

Appendix VIII

NSF Review Terms of Reference

Terms of Reference

1) Review and evaluate the current and projected research vessel fleet required for research sponsored by the National Science Foundation within a national framework that includes research requirements of other federal agencies, state and local governments, and private sources.

This review should be done in the context of environmental and geoscience research, in general, and the specific contributions the Academic Research Fleet provides to the research enterprise as a whole.

Specific issues include:

- Do the capabilities and operating modes of the academic ships meet research requirements?
- Is the number of ships overall, and distribution within size categories, consistent with the level of research support and type of seagoing research projects expected in the future?
- Are specialized capabilities required to meet research priorities adequately included in the overall fleet profile?

Terms of Reference

2) Review and evaluate overall management structure of the Academic Research Fleet; review and evaluate existing capabilities and services provided by the operating organizations; and review and evaluate possible future changes in academic fleet operations to ensure optimal operations of the academic fleet to support research requirements.

The review context should include consideration of the distributed ownership of the fleet, cost sharing for both capital acquisition and operations and requirements of multiple research sponsors who participate in scientific, operational and financial support.

Specific issues include:

- Are organizational arrangements and structures appropriate?
- Can the Academic Research Fleet system be managed in a more cost-effective manner?
- Should elements of the research fleet or its operation be recompeted?

Terms of Reference

3) Provide recommended actions by NSF to improve the organization, management, and cost effective operation of the Academic Research Fleet in support of scientific capabilities required to maintain world leadership in ocean and environmental science research.

The recommendations should be formulated in the context of the results of the review and evaluations of the first two terms of reference. Key elements include providing a perspective on Academic Research Fleet operations within a national context, relevance and quality of scientific, educational, and technical support; and benefits and added value of any recommended actions for peer reviewed competition or recompetition of research fleet components.

Academic Fleet Review - Upcoming Areas to be Addressed

CUSTOMER SATISFACTION/NEEDS

- Develop questionnaire for committee to address research scientist needs, support, capabilities, improvements to system, etc.
- Community input directly to Committee for candor.
- Involve NSF Science Resource Studies re questionnaire design.

ACTION: NSF to do first draft and circulate to Committee for comments before sending.

TIMING: ASAP to receive responses before next meeting in September.

SHIP OPERATIONS

Fleet history of operating institutions, ship changes, numbers, size to get context for operations capabilities and days. Couple with history of days used vs days available to assist with analysis of fleet size/use issues.

ACTION: UNOLS to provide via NSF.

- Science capabilities of fleet and their evolution. This includes a science systems "compilation" of available instrumentation broken out ship classes - not just a list but capability oriented.
- "Productivity measures" and investigator days/berths analysis with goal to better define evolution of science capabilities, investigator productivity, etc with changes/new ships in fleet.

ACTION: UNOLS to provide via NSF.

TIMING: Intersessional - for both items. Provide when compiled but with target date of mid-July.

COMPARATIVE OPERATIONS

- Antarctic program systems contractor practices for science support services. Presentation at next committee meeting - 1 hour max.- with goal to better understand possible alternative approaches.
- Scheduling, operations, support mechanisms for science projects used by both other US systems, e.g. NOAA and Navy, and other countries with goal as above to better understand alternative possibilities.

ACTION: NSF to arrange with NSF/OPP for Antarctic input and organize data and presentation re second items.

TIMING: Second meeting agenda.

NSF PROPOSAL TRENDS

- Overall budget trends and support from the Ocean Sciences. Division for research programs and facilities programs including ship use as a program percentage. Include data on total proposals submitted for ship use and related ship size distributions and comparative success rates for seagoing projects vs laboratory, analysis, theoretical studies with goal of understanding factors in declining number of days at sea sponsored by NSF.

ACTION: NSF to organize and present.

TIMING: Second meeting agenda.

FINANCIAL ANALYSES

- Provide operations and support data using standard accounting practice with identification of fixed cost vs variable cost parameters. Include in analyses both operations and layups, including for NSF explanation of practice and policy re layups.
- Provide data/analysis of comparative operations costs for UNOLS, NSF longterm charters in OPP, other federal operations, commercial operations and other country operations. Use standard accounting practice.

ACTION: NSF to obtain independent external "financial/audit" consultant to review/obtain required data and provide analysis.

TIMING: Progress report at second meeting. Committee input to study at that time prior to final report at third meeting.