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EPA

AIRBORNE PARTICULATE MATTER (PM) CENTERS

Science To Achieve Results Program

1998 Grants Announcement

Opening Date: May 19, 1998

Closing Date: October 28, 1998

Airborne Particulate Matter (PM) Centers

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Contents

ABSTRACT

EPA intends to support up to five research centers to study priority issues relating to particulate matter, specifically, exposure, dosimetry and extrapolation modeling, toxicology, and epidemiology. Centers will be funded for up to five years. A total of $8 million is available for the first year to support this effort at this time.

INTRODUCTION

In this announcement the U.S. Environmental Protection Agency (EPA), Office of Research and Development (ORD), invites research grant applications to establish Airborne Particulate Matter (PM) Research Centers to address priority research needs in the following research topic areas:

EXPOSURE
DOSIMETRY and EXTRAPOLATION MODELING
TOXICOLOGY
EPIDEMIOLOGY

This announcement provides relevant background information, summarizes EPA's interest in establishing these Centers, and describes the application and review process.

EPA's Mission and Research and Development Strategy

The mission of EPA is to protect public health and to safeguard the natural environment (air, water, and land) upon which life depends. To achieve this mission, EPA must apply sound science to assess environmental problems and evaluate possible solutions. A significant challenge is to support both long-term research that anticipates future environmental problems and research that fills gaps in knowledge relevant to meeting current Agency goals. This Request for Applications (RFA) is an important step toward promoting a sound scientific foundation for both current and future environmental protection.

EPA's research programs focus on reduction of risks to public health and ecosystems and on the reduction of uncertainty associated with environmental health risk assessment and management. Through its laboratories and grants to academic and other nonprofit institutions, EPA promotes research in both human health and ecology, according the highest priority to those areas of risk assessment where uncertainty is high, and which are in critical need of new concepts, methods, and data. EPA also fosters the development and evaluation of new risk reduction technologies including pollution prevention, end-of-pipe controls, 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 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) through the Science to Achieve Results (STAR) Program.

Background

In 1996, EPA's PM Criteria Document, which was peer reviewed by the Clean Air Scientific Advisory Committee (CASAC), concluded that there is increasing scientific confidence, based on numerous epidemiological studies, that PM is associated with increased morbidity and mortality, and that these associations occur at concentrations below the National Ambient Air Quality Standards (NAAQS) for PM in effect at that time. In July 1997, EPA published new NAAQS for PM smaller than 2.5 micrometers (μm) in diameter, called PM2.5, to provide increased protection against a wide range of PM-related health effects, as well as retaining the PM10 NAAQS. In establishing these standards, both EPA and CASAC agreed on the importance of expanding research programs to address the key issues raised in the PM criteria and standards review.

In fiscal year 1998 Congress urged EPA to establish as many as five university-based research centers focused on PM research. Up to $8 million may be used for this purpose. In addition, Congress asked EPA to arrange for an independent study by the National Academy of Sciences, National Research Council (NRC), to develop priorities for a comprehensive PM research plan, develop a near and long-term PM research program, and to monitor research progress over the next five years. On March 31, 1998, the NRC released its first report entitled *Research Priorities for Airborne Particulate Matter: 1. Immediate Priorities and Long-Range Research Portfolio.* Based on recommendations from this NRC report and earlier strategic assessments, ORD is developing and implementing an integrated research program for PM which includes in-house studies, interagency research, and RFAs through which scientists may compete for grant awards. This RFA addresses the need to establish PM Research Centers that will integrate a range of scientific disciplines and activities in order to build long-term health effects and human exposure research programs.

The recommendations from the March 31, 1998, NRC report were used as a major source of guidance for the development of this RFA. The NRC report can be obtained by consulting http://www.nap.edu/readingroom/books/airborne/index.html on the Internet.

EPA plans to establish three types of PM2.5 monitoring networks: mass monitoring (including regulatory gravimetric and continuous monitors), routine chemical speciation, and chemical speciation"super-sites." EPA is currently reviewing the design and siting of these networks to provide maximum support for assessing relevant health effects, exposure assessment, and atmospheric modeling, in addition to supporting attainment requirements. Information on EPA's regulatory monitoring program is accessible through the Internet: http://www.epa.gov/ttn/amtic/amticpm.html. For additional information on EPA's plans on the PM networks, please contact: Richard Scheffe (919-541-4650) or Lee Ann Byrd (919-541-5367).

