

## 2017 INCITE: Computational Readiness Review Form

Computational experts conduct reviews to gauge the state of readiness of INCITE submittals to effectively utilize the requested Leadership Computing Facility (LCF) resources. Reviewers focus on the benchmarking data and other information provided in the proposal to assess the need for leading-class systems, readiness to effectively use INCITE resources, and the reasonableness of the computational campaign the authors defined for the proposed production simulations.

**Reviewer: Please enter the following proposal information**

Proposal Title: \_\_\_\_\_

PI: \_\_\_\_\_

Category of submittal (check one):

New proposal (ex. PI did not have an INCITE award in the previous allocation year or had an INCITE award that expired in the previous allocation year.)

Renewal

Machine Requested (check one or more):

Titan (Cray XK7)

Mira (IBM BG/Q)

**Reviewer Instructions:**

The table below summarizes the scale on which computational readiness of the submittal is assessed. The appropriateness of LCF resources can be either capability computing, defined as using approximately 20% of the LCF computing resources available, or specific architectural requirements that only can be met by the INCITE program. To receive an assessment of appropriate for LCF resources, the project must utilize key components of the compute resources (e.g. hardware threads on the BG/Q or GPUs on the XK7) or the project must have specific memory needs, data storage requirements, or time to solution expectations, etc. that cannot be obtained elsewhere. Clearly articulate in the report the basis for your assessment.

<b>Computational Readiness for INCITE resources.</b>	
Ready ↕	The project is highly appropriate for the requested resource: the planned work could not be accomplished without INCITE resources; the project codes and workflow are already optimized and demonstrated to operate at scale on the requested resource; a clear plan and justification for the requested resources is provided; and the project is ready to begin efficiently computing immediately.
	The project is very appropriate for the requested resource: the planned work could not be accomplished without INCITE resources; a very high degree of confidence exists that the project code and workflow can transition to efficient operation at scale on the requested resource; a reasonably clear plan and justification for the requested resources has been provided and the project can be computing efficiently within 1 calendar month.
	The project is appropriate for the requested resource: the planned work may not be possible without INCITE resources; the project code has several minor technical issues but can be brought to efficient operation at scale on the requested INCITE resource. The project provides a sufficiently clear plan and justification for the requested resources and can be computing efficiently in less than 3 calendar months using project-provided resources plus normal site user support.
← Not Ready	Aspects of the project may not be appropriate for the requested resource: the planned work may not require INCITE resources; the project code has significant technical issues that could negatively impact the ability to effectively use INCITE resources. Minor aspects of the project plan or justification for requested resource may be unclear. The project can only be brought to efficient operation at scale on the requested INCITE resource in no less than 6 calendar months using project resources or project resources plus additional implementation support beyond normal site user support.
	The project is not appropriate for the requested resource: INCITE resources are not needed to accomplish the goals; the code cannot run efficiently at scale and there are no plans to scale up; or the project has not provided a clear plan or provided insufficient data to gauge computational readiness.

**1. Need for and Effective Use INCITE's Leadership-class Systems**

Select one or more of the following that best exemplifies the proposed computational work.

Describe the reason for your selection in the assessment below.

- capability computing (use of 20% or more of the leadership-class system for production runs: individual simulations or ensembles)
- specific architectural requirements (e.g., large memory, GPU's, file system)
- other

*For new requests*, please assess the need for LCF resources and how effectively the project team can use the requested systems. For example, could the work be performed elsewhere? How well is the application optimized for the resources requested (in terms of efficiency, scalability, throughput, data input/output, workflow tools for ensemble runs, etc)? Ratings should be downgraded if the data provided in the proposal is unrelated to the proposed production work.

*For renewals*, please assess the project's system usage and improvements to code efficiency, scalability, throughput, data input/output, workflow tools, etc, which have been carried out to date.

*For multiple-resource requests*, please comment on the merit of allocations at both centers.

**Response:**

**2. Computational Plan**

Assess the computational plan (e.g. system requirements, milestones, data management, post processing and analysis, workflow), project staffing and technical expertise, and the timeliness of the project to begin computing next year.

- Is the project's computational plan and request for resources clearly explained and the amount of time and storage requirements reasonably estimated and associated with relevant project milestones? If appropriate, are all aspects of data management (moving data into and out of the LCFs, pre- and post-processing and analysis, and project workflow) clearly explained and tractable?
- Does the Personnel Justification and Management Plan clearly articulate who is responsible for each component of the project's computational plan? Is the level of effort sufficient?
- How much time would it take for the project to begin capability-class production runs?

**Response:**