CEDAR, GEM, and SHINE Postdoctoral Research

Program Solicitation

NSF 04-573



Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

First Monday in February

annually

SUMMARY OF PROGRAM REQUIREMENTS

General Information

Program Title:

CEDAR, GEM, and SHINE Postdoctoral Research

Synopsis of Program:

The Coupling, Energetics, and Dynamics of Atmospheric Regions (CEDAR) program, the Geospace Environment Modeling (GEM) program, and the Solar, Heliosphere and INterplanetary Environment (SHINE) program are special programs within the Aeronomy, Magnetospheric Physics and Solar-Terrestrial Research programs in the Atmospheric Sciences Division of the Geosciences Directorate. These three programs each involve specific regions of the space environment and the way these regions interact. Each of the programs has its own Program Solicitation, but they also have a common committment to support researchers who have recently received their Ph.D. degree, allowing them to request limited support for CEDAR/GEM/SHINE research activities of their own devising.

Cognizant Program Officer(s):

- Kile B. Baker, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8519, fax: (703) 292-9022, email: kbaker@nsf.gov
- Paul Bellaire, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8529, fax: (703) 292-9023, email: pbellair@nsf.gov
- Robert Kerr, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 790 N, telephone: (703) 292-8529, fax: (703) 292-9023, email: rkerr@nsf.gov

 Robert M. Robinson, Program Manager, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8529, fax: (703) 292-9022, email: rmrobins@nsf.gov

Applicable Catalog of Federal Domestic Assistance (CFDA) Number(s):

47.050 --- Geosciences

Eligibility Information

- Organization Limit: None Specified.
- PI Eligibility Limit:

The researcher to be supported must have received his/her Ph.D. (or equivalent) within the past 3 years or expect to be in a postdoctoral research position by the time the award is made. The researcher to be supported may appear on only one proposal submitted in response to this program solicitation in any given year. He/she should appear on the proposal as the sole Principal Investigator if the institution allows this. If the institution does not allow postdoctoral researchers to act as PIs on research grants, then the researcher's advisor at the institution should appear as the sole PI, and the researcher to be supported should be listed by name in the Senior Personnel section of the budget.

• Limit on Number of Proposals: 1. per postdoctoral researcher. There is no limitation on the number of proposals an organization may submit.

Award Information

- Anticipated Type of Award: Standard or Continuing Grant
- Estimated Number of Awards: 3 to 6 each year
- Anticipated Funding Amount: \$320,000 each year, pending availablility of funds.

Proposal Preparation and Submission Instructions

A. Proposal Preparation Instructions

• Full Proposal Preparation Instructions: This solicitation contains information that deviates from the standard Grant Proposal Guide (GPG) proposal preparation guidelines. Please see the full text of this solicitation for further information.

B. Budgetary Information

- Cost Sharing Requirements: Cost Sharing is not required.
- Indirect Cost (F&A) Limitations: Not Applicable.
- Other Budgetary Limitations: Other budgetary limitations apply. Please see the full text of this solicitation for further information.

C. Due Dates

Full Proposal Deadline Date(s) (due by 5 p.m. proposer's local time):
 First Monday in February annually

Proposal Review Information

• Merit Review Criteria: National Science Board approved criteria. Additional merit review considerations apply.

Please see the full text of this solicitation for further information.

Award Administration Information

- Award Conditions: Standard NSF award conditions apply.
- Reporting Requirements: Standard NSF reporting requirements apply.

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I. INTRODUCTION

The Coupling, Energetics and Dynamics of Atmospheric Regions (CEDAR), Geospace Environment Modeling (GEM) and Solar, Heliosphere and INterplanetary Environment (SHINE) programs all relate to solar influences on the space environment surrounding Earth. An important goal of these programs is to foster the development of a new generation of researchers involved in the fundamental research covered by the three individual programs. Each of the three programs provides extensive support for students to attend annual workshops and, in addition, each of the three is committed to providing support for outstanding young scientists who have recently received a Ph.D. degree or expect to have received their Ph.D. degree by the time the award could be made.

