standard NSF Merit Review Criteria, evaluation of Oceanographic Instrumentation Program proposals is based on the following equally weighted criteria:

- Urgency of the need for requested instrumentation for the support of NSF-sponsored oceanographic field research projects.
- Adequacy of the instrumentation for shared-use applications.
- Appropriateness of the instrumentation for management by the institution's existing shared-use facility.
- Demonstration of effective and accountable shared-use plans and maintenance procedures for the instrumentation.

Proposal Format

Proposals are evaluated concurrently and information from all applicants must be presented in the same format. Proposals may be returned if the required format is not followed and must be returned if NSF Merit Review criteria are not addressed.

Each proposal includes:

- *Information about Project Director (PD).*
- *Cover Sheet.* Enter "Oceanographic Instrumentation" for NSF ORGANIZATION UNIT and "NSF 04-052" for PROGRAM ANNOUNCEMENT. The project director or co-project director must provide direct, first order management and oversight of the instrumentation.
- *Table of Contents* (Generated automatically by Fastlane).
- *Project Summary.*
- *Project Description.*
 - *Outline of Instrumentation Requests.* An annotated list of requested instrumentation must be provided. The annotations highlight

the relative importance of the requested items only. Exhibit I shows the outline format, and Exhibit II provides a sample page. If both shipboard and portable instruments are being requested, it is recommended that they be described and prioritized in separate sections.

- *Background and Justification.* The following information must be provided for each item in the sequence of the outline:

1. A technical description of the item with supporting statement of expected improvements in ocean research capabilities. Identify any handicaps that would exist without the item, including list of scheduled or anticipated research projects that require its use. The description must permit technical evaluation by external merit reviewers. Any existing items of the type requested that are in current institutional shared-use inventories must be described with their relation to the request. All equipment items designated by manufacturer's name and type should be identified in this manner only for the purpose of categorizing the particular item as to function, specifications and cost. Requirements may be satisfied by equivalent products.

2. Justification for NSF. The need for the instrumentation items for multiple project use or increased capabilities and/or efficiency for existing ship operations and research projects, both current and long-term should be addressed. Brief descriptions of research projects with the principal scientists involved should be provided to demonstrate current demand estimates. The basis for anticipated continuing need for the item must also be described.

3. Total cost of the instrument item.

- *Ranking.* A summary page with the relative importance, in rank order, of each item requested.

Management Plan and Quality Control. The procedures and responsible persons that manage, maintain, enable cooperative use, and

assure quality control for all instrumentation must be provided. Describe any related instrumentation pools or cost centers, sources of spare parts and expendable supplies, and inventory procedures for instrumentation provided by NSF and that obtained through other sources. If the overall management of any item(s) will differ significantly from the general procedures, the relevant management plan must be provided in the individual item justification.

Budget. Seven main headings are provided for the budget in Exhibit III (i.e., I, II, III, etc.). Items costing more than \$5,000 should be identified and priced separately unless they form an integral part of an instrument system. Shipping and handling charges should be explicitly identified. Installation charges are an allowable cost associated with acquisitions. These charges, however, must always appear as separate items and be explained.

- *Summary Proposal Budget.* (Generated automatically by FastLane).
- *Biographical Sketch of PD and Co-PDs.*
- *Statement of Current and Pending Support.*
- *Appendices.* Certain materials are required as supporting information to reinforce the justification statements and to provide technical data and specifications. The following types of supporting materials must be provided, but the number of pages must be the minimum essential for describing any given item.
 - a. Item descriptions. This may consist of pages reproduced from catalogs or brochures. Information on commonly used instruments need not be included.
 - b. Price quotations.
 - c. Any additional information required to document or justify the requests.

Exhibit I

OCEANOGRAPHIC INSTRUMENTATION

- I. Data management systems and components
 - II. Sea water measurements, sampling and analysis
 - III. Sea floor sampling and analysis
 - IV. Acoustic signaling systems and components
 - V. Instrument deployment, tracking and retrieval
 - VI. Shore laboratory instrumentation
 - VII. Other
-

(SAMPLE PAGE)

Exhibit II

OUTLINE OF INSTRUMENTATION REQUESTS

SHIPBOARD

Oceanographic Instrumentation

- I. Data management systems and components
None *

- II. Sea water measurements, sampling and analysis
 - A. Spare sensors (2 each conductivity and temperature) for use in CTD and flow-through systems \$ 6,500
 - B. Rosette system. To provide second water sampling system to CTD pool \$22,000

- III. Sea floor sampling and analysis
 - A. 10 barrels for piston corer. To replace units lost or damaged in 2002 cruises. \$6,000
 - Total \$34,500

* NOTE: Include sub-item of the outline even if you are not requesting anything under them and indicate "None."

