



To/MS: Leaders
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Phone/Fax: 5-4225/7-7034
Symbol: LDRD-02-065
Date: Dec. 17, 2002

Subject: Formal Call for LDRD Directed Research Pre-proposals

Please find attached the Laboratory Directed Research and Development (LDRD) Call for Pre-proposals for FY04 funding. This constitutes the first phase of the LDRD Directed Research component process for this year. The document includes a description of how we intend to handle the Directed Research component of LDRD.

The LDRD program is a vital tool to help us create a strong future for the Laboratory. Technical organizations and staff are encouraged to submit pre-proposals and to help in our deliberations about LDRD strategic investment by participating in this pre-proposal process. Pre-proposals must be endorsed by management. The call outlines the process for the endorsement, which should provide specific information about the strategic merit of each pre-proposal as well as signify that the endorsing organization considers the proposed work to be high-quality science and technology.

A Discussion Draft of a White Paper on LDRD DR Strategic Priorities is available to use as a reference to help guide the strategic ideas in the LDRD pre-proposals. The contents of this Discussion Draft were developed working with the various directorates, with the intent of capturing significant scientific and technical challenges that are strategically important for LDRD DR to attempt to address. Division and Group Leaders are encouraged to communicate this information to proposal authors, and to supplement it through the formal endorsement process. The Discussion Draft of the White Paper can be found at the following web site: http://ldrd.lanl.gov/DRinfo_fy03/whitepaper.pdf. Pre-proposals should be submitted through the on-line LDRD submission system at <http://montecarlo.lanl.gov/> by 5:00 pm, Monday, February 3, 2003, and endorsement memoranda on February 7, 2003. Please contact the LDRD office, 667-1235, or e-mail watkins@lanl.gov, for further information.

*LDRD DR Call for Pre-proposals
December 16, 2002*

**Formal Call for Pre-proposals for
LDRD Directed Research Investment for FY 2004**

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1. Outline of the LDRD Directed Research Process for FY 2004 Funding

LDRD is designed to help the Laboratory retain its intellectual vitality and technical capability to better support its current and future missions. It funds basic and applied research and development (R&D) focusing on early exploration and exploitation of creative concepts selected at the discretion of the Laboratory Director. With this Program, the Laboratory Director helps to ensure a strong science and technology base in the technical core competencies and capabilities required to fulfill the Laboratory's missions. The LDRD Program consists of three components: Directed Research (DR), Exploratory Research (ER), and Postdoctoral Research and Development (PRD). This memo describes the process for DR proposal submission for projects to be funded beginning in FY-04 and makes a formal call for DR pre-proposals as part of that process.

Background to the DR Component

LDRD Directed Research supports large research and development projects directed at providing a scientific or technical foundation for long-term, innovative solutions to problems confronted in LANL's missions. The primary objective is to support multi-disciplinary science and technology that can ultimately be applied to well-poised programmatic issues, and to accomplish scientific and technical work that will sustain LANL's scientific leadership. This year, in an attempt to better communicate the strategic research priorities of the Laboratory to potential proposal authors and to those involved in proposal review, we have prepared a Discussion Draft of a White Paper on LDRD DR Strategic Priorities. This Draft White Paper should be used as a guide on scientific and technical challenges that are critical to the long-term ability of LANL to execute its missions. These priorities will be reflected in the evaluation of the pre-proposals for strategic merit. Pre-proposals that address science and technology issues not identified in the White Paper are welcome, but the endorsement of such pre-proposals by Divisions should include a compelling explanation of the strategic significance of the proposed work.

Successful proposals will generally be supported by funds in the range of one to one and a half million dollars. While a project may comprise a number of distinct and complementary tasks, it must support a single and unifying strategic goal with exceptional, innovative science and technology.

Joint proposals with other national laboratories, especially Sandia National Laboratory and Livermore National Laboratory, are welcome. Such proposals should clearly identify the reasons for the collaboration, and should broadly outline the work to be done at each Laboratory. These proposals will be evaluated using the same process and standards applied to all LDRD DR proposals. Coordination of the final decision on jointly proposed work among the participating labs will be done by the Deputy Director for Science and Technology (DDST).

The process for the Directed Research component will occur in two phases: This memo constitutes the first step in the first phase—the Formal Call to the technical staff and

technical organizations to submit pre-proposals for institutional consideration by senior management. The second phase will be a solicitation of specific full proposals based on the strategic ideas gathered from those pre-proposals. The full proposals will ultimately be called for by the Deputy Director for Science and Technology (DDST) and may be aggregated or consolidated from more than one pre-proposal or from individual tasks within pre-proposals.

Rationale for having Pre-proposals in the DR Process

It is intended that the use of a pre-proposal phase will provide a unified and open process for presenting strategic ideas for LDRD DR investment to Laboratory leadership for consideration. The pre-proposals will consist of fairly brief strategic idea papers to be used to prepare a directed call for specific full proposals. There will not necessarily be a direct one-to-one link between the ideas in the pre-proposals and the call. The idea papers may spawn either a broader or more focused thinking on the part of management, resulting in requests to modify the ideas in the full proposals.

