



**National Aeronautics and  
Space Administration**

**March 20, 1998**

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**NRA-98-OES-02**

# **RESEARCH ANNOUNCEMENT**

**TROPICAL RAINFALL MEASURING MISSION (TRMM) SCIENCE:  
POST-LAUNCH RESEARCH OPPORTUNITIES**

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**Letter of Intent due April 17, 1998  
Proposals Due May 26, 1998**

0087

OMB Approval No. 2700-

**TROPICAL RAINFALL MEASURING MISSION (TRMM) SCIENCE:  
POST-LAUNCH RESEARCH OPPORTUNITIES**

**NASA Research Announcement  
Soliciting Research Proposals  
for  
Period Ending  
May 26, 1998**

**NRA-98-OES-02  
Issued March 20, 1998**

**Office of Earth Science  
National Aeronautics and Space Administration  
Washington, DC 20546**

**NASA RESEARCH ANNOUNCEMENT  
TROPICAL RAINFALL MEASURING MISSION (TRMM) SCIENCE:  
POST-LAUNCH RESEARCH OPPORTUNITIES**

**I. INTRODUCTION**

The National Aeronautics and Space Administration (NASA) announces the solicitation of research proposals to conduct scientific investigations in the Earth sciences discipline of precipitation science and related tropical energetics in connection with the Tropical Rainfall Measuring Mission (TRMM) launched in November 1997. This opportunity, which follows an earlier TRMM research announcement that began in 1997, is intended to support TRMM post-launch investigations for a 3-year period. Five topics of interest are emphasized in this NRA that are relevant to TRMM post-launch science investigations: (1) algorithm improvement, (2) data utilization, (3) validation data, (4) field campaigns, and (5) applications. A technical description of investigations of interest appears in Appendix A. Approximately \$2.5 million per year is expected to be reserved to support NASA's science investigations, subject to availability of funds. It is anticipated that an average NASA award will be funded in the range of \$80,000 to \$120,000.

Participation in this program is open to all categories of domestic and foreign organizations, including educational institutions, industry, non-profit institutions, NASA centers, and other U.S. agencies. In accordance with NASA policy, all investigations by foreign participants will be conducted without any exchange of funds, i.e., investigators whose home institution is outside the United States cannot be funded by NASA. Proposals may be submitted at any time during the period ending May 26, 1998. NASA reserves the right to consider proposals received after that date in accordance with Appendix B, paragraph 11, i.e., "the selecting official deems the late proposal to offer significant technical advantage or cost reduction." Proposals submitted to NASA will be evaluated through scientific peer reviews and engineering feasibility reviews. Selection is expected to be announced during August 1998.

All prospective proposers are strongly encouraged to submit a letter of intent to propose to this Announcement by April 17, 1998. This letter should contain a brief description of the research to be proposed.

Technical information contained in Appendix A applies to this Research Announcement only. Appendix B through D contain NASA general guidelines for the preparation of proposals solicited by this Research Announcement.

**Identifier:** NRA 98-OES-02

**Submit Letter of Intent to:** Tropical Rainfall Measuring Mission  
Code Y  
400 Virginia Avenue, SW, Suite 700  
Washington, DC 20024

**Submit Proposals to:** Tropical Rainfall Measuring Mission  
Code Y  
400 Virginia Avenue, SW, Suite 700  
Washington, DC 20024  
Washington, DC 20024

**Number of Copies Required:** 12

**Selecting Official:** Director, Science Division  
Office of Earth Science  
NASA Headquarters

**Obtain Additional Information From:** Dr. Ramesh Kakar  
TRMM Program Scientist  
Code YS  
NASA Headquarters  
300 E Street, SW  
Washington, DC 20546  
Telephone: (202) 358-0240  
FAX: (202) 358-2770  
email: Ramesh.Kakar@hq.nasa.gov

Please use identifier number NRA-98-OES-02 when making an inquiry regarding this Announcement. Your interest and cooperation in participating in this effort are appreciated.