(SAMPLE PAGE)

Exhibit III

Inst. Kennel University
P.D. Erich E. Seagle

SUMMARY 12 MONTH BUDGET

Oceanographic Instrumentation

II.	Sea water measurements, sampling and analysis	
	Sensors for CTD and flow-through systems	\$ 6,500
	Rosette system	\$22,000
	Subtotal II	<u>\$28,500</u>
III.	Sea floor sampling and analysis	
	Core barrels	\$ 6,000
	Subtotal III	<u>\$ 6,000</u>
	Total Cost	<u>\$34,500</u>
	Less Funds from Other Sources *	-0-
	Total requested from NSF	<u>\$34,500</u>

* List amounts by source

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT PROGRAM

Purpose

The purpose of the Shipboard Scientific Support Equipment (SSSE) Program is to improve safety systems and to enhance scientific capabilities and productivity of NSF-supported seagoing research projects that use existing major facilities, primarily research vessels. This Program does not consider individual items under \$5,000, or maintenance items (see section on "Scope").

Scope

Proposals may include permanent installations and equipment required to upgrade an existing ocean science research vessel. This includes such scientific support equipment items as winches, cranes, the entire range of navigation and communication equipment, and safety items. Requests for new equipment and installation are considered.

Requested equipment must be justifiable in terms of multi-project cooperative utilization in support of NSF-supported science. Equipment that is project-specific in nature, i.e. required for a single project or principal investigator, should be requested from an appropriate source of research support. Maintenance items should not be proposed to this Program, but rather through the Major Overhaul Stabilization Account (MOSA) within the Ship Operations Program. Significant vessel modification or upgrade requests should be submitted to the Ship Acquisition and Upgrade Program after discussions with the cognizant Program Officer.

Content

Proposals must contain sufficient detail to justify the requested support based on needs for maintaining and updating present capabilities and acquiring additional capabilities consistent with goals for improved fleet quality and ability to support NSF ocean science research.

Evaluation Criteria

In addition to the standard National Science Foundation Merit Review Criteria 1 and 2 (see 'Proposal Review Information'), the following supplementary criteria are used in the evaluation of SSSE proposals:

- **Justification** – relationship to NSF-sponsored research to meet science research requirements, potential for improving an existing ship's oceanographic research capability, degree of multi-project use, history and description of existing equipment, urgency to meet safety standards and/or science program requirements, examination of

alternatives, details of desired equipment, installation details, maintenance plans, evidence of engineering studies; and

- **Costs** – reasonableness, degree of budget detail, provision of more than one vendor quotation when applicable.

Proposal Format

Proposals may be returned if the required format is not followed and/or the NSF Merit Review Criterion 1 & 2 are not addressed as defined by the NSF Grant Proposal Guide (GPG) (<http://www.nsf.gov/pubsys/ods/getpub.cfm?gpg>).

Each proposal should include:

- *Information about Project Director (PD).*
- *Cover Sheet.* Enter "Shipboard Scientific Support Equipment" for the NSF ORGANIZATION UNIT and "NSF 04-052" for PROGRAM ANNOUNCEMENT. The Project Director or Co-Project Director must provide direct, first order management and oversight of the shipboard equipment.
- *Table of Contents (Generated automatically by FastLane).*
- *Project Summary* (Must clearly address in separate statements NSF Merit Review Criteria 1 and 2 (see the NSF GPG for further details)).
- *Project Description.*
 - *Outline of Equipment Requests.* An annotated list of equipment or services requested must be provided. The annotations highlight the relative importance of the requested items only. Exhibit I shows the outline format, and Exhibit II provides a sample page.
 - *Background and Justification.* The following information must be provided for each item in the sequence of the outline.
 1. A technical description of the item with supporting statement of expected improvements in meeting safety requirements and standards or the scientific mission of the ship. Identify what similar equipment or system is currently used on board ship, if any, and if this is a replacement item for such

system. If this is a replacement item, describe why a new system is needed and how the proposed new system will improve science activities. Identify any problems that would exist if the item were not obtained. Note alternatives or options to obtaining the requested item and ramifications. Address the broader impacts (NSF Merit Criterion 2) that will result from the proposed equipment (See the NSF GPG for further details).

