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▣ **What is ALCC?** The mission of the ASCR Leadership Computing Challenge (ALCC) is to provide an allocation program for projects of interest to the Department of Energy (DOE) with an emphasis on high-risk, high-payoff simulations in areas directly related to the DOE mission, in response to National

emergencies, and for broadening the community of researchers capable of using leadership computing resources. ALCC does NOT award any funding.

What is new for the 2021-2022 ALCC campaign? The submission site has changed—new site is <https://science.osti.gov/ascr/ALCC> A Pre-Proposal is **required** as a first step in submitting a proposal (to help us plan for reviews and to quickly identify nonresponsive proposals and projects that are not appropriate for the available resources). The LOI is **required, is binding** and **will be** used to encourage or discourage the submission of full proposals. The ALCC call opens November 10, 2020. The Pre-Proposal is due January 4, 2021 at 5:00PM (Eastern Time). The Proposals are due February 26, 2021 at 5:00PM (Eastern Time). For all Pre-Proposals received by DOE an automated email will be sent to the lead Principal Investigator acknowledging receipt. Federal Program Managers will evaluate all Pre-Proposals using these criteria:

1. Responsiveness to the objectives and requirements of the ALCC.
2. Scientific and technical merit.
3. Appropriateness of the proposed research approaches.
4. Likelihood of scientific impact. This will be a comparative review with priority given to scientifically innovative and forward-looking basic research with the highest likelihood of success as full proposals. Applicants with the highest rated pre-applications will be allowed to submit full proposals; all others will be disallowed from submitting. DOE will communicate these decisions to the applicants by February 15, 2021. Applicants who are disallowed from submitting full proposals may request written feedback from the review, which will be provided only after awards have been announced. Topical diversity will be considered, with potential variation in the allow/disallow ratios among research priority areas. Full Proposals are due February 26, 2021. There are also instructions in the Pre-Proposal to clarify what will be deemed nonresponsive to the ALCC call.

What are the criteria for review of ALCC proposals? See https://science.osti.gov/-/media/ascr/pdf/facilities/ALCC/2020/2020_ALCC_Review_Questions.pdf

How is ALCC different from other ASCR allocation programs (INCITE, ERCAP, DD)? See <https://science.osti.gov/ascr/Facilities/Accessing-ASCR-Facilities/>

What computers are included in the ALCC awards? For ALCC 2021-22, the computers will be the same ones used for the ALCC 2019-20 campaign: Theta at ALCF, Summit at OLCF, and Cori/KNL at NERSC. For a description of the computing resources, please see

- Argonne Leadership Computing Facility (ALCF): <http://www.alcf.anl.gov/computing-resources>
- Oak Ridge Leadership Computing Facility (OLCF): <http://www.olcf.ornl.gov/computing-resources>
- National Energy Research Scientific Computing Center (NERSC): <http://www.nersc.gov/systems>

How much time is available in the awards? Beginning with the 2019-2020 campaign, awards of time are granted in millions of node-hours on the specific machines available for a given year. For ALCC 2021-2022 the available resources will be 5.9 M node-hours on Theta, 6.0 M node-hours on Summit, and 4.5 M node-hours on Cori/KNL (this is the same as the 2019-2020 campaign).

Does ALCC have restrictions on time requested? PIs should consider the size of their request in the context of the total pool of time that is available for a particular year and the other allocation programs. Very large projects are encouraged to apply to the INCITE program. Starting in this 2021-2022 call,

Proposals that request more than 25% of the available resources at any facility will be considered nonresponsive and may not undergo merit review, and Pre-Proposals with such large requests may be declined. Proposals to the OLCF that do not use the GPUs will also be considered nonresponsive. PIs should familiarize themselves with all the policies of the requested facilities as projects that do not meet these policies will be considered nonresponsive:

OLCF- Summit

- https://docs.olcf.ornl.gov/systems/summit_user_guide.html
- https://docs.olcf.ornl.gov/accounts/olcf_policy_guide.html

ALCF – Theta

- <https://www.alcf.anl.gov/support-center/facility-policies>
- <https://www.alcf.anl.gov/support-center/theta/job-scheduling-policy-theta>

NERSC – Cori

- <https://www.nersc.gov/users/policies/>
- <https://docs.nersc.gov/jobs/policy/>

Who is eligible to apply for ALCC time? Funded researchers affiliated with a university, lab, agency, or industry performing research in a science area that supports the DOE mission/ research priority areas.

