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Agency

Office of Research and
Development
Washington DC 20460

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1998 EPA SCIENCE TO ACHIEVE RESULTS (STAR) RESEARCH GRANTS

Announcement of Opportunity for Regional Scale Analysis and Assessment Research

Opening Date: November 25, 1997

Closing Date: February 12, 1998

The United States Environmental Protection Agency
Office of Research and Development
National Center for Environmental Research and Quality Assurance

1998 Science To Achieve Results (STAR) Grants for Research

Announcement of Opportunity

Opening Date: November 25, 1997.....Closing Date: February 12, 1998

Introduction

In this announcement the U.S. Environmental Protection Agency (EPA), Office of Research and Development (ORD), invites research grant applications on:

Regional Scale Analysis and Assessment

This invitation provides relevant background information, summarizes EPA's interest in the topic areas, and describes the application and review process.

Background

In fiscal year 1995 EPA began an expansion of its investigator-initiated research grants program for academic and not-for-profit institutions (the STAR Program, Science to Achieve Results). Subsequently, this program increased in fiscal years 1996 and 1997, and in fiscal year 1998 EPA anticipates reaching its programmatic goal of \$100 million. As a part of that program, this Request for Applications (RFA) describes one of the programmatic areas which is a part of the EPA 1998 solicitation. Additional program topic areas and joint programs with the National Science Foundation and other agencies will be announced separately.

EPA Mission and R & D Strategy

The mission of EPA is to protect both environmental quality and human health through effective regulations and other policy initiatives. Achievement of this mission requires the application of sound science to assessment of environmental problems and to evaluation of possible solutions. A significant challenge is to support both long-term research that anticipates future environmental problems as well as research that fills gaps

in knowledge relevant to meeting current Agency goals. This Request for Applications and the multi-agency solicitations are important steps toward promoting a sound scientific foundation for environmental protection.

EPA's research programs focus on reduction of risks to human health and ecosystems and on the reduction of uncertainty associated with risk assessment. Through its laboratories and through grants to academic and other not-for-profit institutions, EPA promotes research in both domains, according the highest priority to those areas in which risk assessors are most in need of new concepts, methods, and data. EPA also fosters the development and evaluation of new risk reduction technologies across a spectrum, from pollution prevention through end-of-pipe controls to remediation and monitoring. In all areas, EPA is interested in research that recognizes issues relating to environmental justice, the concept of achieving equal protection from environmental and health hazards for all people without regard to race, economic status, or culture.

EPA's extramural research grant programs are administered by ORD's National Center for Environmental Research and Quality Assurance (NCERQA). The specific topic area of this solicitation, research on Regional Scale Analysis and Assessment, is discussed below.

Regional Scale Analysis and Assessment Research

Introduction

Much of the ecological information generated today comes from intensive investigations of single sites or relatively small geographic areas. Yet many of the management questions being asked or ecological assessments being conducted are focused over broad geographic regions. The specific purpose of this solicitation by the STAR program on behalf of EPA's Environmental Monitoring and Assessment Program (EMAP) is to request proposals for research that lead to the development and demonstration of approaches to link site specific information with regional survey data and remote sensing imagery for conducting regional level ecological assessments. You may find extensive information about the EMAP program at <<http://www.epa.gov/emap>>.

Background

Ecologists have learned an extensive amount about systems and how they function by long-term studies of individual locations. Research conducted at the Long-Term Ecological Research (LTER) sites (funded primarily by the National Science Foundation) is outstanding among the many examples of these types of studies. A lingering question from studies of this nature is the extent to which the findings from the single site can be extrapolated to broader areas. Determining the "representativeness" of the site is one approach toward creating regional scale analyses from the site studies. Knowledge of the important system drivers at the site is generally needed along with a knowledge of how those drivers are distributed over broader geographic areas containing apparently similar types of systems.