The description must permit technical evaluation by external reviewers. If the item is a component of a larger system or is dependent on inputs from other shipboard equipment, explain the interrelationship and compatibility to the larger system. Possible advantages of commonality with equipment and/or spares on hand should be discussed, as well as any pool arrangements applicable to the handling or use of the equipment.

2. **Justification for NSF support must be provided.** The need for the shared-use equipment to enhance NSF-sponsored research, meet safety requirements or increase efficiency of ship operations to conduct science at sea, for both current and long-term needs, should be addressed. Indicate funding in hand or being sought from other sources (including joint funding requests).
 3. Total cost of the equipment item (including itemization of associated costs, such as spare parts, shipping, installation, etc.) must be provided. If the equipment is being co-sponsored by other research sponsors or the institution, identify the status of those funds.
 4. If a specific manufacturer's brand has been requested, describe why it has been chosen over other brands or options. (Note: More than one quote per item requested should be included in the Appendices even if a specific brand is being requested. If more than one quote cannot be obtained, a detailed explanation should be provided.)
- *Ranking.* Provide a summary page with the relative importance, in rank order, of each item requested. An explanation of ranking order should be included.
 - *Broader Impacts.* Address and describe the broader impacts resulting from acquisition of the proposed

equipment (addressing NSF Merit Review Criteria 2).

- *Management Plan and Quality Control.* The procedures and responsible persons that manage, maintain, and assure quality control for all equipment must be provided. Describe anticipated sources of support for operations and any related equipment pools or cost centers that contribute to oversight of the equipment.
 - *Budget.* Four main headings are provided for the budget in Exhibit III (i.e., I, II, etc.). Items that cost less than \$5,000 should not be requested through the SSSE Program but rather through the general Ship Operation Proposal or another more appropriate program. Installation and shipping charges are allowable costs associated with acquisitions (see above). These charges, however, must always appear as separate items and be explained.
- *Summary Proposal Budget,* (Generated automatically by FastLane). (Note: As instructed, items requested should be listed in Section D of the 1030 Form.)
 - *Biographical Sketch of PD and Co-PDs.*
 - *Statement of Current and Pending Support.*
 - *Appendices.* Certain materials are required as supporting information for proposals to reinforce the justification statements and to provide technical data and specifications. Lack of this information can impact reviewer ratings and Program Officer decision to fund the proposal.

The following types of supporting materials must be provided, but the number of pages must be the minimum essential for describing any given item:

- a. Item descriptions. This may consist of pages reproduced from catalogs or brochures.
- b. Price quotations. More than one quote per item is required. If more than one quote cannot be obtained, a detailed explanation should be provided.
- c. Any additional information required to document or justify the requests, including ship schedules.

Appendix materials must follow the same sequence as the Outline of Equipment Requests (Exhibit I) and must be entered into FastLane under the "Supplementary Docs" Module.

(SAMPLE PAGE)

Exhibit I

SHIPBOARD SCIENTIFIC SUPPORT EQUIPMENT

- I. Deck Equipment
- II. Navigation Equipment
- III. Communications Equipment
- IV. Other Equipment

(SAMPLE PAGE)

Exhibit II

OUTLINE OF EQUIPMENT REQUESTS

Shipboard Scientific Support Equipment

I. Deck Equipment		
A. Modification of trawl winch tension assembly on R/V EXPEDITION	\$ 7,500	
Existing unit is worn out and provides inaccurate information.		
II. Navigation Equipment		
A. Replacement DP system for R/V WAVERUNNER	\$105,500	
Existing system is obsolete and requires repair parts that are no longer manufactured.		
B. Back-up Radar for R/V MARINER	\$ 35,000	
Present unit is unreliable and beyond economical repair.		
III. Communications Equipment		
None*		
IV. Other Equipment		
A. Inflatable workboat for R/V VOYAGER	\$ 5,950	
Requested to replace heavily used boat no longer suitable for use at sea.		
B. Fire System Replacement for R/V MARINER	\$ 8,700	
Existing Halon system is no longer serviceable.		

	Total	\$162,650

* Include sub-items of outline even if you are not requesting anything under them and indicate "None."