II. PROGRAM DESCRIPTION

The CEDAR, GEM, and SHINE programs are all broad-based, community-initated research programs dealing with special regions of Earth's space environment. Each of these three programs has its own NSF Program Solicitation and each has its own web page hosted at one of the research institutions involved. Postdoctoral researchers interested in submitting a proposal in response to this Program Solicitation should also examine these other program solicitations and web sites for more details on the CEDAR, GEM and SHINE programs (see Section IX. Other Programs of Interest for the links to the CEDAR, GEM and SHINE Program Solicitations and the web pages). Awards made under this Program Solicitation will be for research appropriate to one (or more) of the CEDAR, GEM, and SHINE programs. Proposals for cross-cutting research that would be appropriate for two or all three of the CEDAR, GEM, and SHINE programs are encouraged.

The primary goal of this program is to provide a mechanism for the support of young researchers to pursue research goals (related to the areas described above) of their own devising. Because of the special nature of these awards, there are special rules for the preparation of the proposals, the budgets and the review process (see below for details).

III. ELIGIBILITY INFORMATION

The researcher to be supported must have received his/her Ph.D. (or equivalent) within the past 3 years or expect to be in a postdoctoral research position by the time the award is made. He/she should appear on the proposal as the sole Principal Investigator if the institution allows this. If the institution does not allow post-doctoral researchers to act as PIs on research grants, then the researcher's advisor at the institution should appear as the sole PI, and the researcher to be supported should be listed by name in the Senior Personnel section of the budget.

The researcher to be supported may appear on only one proposal submitted in response to this program solicitation in any given year.

There is no limitation on the number of proposals that may be submitted by an institution.

IV. AWARD INFORMATION

NSF expects to make the following type of award(s): Standard or Continuing Grant.

The estimated number of awards will be 3 to 6 per year. The anticipated award date is September 15 of each year.

The anticipated funding amount is \$320,000 per year, with the typical award being about \$80,000 per year. All awards will be limited to a duration of two (2) years. Note that there are budgetary limitations (see Section V.B).

Estimated program budget and number of awards are subject to the availability of funds.

V. PROPOSAL PREPARATION AND SUBMISSION INSTRUCTIONS

A. Proposal Preparation Instructions

Full Proposal Instructions:

Proposals submitted in response to this program announcement/solicitation should be prepared and submitted in accordance

with the general guidelines contained in the NSF *Grant Proposal Guide* (GPG). The complete text of the GPG is available electronically on the NSF Website at: http://www.nsf.gov/cgi-bin/getpub?gpg. Paper copies of the GPG may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

The following instructions deviate from the GPG guidelines.

The title on the cover sheet of proposals submitted in response to this Program Solicitation should begin with one (or more) of the acronyms CEDAR, GEM, and SHINE (to indicate to which of those programs the research is relevant) and the word "Postdoc:". For cross-cutting research use a form such as "GEM/SHINE Postdoc: . . . "

The project description may be brief (3-5 pages) and must not exceed 10 pages. The project description need only include a synopsis of the type of CEDAR/GEM/SHINE-related research that is to be carried out.

The postdoctoral researcher's biographical sketch (see GPG guidelines) must be included in the biographical sketch section of the proposal.

In addition to the standard items required in a FastLane proposal that are described in the GPG guidelines referenced above, a letter indicating the host institution's interest in pursuing this project must be included, along with two letters of recommendation, an abstract of the candidate's doctoral thesis, and a transcript of the candidate's graduate course work. This additional material should be submitted through FastLane as supplementary documents.

Proposers are reminded to identify the program announcement/solicitation number (04-573) in the program announcement/solicitation block on the proposal Cover Sheet. Compliance with this requirement is critical to determining the relevant proposal processing guidelines. Failure to submit this information may delay processing.

B. Budgetary Information

Cost Sharing:

Cost sharing is not required in proposals submitted under this Program Solicitation.

Other Budgetary Limitations:

The CEDAR, GEM, SHINE postdoctoral research awards are two-year awards and provide a stipend of \$40,000 per year for the postdoctoral researcher, plus appropriate amounts for benefits, travel, publishing expenses, and indirect costs. If NSF increases the postdoctoral stipend level for NSF awardees, the budget limitation of the postdoctoral researcher's stipend under this solicitation will be adjusted accordingly. It is not the intent of this budget limitation to restrict the total compensation that the supported researcher may receive.

