

Fiscal Year 1999
National Ocean Partnership Program BAA
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North Quincy St., Arlington, VA 22217-5660 SUBJECT: A--NATIONAL OCEAN
PARTNERSHIP PROGRAM SOL 99-003 DUE 020999 POC **Brian Glance** ONR 252,
(703) 696-2596 DESC: **BAA 99-003**

On behalf of the National Ocean Partnership Program (NOPP) The Office of Naval Research (ONR) solicits proposals addressing a variety of Partnership Programs as outlined in Title II, subtitle E, of Public Law 104-201 of September, 1997, the National Oceanographic Partnership Program.

Up to \$14M may be available for this announcement which is subject to final approval by the National Ocean Research Leadership Council. Proposals are due February 9, 1999. Team efforts among academia, industry, and government participants: cost sharing and proposals augmenting ongoing joint efforts are very strongly encouraged.

Proposals are sought in the following major topic areas which are also described at http://www.onr.navy.mil/sci_tech/ocean under "Additional Points of Interest:"

Topic A - DATA ASSIMILATION AND MODELING INITIATIVE

Partnership efforts are sought to begin a community-wide effort of building a linked system of resources and collaborations for ocean modeling and data assimilation leading to new scientific insight and synthesis of new results with broad utility to the ocean community. The genesis for this initiative is a series of workshops in 1997 and 1998 which illuminated the need for an Ocean Research Synthesis and Modeling Program (ORSMP) formed under a new structural paradigm. Background on the workshops can be found in [Nowlin](#) (1997) and [Powell](#) (1998) available through the ONR and CORE/NOPP websites.

From Powell et al. (1998) NOPP finds that arguments to begin a substantial enhancement of modeling and data assimilation capabilities in all sub-disciplines of the ocean sciences are compelling. The most critical of these reasons involve: existing and new satellites and the data they are collecting; voluminous data sets assembled by World Ocean Circulation Experiment (WOCE), Joint Global Ocean Flux Study (JGOFS), Global Ocean Ecosystems Dynamics (GLOBEC), etc.; the need for greater coordination and integration among ocean modelers, and between modelers and observationalists; as well as the requirement for improved access to greater, yet more diverse, computing capabilities.

To address these needs new infrastructure and partnerships are required that span the ocean community. A concept has been developed to address these needs and evolve in a phased manner. The concept involves a central "hub facility" supporting a number of "scientific nodes." The hub facility will provide computational and data assimilation capabilities, high-level analyses, technical assistance, code and analysis software, benchmark solutions, documentation, and other services. The "hub facility" may itself be

a distributed (virtual) entity depending on further study. Nodes are envisioned as small to large teams (5-15 scientists) collaborating on model/data synthesis projects requiring regional- to global-scale computational capability. The rationale is that such groups are needed to advance our capability in the simulation and understanding of the physical, chemical, biological and biogeochemical behavior of the ocean, estimations of the state of the ocean, and the identification of essential new ocean observing capabilities.

Four initial nodes, or scientific teams, were discussed by Powell (1998). In no particular order, these are in the areas of: (1) the coastal ocean, (2) coupled physical-biological models, (3) marine biogeochemistry, and 4) ocean general circulation/climate. Specific examples within these general areas are also cited in the report. New partnerships in these areas capable of serving as "scientific nodes" in the new structure are sought in this announcement. At this stage NOPP intends to support the development of the ORSMP by funding one or more multi-disciplinary science teams in each of the proposed science areas listed above. Once selected, these teams will assist NOPP in establishing the requirements for the "hub" facility to support them and other "nodes" to be established by NOPP in the future.

Under this topic of the announcement, NOPP will consider two types of proposals:

- (A1) planning activities ("Phase A studies") up to \$250K for one year, or
- (A2) implementation activities ("Phase B studies") on the part of teams that have already developed a mature work plan.

The purpose of the one-year planning award will be to develop a detailed rationale, justification and plan of action for five or more years of follow-on work as a node in the chosen area. Teams funded for Phase A studies will be expected to submit Phase B proposals at the completion of the one-year planning activity. Phase B activities would be in the range of \$500K to \$1M per year for 5 years.