(SAMPLE PAGE)

Exhibit III

DETAILED BUDGET

Shipboard Scientific Support Equipment

I. Deck Equipment		
Modification of trawl winch tension assembly on R/V EXPEDITION	\$ 7,500	
	Subtotal I	\$ 7,500
II. Navigation Equipment		
Replace DP System for the R/V WAVERUNNER	\$ 97,500	
Shipping	\$ 3,000	
Installation	\$ 5,000	
Radar for the R/V MARINER	\$ 33,500	
Antenna installation	\$ 1,500	
	Subtotal II	\$140,500
III. Communication Equipment		
None	Subtotal III	\$ -0-
IV. Other Equipment		
Inflatable Boat for the R/V VOYAGER	\$ 4,800	
Repair Kit	\$ 300	
Boat Cradle	\$ 850	
Fire System Replacement for R/V MARINER	\$ 7,500	
Installation	\$ 1,200	
	Subtotal IV	\$ 14,650
	Total Cost	\$162,650
	(Less funds from other sources *)	\$ -0-
	Total requested from NSF	\$162,650

* List amount by source.

SHIP ACQUISITION AND UPGRADE PROGRAM

Occasionally, OCE makes awards for the design, construction, acquisition, upgrade, or conversion of research vessels that have traditionally or will support NSF-funded research. These awards are dependent upon the availability of funds appropriated for this purpose. Most awards in recent years have been for the conversion or upgrade of ships already in service whose age, configuration, or operating costs have impaired their usefulness. The Division of Ocean Sciences will continue to acquire and construct ships for the fleet based on the renewal plan established by the Federal Oceanographic Facilities Committee (FOFC) in its report, "Charting the Future for the National Academic Research Fleet: A Long range Plan for Renewal" (2001) and its subsequent revisions.

Nature and Duration of Awards

Ship acquisition and upgrade awards are generally made in the form of grants or cooperative agreements, however other funding mechanisms may be considered by NSF. Duration of awards is dependent upon the request and will be negotiated with the Program Officer to cause the least impact on scientific cruises. Typically, title to ships built or acquired with NSF funds will be retained by the Federal government.

Submission of Proposals

Institutions must consult with the appropriate Program Officer in advance of any proposal submission. There is no prescribed format for acquisition and upgrade proposals. However, the NSF proposal requirements specified in the latest version of *Grant Proposal Guide* must be met. Upgrade proposals must describe the proposed changes, urgency and rationale (e.g., safety, improvements, existing conditions, science requirements, etc.), provide strong justification (e.g., examination of alternatives, engineering studies and designs, time schedule, and how NSF-funded scientists will benefit from an upgrade, etc.) and include cost details.

OCEANOGRAPHIC TECHNOLOGY AND INTERDISCIPLINARY COORDINATION

Purpose

The Ocean Sciences Division (OCE) supports oceanographic technology development through the Oceanographic Technology & Interdisciplinary Coordination (OTIC) Program within the Integrative Programs Section (IPS).

Scope

The OTIC Program accepts proposals for developing new instrumentation that has broad applicability to ocean science research. Ocean technology development proposals should enhance the observational, experimental, and/or analytical capabilities of the ocean science research community. Instruments proposed for development must have direct relevance to research activities funded by OCE. Current priority areas include the development of sensors and sampling strategies to optimize investigations at ocean observing systems, instruments facilitating time-series observations, and tools and proxies to sample oceanographic processes at appropriately tuned spatial and temporal scales. Proposals to adapt technologies from other fields or to modify existing instrumentation for ocean science research purposes are eligible, as are workshop proposals to assess the current status of technology and instrumentation and to recommend areas for future development.

Proposals that involve technique development and/or instrumentation directly associated with a specific research project or goal should be submitted to the appropriate disciplinary program as a regular research proposal. Joint funding with the OTIC Program may then be considered on a case-by-case basis.

This program area is distinct from the Oceanographic Instrumentation Program, which provides support for acquisition of oceanographic instrumentation for shared-use aboard research vessels.

Persons intending to submit a proposal may wish to contact the OTIC Program Director prior to developing a formal submission to avoid submission of an inappropriate proposal.

Most ocean technology development proposals are mail reviewed only. However, some proposals may also be considered by a research panel to help evaluate the proposed instrument's relevance to ocean science research topics.

Evaluation Criteria

Normal NSF evaluation criteria for proposals will apply. These criteria include intellectual merit of the proposed activities and their broader impacts. Ocean technology development proposals will also be evaluated on the basis of the following equally weighed criteria:

- scientific merit of research for which the instrumentation will be used;
- ability of the applicant(s) to undertake instrument development;
- importance and relevance of the proposed instrumentation to the successful completion of the research for which it is intended; and the
- degree to which the instrumentation improves research capabilities for the community and to which it addresses the requirements of more than one user group.