ORIGINAL SIGNED BY

Dr. Ghassem Asrar  
Associate Administrator  
Office of Earth Science

**NASA RESEARCH ANNOUNCEMENT  
TROPICAL RAINFALL MEASURING MISSION (TRMM) SCIENCE:  
POST-LAUNCH RESEARCH OPPORTUNITIES**

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## APPENDIX A TECHNICAL DESCRIPTION

This announcement seeks investigators to supplement the existing TRMM science team. The current science team consists of a broad range of investigations covering algorithm development; validation as well as modeling and analysis. For an overview of the TRMM research and operations, the reader is referred to the TRMM Science Operations Plan which can be found on the TRMM web page at <http://trmm.gsfc.nasa.gov> under the heading of "Science Background." Additional validation information is also contained under the heading "Validation." Given the successful launch of TRMM on Nov. 27, 1997, and the successful operation of all five science instruments, this announcement of opportunity seeks primarily to round out the scientific investigations by filling research voids identified by the existing science team. Research proposals are sought in five distinct areas described below:

**1. Algorithm Improvement:** Investigators are sought that can work within the framework of existing algorithms to refine assumptions, address known deficiencies or expand the existing set of retrieved geophysical parameters within the TRMM operational algorithms. Passive microwave, radar, and combinations of passive microwave and radar algorithms are used in TRMM, along with algorithms coupling TRMM products with observations from other satellites. The existing algorithms along with partial lists of potential improvements can be found on the TRMM home page at <http://trmm.gsfc.nasa.gov> under "Science Background." Potential investigators in this category are urged to contact the algorithm investigators directly as the ability to propose a coherent team approach to the algorithm improvement will be weighted heavily in the evaluations.

**2. Data Utilization:** Investigators are sought from the weather and climate modeling community that will make use of TRMM products to advance our understanding of regional or the global climate system. Areas of interest to TRMM include, but are not limited to: Efforts involving data assimilation or studies to determine the sensitivity of models to the quality of rainfall data; model initialization and studies to determine the observational requirements for sustained positive impact on general circulation models; efforts leading to the generation of TRMM products, either alone or in combination with other data sources, that can be readily used by the modeling community.

**3. Validation Data:** Investigators are sought with specialized experience to conduct precipitation research and analysis focusing on ground-based precipitation observations to develop a more precise understanding of tropical rainfall characteristics and in particular to strengthen the quality of the measurements for application to validation and interpretation of TRMM satellite rainfall observations. Through the TRMM global validation program, extensive rainfall and related meteorological measurements are continuously being made at the several tropical ground validation sites and from a number of experimental sites. In addition to precipitation radars and extensive networks of rain-rate gauges, polarimetric observations are being acquired with multi-frequency dual polarization radars and a multi-frequency microwave attenuation link. Ground-based observational systems also include video and impact disdrometers, profilers, dual-Doppler radar, and other remote sensing systems. More detailed information on these measurements can be obtained through the TRMM web site under "Validation."

**4. Field Experiments:** Investigators with special abilities to analyze field experiment data are sought in connection with the TRMM Field Campaigns in Texas, Florida, Brazil and Kwajalein. The TRMM Field Campaigns will consist of ground based radars and profilers, remote sensing aircraft; aircraft instrumented for microphysical measurements; disdrometers and rain-rate gauges and other supporting meteorological observations. TRMM will also be participating to a limited extent in the South China Sea Monsoon Experiment (SCSMEX). Observations of interest to TRMM will include dual-Doppler radar (polarimetric measurements from one of the two radars) and atmospheric soundings. An outline of the four TRMM specific campaigns is described in the TRMM Science Operations Plan and SCSMEX details are described at

[http://www.joss.ucar.edu/joss\\_psg/project/scsmex/](http://www.joss.ucar.edu/joss_psg/project/scsmex/). More specific details regarding the types of observations or analyses that are currently not well covered by the TRMM science plan can be found on TRMM web page <http://trmm.gsfc.nasa.gov> under “Science Background.” As with the algorithm improvement investigators, investigators proposing in this category are encouraged to contact the principal investigators of each Field Campaign to identify a cohesive team strategy.

**5. Applications:** Limited resources are available to expand investigations dealing with the applicability of TRMM data to areas of either pure scientific interest or issues of immediate social relevance. Unlike the previous categories aimed at rounding out existing research efforts, investigators in this category are sought to expand the scope and usefulness of TRMM data.

