

## NLCS 2007 Proposal Instructions

This document contains proposal instructions for NASA's 2007 National Leadership Computing System (NLCS) call.

### Proposal Contents

A complete NLCS 2007 proposal must contain the following documents:

- Cover Page (use Cover Page template)
- Technical Proposal (use Technical Proposal template; 10-page limit)
- Vitae for Principal Investigator (PI) and Co-Investigators

### Available Resources

No monetary funds are available through this call. The NLCS call will allocate 25% of the theoretical maximum annual CPU-hours on the 2,048-processor shared memory environment (the NLCS system) on the Columbia supercomputer at NASA Ames Research Center. [See [http://www.nas.nasa.gov/Resources/Systems/columbia\\_details.html](http://www.nas.nasa.gov/Resources/Systems/columbia_details.html) for details on Columbia.] Thus, this NLCS call will allocate ~4.5 million CPU-hours. It is anticipated that a small number (four to eight) of large allocation awards will be granted. Successful NLCS proposals must use their allocation during the one-year period April 1, 2007 through March 31, 2008.

NASA will provide NLCS users with helpdesk support and application porting services (to move codes onto Columbia). NASA will also endeavor to provide advanced technical support, if requested and if staffing is available. Advanced support services include application scaling and optimization, large-scale data analysis and visualization, system and networking customization, and multimedia services. NASA provision of advanced services cannot be made a requirement for project success.

### Eligibility

PIs engaged in scientific or engineering research with the intent to publish results in the open peer-reviewed literature are eligible to propose to NLCS. This initiative specifically encourages proposals from universities, research institutions, and industry (as encouraged in recent reports by the Council on Competitiveness, <http://www.compete.org/hpc>). PIs cannot be NASA civil servants or full-time NASA contractors. PIs will not be awarded NLCS computer time for projects funded by NASA, or for projects that already have an annual NASA computing allocation greater than 10% of the proposed NLCS computer request. PIs may have funding from NASA for other projects.

Due to the prolonged delay being experienced by NASA in obtaining account approval for foreign nationals, NLCS projects must not require accounts for foreign nationals who do not already have clearance to use NASA computing systems. This means that each foreign national NLCS user must have an existing, NASA-accepted National Agency Check (NAC) that will be valid for the full one-year period of the NLCS project.

## Selection Process and Criteria

The NLCS selection process has three stages: technical peer review, inter-agency panel ranking and recommendation, and final NASA selection.

In the technical peer review, proposals will be rated by a panel of discipline experts and computer scientists assembled from NASA, other Federal agencies, and other organizations. This technical evaluation considers the following three factors:

1. Likelihood and significance of discipline impact.
2. Need for unique features of the NLCS system, which are described at [http://www.nas.nasa.gov/Resources/Systems/columbia\\_details.html](http://www.nas.nasa.gov/Resources/Systems/columbia_details.html).
3. Computer science merit, including readiness to perform leadership-scale computations, use of advanced algorithms, and efficient use of resources.

The peer reviewers will also assess whether the requested resource allocation seems reasonable for completing the proposed computations.

In the second stage, a panel is formed from supercomputing program and facility managers from multiple agencies. NASA will provide the panel moderator, but will not have input on the panel's ranking or recommendation. In making their selection recommendation, the panel will consider the technical review rating, but it will also favor a broad distribution of projects across disciplines and sponsoring organizations. Thus, NLCS proposals should provide sufficient information for peer review in its area of research and also for general scientific review in comparison with proposals in other disciplines. While resource requests by PIs are generally respected, the panel may also recommend different resource allocations for one or more recommended projects.

In the third stage, the final decision regarding NLCS project selections and resource allocations will be made by the Associate Administrator of NASA's Science Mission Directorate. Generally, the recommendation of the inter-agency panel and the resource requests of PIs are respected. However, NASA management reserves the right to make an independent decision regarding use of its resources.

## Terms and Conditions

The NASA NLCS initiative is unable to accommodate classified data, national security information, or data that falls under the Privacy Act of 1974 5U.S.C. 552a. Proprietary use of NLCS resources by industry is subject to successful completion of negotiations with NASA regarding Terms and Conditions including cost recovery and approval by the NASA General Counsel. Sensitive or restricted data may be allowed on a case-by-case basis.

PIs and designated Project Managers are responsible for monitoring the computer usage associated with this project, to ensure that NLCS resources are used exclusively for purposes of the proposed NLCS project, and to ensure compliance with all U.S. Export Controls.

NASA will work with the PI to publicize NLCS project results and illustrate the value and impact of NASA's supercomputing activities and resources. This publicity will include a press release on NLCS awards, and may include publication of NLCS results in the periodic NASA supercomputing application highlights report and demonstration of NLCS results at the annual

Supercomputing conference. At a minimum, PIs are expected to report quarterly on NLCS project status.

### **Proposal Submission**

The proposal submission website is accessed from [http://www.nas.nasa.gov/Users/Accounts/pi\\_NLCS.html](http://www.nas.nasa.gov/Users/Accounts/pi_NLCS.html). Submitted proposal documents may be in Word or PDF (Acrobat) format. No hard copy submissions will be accepted. The proposal submission function will open on January 2, 2007. Proposals will be accepted until midnight EDT on Tuesday, January 16, 2007. NASA expects to announce NLCS 2007 awards in March 2007 for the allocation period April 1, 2007 – March 31, 2008.

### **Additional Information**

More information about the Columbia supercomputer is available at <http://www.nas.nasa.gov/Resources/Systems/columbia.html>. More information about the NASA Advanced Supercomputing (NAS) Division that operates Columbia can be found at <http://www.nas.nasa.gov>.

The Federal Plan for High-End Computing: Report of the High-End Computing Revitalization TaskForce (HECRTF) is at [http://www.nitrd.gov/pubs/2004\\_hecrtf/20040702\\_hecrtf.pdf](http://www.nitrd.gov/pubs/2004_hecrtf/20040702_hecrtf.pdf). One of the recommendations of this plan was for agencies to share access to leadership supercomputing systems such as Columbia. This NLCS call is NASA's response to that recommendation.

Please email any questions about the NLCS 2007 proposal procedure to [NLCS@nas.nasa.gov](mailto:NLCS@nas.nasa.gov). Your interest in participating in this opportunity is appreciated.