

Phase 3 NASA EPSCoR in Louisiana

A Research Infrastructure Development Project

Developing Aerospace Research & Technology  
(DART 2)

A NASA-BoR Program

**APPLICATION PACKET**

# DEVELOPING AEROSPACE RESEARCH & TECHNOLOGY "DART 2 Awards"

A NASA EPSCOR – BoR RESEARCH INFRASTRUCTURE DEVELOPMENT PROGRAM

<http://phacts.phys.lsu.edu/EPSCoR/DART/>

## I. INTRODUCTION:

The Louisiana Board of Regents has received an EPSCoR-Phase 3 Research Infrastructure Development (RID) award from the NASA EPSCoR program. This competition stresses collaborative ventures between the state's researchers and NASA researchers at the NASA field centers or headquarters. The goals of this program are to (a) acquaint LA researchers with the NASA centers and their research personnel, (b) foster development of joint research projects between LA researchers and NASA researchers, and (c) move the state's researchers up to the next level of competitiveness. In pursuit of these goals, we are offering a new competition for **Developing Aerospace Research & Technology (DART 2)**: 'seed' funding for joint research projects.

## II. NASA MISSION DIRECTORATES

The NASA **Mission** is:

*To pioneer the future in space exploration, scientific discovery, and aeronautics research*

To achieve this Mission, the NASA program of exploration, discovery and research has been re-organized into Mission Directorates, following the President's 2004 announcement of the new *Vision for Space Exploration*. All NASA subprograms must relate to and support one or more of these Directorates. Likewise, all programs supported by NASA EPSCoR must also support these new NASA Directorates. In addition, all programs must align with and support the *Vision for U. S. Space Exploration* - - see ([www.nasa.gov/pdf/55583main\\_vision\\_space\\_exploration2.pdf](http://www.nasa.gov/pdf/55583main_vision_space_exploration2.pdf)).

The current Mission Directorates are:

- **Aeronautics Research** - - *Enable a safer, more secure, efficient, and environmentally friendly air transportation system.*
- **Exploration Systems** - - *Direct the identification, development, and validation of exploration systems and technologies.*
- **Science** - - *Exploring the Earth-Sun system, our own solar system, and the universe beyond.*
- **Space Operations** - - *Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery.*

More information about the NASA Mission Directorates can be found at <http://www.nasa.gov/centers/hq/organization/index.html>. Each Mission Directorate has a unique set of goals, objectives, and strategies that addresses the requirements of its primary external customers. Although NASA's broad mission is driven by the Space Act, the specific programs that are conducted within its Directorates, and the priorities placed on them, are driven by the directives of the Administration and Congress, and, therefore, change over time. Current specific content for the Mission Directorates is presented within their own Strategic Plans available on the web. (<http://www.education.nasa.gov/about/nasaent/index.html>.)

In addition to the Directorates, NASA's **Office of Education** coordinates education efforts from K-16, including educational products and technology. As stated in the 2006 *Education Strategic Coordination Framework*, (<http://education.nasa.gov/about/strategy/index.html>) the Education Office has three **Goals**:

- to strengthen NASA and the nation's future workforce
- to attract and retain students in STEM disciplines
- to engage Americans in NASA's Mission

The National Space Grant College and Fellowship Program and the NASA EPSCoR Program are both managed through the NASA Office of Education. Thus, emphasis on workforce development (to influence the "pipeline" of a highly trained future workforce that will lead NASA into the Exploration Era) means that the involvement of students in research projects is highly desirable and is strongly encouraged.

**Each project under this award must be related to one of the above Mission Directorates. The PI and NASA center collaborator should discuss the relationship, which must be described in the project narrative.** (For more information on the Directorates consult the NASA web sites.)

### III. THE DART 2 SUBPROGRAM

The DART 2 awards are designed for those researchers who have made a NASA contact and are ready to take the next step — initiating a small project. This could involve almost any type of project such as utilizing a specific NASA facility, or employing NASA expertise, or building upon previous NASA work (akin to technology/knowledge transfer) or working with a NASA group on problems of common interest. In all cases, the LA researcher must be **sponsored by/work with a NASA center researcher**. Moreover, a DART 2 award could be used to perform initial studies that can be utilized as part of a larger program. In all cases, however, the **goal** is to develop larger, longer-lasting collaborative projects.

#### ELIGIBILITY:

The DART 2 sub-program is designed to provide "seed" grants to LA researchers for R & D that has a demonstrated tie-in to a NASA center. During the period of the award (nominally 12 months), the researcher must make one, or more, trips to the NASA center to work

with the NASA researcher who sponsored the project. The project PI must be a faculty member at one of Louisiana's institutions of higher education. Post-doctoral associates, graduate students and undergraduates should be involved as required. Projects must involve Research or Technology, but are open to any area relevant to NASA.

Each project must have a NASA 'sponsor' who is interested in the project and is willing to host a visit by the PI or the PI team. Such sponsorship is to be evidenced by a letter or e-mail submitted along with the application. (If you need help finding a NASA sponsor, contact the University Affairs Officers - - UAO's - - at the various NASA centers or call the LaSPACE office for advice.)

