

**Office of Science
Financial Assistance
Funding Opportunity Announcement
DE-PS02-07ER07-30**

***Research and Development
For Rare Isotope Beam Capabilities***

The Office of Nuclear Physics (NP), Office of Science (SC), U.S. Department of Energy (DOE), hereby announces its interest in receiving applications for Research and Development (R&D) efforts directed at rare isotope beam capabilities. A next generation facility for nuclear structure and astrophysics is under consideration to address emerging research opportunities in low energy nuclear physics, and DOE is sponsoring pre- conceptual R&D activities on next generation rare isotope beam capabilities.

A companion Program Announcement to DOE Laboratories (LAB 07-30) is available on the Office of Science Grants and Contracts web site at: <http://www.science.doe.gov/grants/>.

APPLICATION DUE DATE: October 17, 2007, 8 PM Eastern Time

Applications must be submitted using [Grants.gov](http://www.grants.gov), the Funding Opportunity Announcement can be found using the CFDA Number, 81.049 or the Funding Opportunity Announcement number, DE-PS02-07ER07-30. Applicants must follow the instructions and use the forms provided on [Grants.gov](http://www.grants.gov).

PROGRAM MANAGER: Dr. Manouchehr Farkhondeh, Office of Nuclear Physics

PHONE: (301) 903-4398

FAX: (301) 903-3833

E-MAIL: Manouchehr.Farkhondeh@science.doe.gov

SUPPLEMENTARY INFORMATION:

The DOE/National Science Foundation (NSF) Nuclear Science Advisory Committee (NSAC) was charged with performing an evaluation of the options for a next-generation facility in the United States for rare isotope beam studies. The charge letter can be found at: <http://www.sc.doe.gov/np/nsac/nsac.html>. Their report, which is expected in September, will be posted at the same site. Additional information on rare isotope beam capabilities are outlined in the 1999 NSAC ISOL Taskforce Report that can be found at: <http://www.sc.doe.gov/np/nsac/docs/ISOLTaskForceReport.pdf> and the 2002 NSAC Long Range Plan for Nuclear Science at: <http://www.sc.doe.gov/np/nsac/nsac.html>.

Program Objective:

Community sponsored studies and workshops have identified a number of areas where focused R&D and prototyping could enhance performance, reduce costs, and impact the engineering and construction schedule risk for a next generation facility. Examples of R&D studies aimed at a rare isotope beam facility can be found in the report of the 2003 Rare Isotope Accelerator R&D Workshop at the following website: http://www.sc.doe.gov/np/projects/docs/2003-RIA_Report.pdf.

The proposed R&D should be generic and not site specific. Among the areas of potential R&D topics are:

- Beam simulations, including end-to-end and parallel computing;
- Front end concepts, including driver ion source and Radio Frequency Quadrupole (RFQ);
- Driver Linac concepts, including stripper parameters, cavity development and diagnostics.
- Isotope-Separator-on-Line (ISOL) and Projectile fragmentation based on ISOL concepts.
- Fragment Separation-for Fragment Separator concepts, including beam dumps and high power targets.
- Fragment Separation-for Gas Cell concepts, including alternative cell geometries.
- Post Acceleration including performance issues, isobar-separator and diagnostics.
- Multi-User Considerations concept including beam splitting for realistic simultaneous independent experiments.

Applications requesting support for research and development in one or more of the areas outlined above should indicate a separate task for each area. Applications may include more than one task. For each task the application should address the goal of the effort; the method or approach to be taken; a cost-breakdown of the effort; the workforce to carry out the effort; the deliverable result of the work; and the performance, cost, or schedule benefit for a rare isotope beam facility. Each task should describe a realistic schedule which includes a minimum of one milestone per quarter. Applicants should note that they will be required to report formally on a quarterly basis regarding R&D expenditures and progress towards achieving the milestones and deliverables of the proposed effort. Institutional contributions to the effort should be clearly indicated.

Collaboration

Collaborative research projects with other institutions, such as universities, industry, non-profit organizations, and Federally Funded Research and Development Centers (FFRDCs), including the DOE National Laboratories, are encouraged under this Announcement. Applications submitted from different institutions, which are directed at a single research activity, should clearly indicate they are part of a proposed collaboration and contain a brief description of the overall research project. However, each application must have a distinct scope of work and a qualified principal investigator who is responsible for the research effort being performed at his or her institution. **If a university is part of a proposed collaboration, the university must submit a separate application** that meets all the essentials stated above. It is highly recommended to include on the first page of the proposal narrative a simple table listing every collaborating institution/PI and the amount of funding requested by each. Further information on

preparation of collaborative applications may be accessed via the Internet at:
<http://www.science.doe.gov/grants/Colab.html>.

Program Funding:

It is anticipated that up to \$4,000,000 will be available for awards to be made in Fiscal Year 2008, contingent on the availability of appropriated funds. Applications may request project support for one year only. The number and size of awards will depend on the number of applications received and selected for award and the availability of appropriated funds. DOE is under no obligation to pay for any costs associated with preparation or submission of applications. DOE reserves the right to fund, in whole or in part, any, all, or none of the applications submitted.

Posted on the Office of Science Grants and Contracts Web Site
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