Awards made under this Program Solicitation may provide salary or stipend support only for the postdoctoral researcher.

C. Due Dates

Proposals must be submitted by the following date(s):

Full Proposal Deadline(s) (due by 5 p.m. proposer's local time):

First Monday in February annually

D. FastLane Requirements

Proposers are required to prepare and submit all proposals for this announcement/solicitation through the FastLane system. Detailed instructions for proposal preparation and submission via FastLane are available at: https://www.fastlane.nsf.gov/a1/newstan.htm. For FastLane user support, call the FastLane Help Desk at 1-800-673-6188 or e-mail fastlane@nsf.gov. The FastLane Help Desk answers general technical questions related to the use of the FastLane system. Specific questions related to this program announcement/solicitation should be referred to the NSF program staff contact(s) listed in Section VIII of this announcement/solicitation.

Submission of Electronically Signed Cover Sheets. The Authorized Organizational Representative (AOR) must electronically sign the proposal Cover Sheet to submit the required proposal certifications (see Chapter II, Section C of the Grant Proposal Guide for a listing of the certifications). The AOR must provide the required electronic certifications within five working days following the electronic submission of the proposal. Proposers are no longer required to provide a paper copy of the signed Proposal Cover Sheet to NSF. Further instructions regarding this process are available on the FastLane Website at: http://www.fastlane.nsf.gov

VI. PROPOSAL REVIEW INFORMATION

A. NSF Proposal Review Process

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program Officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority-serving institutions, or adjacent disciplines to that principally addressed in the proposal.

The National Science Board approved revised criteria for evaluating proposals at its meeting on March 28, 1997 (NSB 97-72). All NSF proposals are evaluated through use of the two merit review criteria. In some instances, however, NSF will employ additional criteria as required to highlight the specific objectives of certain programs and activities.

On July 8, 2002, the NSF Director issued Important Notice 127, Implementation of new Grant Proposal Guide Requirements Related to the Broader Impacts Criterion. This Important Notice reinforces the importance of addressing both criteria in the preparation and review of all proposals submitted to NSF. NSF continues to strengthen its internal processes to ensure that both of the merit review criteria are addressed when making funding decisions.

In an effort to increase compliance with these requirements, the January 2002 issuance of the GPG incorporated revised proposal preparation guidelines relating to the development of the Project Summary and Project Description. Chapter II of the GPG specifies that Principal Investigators (PIs) must address both merit review criteria in separate statements within the one-page Project Summary. This chapter also reiterates that broader impacts resulting from the proposed project must be addressed in the Project Description and described as an integral part of the narrative.

Effective October 1, 2002, NSF will return without review proposals that do not separately address both merit review criteria within the Project Summary. It is believed that these changes to NSF proposal preparation and processing guidelines will more clearly articulate the importance of broader impacts to NSF-funded projects.

The two National Science Board approved merit review criteria are listed below (see the Grant Proposal Guide Chapter III.A for further information). The criteria include considerations that help define them. These considerations are suggestions and not all will apply to any given proposal. While proposers must address both merit review criteria, reviewers will be asked to address only those considerations that are relevant to the proposal being considered and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the

reviewer will comment on the quality of the prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

NSF staff will give careful consideration to the following in making funding decisions:

Integration of Research and Education

One of the principal strategies in support of NSF's goals is to foster integration of research and education through the programs, projects, and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learning perspectives.

Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens -- women and men, underrepresented minorities, and persons with disabilities -- is essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

Additional Review Criteria:

Reviewers will be asked to comment on the relevance of the proposed research to the CEDAR, GEM and SHINE program objectives. They will also be asked to comment on the qualifications of the researcher based on the letters of recommendation, transcript of course work, and quality of the researcher's previously published work.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three other persons outside NSF who are experts in the particular field represented by the proposal. Proposals submitted in response to this announcement/solicitation will be reviewed by Ad Hoc and/or panel review.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. The Program Officer assigned to manage the proposal's review will consider the advice of reviewers and will formulate a recommendation.