#### PROJECT CATEGORIES:

There are two separate types of projects being solicited under the DART 2 program:

Single Institution Projects (SIP) are for one or more researchers on a single campus to work together, and with NASA, on a focused R & D effort. (These are the same as the original DART awards under the previous NASA EPSCoR - 2000 program.)

Partnership Projects (PP) involve two or more institutions, one of which must be an HBCU and/or a HUD designated hurricane impacted campus (Dillard, LSU Ag (some), LSUHSC (NO), LUMCON, Loyola, McNeese, SUNO, Tulane, TUHSC, UNO and Xavier). A Partnership Project is much like an SIP except involving multiple institutions. In addition to the SIP requirements, a Partnership Project must demonstrate significant contributions from each institution, an equitable distribution of resources, and a management plan that details how the institutions will work together on the project. Like a SIP, a PP must be focused upon evolving the team toward more significant research involvement.

These 'seed' grants from NASA EPSCoR are not just research grants. Excellent research must be performed -- yes -- but the project should be designed to (a) increase research capacity and competitiveness and (b) be scalable to a team approach for a larger endeavor. Evidence of the probability of (a) and (b) must be presented in the proposal and must be addressed in the project report.

#### AMOUNT:

The NASA EPSCoR program intends to distribute approximately \$185 - 190K per year under this DART 2 subprogram. Two to four SIP awards are anticipated with project budgets generally in the range of \$25,000. - \$30,000., and one or two PP awards at funding levels of \$55,000. - \$65,000.

#### AWARD:

Award funds will be provided by subcontract from the Board of Regents to the applicants' college or university, which will assume responsibility for administering the funds according to its standard procedures. For PP awards, one institution must be the lead institution

to which the award will be given. The lead institution will subcontract with the partner institution.

#### COST SHARING:

EPSCoR programs are federal-state partnerships that require matching at the state/local level. It is anticipated that there will be significant cost sharing on both SIP and PP proposals. This is taken by the reviewers as evidence of commitment on the part of the proposing institution(s). Such an institutional commitment in the form of 're-assigned responsibilities' is most significant since it allows the faculty member sufficient time to participate in and manage the proposed research. Lack of such time calls into question the ability of the proposers to actually carry the project to a successful conclusion. All cost sharing must be certified in the project final financial report.

#### INDIRECT (F & A) COSTS:

Indirect cost recovery will be allowed at the BoR rate, i.e. 25% of salaries, wages and fringe. Unrecovered indirect is allowable cost sharing.

#### TERM OF AWARD:

DART 2 projects will have a period of performance of 12 months. Projects submitted to DART 2 will be reviewed following BoR procedures. Researchers should allow 2 - 3 months from the submission date for review and contract processing.

#### APPLICATION:

Proposals consist of (a) required Cover page, (b) Summary page with 200 word abstract, (c) Project Description (narrative) section, (d) required Budget page plus budget explanations, (e) current and pending support form, (f) letter/e-mail from the NASA sponsor and (g) a short (two page) vita for the PI. The required forms are attached. Additional copies can be obtained from the LaSPACE office: (225-578-8697; fax: 225-578-1222; e-mail: [guzik@phunds.phys.lsu.edu](mailto:guzik@phunds.phys.lsu.edu), [wefel@phunds.phys.lsu.edu](mailto:wefel@phunds.phys.lsu.edu)). Request the DART 2 proposal package. This solicitation can be found on the NASA EPSCoR website: <http://phacts.phys.lsu.edu/epscor/dart/>

#### DELIVERABLES:

At the end of the project, two final reports are required: the Final Technical Report and the Final Financial Report. These reports are due 30 and 45 days, respectively, after the subcontract expiration date.

The Final Technical Report will be a multi-page write-up that is suitable for transmission to NASA and BoR. This report should describe the activities undertaken, the participants, and your assessment, as Principal Investigator(s), of the success of the venture, the impact that it had (or will have), any follow-on proposals in preparation/submitted and any further plans for a continuation or for like projects. Please also include a bibliography and copies of reports, presentations, publications, follow-on proposals, patent applications, technology transfer, or

publicity. These items should contain citations acknowledging NASA EPSCoR/BoR support. This report shall be submitted to the Board of Regents through the BoR online electronic reporting system. A copy shall also be submitted to the LA NASA EPSCoR office at the address given below.

The Final Financial Report is an official report that shows the final expenditure of the funds and certifies the cost sharing. This report is to be submitted to the Board of Regents by your university's financial office using the BoR electronic reporting system.

Additional instructions for reporting are given in the subcontract.

TIME SCHEDULE:

The DART 2 proposal review cycle will commence in the Fall. All proposals received by the due date will be included in the review.

SUBMISSION:

Mail DART 2 proposals to:

Louisiana NASA EPSCoR - DART 2  
Department of Physics and Astronomy  
364 Nicholson Hall  
Louisiana State University  
Baton Rouge, LA 70803-4001

OR send a PDF version of the proposal (with signature pages completed) to [eads@phys.LSU.edu](mailto:eads@phys.LSU.edu).