Another dimension of this concern comes in applying the multi-scale monitoring framework proposed by EMAP in 1990 and recently proposed by the White House Office of Science and Technology's Committee on the Environmental and Natural Resources (CENR) for its national monitoring and research framework. These frameworks suggest that monitoring and research must make use of a three tier approach to include (1) remote sensing, (2) sample surveys, and (3) intensive studies. Remote sensing can provide "complete coverage" of a geographic area. It can monitor changes in land-use/land cover that aid in interpreting changes in single resources, such as streams and wetlands. It can also provide estimates (through models) of important terrestrial features such as leaf area index (LAI). Sample surveys can characterize specific properties of ecological resources in a region through use of statistical sampling of a subset of the resource, followed by rigorous statistical inference back to the entire resource. The use of ground-based surveys broadens the range of ecological characteristics which can be measured, but surveys conducted over extensive spatial scales are often limited to measurements during a restricted portion of the year. Intensive studies at individual locations can provide even more detailed measurements of a wider range of system structure and function and often provide more temporally intensive data within a year. These studies are severely limited however, in their spatial coverage.

All three approaches to research and monitoring are essential for an integrated assessment capability. Unfortunately, few examples exist which demonstrate how these different approaches and tools can be carefully linked to provide a more comprehensive assessment of a geographic region.

Scope of Research

EPA's STAR program solicits proposals for research on novel approaches for either conducting regional scale assessments by combining data from intensive investigations, regional surveys, and remotely sensed data or for novel approaches to determine the "representativeness" of an intensively studied site within a region. Priorities for funding will be:

- (1) Development and demonstration of methodologies that link remote sensing, regional survey data, and intensively studied site research into an integrated ecological assessment. For example, how would one approach linking (a) studies of carbon allocation at a specific forest research site with (b) production estimates from forest inventory and analysis (FIA) surveys with (c) remote sensing estimates of forest cover and leaf area index to provide a better description and understanding of forest productivity?
- (2) Studies which demonstrate approaches for determining the "representativeness" of individual research locations. Lake Tahoe, for example, has been extensively studied but is also considered quite unique. How applicable are findings of research on Lake Tahoe to other lakes in western North America? If a less "unique" western lake were studied, how would one quantify its "representative-

ness” among other western lakes? Each of the LTER sites is located within a particular biome. How would one rigorously quantify how applicable the results from H.J. Andrews Experimental Forest, for example, are to other forested systems in the northwest?

A range of research may be appropriate for this request. Research which relies on existing data but demonstrates novel approaches for linking information from different sources would be appropriate. Other research might require additional primary data collection from any or all of the three tiers in order to demonstrate the approach proposed.

The outcome of this research should assist in answering some of the following questions:

How can the "representativeness" of an intensively studied site within a region be determined?

To what degree can intensive studies at smaller, traditional ecological scales be extrapolated to larger scales in which effects typical of regional anthropogenic stresses are expressed?

To what degree are assessments at fine scale spatially concordant with assessments made at coarse scale?

What are the implications of the demonstrated approach for designing research and monitoring at any or all of the three tiers? To what extent do the three tiers need to be designed in concert, or can they be independently designed and integrated after the fact?

Funding: Approximately \$3 million is expected to be awarded in fiscal year 1998 for research under this RFA, depending on the availability of funds. It is anticipated that the annual funding levels (for up to three years) will range from \$75,000 to \$250,000. *Applicants: Do not exceed these funding levels.*

Eligibility

Academic and not-for-profit institutions located in the U.S., and state or local governments are eligible under all existing authorizations. Profit making firms and other federal agencies are not eligible to receive grants from EPA under this program. Federal agencies, national laboratories funded by federal agencies (FFRDCs), and federal employees are not eligible to submit applications to this program and may not serve in a principal leadership role on a grant.

Federal and FFRDC employees are strongly encouraged to cooperate or collaborate with eligible applicants within the limits imposed by applicable legislation and regulations. They may participate in planning, conducting, and analyzing the research directed by the principal investigator, but may not direct research on behalf of the applicant organization or principal investigator or receive salary or research funding from the grant. However, the principal investigator's institution may subcontract to a federal agency or FFRDC to purchase unique supplies or services unavailable in the private sector. Examples are purchase of satellite data, census data tapes, chemical reference standards, unique analyses or instrumentation not available elsewhere, etc. A written justification for such federal involvement must be included in the application, along with an assurance from the federal agency which commits it to supply the specified service.

Potential applicants who are uncertain of their eligibility should contact Dr. Robert E. Menzer in NCERQA, phone (202) 564-6849, EMail: menzer.robert@epamail.epa.gov

Standard Instructions for Submitting an Application

This section contains a set of special instructions related to how applicants should apply for an NCERQA grant. Proposed projects must be for research designed to advance the state of knowledge in the research areas described in this solicitation.