In addition, the Senior Executive Team is in the process of selecting a small number (one to three) of topics critical to our strategic posture. Pre-proposals or proposals on these topics will compete on the basis of technical merit with all other proposals. These proposals will be solicited directly by senior management.

2. Budget for LDRD and for the DR Component for FY 2004

The budget for the FY 2004 LDRD program will be set at six percent of the Laboratory budget, and is expected to be just over \$100M. This anticipates that the LDRD Program will be authorized at the full six percent level by Congress. The ultimate budget is subject to senior management deliberation and contingent on the level of the overall Laboratory budget in FY 2004.

LDRD projects are limited to three years in duration, and are subject to annual review. This means that only a fraction of the total LDRD program funds in any given year are available for investment in new starts. Because of the need to continue commitments to past investments, a budget of \$100M will allow approximately \$19M for investment in new starts in the LDRD DR component. The actual allocation to new projects will also depend on the review of on-going LDRD projects. The goal of the allocations will be to keep the ratio of funding in the DR to ER components at about 2:1.

3. The DR Process Schedule

Key milestones in the DR process are given in Table 1.

Table 1. Key Milestones in the LDRD Directed Research Process

Date	Activity
Monday, 16-Dec-02	Call for DR Pre-proposals issued by the LDRD Office
Thursday, 2-Jan-03	MonteCarlo Web Site open for Pre-proposal submission
Monday, 3-Feb-03	Due date for DR pre-proposal submission through MonteCarlo website
Friday, 7-Feb-03	Endorsement Memoranda due (e-mail submission to Watkins@lanl.gov)
Monday, 17-Mar-03	Call for DR full proposals issued on behalf of the Director's Office by the LDRD Office
Monday, 21-Apr-03	Due date for DR full proposals to reach the LDRD Office
Friday, 27-June-03	Announcement of DR investment decisions

4. Goals for the Pre-proposal Phase

It is intended that the pre-proposal phase will provide an opportunity for all strategic ideas to be given fair and due consideration in a unified and open process. It also offers the opportunity for, and expectation that, technical management in line organizations review and endorse (or not endorse) such pre-proposals. Pre-proposals that are not within the current vision of any line organization and so cannot gain their endorsement, may still seek to persuade STB to endorse the pre-proposal as sufficiently innovative or visionary to merit institutional consideration.

5. Required Endorsement Process, Rationale and Expectations

To be considered by the LDRD Strategy team, pre-proposal must be endorsed through a memorandum prepared by at least one of the following:

- A technical division leader or named designate,
- Any of the Associate Directors (ADs) or their deputies,
- STB program director or named designate

It is the responsibility of the pre-proposal authors to solicit endorsements of their pre-proposals. Pre-proposals that are not endorsed will not be considered. Division Leaders are encouraged to coordinate the endorsements of multi-division pre-proposals with other Division Leaders and/or ADs.

There is no limit to the number of pre-proposals that may be submitted. However, Division Leaders and Associate Directors are required to clearly designate their prioritization of the pre-proposals they endorse.

The endorsement should be in the form of a memorandum attached to an e-mail to the LDRD Program Manager (watkins@lanl.gov). The endorsement memoranda are due by February 3, 2003. The memoranda do not need to include the pre-proposals, but should clearly identify the title and principal investigator of the pre-proposal. Each memorandum should provide a single paragraph (not to exceed 1/2 page) for each endorsed pre-proposal addressing the anticipated impact of the science or technology on Division and Laboratory strategic directions and the quality of the science and technology proposed. To be effective, these paragraphs should provide additional information from the perspective of the endorser about the merits of the pre-proposal. Simply repeating information already in the pre-proposal does not help the strategy team assess the relative merits of the pre-proposals. The endorsement signifies that the pre-proposal is scientifically and technically sound, that the proposed work will significantly advance the state of the art, and that the strategic scope of the idea presented in the pre-proposal is important to the Laboratory. The goal of the White Paper on LDRD DR Strategic Priorities is to capture challenging scientific and technical issues confronting the Laboratory as it seeks to execute its long-term missions. Endorsements should draw on the strategic priorities in the White Paper, or indicate that the topic should be considered for inclusion in the White Paper (which is still in the draft form). The endorser is representing to the Strategy Team that the pre-proposal is a high priority for the endorsing organization, and that the technical quality of the proposed work merits significant consideration.

6. Pre-proposal Review Process, Rationale and Expectations

The “LDRD Directed Research Strategy Team” will review all the endorsed pre-proposals. The team will be chaired by the DDST and supported administratively by STB/LDRD. The team will be asked to recommend to the DDST and the ADs a portfolio of projects as the basis of the call for full proposals. The final decision on the call will be at discretion of the DDST and ADs. The team will not be expected to have the technical breadth or expertise to evaluate the full technical merit or scope of any given pre-proposal. It is expected that evaluation of the technical validity will form part of the endorsement process. The team is expected instead to propose a strategically credible and exciting portfolio.