FUTURE SOLICITATIONS:

Subject to the continuation of the NASA EPSCoR program and the availability of funds, it is anticipated that there will be an annual solicitation for DART 2 awards. These will be announced via mail and e-mail and will be posted on the NASA EPSCoR website.

**DEVELOPING AEROSPACE RESEARCH AND TECHNOLOGY (DART 2)**

**A NASA EPSCoR – BoR PROGRAM**

**COVER PAGE**

1. Title of Proposed Project: \_\_\_\_\_  
\_\_\_\_\_ Is this a \_\_\_\_\_ SIP or \_\_\_\_\_ PP project?

2. Principal Investigator(s): \_\_\_\_\_  
(Name)  
\_\_\_\_\_  
(Department)

3. Institution(s) of Higher Education: \_\_\_\_\_

4. PI Address: \_\_\_\_\_  
(Street Address/P.O. Box Number)  
(City, State) (Zip Code)

5. Telephone: \_\_\_\_\_ FAX: \_\_\_\_\_ email: \_\_\_\_\_

6. NASA Sponsor: \_\_\_\_\_  
(Name) (Position)

\_\_\_\_\_  
(Center) (Address)

\_\_\_\_\_  
(Phone) (FAX) (e-mail)

7. Total Funds Requested: \$ \_\_\_\_\_ Institutional Commitment: \$ \_\_\_\_\_

-----  
By signing and submitting this proposal, the signatories are certifying that the institution and the proposed project are in compliance with all applicable Federal and State laws and regulations (including, but not limited to, the required certifications set forth in: (1) Grants for Research and Education in Science and Engineering. NSF 90-77; and (2) Appendix C, 45 CFR 620, Subpart F [Requirements for a Drug-Free Workplace] and funding of this project does not supplant other forms of direct state support for the project.

8. Signature(s) of Principal Investigator(s): \_\_\_\_\_  
\_\_\_\_\_

9. Signature of Campus Head or  
Authorized Institutional Representative: \_\_\_\_\_

10. Date Signed: \_\_\_\_\_

## **PROJECT SUMMARY**

'TITLE'

'INVESTIGATORS NAMES AND ADDRESSES'

### **ABSTRACT**

(limit 200 words)

(suitable for general distribution)

## PROJECT DESCRIPTION

(1) Narrative Section

Introduction

Background

Research Objectives

NASA Mission Directorates Supported by this Research and its Relevance to NASA

Implementation Strategy

Collaborative Effort with NASA Sponsor

Anticipated Outcomes/Plans for Future Endeavors/Future Collaborations with NASA

*Length limited to 7 pages (including figures and tables)*

(2) Literature cited - - one page maximum.

DEVELOPING AEROSPACE RESEARCH AND TECHNOLOGY (DART 2)  
A NASA EPSCoR – BoR PROGRAM

DART 2 BUDGET REQUEST

Title of Proposed Research: \_\_\_\_\_

Principal Investigator(s): \_\_\_\_\_

Institution(s) of Higher Education: \_\_\_\_\_

I. PROPOSED BUDGET:

	NASA/BoRSF Funds Requested	Institutional Contribution*
A. <u>Salaries:</u>		
1. Research	\$ _____	\$ _____
2. Clerical	_____	_____
3. Fringe Benefits	_____	_____
4. Graduate Asst.	_____	_____
5. Student(s)	_____	_____
6. Subtotal A	\$ _____	\$ _____
B. <u>Support Expenses:</u>		
1. Travel	\$ _____	\$ _____
2. Supplies	_____	_____
3. Consultants	_____	_____
4. Rentals	_____	_____
5. Communications	_____	_____
6. Equipment	_____	_____
7. Printing	_____	_____
8. Other (Identify)		
a.	_____	_____
b.	_____	_____
9. Subcontracts	_____	_____
10. Subtotal B	\$ _____	\$ _____
11. Indirect <sup>†</sup>	_____	\$ _____
C. <u>Total Project Cost:</u>	\$ _____	\$ _____

\*Must be reported on final financial report.

†BoR rate (25% of A) allowed.

Please attach budget explanations.

## BUDGET EXPLANATIONS

(Describe use of requested funds and describe any institutional cost sharing commitment.)

## CURRENT AND PENDING SUPPORT FORM

This Form is to be filled out for each Principal Investigator. For each Project involving a Principal Investigator provide the following information: Funding Agency, Title, Funding Amount, Starting and Ending Dates, and Personnel Effort Committed to the Project (person-months or % of effort). Please add additional pages if needed.

### 1. Current Support

Agency/Grant No.:

Title:

Amount

Period:

Effort:

Location:

Agency/Grant No.:

Title:

Amount

Period:

Effort:

Location:

### 2. Pending Support

(list this proposal first)

Agency: NASA-BoR EPSCoR

Title:

Amount

Period:

Effort:

Location:

Agency:

Title:

Amount

Period:

Effort:

Location:

ATTACH HERE:

- 1) Letter/e-mail from NASA sponsor.
- 2) Short (i.e. two (2) pages maximum) Vitae for Principal Investigator(s).