Sorting Codes

In order to facilitate proper assignment and review of applications, each applicant is asked to identify the topic area in which their application is to be considered. It is the responsibility of the applicant to correctly identify the proper Sorting Code. Failure to do so will result in an inappropriate peer review assignment. At various places within the application, applicants will be asked to identify this topic area by using the appropriate Sorting Code. The Sorting Code corresponding to research on Regional Scale Analysis and Assessment is 98-NCERQA-L1.

The Sorting Code must be placed at the top of the abstract (as shown in the abstract format), in Box 10 of Standard Form 424 (as described in the section on SF424), and should also be included in the address on the package that is sent to EPA (see the section on how to apply).

The Application

The initial application is made through the submission of the materials described below. **It is essential that the application contain all the information requested and be submitted in the formats described.** If it is not, the application may be rejected on administrative grounds. If an application is considered for award, (i.e., after external peer review and internal review) additional forms and other information will be requested by the Project Officer. **The application should not be bound or stapled in any way.** The Application contains the following:

- A. Standard Form 424:** The applicant must complete Standard Form 424 (see attached form and instructions). This form will act as a cover sheet for the application and **should be its first page**. Instructions for completion of the SF424 are included with the form. The form must contain the original signature of an authorized representative of the applying institution. Please note that both the Principal Investigator and an administrative contact should be identified in Section 5 of the SF424.
- B. Key Contacts:** The applicant must complete the Key Contacts Form (attached) as the **second page** of the submitted application.
- C. Abstract:** **The abstract is a very important document.** Prior to attending the peer review panel meetings, some of the panelists may read only the abstract. Therefore, it is critical that the abstract accurately describe the research being proposed and convey all the essential elements of the research. Also, in the event of an award, the abstracts will form the basis for an Annual Report of awards made under this program. The abstract must not exceed one 8.5 x 11-inch page of single-spaced standard 12-point type with 1-inch margins. The abstract should include the following information, as indicated in the example format provided:
 - 1. Sorting Code:** Use the correct code that corresponds to this topic area: **98-NCERQA-L1**.
 - 2. Title:** Use the exact title as it appears in the rest of the application.
 - 3. Investigators:** List the names and affiliations of each investigator who will significantly contribute to the project. Start with the Principal Investigator.
 - 4. Project Summary:** This should summarize: (a) the **objectives** of the study (including any hypotheses that will be tested), (b) the experimental **approach** to

be used (which should give an accurate description of the project as described in the proposal), (c) the **expected results** of the project and how it addresses the research needs identified in the solicitation, and (d) a brief description of the improvement **in risk assessment or risk management** that will result from successful completion of the work proposed.

5. Supplemental Keywords: A list of suggested keywords is provided for your use. Do not duplicate terms already used in the text of the abstract.

- D. Project Description:** This description must not exceed fifteen (15) consecutively numbered (center bottom), 8.5x11-inch pages of single-spaced standard 12-point type with 1-inch margins. The description must provide the following information:
- 1. Objectives:** List the objectives of the proposed research and the hypotheses being tested during the project and briefly state why the intended research is important. This section can also include any background or introductory information that would help explain the objectives of the study (one to two pages recommended).
 - 2. Approach:** Outline the methods, approaches, and techniques that you intend to employ in meeting the objective stated above (five to 10 pages recommended).
 - 3. Expected Results or Benefits:** Describe the results you expect to achieve during the project, the benefits of success as they relate to the topic under which the proposal was submitted, and the potential recipients of these benefits. This section should also discuss the utility of the research project proposed for addressing the environmental problems described in the solicitation (one to two pages recommended).
 - 4. General Project Information:** Discuss other information relevant to the potential success of the project. This should include facilities, personnel, project schedules, proposed management, interactions with other institutions, etc. (one to two pages recommended).
 - 5. Important Attachments:** Appendices and/or other information may be included but must remain within the 15 page limit. References cited are in addition to the 15 pages.
- E. Resumes:** The resumes of all principal investigators and important co-workers should be presented. Resumes must not exceed two consecutively numbered (bottom center), 8.5x11-inch pages of single-spaced standard 12-point type with 1-inch margins for each individual.
- F. Current and Pending Support:** The applicant must identify any current and pending financial resources that are intended to support research related to that included in the proposal or which would consume the time of principal investigators. This should be done by completing the appropriate form (see attachment) for each investigator and other senior personnel involved in the proposal. Failure to provide this information may delay consideration of your proposal.