## **APPENDIX B**

### **Instructions for Responding to NASA Research Announcements (JULY 1995)**

#### **1. Foreword**

a. These instructions apply to NASA Research Announcements. The "NASA Research Announcement (NRA)" permits competitive selection of research projects in accordance with statute while preserving the traditional concepts and understandings associated with NASA sponsorship of research.

b. These instructions are Appendix I to 1870.203 of the NASA Federal Acquisition Regulation Supplement.

#### **2. Policy**

a. Proposals received in response to an NRA will be used only for evaluation purposes. NASA does not allow a proposal, the contents of which are not available without restriction from another source, or any unique ideas submitted in response to an NRA to be used as the basis of a solicitation or in negotiation with other organizations, nor is a pre-award synopsis published for individual proposals.

b. A solicited proposal that results in a NASA award becomes part of the record of that transaction and may be available to the public on specific request; however, information or material that NASA and the awardee mutually agree to be of a privileged nature will be held in confidence to the extent permitted by law, including the Freedom of Information Act.

#### **3. Purpose**

These instructions supplement documents identified as "NASA Research Announcements." The NRA's contain programmatic information and certain requirements which apply only to proposals prepared in response to that particular announcement. These instructions contain the general proposal preparation information which applies to responses to all NRAs.

#### **4. Relationship to Award**

a. A contract, grant, cooperative agreement, or other agreement may be used to accomplish an effort funded in response to an NRA. NASA will determine the appropriate instrument.

b. Grants are generally used to fund basic research in educational and nonprofit institutions, while research in other private sector organizations is accomplished under contract. Contracts resulting from NRAs are subject to the Federal Acquisition Regulation and the NASA FAR Supplement (NHB 5100.4). Any resultant grants or cooperative agreements will be awarded and administered in accordance with the NASA Grant and Cooperative Agreement Handbook (NHB 5800.1).

#### **5. Conformance to Guidance**

a. NASA does not have mandatory forms or formats for preparation of responses to NRAs; however, it is requested that proposals conform to the guidelines in these instructions. NASA may accept proposals without discussion; hence, proposals should initially be as complete as possible and be submitted on the proposers' most favorable terms.

b. In order to be considered responsive, a submission must, at a minimum, present a specific project within the areas delineated by the NRA; contain sufficient technical and cost information to permit a meaningful evaluation; be signed by an official authorized to legally bind the submitting organization; not merely offer to perform standard services or to

just provide computer facilities or services; and not significantly duplicate a more specific current or pending NASA solicitation.

## **6. NRA-Specific Items**

a. Several proposal submission items appear in the NRA itself. These include: the unique NRA identifier; when to submit proposals; where to send proposals; number of copies required; and sources for more information. Items included in these instructions may be supplemented by the NRA.

## **7. Proposal Contents**

a. The following information is needed in all proposals in order to permit consideration in an objective manner. NRAs will generally specify topics for which additional information or greater detail is desirable. Each proposal copy shall contain all submitted material, including a copy of the transmittal letter if it contains substantive information.

b. Transmittal Letter or Prefatory Material.

(1) The legal name and address of the organization and specific division or campus identification if part of a larger organization;

(2) A brief, scientifically valid project title intelligible to a scientifically literate reader and suitable for use in the public press;

(3) Type of organization: e.g., profit, nonprofit, educational, small business, minority, women-owned, etc.;

(4) Name and telephone number of the principal investigator and business personnel who may be contacted during evaluation or negotiation;

(5) Identification of other organizations that are currently evaluating a proposal for the same efforts;

(6) Identification of the NRA, by number and title, to which the proposal is responding;

(7) Dollar amount requested, desired starting date, and duration of project;

(8) Date of submission; and

(9) Signature of a responsible official or authorized representative of the organization, or any other person authorized to legally bind the organization (unless the signature appears on the proposal itself).

c. Restriction on Use and Disclosure of Proposal Information

Information contained in proposals is used for evaluation purposes only. Offerors or quoters should, in order to maximize protection of trade secrets or other information that is confidential or privileged, place the following notice on the title page of the proposal and specify the information subject to the notice by inserting appropriate identification, such as page numbers, in the notice. In any event, information contained in proposals will be protected to the extent permitted by law, but NASA assumes no liability for use and disclosure of information not made subject to the notice.