Does my project have to be funded by DOE to be eligible? No, but you DO need to identify the relevant DOE Office/research priority area, and you need to provide the name and email of your program manager/project sponsor. Program priority is part of the merit review and projects that do not have input from the sponsor program will not be competitive.

If I do have DOE funding, do I need to include the grant or contract number? No, but you DO need to tell us which DOE Office/research priority area and provide the name and email of your program manager/project sponsor. Program priority is part of the merit review and projects that do not have input from the sponsor program will not be competitive.

What are the DOE programs and research priority areas?

DOE/SC/ASCR (link to new page)

DOE/SC/BES (link to new page)

DOE/SC/BER (link to new page)

DOE/SC/FES (link to new page)

DOE/SC/HEP (link to new page)

DOE/SC/NP (link to new page)

DOE/EERE (link to new page)

DOE/FE (link to new page)

DOE/NE (link to new page)

DOE/NNSA (link to new page)

☐ My project supports, for example, energy efficiency in aviation, which supports the DOE energy mission but is not in an area directly funded by DOE. Can I submit to ALCC? Yes, ALCC supports projects that advance the DOE mission. Projects with non-DOE funding should choose DOE/SC/ASCR/interagency partnerships; SC/ASCR/industrial competitiveness or DOE/SC/ASCR/national preparedness (this includes COVID research efforts)

☐ My funding comes from DOE/EM. Which DOE research priority area do I choose?

EM funded projects should choose DOE/SC/ASCR/interagency partnerships

☐ My funding comes from another Federal Agency. Which DOE research priority area do I choose?

Projects with funding from another Federal agency should choose DOE/SC/ASCR/interagency partnerships

☐ My funding comes from Industry. Which DOE research priority area do I choose?

Industry funded projects should choose DOE/SC/ASCR/industrial competitiveness

☐ My funding comes from another source (State, private foundation, etc.), which DOE research priority area do I choose?

Projects with funding from other sources should choose SC/ASCR/interagency partnerships

☐ My project is not funded, am I eligible to apply for ALCC and can I get funding from ALCC?

No. ALCC does not award funding. All ALCC projects must have approved funding from another source.

☐ How many years can I request for allocation? ALCC is a one year allocation program. Projects must submit new applications each year. If your project is part of a multi-year effort, you should mention how this year's request fits into your overall plans.

☐ Do I have to demonstrate scalability? No. However, if you have scalability info, you should include it. Also, new this year, the Pre-Proposal asks for details such as what codes you plan to use, your workflow and how you plan to use the allocation. This is to identify projects that are not well matched to the resources available. PIs should be aware of the facility policies, especially the queueing policies, the codes and tools that are supported at each facility, and the projects that have been successful in previous ALCC cycles.

☐ Can I submit to ALCC a proposal based on an INCITE or ERCAP proposal? Yes, but you should not resubmit an identical proposal since goals and requirements are different. ALCC proposals should focus on impact to DOE mission. Also, you should address any reviewer comments from previous versions of your proposal.

☐ Can I submit a proposal to request proprietary research? Projects cannot require the Proprietary User Agreement. However the Industrial Partnership User Agreement for ALCC allows industrial projects to perform *some* proprietary work so long as a meaningful list of research results and data are released to the public. Interested applicants should contact the designated industrial outreach contact at ASCR

centers for more information and concurrence **before** submitting the full proposal. NOTE: the proposal itself should NOT contain proprietary info.

