University allocations

The next university deadline for submitting Large Allocation Requests is September 12, 2023.

University use of the NCAR HPC environment is intended to support Earth system science and related research by researchers at U.S. institutions. Eligible researchers and activities incur no costs for the use of NCAR resources.

Recent changes: We have recently updated these policies to reflect the arrival of Derecho and to expand opportunities for University researchers. Most notably, we have created a new Data Analysis opportunity to allow more researchers to analyze NCAR-hosted data sets, and we have redefined "new faculty" to be any faculty member who has not computed at NCAR before. We have also called out options for expanding or extending the smaller-scale projects and clarified the eligibility language to emphasize the range of post-secondary institutions welcome to use NCAR's resources.

While we often distinguish between the allocation opportunities based on the size of the HPC resource needs, most of these options allow you to request data analysis, visualization, and storage resources. *To see what HPC resource limits apply to each type of allocation, refer to **the table below***.

As of August 1, 2023, all university allocation requests are being awarded on Derecho (or Derecho GPU). We are no longer accepting allocation requests for Cheyenne, which will be decommissioned at the end of the year. All project leads are encouraged to transfer their Cheyenne core-hours to Derecho and migrate their work to the new system as soon as is feasible.

Allocation request	Initial HPC limit*	Supplement HPC limit	Frequency	Funding eligibility
Large	No upper limit (subject to availability)	No upper limit (subject to availability)	Semi-annual panel review	NSF award required
Small	~~Cheyenne: 400,000 core-hours~~ Derecho: 1 million core-hours Derecho GPU: 2,500 GPU-hours	~~Cheyenne: 400,000 core-hours~~ Derecho: 1 million core-hours Derecho GPU: 2,500 GPU-hours	Continuous	NSF award required
Exploratory & Classroom	~~Cheyenne: 400,000 core-hours~~ Derecho: 500,000 core-hours Derecho GPU: 1,500 GPU-hours	~~Cheyenne: 400,000 core-hours~~ Derecho: 500,000 core-hours Derecho GPU: 1,500 GPU-hours	Continuous	No external funding award
Data Analysis	n/a (Casper only)	n/a (Casper only)	Continuous	Any funding source

*For Small, Exploratory, and Classroom projects, the amounts shown are the limits for requests on **one** system. For requests to use more than one system, proportionally smaller limits apply–e.g., up to half the Derecho limit and half the Derecho GPU limit can be requested together.*

Submitting Your Request

For all types of university allocations, including any subsequent extension or supplement requests, requests should be submitted via the ARC portal's Allocations section. If you have questions about these options, please contact us via the Research Computing help desk.

Page contents

Large Allocations

A university researcher may submit a large request for work that is beyond the scope of the amounts available via Small allocation requests. These requests have no upper limit, aside from the portion of the system available to the university community and ensuring that we can support the breadth of work from eligible university researchers.

CISL accepts requests for large allocations of NCAR resources every six months, in March and September. Deadlines for submitting requests are announced approximately two months in advance. The CISL HPC Allocations Panel (CHAP) reviews requests in April and October, and projects begin in May and November.

NOTE: We strongly recommend that researchers begin any new project by submitting a Small allocation request first. With a Small allocation, you can get started quickly and conduct benchmark and test runs to confirm the estimated computational costs of your planned model configurations. Such preparatory work will maximize your success during CHAP review.

The panel recommends awards on the basis of the computational experimental design, computational effectiveness, and availability of computing resources (see Review Criteria). Check the submission instructions for preparing the required Request Summary document.

If your Request Summary is ready, submit your Large Allocation Request here.

Large allocations are made for the duration of the supporting NSF award. If the NSF award is extended, including no-cost extensions, you can ask for your allocation end date to be extended as well. At the end of your NSF award, you can request three extra months to wrap things up, and with concurrence from the NSF Program Officer, we can extend your allocation up to 12 months beyond the end of your NSF award.

Small Allocations

Small requests can be submitted at any time and decisions are typically made within a few days.

U.S. university researchers who are supported by an NSF award can request an initial small allocation of up to 1 million core-hours on Derecho, or up to 2,500 GPU-hours on Derecho GPU for each NSF award. These allocations can be used to complete small projects or to conduct initial runs in preparation for submitting a request for a large allocation.

If needed to complete your work, you can request a *one-time supplement* to a small allocation – as much as doubling the total hours available for your project – with a brief statement that you are on track to finish or that you are aware you will need to prepare a large allocation proposal for any additional resources. You may also request a large allocation at any point after receiving a small allocation.

Small allocations are also made for the duration of the supporting NSF award, and they can be extended according to the same rules as for large allocations.

Submit a Small Allocation Request here.

Exploratory Allocations

Exploratory requests can be submitted at any time and decisions are typically made within a few days.