- G. Budget:** The applicant must present a detailed, itemized budget for the entire project. This budget must be in the format provided in the example (see attachment) and not exceed two consecutively numbered (bottom center), 8.5x11-inch pages with 1-inch margins. Please note that institutional cost sharing is not required and, therefore, does not have to be included in the budget table. If desired, a brief statement concerning cost sharing can be added to the budget justification.
- H. Budget Justification:** This section should describe the basis for calculating the *personnel, fringe benefits, travel, equipment, supplies, contractual support*, and *other* costs identified in the itemized budget and explain the basis for their calculation (special attention should be given to explaining the *travel, equipment*, and *other* categories). This should also include an explanation of how the indirect costs were calculated. This justification should not exceed two consecutively numbered (bottom center), 8.5x11-inch pages of single-spaced standard 12-point type with 1-inch margins.
- I. Quality Assurance Narrative Statement:** For any project involving data collection or processing, conducting surveys, environmental measurements, and/or modeling, provide a statement on how quality processes or products will be assured. This statement should not exceed two consecutively numbered, 8.5x11-inch pages of single-spaced standard 12-point type with 1-inch margins. This is in addition to the 15 pages permitted for the Project Description. The Quality Assurance Narrative Statement should, for each item listed below, either present the required information or provide a justification as to why the item does not apply to the proposed research. For awards that involve environmentally related measurements or data generation, a quality system that complies with the requirements of ANSI/ASQC E4, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs," must be in place.
1. The activities to be performed or hypothesis to be tested (reference may be made to the specific page and paragraph number in the application where this information may be found); criteria for determining the acceptability of data quality in terms of precision, accuracy, representativeness, completeness, comparability.
 2. The study design including sample type and location requirements and any statistical analyses that were used to estimate the types and numbers of samples required for physical samples or similar information for studies using survey and interview techniques.
 3. The procedures for the handling and custody of samples, including sample identification, preservation, transportation, and storage.
 4. The methods that will be used to analyze samples or data collected, including a description of the sampling and/or analytical instruments required.

5. The procedures that will be used in the calibration and performance evaluation of the sampling and analytical methods used during the project.
6. The procedures for data reduction and reporting, including a description of statistical analyses to be used and of any computer models to be designed or utilized, and associated verification and validation techniques.
7. The intended use of the data as they relate to the study objectives or hypotheses.
8. The quantitative and or qualitative procedures that will be used to evaluate the success of the project.
9. Any plans for peer or other reviews of the study design or analytical methods prior to data collection.

ANSI/ASQC E4, "Specifications and Guidelines for Quality Systems for Environmental Data Collection and Environmental Technology Programs" is available for purchase from the American Society for Quality Control, phone 1-800-248-1946, item T55. Only in exceptional circumstances should it be necessary to consult this document.

- J. Postcard:** The Applicant must include with the application a self addressed, stamped 3x5-inch post card. This will be used to acknowledge receipt of the application and to transmit other important information to the applicant.

How to Apply

The original and ten (10) copies of the fully developed application and five (5) additional copies of the abstract (15 in all), must be received by NCERQA no later than **4:00 P.M. EST** on the closing date assigned to this topic area: **February 12, 1998**.

The application and abstract must be prepared in accordance with these instructions. Informal, incomplete, or unsigned proposals will not be considered. The application should not be bound or stapled in any way. The original and copies of the application should be secured with paper or binder clips. Completed applications should be sent via regular mail to:

**U.S. Environmental Protection Agency
Peer Review Division (8703R)
Sorting Code: 98-NCERQA-L1
401 M Street, SW
Washington DC 20460**

For express mail applications, the following address must be used:

U. S. Environmental Protection Agency**Peer Review Division (8703R)****Sorting Code: 98-NCERQA-L1****1300 Pennsylvania Avenue, NW****Room B-10105****Washington, DC 20004**

Phone: (202) 564-6939 (for express mail applications)

The sorting code must be identified in the address (as shown above).