7. Role of the DDST and ADs

The ADs are encouraged to communicate their strategic priorities to all potential contributing Divisions, and to solicit good ideas for proposals addressing their strategic priorities. ADs will be asked to discuss their strategic priorities with the LDRD DR Strategy team as well.

The strategy team will not in any way replace management but act entirely in support of the DDST and ADs who will remain responsible for making the ultimate informed decisions as to the scope and content of the full call. The DDST and ADs will evaluate the input of the strategy team to formulate the call for full proposals.

8. Pre-proposal Content, Format and Length

Guidance from the White Paper on LDRD DR Strategic Priorities

Pre-proposals should identify how they support strategic activities at the Laboratory, especially the scientific and technical challenges outlined in the White Paper on LDRD DR Strategic Priorities. This White Paper is available on the Web: http://ldrd.lanl.gov/DRinfo_fy03/whitepaper.pdf. Authors are encouraged to refer to it as the basis for formulating the strategic ideas in their pre-proposals. The DR pre-proposal process is also deliberately intended to allow submission of visionary ideas. Such pre-proposals will still be subject to the endorsement process. Discussion of strategic impact should be brief and to the point. It is recommended that the strategic impact be emphasized in the endorsement for a pre-proposal, so the pre-proposal can be focused on describing the scientific objectives and approach.

Length and Content

Pre-proposals will consist of two sections -- a budget and abstract, and two additional pages that capture the key ideas behind the pre-proposal. Both sections must be submitted through the LDRD on-line proposal submission system: <http://montecarlo.lanl.gov>

The budget and abstract information should be submitted using the web-browser-based on-line forms only. These forms require the following information:

- the title;
- the project leader for the proposed effort;
- the names of other principal participants (including possible external collaborators), their organizations, and fraction of time they will commit to the project;
- a short abstract that captures the essence of the strategic idea, emphasizing the innovative aspects of the proposed work and the impact on Laboratory missions;
- the proposed duration in years; and
- a realistic estimate of the funding proposed by year (limited to three years).

More detailed budget information will be required in the full-proposal phase of the LDRD DR process. Nevertheless, it is strongly recommended that the PI discuss the proposed budget with the BUS support team for his organization to ensure accuracy and completeness.

The two additional pages of the body of the pre-proposal should outline the strategic research and development concept. This must be submitted as a PDF (preferred) or Microsoft Word document through the web-browser-based on-line system. We strongly recommend using the following format:

- a brief description (<1/3 of a page) of the institutional goals and objectives supported by the pre-proposal;
- a description of the science and technology objectives (~2/3 of a page);

- a short description of the tasks and probable accomplishments (~2/3 of a page); and
- supporting arguments regarding the potential impact of LDRD investment in the proposed work (capability growth or creation, program development or expansion, scientific reputation, or other) (~1/3 of a page).

The pre-proposal must reference the project number assigned by the on-line system (preferably in the footer). Pre-proposals must have 1-inch margins on all borders (the header and footer may be within the margins) and be in 12-point "Times" font. Figures and equations are acceptable, but must be contained within the two page limit. References to key publications as background are encouraged, but also must fit within the two-page limit. The LDRD office will notify a PI's Division Management of failure to comply with these requirements, and recommend against endorsing such pre-proposals.

In the past, the most successful pre-proposals have described in clear terms an exciting new approach to tackling key scientific or technical challenges relevant to LANL's missions. The pre-proposals should stress the anticipated scientific and technical accomplishments of the project, and indicate the path to those accomplishments.

9. Project Submission Process

Proposal Authors are responsible for having their pre-proposal reviewed by an Authorized Derivative Classifier prior to submission to the LDRD office.

Unclassified pre-proposals will be submitted through the LDRD on-line proposal submission system: <http://montecarlo.lanl.gov/>. This system will be open for pre-proposals submission on January 2, 2003. Proposal authors will need a LANL cryptocard to access this system. Contact your group office if you do not have a cryptocard. For the purpose of the LDRD process, you only need access to the open partition. Detailed instructions on proposal submission will be available through the LDRD web site: <http://ldrd.lanl.gov/>. Classified pre-proposals should be sent (as a hard copy document) to David Watkins, LDRD Program Manager, at MS-A150.

Division Leaders or their designated representative should submit pre-proposal endorsement memoranda by e-mail to watkins@lanl.gov.

10. Due Date for Pre-proposals

Pre-proposals must be submitted by **5:00 PM, Monday, February 3, 2003**. Pre-proposals received after that time will not be considered. Endorsement memoranda must be submitted by **5:00 PM, Friday, February 7, 2003**. Any questions should be directed to the LDRD Office at 667-1235. For issues related to the electronic proposal submission process contact Lennett Rendon (lrendon@lanl.gov).