OLCF Website for Industry

Suzy Tichenor
Director, Industrial Partnerships,
Computing and Computational Sciences
Oak Ridge National Laboratory
(703) 413-7846
tichenorsp@ornl.gov

NERSC Website for Industry

David Skinner
Strategic Partnerships Lead
NERSC
Lawrence Berkeley National Laboratory
(510) 486-4748
DESkinner@lbl.gov

ALCF Website for Industry

David Martin
Industrial Outreach Lead
Argonne Leadership Computing Facility
Argonne National Laboratory
(603) 252-0929
dem@alcf.anl.gov

❓ **What are the rules on export control?** Rules are subject to change and may be different from one site to another.

ALCF

<https://www.alcf.anl.gov/user-guides/software-policy> <https://www.alcf.anl.gov/user-guides/data-policy#export-control>

OLCF

<https://www.olcf.ornl.gov/project-definitions/> <https://www.olcf.ornl.gov/for-users/olcf-policy-guide/>

NERSC

https://nim.nersc.gov/Appropriate_Use_Policy.php

❓ **What rationale can cause a proposal to be rejected without review?** The following are reasons a proposal will be deemed unresponsive and may not undergo merit review: Proposals that were declined at the Pre-proposal stage; Proposals that did not submit a Pre-Proposal; Incomplete proposals (missing any of the required elements); Proposals lacking a recognized funding source; Proposals for research that is unrelated to the [DOE Mission/ research priority areas](#); Proposals that lack a PI affiliated with a recognized entity (university, lab, agency or industry); Proposals that request the OLCF but do not intend

to use the GPUs; Proposals that do not adhere to the Facility user policies; and Proposals that request more than 25% of the available resources at any facility.

❑ **Can I see my reviews? When?** After the final award decisions are made, ALL PIs will be notified of the status of their projects. Each PI will then be able to request an anonymized copy of their review comments and scores.

❑ **Is a Pre-Proposal required?** Yes. We will use the Pre-Proposals in our planning for the proposal peer reviews and to identify nonresponsive projects. The Pre-Proposal content IS subject to internal review, and IS a determining factor in allocation decisions. The Pre-Proposal will be used to screen out or reject proposals.

❑ **What should be in the Pre-Proposal?** The Pre-Proposal has 5 sections. The Title of the proposed project is entered to start the Pre-Proposal submission process and cannot be edited after the Pre-Proposals stage. Section 1--Team & Contacts: PI/affiliation, Co-PI(s)/affiliations(s), Collaborator(s)/affiliation(s). Section 2--HPC Resource Request by machine: (time in node-hours $\times 10^6$), descriptions of proposed codes and workflows, and current computing resources. Section 3--Project support: DOE mission/priority research areas, funding source and sponsor contact Section 4--Reviewers that PI requests NOT be used Section 5--Executive Summary/Abstract

❑ **Are templates available for Pre-proposal?** Word template is available for the Executive Summary/Abstract section of the Pre-proposal.

❑ **What should be included in the Executive Summary/Abstract?** This section (1 page maximum) is used to assess mission coverage and impact, so it should list main project goals in the context of the DOE mission and/or broadening the HPC community. Be sure to mention any dependencies with other activities (e.g., "Simulation data generated will be used in design of instrument X, scheduled to deploy in 2023"). This section is also used to assess what expertise reviewers should have in order to give an accurate assessment of the full proposal. In describing what the project will do and how it will do it, be sure to explicitly list the science domain (e.g. "biomass engineering", "tokamak plasma turbulence", "solar cell design", etc.) and theoretical and computations methods (e.g., "computational fluid dynamics", "quantum Monte Carlo", "machine learning", etc.) to be used.

❑ **How do I submit a Pre-Proposal?** Submission of Pre-Proposal is done digitally at <https://science.osti.gov/ascr/ALCC>. The person performing the submission must have a Peer Net account. Only one person/email address can edit the submitted Pre-Proposal. The registration information from the PeerNet account used to enter the data will be imported as "Author" and that person will be the authorized contact to edit and submit both the Pre-Proposal and the full Proposal. The Author may be the PI or another member of the team. An author can submit only one Proposal. We recognize that some Pre-Proposal submissions may not be followed by a full Proposal, but ALL Proposals must have first submitted a Pre-Proposal.