RESEARCH CENTERS

The March 31, 1998, NRC report recommended a portfolio of research activities targeted to address the highest priority PM research needs. To develop an optimal research portfolio, the Agency has evaluated the NRC research priorities, considered the research activities already underway to address priority needs (an initial research inventory is contained in the NRC report), and determined the appropriate areas of focus for PM Research Centers. Through this RFA, the Agency is soliciting proposals to develop research centers which construct well-defined and integrated programs that address PM research needs in the areas of exposure, dosimetry and extrapolation modeling, toxicology, and epidemiology.

A successful application will recognize that PM research priorities must evolve as new data are generated and will include a detailed description of the process by which the Center will set priorities and phase in new activities, as appropriate. An iterative process might be used, for example, in which interpretation of new results in multiple disciplines such as toxicology and exposure assessments will influence the design of future epidemiology studies, the results of which may influence further toxicology and exposure measurements. The process should lead to a better understanding of the source-concentration-exposure-dose-response continuum. Institutions submitting proposals in response to this RFA are encouraged to clearly indicate how the proposed research program will address the March 31, 1998, NRC recommendations. Centers may be funded for up to five years; applications should clearly show how the program might evolve during that time.

Described below for each priority research area is a brief overview of the research needs which the PM Research Centers, in toto, are anticipated to address. Applicants are encouraged to consult the NRC report for additional elaboration of the highest priority research needs.

Exposure

Epidemiological studies have depended on the assumption that there is a direct relationship between ambient concentrations measured at outdoor air quality monitors and the personal exposure of the community to ambient PM and gaseous copollutants. To date, information is especially lacking on the relationship between ambient PM and personal exposure to PM in potentially susceptible sub-populations such as the elderly, individuals with respiratory or cardiovascular disease, and children. Novel approaches (procedures, models, and instrumentation) are needed to evaluate the contribution of ambient PM to total personal PM exposure and to characterize PM exposures from ambient, indoor, and personal exposures.

In order to reduce the uncertainty associated with PM exposure assessment research is needed:

(i) to determine how the concentration and chemical characteristics of various hazardous constituents vary as afunction of ambient PM particle size;

(ii) to quantitatively determine the relationship between outdoor ambient PM concentrations and personal exposures to ambient PM in normal and susceptible sub-populations;

(iii) to quantitatively determine personal exposures to biologically important constituents and specific physical characteristics of PM from ambient, indoor, and personal sources;

(iv) to develop and implement source receptor models for biologically important constituents and specific physical characteristics of ambient air PM; and

(v) to assess the extent to which measurement errors and bias affect the interpretation of epidemiological results.

Dosimetry and Extrapolation Modeling

New dosimetry models are needed to reduce the uncertainty in our knowledge about the pulmonary deposition and cell-specific dose of PM and PM-associated constituents. This information will be a critical link between individual PM exposures and health responses of susceptible sub-populations (e.g., children, the elderly, and people with chronic respiratory disease, cardiopulmonary disease, or compromised immune systems). Research is needed:

(i) to develop new dosimetry models to examine the fate of PM and associated constituents once they deposit in the lung of susceptible individuals, taking into account factors such as PM physicochemical properties (e.g, bioavailability and biopotency), age, gender, disease state, exercise patterns;

(ii) to determine the influence of copollutant exposures on PM deposition and clearance in normal and susceptible subpopulations; and

(iii) to develop new models that will allow interspecies extrapolations (animal to human) to be made regarding PM dose-response comparisons for various adverse health effects associated with PM exposure.

Toxicology

Reducing uncertainties in the identification of causative PM constituents is of great importance to PM health risk assessment. The objective of this research is to identify PM causative constituents, understand the biological mechanisms by which PM hazardous constituents mediate adverse acute and chronic health effects associated with PM exposure (biological plausibility) and identify host factors associated with enhanced susceptibility to PM health effects. Biological effects of PM can include pulmonary and extrapulmonary endpoints and should employ either ambient PM or environmentally relevant surrogate particles. Research is needed to determine:

(i) the physical (e.g., ultrafine versus fine versus coarse; particle number or surface area versus mass), chemical, and biological characteristics of particles which are responsible for the acute and chronic health effects associated with PM exposures;

(ii) the dose-response relationships between causative PM constituents and corresponding acute and chronic health effects;

(iii) the extent to which each hazardous constituent contributes to the acute and chronic health effects associated with PM exposure (constituent biopotency);

(iv) the biological mechanisms by which PM mediates acute and chronic health effects; and

(v) the extent to which copollutants influence the toxicity of identified PM hazardous constituents.