## NOTICE

**Restriction on Use and Disclosure of Proposal Information.** The information (data) contained in [ insert page numbers or other identification ] of this proposal constitutes a trade secret and/or information that is commercial or financial and confidential or privileged. It is furnished to the Government in confidence with the understanding that it will not, without permission of the offeror, be used or disclosed other than for evaluation purposes; provided, however, that in the event a contract (or other agreement) is awarded on the basis of this proposal the Government shall have the right to use and disclose this information (data) to the extent provided in the contract (or other agreement). This restriction does not limit the Government's right to use or disclose this information (data) if obtained from another source without restriction.

d. **Abstract.** Include a concise (200-300 word if not otherwise specified in the NRA) abstract describing the objective and the method of approach.

e. **Project Description.** (1) The main body of the proposal shall be a detailed statement of the work to be undertaken and should include objectives and expected significance; relation to the present state of knowledge; and relation to previous work done on the project and to related work in progress elsewhere. The statement should outline the plan of work, including the broad design of experiments to be undertaken and a description of experimental methods and procedures. The project description should address the evaluation factors in these instructions and any specific factors in the NRA. Any substantial collaboration with individuals not referred to in the budget or use of consultants should be described. Subcontracting significant portions of a research project is discouraged.

(2) When it is expected that the effort will require more than one year for completion, the proposal should cover the complete project to the extent that it can be reasonably anticipated. Principal emphasis should, of course, be on the first year of work, and the description should distinguish clearly between the first year's work and work planned for subsequent years.

f. **Management Approach.** For large or complex efforts involving interactions among numerous individuals or other organizations, plans for distribution of responsibilities and arrangements for ensuring a coordinated effort should be described. Intensive working relations with NASA field centers that are not logical inclusions elsewhere in the proposal should be described.

g. **Personnel.** The principal investigator is responsible for supervision of the work and participates in the conduct of the research regardless of whether or not compensated under the award. A short biographical sketch of the principal investigator, a list of principal publications and any exceptional qualifications should be included. Omit social security number and other personal items which do not merit consideration in evaluation of the proposal. Give similar biographical information on other senior professional personnel who will be directly associated with the project. Give the names and titles of any other scientists and technical personnel associated substantially with the project in an advisory capacity. Universities should list the approximate number of students or other assistants, together with information as to their level of academic attainment. Any special industry- university cooperative arrangements should be described.

h. **Facilities and Equipment.** (1) Describe available facilities and major items of equipment especially adapted or suited to the proposed project, and any additional major equipment that will be required. Identify any Government-owned facilities, industrial plant equipment, or special tooling that are proposed for use.

(2) Before requesting a major item of capital equipment, the proposer should determine if sharing or loan of equipment already within the organization is a feasible alternative. Where such arrangements cannot be made, the proposal should so state. The need for items that typically can be used for research and non-research purposes should be explained.

i. **Proposed Costs.** (1) Proposals should contain cost and technical parts in one volume: do not use separate "confidential" salary pages. As applicable, include separate cost estimates for salaries and wages; fringe benefits; equipment; expendable materials and supplies; services; domestic and foreign travel; ADP expenses; publication or page charges; consultants; subcontracts; other miscellaneous identifiable direct costs; and indirect costs. List salaries and wages in appropriate organizational categories (e.g., principal investigator,

other scientific and engineering professionals, graduate students, research assistants, and technicians and other non-professional personnel). Estimate all manpower data in terms of man-months or fractions of full-time.

(2) Explanatory notes should accompany the cost proposal to provide identification and estimated cost of major capital equipment items to be acquired; purpose and estimated number and lengths of trips planned; basis for indirect cost computation (including date of most recent negotiation and cognizant agency); and clarification of other items in the cost proposal that are not self-evident. List estimated expenses as yearly requirements by major work phases. (Standard Form 1411 may be used).

(3) Allowable costs are governed by FAR Part 31 and the NASA FAR Supplement Part 18-31 (and OMB Circulars A-21 for educational institutions and A-122 for nonprofit organizations).

**j. Security.** Proposals should not contain security classified material. If the research requires access to or may generate security classified information, the submitter will be required to comply with Government security regulations.

**k. Current Support.** For other current projects being conducted by the principal investigator, provide title of project, sponsoring agency, and ending date.

**l. Special Matters.** (1) Include any required statements of environmental impact of the research, human subject or animal care provisions, conflict of interest, or on such other topics as may be required by the nature of the effort and current statutes, executive orders, or other current Government-wide guidelines.