Guidelines, Limitations, and Additional Requirements

Proposals must be submitted to only one topic area, using a single sorting code. Proposals submitted to more than one RFA topic will be assigned to the topic designated on the first version received or to the first sorting code designated on the application. If you wish to submit more than one application, you must ensure that the research proposed is significantly different from that in any other that has been submitted to this solicitation or from any other grant you are currently receiving from EPA or any other federal government agency.

Projects which contain subcontracts constituting more than 40% of the total direct cost of the grant for each year in which the subcontract is awarded will be subject to special review and may require additional justification.

Researchers will be expected to budget for and participate in an annual All-Investigators Meeting with EPA scientists and other grantees to report on research activities and to discuss issues of mutual interest.

Review and Selection

All grant applications are initially reviewed by EPA to determine their legal and administrative acceptability. Acceptable applications are then reviewed by an appropriate technical peer review group. This review is designed to evaluate each proposal according to its scientific merit. In general, each review group is composed of non-EPA scientists, engineers, social scientists, and/or economists who are experts in their respective disciplines and are proficient in the technical areas they are reviewing. The reviewers use the following criteria to help them in their reviews:

1. The originality and creativity of the proposed research, the appropriateness and adequacy of the research methods proposed, and the appropriateness and adequacy of the Quality Assurance Narrative Statement. Is the research approach practical and technically defensible, and can the project be performed within the

proposed time period? Will the research contribute to scientific knowledge in the topic area of the solicitation? Is the proposal well-prepared with supportive information that is self-explanatory and understandable?

2. The qualifications of the principal investigator(s) and other key personnel, including research training, demonstrated knowledge of pertinent literature, experience, and publication records. Will all key personnel contribute a significant time commitment to the project?
3. The availability and/or adequacy of the facilities and equipment proposed for the project. Are there any deficiencies that may interfere with the successful completion of the research?
4. The responsiveness of the proposal to the research needs identified for the topic area. Does the proposal adequately address all of the objectives specified for this topic area?
5. Although budget information is not used by the reviewers as the basis for their evaluation of scientific merit, the reviewers are asked to provide their view on the appropriateness and/or adequacy of the proposed budget and its implications for the potential success of the proposed research. Input on requested equipment is of particular interest.

Applications that receive scores of sufficient scientific quality based on the peer review are subjected to a programmatic review within EPA, the object being to assure a balanced research portfolio for the Agency. Scientists from the ORD Laboratories and EPA Program and Regional Offices review these applications in relation to program priorities and their complementarity to the ORD intramural program and make recommendations to NCERQA.

Funding decisions are the sole responsibility of NCERQA. Grants are selected on the basis of technical merit, relevancy to the research priorities outlined, program balance, and budget. A summary statement of the scientific review by the peer panel will be provided to each applicant.

Applications selected for funding will require additional certifications, possibly a revised budget, and responses to any comments or suggestions offered by the peer reviewers. Project officers will contact principal investigators to obtain these materials.

Proprietary Information

By submitting an application in response to this solicitation, the applicant grants EPA permission to share the application with technical reviewers both within and outside of the Agency. Applications containing proprietary or other types of confidential information will be returned to the applicant without review.

Funding Mechanism

The funding mechanism for all awards issued under this solicitation will consist of grants from EPA and depends on the availability of funds. In accordance with Public Law 95-224, the primary purpose of a grant is to accomplish a public purpose of support or stimulation authorized by Federal statute rather than acquisition for the direct benefit of the Agency. In issuing a grant agreement, EPA anticipates that there will be no substantial EPA involvement in the design, implementation, or conduct of the research funded by the grant. However, EPA will monitor research progress, based in part on annual reports provided by awardees.

Contacts

Additional general information on the grants program, forms used for applications, etc., may be obtained by exploring our Web page at <<http://www.epa.gov/ncerqa>>. EPA does not intend to make mass mailings of this announcement. Information not available on the Internet may be obtained by contacting:

**U.S. Environmental Protection Agency
National Center for Environmental Research
and Quality Assurance (8703R)
401 M Street, SW
Washington DC 20460**

Phone: 1-800-490-9194

In addition, a contact person has been identified below for each topic within the RFA. These individuals will usually be the Project Officers for the grants funded under a particular topic. They will respond to inquiries regarding the solicitation and can respond to any technical questions related to your application.