Understanding susceptibility to adverse health effects of PM is another important factor relating to assessment of PM health risk. Research on the biological mechanisms responsible for observed differences in susceptibility should provide insights into host factors affecting susceptibility to PM health effects. Research is needed that employs animal models of human disease to:

(i) identify potential health conditions that would enhance susceptibility to adverse PM health effects;

(ii) provide insight into the biological mechanisms associated with enhanced susceptibility to adverse PM health effects; and

(iii) determine the extent to which host susceptibility factors influence the

dose-response relationship for various acute and chronic health end-points of PM exposure.

Epidemiology

Research is needed to identify subpopulations that are particularly susceptible to the adverse acute and chronic health effects associated with PM exposure. Most epidemiological studies on PM-related health effects have investigated premature mortality and increased hospital admissions and emergency room visits (primarily in the elderly and individuals with cardiopulmonary disease), increased respiratory symptoms and disease (in children and individuals with cardiopulmonary disease such as asthma), and decreased lung function (particularly in children and individuals with asthma). Scientific uncertainties remain, however, regarding the relationship of PM and copollutant exposures to increased human mortality and morbidity, particularly with respect to long-term exposures. Similarly, important uncertainties remain about the biological mechanisms responsible for increased mortality or morbidity from PM exposures and about the nature of human exposures.

Research is needed to reduce the scientific uncertainty about the extent to which chronic PM exposure:

(i) causes or exacerbates morbidity end points in susceptible subpopulations;

(ii) contributes to premature death in susceptible subpopulations; and

(iii) participates in the development of pulmonary disease in the young.

Research is needed to determine the extent to which copollutant exposures affect PM-associated morbidity and mortality. New epidemiological studies are needed to examine the degree to which important constituents identified in PM toxicological studies correlate with the adverse acute and chronic health effects observed in susceptible sub-populations following PM exposure. However, based on the NRC recommendation, certain major epidemiological studies on PM should be delayed until additional information on personal exposure and toxicological mechanisms is available.

Funds Available

Although this solicitation is included in EPA's FY 1998 program, support for these Center grants is contingent upon the availability of funds for this purpose. It is anticipated that a total of $8 million, including direct and indirect costs, will be available to fund the first year of the program which will support up to 5 Centers. It is anticipated that the Centers will be funded at up to $1.5M per year for a period of up to 5 years, subject to the availability of continued funding.

Special Requirements

1. To the extent possible, Center proposals are encouraged to take a multi- disciplinary approach and make every effort to ensure that research data will be available to other scientists and the public. This emphasis is consistent with the FY 1998 Congressional Appropriations Conference Report which indicates that these Centers should " . . . bring together biomedical and public health scientists, engineers, environmental scientists, economists, and policy analysts as part of a coordinated and comprehensive data analysis and research effort." And ". . . the conferees expect that all the research data resulting from this funding will become available to the public, with proper safeguards for researchers' first right of publication, for scientific integrity, for individuals participating in studies, for proprietary commercial interests, and to prevent scientific fraud and misconduct."

2. In conducting its research the Center must demonstrate a willingness to take advantage of existing or future air quality data bases, especially relating to PM2.5, as they become available.

3. Applications which bring together researchers from multiple institutions to form consortia are encouraged.

4. The minimal required components of each Center are as follows:

   (A) An administrative core unit which provides overall oversight, coordination, and integration of the Center's activities. Applications should indicate how the program will be coordinated internally. This plan, at minimum, should describe how programmatic and funding decisions will be made; how new projects would be solicited, reviewed, and selected; how progress will be monitored; and who sets priorities.

   (B) If appropriate and desired, one or more facility support cores that provide a technique, service, or instrumentation that will enhance ongoing research efforts. Examples of such facilities are analytical chemistry laboratories, statistics centers, laboratory animal facilities, etc.

   (C) One or more research projects that address one or more of the research areas described above.