(2) Proposers should include a brief description of the organization, its facilities, and previous work experience in the field of the proposal. Identify the cognizant Government audit agency, inspection agency, and administrative contracting officer, when applicable.

## 8. Renewal Proposals

a. Renewal proposals for existing awards will be considered in the same manner as proposals for new endeavors. A renewal proposal should not repeat all of the information that was in the original proposal. The renewal proposal should refer to its predecessor, update the parts that are no longer current, and indicate what elements of the research are expected to be covered during the period for which support is desired. A description of any significant findings since the most recent progress report should be included. The renewal proposal should treat, in reasonable detail, the plans for the next period, contain a cost estimate, and otherwise adhere to these instructions.

b. NASA may renew an effort either through amendment of an existing contract or by a new award.

## 9. Length

Unless otherwise specified in the NRA, effort should be made to keep proposals as brief as possible, concentrating on substantive material. Few proposals need exceed 15-20 pages. Necessary detailed information, such as reprints, should be included as attachments. A complete set of attachments is necessary for each copy of the proposal. As proposals are not returned, avoid use of "one-of-a-kind" attachments: their availability may be mentioned in the proposal.

## 10. Joint Proposals

a. Where multiple organizations are involved, the proposal may be submitted by only one of them. It should clearly describe the role to be played by the other organizations and indicate the legal and managerial arrangements contemplated. In other instances, simultaneous submission of related proposals from each organization might be appropriate, in which case parallel awards would be made.

b. Where a project of a cooperative nature with NASA is contemplated, describe the contributions expected from any participating NASA investigator and agency facilities or equipment which may be required. The proposal must be confined only to that which the proposing organization can commit itself. "Joint" proposals which specify the internal

arrangements NASA will actually make are not acceptable as a means of establishing an agency commitment.

## **11. Late Proposals**

A proposal or modification received after the date or dates specified in an NRA may be considered if the selecting official deems it to offer NASA a significant technical advantage or cost reduction.

## **12. Withdrawal**

Proposals may be withdrawn by the proposer at any time. Offerors are requested to notify NASA if the proposal is funded by another organization or of other changed circumstances which dictate termination of evaluation.

## **13. Evaluation Factors**

a. Unless otherwise specified in the NRA, the principal elements (of approximately equal weight) considered in evaluating a proposal are its relevance to NASA's objectives, intrinsic merit, and cost.

b. Evaluation of a proposal's relevance to NASA's objectives includes the consideration of the potential contribution of the effort to NASA's mission.

c. Evaluation of its intrinsic merit includes the consideration of the following factors, none of which is more important than any other:

(1) Overall scientific or technical merit of the proposal or unique and innovative methods, approaches, or concepts demonstrated by the proposal.

(2) Offeror's capabilities, related experience, facilities, techniques, or unique combinations of these which are integral factors for achieving the proposal objectives.

(3) The qualifications, capabilities, and experience of the proposed principal investigator, team leader, or key personnel critical in achieving the proposal objectives.

(4) Overall standing among similar proposals and/or evaluation against the state-of-the-art.

d. Evaluation of the cost of a proposed effort includes the realism and reasonableness of the proposed cost and the relationship of the proposed cost and available funds.

## **14. Evaluation Techniques**

Selection decisions will be made following peer and/or scientific review of the proposals. Several evaluation techniques are regularly used within NASA. In all cases proposals are subject to scientific review by discipline specialists in the area of the proposal. Some proposals are reviewed entirely in-house, others are evaluated by a combination of in-house and selected external reviewers, while yet others are subject to the full external peer review technique (with due regard for conflict-of-interest and protection of proposal information), such as by mail or through assembled panels. The final decisions are made by a NASA selecting official. A proposal which is scientifically and programmatically meritorious, but not selected for award during its initial review, may be included in subsequent reviews unless the proposer requests otherwise.

## **15. Selection for Award**

a. When a proposal is not selected for award, and the proposer has indicated that the proposal is not to be held over for subsequent reviews, the proposer will be notified. NASA will explain generally why the proposal was not selected. Proposers desiring additional information may contact the selecting official who will arrange a debriefing.

b. When a proposal is selected for award, negotiation and award will be handled by the procurement office in the funding installation. The proposal is used as the basis for negotiation. The contracting officer may request certain business data and may forward a model contract and other information which will be of use during the contract negotiation.