Regional Scale Analysis and Assessment

Barbara Levinson
levinson.barbara@epamail.epa.gov

202-564-6911

APPLICATION FOR FEDERAL ASSISTANCE

1. TYPE OF SUBMISSION Application ☐ Construction ☐ Non-Construction		Preapplication ☐ Construction ☐ Non-Construction		2. DATE SUBMITTED		Applicant Identifier	
				3. DATE RECEIVED BY STATE		State Applicant Identifier	
				4. DATE RECEIVED BY FEDERAL AGENCY		Federal Identifier	
5. APPLICANT INFORMATION IS THIS PROPOSAL BEING SUBMITTED TO ANOTHER FEDERAL AGENCY? ☐ YES ☐ NO IF YES, LIST ACRONYM(S)							
Legal Name:				Organizational Unit:			
Address (<i>give city, county, state, and zip code</i>):				Name and telephone and E-mail number of the person to be contacted on matters involving this application (<i>give area code</i>) PI: ADMIN. CONTACT:			
6. EMPLOYER IDENTIFICATION NUMBER (EIN): -				7. TYPE OF APPLICANT: (<i>enter appropriate letter in box</i>) A. State H. Independent School Dist. B. County I. State Controlled Institution of Higher Learning C. Municipal J. Private University D. Township K. Indian Tribe E. Interstate L. Individual F. Intermunicipal M. Profit Organization G. Special District N. Other (Specify) _____			
8. TYPE OF APPLICATION: ☐ New ☐ Continuation ☐ Revision If Revision, enter appropriate letter(s) in box(es): A. Increase Award B. Decrease Award C. Increase Duration D. Decrease Duration Other (<i>specify</i>): _____				9. NAME OF FEDERAL AGENCY: U.S. Environmental Protection Agency - ORD - NCERQA			
10. CATALOG OF FEDERAL DOMESTIC ASSISTANCE NUMBER: 6 6 . 5 0 0 TITLE: 98-NCERQA - _ _ _				11. DESCRIPTIVE TITLE OF APPLICANT'S PROJECT:			
12. AREAS AFFECTED BY PROJECT (<i>cities, counties, states, etc.</i>):							
13. PROPOSED PROJECT:		14. CONGRESSIONAL DISTRICTS OF:					
Start Date	Ending Date	a. Applicant			b. Project		
15. ESTIMATED TOTAL PROJECT FUNDING:		16. IS APPLICATION SUBJECT TO REVIEW BY STATE EXECUTIVE ORDER 12372 PROCESS?					
a. Federal	\$.00	a. YES. THIS PREAPPLICATION/APPLICATION WAS MADE AVAILABLE TO THE STATE EXECUTIVE ORDER 12372 PROCESS FOR REVIEW ON: DATE _____ b. NO. ☐ PROGRAM IS NOT COVERED BY E.O. 12372 ☐ OR PROGRAM HAS NOT BEEN SELECTED BY STATE FOR REVIEW					
b. Applicant	\$.00						
c. State	\$.00						
d. Local	\$.00						
e. Other	\$.00						
f. Program Income	\$.00	17. IS THE APPLICANT DELINQUENT ON ANY FEDERAL DEBT? ☐ Yes If "Yes," attach an explanation. ☐ No					
g. TOTAL	\$.00						
18. TO THE BEST OF MY KNOWLEDGE AND BELIEF, ALL DATA IN THIS APPLICATION/PREAPPLICATION ARE TRUE AND CORRECT. THE DOCUMENT HAS BEEN DULY AUTHORIZED BY THE GOVERNING BODY OF THE APPLICANT AND THE APPLICANT WILL COMPLY WITH THE ATTACHED ASSURANCES IF THE ASSISTANCE IS AWARDED.							
a. Typed Name of Authorized Representative				b. Title		c. Telephone number	
d. Signature of Authorized Representative						e. Date Signed	

INSTRUCTIONS FOR THE SF 424

This is a standard form used by applicants as a required facesheet for preapplications and applications submitted for Federal Assistance. It will be used by Federal agencies to obtain applicant certification that States which have established a review and comment procedure in response to Executive Order 12372 and have selected the program to be included in their process, have been given an opportunity to review the applicant's submission.