   (D) In recognition of the NRC's suggestion, plans for information sharing, which should include how the Center will obtain information from other sources, how it plans to disseminate research findings and other information, and how it will ensure that the Center's research is complementary, coordinated with, and not duplicative of others.

5. Each Center that is awarded must establish an external science advisory committee (SAC) that can provide objective, independent, technical advice to the Center to ensure scientific quality and progress. The SAC membership will typically consist of nine to twelve peers selected from the academic, private and public sectors. The composition, operating principles, and method for selection of this body should be addressed in the application.

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 employees may cooperate or collaborate with eligible applicants within the limits imposed by applicable legislation and regulations. However, 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. Under exceptional circumstances 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

Instructions for Submitting an Application

This section contains a set of instructions related to how applicants should prepare their applications. Proposed projects must be for research designed to advance the state of knowledge in the research areas described in this solicitation.

Sorting Code

In order to facilitate proper assignment and review of applications, each applicant is asked to identify the sorting code for this topic area at various places within the application. **It is the responsibility of the applicant to correctly identify the proper sorting code.** Failure to do so may result in an inappropriate peer review assignment. The Sorting Code for this solicitation is **98-NCERQA-U1.**

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 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 successful 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 meeting, 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 two 8.5 x 11-inch pages 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 RFA topic, 98-NCERQA-U1.

2. Title: Use the exact title as it appears throughout 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) the estimated **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 thirty (30) 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. Overall Objectives: List the objectives of the proposed Center and the research being conducted 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 Center (one to two pages recommended).

2. Approach: Outline the methods, approaches, and techniques that you intend to employ in meeting the objectives stated above (20 to 25 pages recommended). The administrative core, facilities core(s), research projects, and information plan should be described as separate components of this section. Each research project should be fully documented in terms of objectives, approach, and methods to be used.

3. Expected Results or Benefits: Describe the results you expect to achieve, the benefits of success as they relate to the research topic areas of this solicitation, and the potential recipients of these benefits. This section should also discuss the utility of the research projects proposed for addressing the environmental problems described (one to two pages recommended).

4. General Project Information: Discuss other information relevant to the potential success of the Center. This could include additional information on facilities, personnel, project schedules, 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 30-page limit. References cited are in addition to the 30 pages.

E. Resumes: The resumes of the principal investigator and all important co-workers should be presented. Each resume must not exceed two consecutively num-

bered (bottom center), 8.5x11-inch pages of single-spaced standard 12-point type with 1-inch margins.

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. If personnel involved in the Center have continuing support from EPA or other sources for research related to the objectives of the Center, describe how you plan for potential coordination or integration of this research with the Center's program. This description is in addition to the 30-page limitation.

G. Budget: The applicant must present a detailed, itemized budget for the entire Center program and for each of the component subunits. This budget must be in the format provided in the example (see attachment). 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.

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 three consecutively numbered, 8.5x11-inch pages of single-spaced standard 12-point type with 1-inch margins. This is in addition to the 30 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, and 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 with 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 20 copies of the fully developed application and 10 additional copies of the abstract (30 in all), must be received by NCERQA no later than **4:00 p.m. EST October 28, 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 if sent via regular mail should be addressed to:

U.S. Environmental Protection Agency
Peer Review Division (8703R)
Sorting Code: 98-NCERQA-U1
401 M Street, SW
Washington DC 20460

For express mail or courier-delivered applications, the following address must be used:

U. S. Environmental Protection Agency
Peer Review Division (8703R)
Sorting Code: 98-NCERQA-U1
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

If you wish to submit more than one application, you must ensure that the research proposed is significantly different from that in any other application that has been submitted to this solicitation or from any other grant you are currently receiving from EPA, any other federal government agency, or other sources.

Center Directors (Principal Investigators) will be required to budget for and attend an initial meeting with EPA program administrators shortly after initiation of the program. Researchers will be expected to budget for and participate in annual All-Investigators Meetings 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 excellent and very good from the peer reviewers 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 recommend selections to NCERQA.

Funding decisions are the sole responsibility of EPA. 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. He will respond to inquires regarding the solicitation and can respond to any technical questions related to your application.

Airborne Particulate Matter Research Centers

Deran Pashayan 202-564-6913
pashayan.deran@epamail.epa.gov