A summary rating and accompanying narrative will be completed and submitted by each reviewer. In all cases, reviews are treated as confidential documents. Verbatim copies of reviews, excluding the names of the reviewers, are sent to the Principal Investigator/Project Director by the Program Director. In addition, the proposer will receive an explanation of the decision to award or decline funding.

NSF is striving to be able to tell proposers whether their proposals have been declined or recommended for funding within six months. The time interval begins on the closing date of an announcement/solicitation, or the date of proposal receipt, whichever is later. The interval ends when the Division Director accepts the Program Officer's recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial, and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only a Grants and Agreements Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with a NSF Program Officer. A Principal Investigator or organization that

makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants and Agreements Officer does so at their own risk.

VII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to *the submitting organization* by a Grants Officer in the Division of Grants and Agreements. Organizations whose proposals are declined will be advised as promptly as possible by the cognizant NSF Program Division administering the program. Verbatim copies of reviews, not including the identity of the reviewer, will be provided automatically to the Principal Investigator. (See section VI.A. for additional information on the review process.)

B. Award Conditions

An NSF award consists of: (1) the award letter, which includes any special provisions applicable to the award and any numbered amendments thereto; (2) the budget, which indicates the amounts, by categories of expense, on which NSF has based its support (or otherwise communicates any specific approvals or disapprovals of proposed expenditures); (3) the proposal referenced in the award letter; (4) the applicable award conditions, such as Grant General Conditions (NSF-GC-1); * or Federal Demonstration Partnership (FDP) Terms and Conditions * and (5) any announcement or other NSF issuance that may be incorporated by reference in the award letter. Cooperative agreement awards also are administered in accordance with NSF Cooperative Agreement Terms and Conditions (CA-1). Electronic mail notification is the preferred way to transmit NSF awards to organizations that have electronic mail capabilities and have requested such notification from the Division of Grants and Agreements.

*These documents may be accessed electronically on NSF's Website at http://www.nsf.gov/home/grants/grants_gac.htm. Paper copies may be obtained from the NSF Publications Clearinghouse, telephone (703) 292-7827 or by e-mail from pubs@nsf.gov.

More comprehensive information on NSF Award Conditions is contained in the NSF *Grant Policy Manual* (GPM) Chapter II, available electronically on the NSF Website at http://www.nsf.gov/cgi-bin/getpub?gpm. The GPM is also for sale through the Superintendent of Documents, Government Printing Office (GPO), Washington, DC 20402. The telephone number at GPO for subscription information is (202) 512-1800. The GPM may be ordered through the GPO Website at http://www.gpo.gov.

C. Reporting Requirements

For all multi-year grants (including both standard and continuing grants), the PI must submit an annual project report to the cognizant Program Officer at least 90 days before the end of the current budget period.

Within 90 days after the expiration of an award, the PI also is required to submit a final project report. Failure to provide final technical reports delays NSF review and processing of pending proposals for the PI and all Co-PIs. PIs should examine the formats of the required reports in advance to assure availability of required data.

Pls are required to use NSF's electronic project reporting system, available through FastLane, for preparation and submission of annual and final project reports. This system permits electronic submission and updating of project reports, including information on project participants (individual and organizational), activities and findings, publications, and other specific products and contributions. Pls will not be required to re-enter information previously provided, either with a proposal or in earlier updates using the electronic system.

General inquiries regarding this program should be made to:

- Kile B. Baker, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8519, fax: (703) 292-9022, email: kbaker@nsf.gov
- Paul Bellaire, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8529, fax: (703) 292-9023, email: pbellair@nsf.gov
- Robert Kerr, Program Director, Directorate for Geosciences, Division of Atmospheric Sciences, 790 N, telephone: (703) 292-8529, fax: (703) 292-9023, email: rkerr@nsf.gov
- Robert M. Robinson, Program Manager, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8529, fax: (703) 292-9022, email: rmrobins@nsf.gov

For questions related to the use of FastLane, contact:

• Ruth E. Joel, Program Assistant, Directorate for Geosciences, Division of Atmospheric Sciences, 775 S, telephone: (703) 292-8522, fax: (703) 292-9022, email: rjoel@nsf.gov

IX. OTHER PROGRAMS OF INTEREST

The NSF *Guide to Programs* is a compilation of funding for research and education in science, mathematics, and engineering. The NSF *Guide to Programs* is available electronically at http://www.nsf.gov/cgi-bin/getpub?gp. General descriptions of NSF programs, research areas, and eligibility information for proposal submission are provided in each chapter.