Proposal Format

Submissions should follow the format of a standard research proposal and address the evaluation criteria outlined above. In addition, investigators should provide a description of their plans to facilitate and encourage broader community use of the proposed instrumentation once it is developed. This can be included as supplemental documentation in FastLane.

Other Related Programs

OTIC also supports research of the unique physical and meteorological processes in the coastal ocean that promotes high biological productivity, active sedimentary processes, dynamic chemical transformations and intense air-sea interactions through the Coastal Ocean Processes (CoOP) Program.

The program Announcement and proposal deadline for CoOP can be found at:

<http://www.geo.nsf.gov/cgi-bin/geo/showprog.pl?id=49&div=oce>

In addition, OTIC supports improvements of biological field stations and marine laboratories (FSML) through the Improvements in Facilities, Communications and Equipment Program. FSMLs must offer modern laboratories and educational spaces, up-to-date equipment, appropriate personal accommodations for visiting scientists and students, and “user-friendly” communication and data management systems for a broad array of users in order to fulfill their role in biological research and education.

The links to the program Announcement and proposal deadline for the FSML Program can be found at: <http://www.geo.nsf.gov/cgi-bin/geo/showprog.pl?id=100&div=oce>

OCEANOGRAPHIC EDUCATION PROGRAM

Purpose

The Division of Ocean Science's Oceanographic Education (OE) Program supports proposals from research institutes, universities, school districts, museums, aquaria, and other organizations that support the goals of improving ocean education in K-12, undergraduate, graduate and informal settings. Funding is primarily allocated to three programs: 1) the Research Experience for Undergraduates (REU), 2) the CAREER program, and 3) the Centers for Ocean Science Education Excellence (COSEE). Some funding is available for unsolicited programs that address OCE goals for diversity and education.

The OE program also works with other NSF Programs to coordinate review and funding of other education-related proposals. These programs include the Geosciences Education Program, the Opportunities to Enhance Diversity in Geosciences (OEDG) Program, ADVANCE, and the GK-12 program.

Scope

Programs supported directly by Ocean Education include:

- Research Experience for Undergraduates (REU), a program that supports summer-long and semester-long paid internships for undergraduates at marine laboratories and other research sites. See the most recent REU Program Announcement on the NSF Publications website for the current proposal submission deadline.
- CAREER program. This program promotes research and novel educational activities by un-tenured faculty. See the most recent CAREER Program information on the NSF Publications website for the current proposal submission deadline.
- Centers for Ocean Science Education Excellence (COSEE) program. COSEE was initiated in 2002. Seven centers and one central coordinating office make up the founding sites of COSEE. The Division of Ocean Sciences anticipates future solicitations for additional COSEE centers pending budget considerations.

- Unsolicited proposals may be submitted to the OE program at any time, however PI's are urged to contact the program officer directly to discuss whether or not the proposal fits program goals and budgets. We are particularly interested in efforts to incorporate the academic fleet into educational activities. Such support could take the form of a supplement to an existing grant of the Principal Investigator, cooperative agreement to the ship operator, or a new proposal.

Programs for which OE coordinates review and funding are the:

- Geosciences Education Program, this program accepts proposals to improve Geoscience education at all educational levels. Awards are intended to facilitate the initiation or piloting of highly innovative educational activities that involve leading geoscience researchers.
- Opportunities for Enhancing Diversity in Geosciences (OEDG) Program, accepts proposals designed to expand opportunities for students from underrepresented groups to participate in geoscience research and education activities.
- ADVANCE - a program designed to advance the careers of women in science.
- GK-12 program accepts proposals designed to involve graduate students in K-12 education.

Further Information

The program solicitations for these programs, which provide further guidance on the nature and duration of awards, evaluation criteria, and proposal format are available on the NSF Publications website at: <http://www.nsf.gov/home/menus/publications.htm>. Principal Investigators should contact the cognizant program officer for information about these opportunities.

OTHER OCEANOGRAPHIC FACILITY ACTIVITIES

In addition to the programs described in these guidelines, IPS supports specialized activities such as workshops, research and study projects related to quality control improvement, facilities enhancement, testing and utilization needs.

Criteria for evaluation of proposals for this type of support will vary according to the project but all activities must focus on shared-use facilities of use to the ocean science research community, especially NSF-funded scientists. The NSF proposal requirements specified in the latest version of *Grant Proposal Guide* must be met. Before submitting proposals for such activities, potential Principal Investigators should contact the appropriate Program Officer to determine if the activity is appropriate.

STANDARD NAVY OCEAN AREA AND REGION INDEX LIMITS PLAN 2