A working group, representative of the selected nodal activities plus other experts, will be formed to advise the NOPP on the form and requirements of the future hub facility. This working group will be called upon to suggest the essential characteristics of the hub facility to support team activities for the next decade. All participants selected under this topic are expected to establish strong collaborative interactions between the various teams and be willing to participate in the concept development of a central "facility" capable of serving the teams. To foster these collaborations, all investigators selected for awards may be expected to participate in periodic workshops starting shortly after award to identify the specific needs and considerations of individual teams and the necessary hub infrastructure to support ORSMP. It is expected that NOPP will call for proposals for a central "hub" as early as fall 1999 along with the next set of "node" proposals.

The challenges for proposers in this topic area are two-fold. The first objective is to develop the partnerships and rationale for a scientific study and products of wide community interest. The second objective is to develop concepts that maximize flexibility and utility of the hub-node system for future teams. The goal is to simultaneously produce scientific results in challenging areas and develop new infrastructural resource arrangements. The scientific problems to be addressed by this structure will evolve and

will be of such a nature to warrant resources invested in the hub and normally unavailable to a single investigator. By providing the necessary infrastructure, this program will promote the development of community models and modeling capabilities, efficient and effective data assimilation and data management systems, and provide ongoing rationale for the most informative and useful ocean observations. We plan to make this widely and readily available to a growing set of users.

Topic B - OCEAN OBSERVATION CAPABILITIES

Partnership efforts are sought to develop and/or demonstrate ocean observational capabilities to establish the means for continuous, high resolution measurements of oceanic processes. Collaborative proposals are sought for development and application of new sampling, analytical, and interpretive techniques to improve the characterization of distributions, mechanisms, and rates of processes involving chemical and biological variables together with physical variables in the ocean. The challenge is to develop rapid analytical techniques and "smart" sampling tools based on real-time measurements. Fundamental progress will require coordinated efforts involving improvements in sampling and measurement strategies on process-relevant time and space scales, implementation and/or development of new analytical methodologies, and processing/storage/transmittal that closely link observations to models, sufficiently to develop a predictive capability. Such efforts should embrace networking and broad accessibility to all derived data in near or real time.

Autonomous and/or long-term and/or distributed approaches that provide a new observational capability for the ocean community are particularly encouraged.

Innovative sensors and measurement techniques are solicited to obtain oceanographic variables (e.g., chemical, optical, or biological) in 3-D space and time to augment physical variables. The emphasis should be placed on:

- novel approaches and concepts for measuring a particular parameter coherently in 4-D;
- observations which can be conducted as autonomously as possible (i.e. for independent operation on Remotely Operated Vehicles (ROV's), Autonomous Underwater Vehicles (AUV's), buoys, or with expendable instruments);
- providing a significant reduction in instrument weight and volume without reducing fidelity or resolution as compared to current state-of-the-art devices;
- and developing the next generation of low cost instrumentation usable by the ocean research community.

Proposals should clearly specify: what the new technology will do; how it improves existing technology; why it is important and relevant to the needs of specific ocean studies; whether a prototype has been tested or when one will become available to the larger community as a result of funding provided by NOPP. Since future renewal funding from NOPP for the selected efforts under this Topic will be rare, plans for follow-on support, if any, and/or deployments and availability of the products should be addressed in the proposal.

- (B1) Approximately \$6M is available to support 4 to 6 large projects in the range of \$750K to \$1.5M per year for up to 3 years.
- (B2) In addition, focused partnership efforts to develop sensors and instrumentation packages compatible with future systems described above are solicited. Two to three

awards of this nature in the range of up to \$250K per year for up to 2 years for these smaller projects are anticipated.

Interested offerors are **required** to submit a notice of intent to propose by December 21, 1998 to the address listed below. A short letter (1-2 pages) should be submitted that gives the intended title with a description of the subject and a list of the potential partners (by name and affiliation). The information submitted in this notice of intent should be in sufficient detail to aid the government in the identification of potential peer reviewers who possess appropriate technical expertise and are without conflicts of interests, in advance of full proposal submissions. All proposals will be subject to peer scientific review, which may include non-governmental reviewers. All reviewers will adhere to confidentiality and conflict of interest standards. E-mail or fax submissions are strongly discouraged.