Many NSF programs offer announcements or solicitations concerning specific proposal requirements. To obtain additional information about these requirements, contact the appropriate NSF program offices. Any changes in NSF's fiscal year programs occurring after press time for the *Guide to Programs* will be announced in the NSF E-Bulletin, which is updated daily on the NSF Website at http://www.nsf.gov/home/ebulletin, and in individual program announcements/solicitations. Subscribers can also sign up for NSF's Custom News Service (http://www.nsf.gov/home/cns/start.htm) to be notified of new funding opportunities that become available.

Related Programs:

- Coupling, Energetics, and Dynamics of Atmospheric Regions (NSF 02-070)
- Geospace Environment Modeling (NSF 02-122)
- Solar, Heliospheric, and INterplanetary Environment (NSF 02-189)

ABOUT THE NATIONAL SCIENCE FOUNDATION

The National Science Foundation (NSF) funds research and education in most fields of science and engineering. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. Thus, the Foundation does not assume responsibility for such findings or their interpretation.

NSF welcomes proposals from all qualified scientists, engineers and educators. The Foundation strongly encourages

women, minorities and persons with disabilities to compete fully in its programs. In accordance with Federal statutes, regulations and NSF policies, no person on grounds of race, color, age, sex, national origin or disability shall be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving financial assistance from NSF, although some programs may have special requirements that limit eligibility.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF-supported projects. See the GPG Chapter II, Section D.2 for instructions regarding preparation of these types of proposals.

The National Science Foundation promotes and advances scientific progress in the United States by competitively awarding grants and cooperative agreements for research and education in the sciences, mathematics, and engineering.

To get the latest information about program deadlines, to download copies of NSF publications, and to access abstracts of awards, visit the NSF Website at http://www.nsf.gov

Location:
 4201 Wilson Blvd. Arlington, VA 22230

• For General Information (703) 292-5111

(NSF Information Center):

• TDD (for the hearing-impaired): (703) 292-5090

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Send an e-mail to: pubs@nsf.gov

or telephone: (703) 292-7827

• To Locate NSF Employees: (703) 292-5111

PRIVACY ACT AND PUBLIC BURDEN STATEMENTS

The information requested on proposal forms and project reports is solicited under the authority of the National Science Foundation Act of 1950, as amended. The information on proposal forms will be used in connection with the selection of qualified proposals; project reports submitted by awardees will be used for program evaluation and reporting within the Executive Branch and to Congress. The information requested may be disclosed to qualified reviewers and staff assistants as part of the proposal review process; to applicant institutions/grantees to provide or obtain data regarding the proposal review process, award decisions, or the administration of awards; to government contractors, experts, volunteers and researchers and educators as necessary to complete assigned work; to other government agencies needing information as part of the review process or in order to coordinate programs; and to another Federal agency, court or party in a court or Federal administrative proceeding if the government is a party. Information about Principal Investigators may be added to the Reviewer file and used to select potential candidates to serve as peer reviewers or advisory committee members. See Systems of Records, NSF-50, "Principal Investigator/Proposal File and Associated Records," 63 Federal Register 267 (January 5, 1998), and NSF-51, "Reviewer/Proposal File and Associated Records," 63 Federal Register 268 (January 5, 1998). Submission of the information is voluntary. Failure to provide full and complete information, however, may reduce the possibility of receiving an award.

An agency may not conduct or sponsor, and a person is not required to respond to an information collection unless it displays a valid OMB control number. The OMB control number for this collection is 3145-0058. Public reporting burden for this collection of information is estimated to average 120 hours per response, including the time for reviewing instructions. Send comments regarding this burden estimate and any other aspect of this collection of information, including suggestions for reducing this burden, to: Suzanne Plimpton, Reports Clearance Officer, Division of Administrative Services, National Science Foundation, Arlington, VA 22230.

OMB control number: 3145-0058.

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