- | Item: | Entry: | Item: | Entry: |
|-------|--|-------|---|
| 1. | Self-explanatory. | 12. | List only the largest political entities affected (e.g., State, counties, cities.) |
| 2. | Date application submitted to Federal agency (or State, if applicable) & applicant's control number (if applicable). | 13. | Self-explanatory. |
| 3. | State use only (if applicable). | 14. | List the applicant's Congressional Districts and any District(s) affected by the program or project. |
| 4. | If this application is to continue or revise an existing award, enter present Federal identifier number. If for a new project, leave blank. | 15. | Amount requested or to be contributed during the first funding/budget period by each contributor. Value of in-kind contributions should be included on appropriate lines as applicable. If the action will result in a dollar change to an existing award, include <u>only</u> the amount of the change. For decreases, enclose the amounts in parentheses. If both basic and supplemental amounts are included, show breakdown on an attached sheet. For multiple program funding, use totals and show breakdown using same categories as item 15. |
| 5. | Legal name of applicant, name of primary organizational unit which will undertake the assistance activity, complete address of the applicant, and name and telephone number of the person to contact on matters related to this application. | 16. | Applicants should contact the State Single Point of Contact (SPOC) for Federal Executive Order 12372 to determine whether the application is subject to the State intergovernmental review process. |
| 6. | Enter Employer Identification Number (EIN) as assigned by the Internal Revenue Service. | 17. | This question applies to the applicant organization, not the person who signs as the authorized representative. Categories of debt include delinquent audit allowances, loans and taxes. |
| 7. | Enter the appropriate letter in the space provided. | 18. | To be signed by the authorized representative of the applicant. A copy of the governing body's authorization for you to sign this application as official representative must be on file in the applicant's office. (Certain Federal agencies may require that this authorization be submitted as part of the application.) |
| 8. | Check appropriate box and enter appropriate letter(s) in the space(s) provided:

— "New" means a new assistance award.

— "Continuation" means an extension for an additional funding/budget period for a project with a projected completion date.

— "Revision" means any change in the Federal Government's financial obligation or contingent liability from an existing obligation. | | |
| 9. | Name of Federal agency from which assistance is being requested with this application. | | |
| 10. | Use the Catalog of Federal Domestic Assistance number and title of the program under which assistance is required. | | |
| 11. | Enter a brief descriptive title of the project. If more than one program is involved, you should append an explanation on a separate sheet. If appropriate (e.g., construction or real property projects), attach a map showing project location. For preapplications, use a separate sheet to provide a summary description of this project. | | |

KEY CONTACTS FORM

■ **Authorized Representative:** *Original awards and amendments will be sent to this individual for review and acceptance, unless otherwise indicated.*

Name: _____
Title: _____
Complete Address: _____

Phone Number: _____

■ **Payee:** *Individual authorized to accept payments.*

Name: _____
Title: _____
Complete Address: _____

Phone Number: _____

■ **Administrative Contact:** *Individual from Sponsored Programs Office to contact concerning administrative matters (i.e., indirect cost rate computation, rebudgeting requests etc.)*

Name: _____
Title: _____
Complete Address: _____

Phone Number: _____
FAX Number: _____
E-Mail Number: _____

■ **Principal Investigator:** *Individual responsible for the technical completion of the proposed work.*

Name: _____
Title: _____
Complete Address: _____

Phone Number: _____
FAX Number: _____
E-Mail Number: _____

EPA STAR Grant Abstract *(Example Format)*

Sorting Code: 98-NCERQA-XX (use the correct code that corresponds to the appropriate RFA topic)

Title: Use the exact title as it appears in the rest of the application.

Investigators: List the names and affiliations of each investigator who will significantly contribute to the project. Start with the Principal Investigator.

Institution: Name of university or other applicant.

Project Period: October 1, 1998--September 30, 2000, for example.

Research Category: Enter your research topic name.

Project Summary:

Objectives/Hypothesis: include a short statement on the context of the proposed research in relation to other environmental research in the particular area of work

Approach: outline the methods, approaches, and techniques you intend to employ in meeting the objectives

Expected Results:

including a brief description of the

Improvements in Risk Assessment or Risk Management

that will be realized if the expected results are achieved

Supplemental Keywords: see attached suggestions. Do not duplicate terms used in the text of the abstract.