## **16. Cancellation of NRA**

NASA reserves the right to make no awards under this NRA and to cancel this NRA. NASA assumes no liability for canceling the NRA or for anyone's failure to receive actual notice of cancellation. Cancellation may be followed by issuance and synopsis of a revised NRA, since amendment of an NRA is normally not permitted.

## APPENDIX C

### Guidelines for International Proposals

NASA accepts proposals from entities located outside the U.S. in response to this NRA. Proposals from non-U.S. entities should not include a cost plan. Non-U.S. proposals, and U.S. Proposals that include non-U.S. participation, must be endorsed by the respective government agency or funding/sponsoring institution in the country from which the non-U.S. participant is proposing. Such endorsement should indicate the following points: (1) The proposal merits careful consideration by NASA; and (2) If the proposal is selected, sufficient funds will be made available by the sponsoring foreign agency to undertake the activity as proposed.

Proposals, along with the requested number of copies and Letter of Endorsement must be forwarded to NASA in time to arrive before the deadline established for this NRA. In addition, one copy of each of these documents should be send to:

NASA Headquarters  
Office of External Relations  
Earth Science Division  
Mail Code IY  
Washington, DC 20546  
USA

Any materials sent by courier or express mail (e.g., Federal Express) should be sent to:

NASA Headquarters  
Office of External Relations  
Earth Science Division  
Mail Code IY  
300 E Street, SW  
Washington, DC 20024-3210

All proposals must be typewritten in English. All non-U.S. proposals will undergo the same evaluation and selection process as those originating in the U.S. Non-U.S. proposals and U.S. Proposals that include non-U.S. participation, must follow all other guidelines and requirements described in this NRA. Sponsoring non-U.S. agencies may, in exceptional situations, forward a proposal without endorsement to the above address, if review and endorsement are not possible before the announced closing date. In such cases, however, NASA's Earth Science Division of the Office of External Relations should be advised when a decision on the endorsement is to be expected.

Successful and unsuccessful proposers will be contacted directly by the NASA Program Office coordinating the NRA. Copies of these letters will be sent to the sponsoring government agency.

**APPENDIX D**

**Proposal Cover Sheet  
NASA Research Announcement 98-OES-02**

**Proposal No.** \_\_\_\_\_ (Leave Blank for NASA Use)

**Title:** \_\_\_\_\_

**Principal Investigator:**

Name: \_\_\_\_\_

Department: \_\_\_\_\_

Institution: \_\_\_\_\_

Street/PO Box: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Country: \_\_\_\_\_ E-mail: \_\_\_\_\_

Telephone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Co-Investigators:**

Name	Institution	Telephone
_____	_____	_____
_____	_____	_____

**Budget:**

1st Year: \_\_\_\_\_ 2nd Year: \_\_\_\_\_ 3rd Year: \_\_\_\_\_ Total: \_\_\_\_\_

**Authorizing Official:** \_\_\_\_\_  
(Name) (Institution)

## APPENDIX D

### CERTIFICATIONS, DISCLOSURES, AND ASSURANCES REGARDING LOBBYING, DEBARMENT & SUSPENSION, AND DRUG-FREE WORKPLACE REQUIREMENTS

#### 1. LOBBYING

As required by Section 1352, Title 31 of the U.S. Code, and implemented at 14 CFR Part 1271, as defined at 14 CFR Subparts 1271.110 and 1260.117, with each submission that initiates agency consideration of such applicant for award of a Federal contract, grant, or cooperative agreement exceeding \$ 100,000, the applicant must certify that:

(1) No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit a Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

#### 2. DRUG-FREE WORKPLACE

The applicant **agrees** that it will or will continue to provide a drug-free workplace as required by the Drug-Free Workplace Act of 1988, P.L. 100-690, as amended.

#### 3. GOVERNMENTWIDE DEBARMENT AND SUSPENSION

As required by Executive Order 12549, and implemented at 14 CFR 1260.510, for prospective participants in primary covered transactions, as defined at 14 CFR Subparts 1265.510 and 1260.117—

(1) The prospective primary participant **certifies** to the best of its knowledge and belief, that it and its principals:

(a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded by any Federal department or agency.

(b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;

(c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph ( 1 )(b) of this certification; and

(d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(2) Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.

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(signature)