Twenty copies of the proposals are due not later than 4:00PM EST on Tuesday, February 9, 1999 to NOPP BAA/ONR 32, Room 407-8, Office of Naval Research, 800 N. Quincy Street, Arlington, VA 22217-5660. Proposals received at ONR after this date and time will not be considered. All proposals must indicate BAA number above and which subtopic area is being addressed (e.g. Topic A1, A2, B1 or B2) on the cover page. Separate proposals must be submitted for each subtopic area. E-mail and facsimile materials are not acceptable.

No request for proposal (RFP), solicitation, or other announcement of this opportunity will be made. Historically Black Colleges and Universities and Minority Institutions, as determined by the Secretary of Education to meet requirements of 34 CFR Section 608.2 and 10 U.S.C. Paragraph 2323(a)(1)(C), are particularly encouraged to participate. Evaluations of the proposals will use the following selection criteria:

- (1) relevance of the proposed research to Partnership objectives, including
 - a) support of critical research objectives or operational goals such as data accessibility, education and communication,
 - b) broad participation within the oceanographic community,
 - c) partners with a long-term commitment to the proposed objectives,
 - d) resources are shared among partners, and
 - e) the degree of cost-sharing by partners with the requested Partnership funding,
- (2) overall scientific and technical merits of the proposal,
- (3) the offeror's capabilities, related experience, and facilities or unique combinations of these that are critical to the proposal objectives,
- (4) the qualifications and experience of the proposed principal investigator and key personnel,
- (5) degree of significant partnering among at least two of the following parties, academia, industry or government,
- (6) socio-economic merits of the proposal,
- (7) realism of proposed costs.

A synopsis of the NOPP review process can be found [here](#). A component of education and/or public outreach is strongly encouraged for each NOPP effort. The level and

type(s) of effort are left to the proposers but linkages/collaborations with ongoing NOPP or other similar education/outreach efforts are particularly encouraged (see <http://core.cast.msstate.edu/NOPPg102.html>). Activities of this nature that are meritorious and require significant levels of support can request additional NOPP support (up to 10%) beyond the amounts listed in the Topic areas. NOPP wishes to foster education and public outreach as an integral part of its research programs wherever feasible.

The final distribution of awards among topics will depend on quality of proposals and availability of funds as determined by the NOPP Council. Funding estimates for any ship-time must be specifically included in the proposal and the budget should clearly specify the size and type of vessels proposed for use. Ships of opportunity are encouraged. Proposers should include shiptime requests on either the former NSF Form 831 (Shiptime Request Form) or preferably the UNOLS on-line request form available at:

<http://www.gso.uri.edu/unols/ship/shiptime.html>

For awards made as contracts, the socio-economic merits of each proposal will be evaluated based on the commitment to provide meaningful subcontracting opportunities for small business, small disadvantaged business, women-owned small business concerns, historically black colleges and universities, and minority institutions. The standard industrial classification code is 8731 with the small business size standard of 500. In addition, contract proposals that exceed \$500,000 submitted by all but small businesses, must be accompanied by a Small, Disadvantaged and Women-Owned Small Business Subcontracting Plan in accordance with FAR 52,219-9.

Additional Information is available on the World Wide Web at

http://www.onr.navy.mil/sci_tech/ocean under "Additional Points of Interest".

This notice constitutes an ONR Broad Agency Announcement (BAA) as contemplated by FAR 6.102(d)(2). Questions regarding business and legal matters relating to this BAA should be directed to: Office of Naval Research, Attention Mr. Brian Glance (Code 252), Ballston Towers One, 800 N. Quincy St., Arlington, VA 22217-5660, (703) 696-2596. Technical and programmatic questions may be submitted by E-mail to "NOPPBAA@ONR.NAVY.MIL" or by fax to "NOPP BAA" (703) 696-2007 if necessary.