📄 **What is the deadline for the Pre-Proposal?** The Pre-Proposal call will open November 10, 2020 and the Pre-Proposal is due by January 4, 2021 at 5:00 PM (Eastern Time). If you encounter difficulties, send an email to us before the deadline at ALCC-ASCR@science.doe.gov

📄 **What should be in the Proposal?** The info from the Pre-Proposal will be imported into the proposal and most info will be editable. **Title:** This is entered as the first step in creating the Pre-Proposal and is not editable after Pre-Proposal submission. *Sections 1-5 are entered for the Pre-Proposal (and may be expanded after they are loaded into the Proposal). Sections 6-11 are added for the full proposal.* **Section 1** -- Team & Contacts: Principal Investigator, Co-PI(s), other Collaborator(s) on the project, *(these are keyed input or cut & paste)* **Section 2** -- HPC resources requested *(keyed input or cut & paste)* **Section 3** – DOE mission/priority research area, Description of code and dependencies, Other HPC Allocations *(keyed input or cut & paste)* Project funding and sponsor contact *(keyed input)* **Section 4** – Reviewers that PI requests NOT be used *(keyed input)* **Section 5** -- Executive Summary/Abstract *(template available, pdf upload) Review Pre-Proposal and Submit*

Section 6 – ALCC related publications: *(template available, keyed input or cut & paste)* **Section 7** -- Project Narrative: *(template available, pdf upload)*

Narrative should include:

- ✓ Significance of Research (includes Research Goals and Impact, Relevance to the DOE Mission and Relation to other projects, and Anticipated Results)
- ✓ Research Objectives (includes Goals, Strategy, and Dissemination of Results)
- ✓ Computational Usage Plans (includes Computational Approach, Milestone Table, and Data Management Plan)
- ✓ References

Section 8 – Security questionnaire *(series of yes/no questions)* **Section 9** -- Prohibited Content Agreement *(this is a checkbox)* **Section 10** – Team Description & Administration Details: *(template available, pdf upload)* **Section 11** -- Bio-sketches: *(template available, pdf upload(s))* also posted at <https://science.osti.gov/ascr/Facilities/Accessing-ASCR-Facilities/ALCC/Application-Details>

📄 **What is meant by “Administration Details” in the proposal?** Describe the project’s leadership team and how decisions are made to allocate time to individuals or, for proposals with multiple collaborating teams, subgroups within the project. Successful proposals will include sufficient details to convey to reviewers the interrelationship between subgroups and how the sum of the parts will lead to scientific discovery or engineering solutions that are the overarching goal of the project.

📄 **Are templates available for the Proposal?** In addition to the template available for the LOI Executive Summary/Abstract, Word templates are available for several sections of the Proposal: Project Narrative, Milestone table, Publications, Team/Administration, and Bio-sketches (a subset of a CV)

📄 **How do I submit a Proposal?** Proposals should be submitted digitally at <https://science.osti.gov/ascr/ALCC> Info from the Pre-Proposal will be automatically moved over to the draft proposal, where it may be edited (and pdfs may be retained or replaced with new uploads).

? **When does the Proposal call open and close?** The ALCC call will open November 10, 2020 for submission of Pre-Proposals, with a due date of January 4, 2021 at 5:00PM (Eastern Time). Pre-proposal content will be screened and those encouraged by DOE will be populated to the draft proposal and available for expansion to a full proposal beginning January 18, 2021. The ALCC call will close February 26, 2020 at 5:00 PM (Eastern Time). If you encounter difficulties, email us at ALCC-ASCR@science.doe.gov **before** the deadline.

? **Can I propose a Consortium or End-Station?** No. These proposals do not review well due to page restrictions and are no longer accepted..