SUGGESTED KEYWORDS

Media: (media, air, ambient air, atmosphere, ozone, water, drinking water, watersheds, groundwater, land, soil, sediments, acid deposition, global climate, indoor air, mobile sources, CASTNET, stratospheric ozone, tropospheric, marine, estuary, precipitation, leachate, adsorption, absorption, chemical transport)

Risk Assessment: (exposure, risk, risk assessment, effects, health effects, ecological effects, human health, bioavailability, metabolism, vulnerability, sensitive populations, dose-response, carcinogen, teratogen, mutagen, animal, mammalian, organism, cellular, population, enzymes, infants, children, elderly, stressor, age, race, diet, metabolism, genetic pre-disposition, genetic polymorphisms, sex, ethnic groups, susceptibility, cumulative effects)

Chemicals, toxics, toxic substances: (chemicals, toxics, particulates, ODS, VOC, CFC, PAH, PNA, PCB, dioxin, metals, heavy metals, solvents, oxidants, nitrogen oxides, sulfates, organics, DNAPL, NAPL, pathogens, viruses, bacteria, acid rain, effluent, discharge, dissolved solids, intermediates)

Ecosystem Protection: (ecosystem, indicators, restoration, regionalization, scaling, terrestrial, aquatic, habitat, integrated assessment)

Risk Management: pollution prevention (green chemistry, life-cycle analysis, alternatives, sustainable development, clean technologies, innovative technology, renewable, waste reduction, waste minimization, environmentally conscious manufacturing); treatment (remediation, bioremediation, cleanup, incineration, disinfection, oxidation, restoration)

Public Policy: (public policy, decision making, community-based, cost-benefit, conjoint analysis, observation, non-market valuation, contingent valuation, survey, psychological, preferences, public good, Bayesian, socio-economic, willingness-to-pay, compensation, conservation, environmental assets, sociological)

Scientific Disciplines: (environmental chemistry, marine science, biology, physics, engineering, social science, ecology, hydrology, geology, histology, epidemiology, genetics, pathology, mathematics, limnology, entomology, zoology)

Methods/Techniques: (EMAP, modeling, monitoring, analytical, surveys, measurement methods, general circulation models, climate models, satellite, landsat, remote sensing)

Geographic Areas: (Northeast, central, Northwest, Chesapeake Bay, Great Lakes, Midwest, Mid-Atlantic, states: {use both full name and two letter abbreviation}, EPA Regions 1 through 10)

Sectors: (agriculture, business, transportation, industry {petroleum, electronics, printing, etc}:{identify 4 digit SIC codes}, service industry, food processing, etc)

Current and Pending Support

The following information should be provided for each investigator and other senior personnel. Failure to provide this information may delay consideration of this proposal.

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Investigator:			Other agencies (including NSF) to which this proposal has been/will be submitted.		
Support: ☐ Current ☐ Pending ☐ Submission Planned in Near Future ☐ Transfer of Support Project/Proposal Title:					
Source of Support: Total Award Amount: \$ Total Award Period Covered: Location of Project: Person-Months Per Year Committed to the Project. Cal: Acad: Sumr:					
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*If this project has previously been funded by another agency, please list and furnish information for immediately preceding funding period.

Itemized Budget for EPA STAR Grant Applications (*Example Format*)

CATEGORIES	YEAR ONE	YEAR TWO	YEAR THREE	TOTAL PROJECT
a. Personnel Principal Investigator Co-PI Research Scientists Postdoctoral Scientists Other Personnel				
TOTAL PERSONNEL COSTS				
b. Fringe Benefits _____ % of _____				
c. Travel Trip 1 Trip 1 Trip 1 ...etc.				
TOTAL TRAVEL COSTS				
d. Equipment Item 1 Item 2 Item 3 ...etc.				
TOTAL EQUIPMENT COSTS				
e. Supplies Item 1 Item 2 Item 3 ...etc.				
TOTAL SUPPLY COSTS				
f. Contracts 1 2 3 ...etc.				
TOTAL CONTRACTUAL COSTS				
g. Other Item 1 Item 2 Item 3 ...etc.				
TOTAL OTHER COSTS				
h. TOTAL DIRECT COSTS (sum of a-g)				
i. Indirect Costs/Charges _____ % of _____ (base)				
j. TOTAL PROJECT COSTS (sum of h & i)				
k. TOTAL REQUESTED FROM EPA				