Resources for unsponsored graduate students, postdocs, and new faculty

A graduate student, post-doctoral researcher, or new faculty member at a U.S. university can request a one-time allocation of up to 500,000 Derecho core-hours, or up to 1,500 Derecho GPU-hours. These awards typically support dissertations, help foster early career research, or provide seed resources for pursuing funded research.

An individual can request a new exploratory project at each stage of their career path. A new faculty member is any eligible researcher who has not previously had an NCAR allocation as a faculty member.

For these allocations, in addition to meeting the domain and affiliation eligibility requirements (below):

* The work must be the individual's own research project rather than a project assigned by the institution that is hosting the grad student, postdoc, or faculty member.
* The work should not lie within the scope of any funded grant.
* A letter from the individual's advisor or department head must affirm the quality of the proposed research and that the work is not within the scope of a funded grant.

If needed to complete your work, you can request a one-time supplement of the allocation, up to twice the original amount, with a brief statement acknowledging that you will finish within the supplemental amount.

Exploratory requests are accepted at any time and decisions are typically made within a few days. Exploratory allocations are made for one year, but may be extended up to two additional years to complete the original project.

Submit an Exploratory Allocation Request here.

Data Analysis Allocations (NEW!)

Data Analysis allocation requests can be submitted at any time and decisions are typically made within a few days.

Earth system scientists can request access to NCAR's Casper data analysis cluster and the Campaign Storage file system to allow them to conduct analyses on data sets curated by NCAR data services and accessible via our storage systems.

We are pleased to make Data Analysis allocations available to researchers from any eligible institution *regardless of the source of funding* for the planned analysis. Researchers are only required to identify the specific NCAR-hosted data sets that are essential to completing their science objectives. (Because of this expanded eligibility, Data Analysis projects cannot make use of Cheyenne or Derecho.)

Data Analysis allocations are made for one year, but may be extended up to two additional years to complete the original project.

Requests for the CMIP Analysis Platform, unless the work requires use of NCAR's HPC resource, fall within the scope of a Data Analysis project.

Submit a Data Analysis Allocation Request here.

Classroom Allocations

Classroom allocation requests can be submitted at any time and decisions are generally made within a few days.

CISL offers opportunities to undergraduate and graduate faculty and instructors at U.S. 2- and 4-year institutions to use NCAR HPC and analysis resources in their courses in Earth system science and related areas. "Special projects" or honors thesis courses under the guidance of a faculty member are eligible.

Classroom allocations can also be used for shorter-term training courses and workshops aimed at the university community with the goal of developing a skilled workforce relevant to all aspects of NCAR's mission.

Individual accounts are provided to all students and the instructor(s), so be sure to allow at least a week for setting up accounts. Very large classes may require more setup time. NCAR can provide consulting assistance to the instructors.

Classroom allocations are typically made for the duration of the course, plus a reasonable limited period afterwards.

Submit a Classroom Allocation Request here.

Eligibility Details

NCAR's HPC environment represents a significant resource for the U.S. university community. Access to the environment is governed by three primary eligibility criteria.

1. Earth system science and related research

To use NCAR resources, a project must be within Earth system science or be Earth system–related research.

According to a recent report from the National Academies, "Earth system science" aims to discover and integrate knowledge on the structure, nature, and scales of the dynamics and interactions among natural and social processes throughout the Earth system, which includes the atmosphere, hydrosphere, geosphere, cryosphere, biosphere, as well as the individuals, institutions, and technologies that respond to and influence these dynamics and their interactions and feedback through time.

Because scientific progress often relies on contributions from many fields, NCAR resources are also available to support Earth system–related work from other domains – that is, work that has a demonstrable benefit to or reliance on Earth system science.

2. Affiliation

A prime component of NCAR's mission is to support atmospheric science at U.S. post-secondary educational institutions. Eligible institutions encompass 2- and 4-year colleges and universities, including community colleges, minority serving institutions (MSIs), and predominantly undergraduate-serving institutions, as well as non-profit research organizations. Recipients of NSF research grants in eligible domains from other types of institutions are also deemed eligible. NCAR resources normally do not support research groups in federal agencies.

3. Sponsorship

NSF grants. Researchers can apply for an NCAR allocation in support of an associated NSF grant for Earth system science or related research as long as their proposed computing supports the objectives of the grant. The NSF is kept informed to ensure appropriate use of NCAR resources.

Unsponsored projects. NCAR provides opportunities for graduate students, postdocs, and new faculty at eligible institutions for work not within the scope of a funded research grant. For this purpose, "new faculty" includes any faculty member who has not previously had a university allocation at NCAR.

- The work must be the individual's own research project rather than a project assigned by the institution that is hosting the grad student, postdoc, or faculty member.
- Their work should not lie within the scope of any funded grant.
- They must provide a letter from their advisor or department head commenting on the quality of the proposed research and affirming that funds are not within the scope of a funded grant.

Unsponsored researchers may also request Data Analysis allocations. These projects cannot use NCAR HPC resources and must make use of NCAR-hosted data sets.

Non-NSF funding

Due to high demand for NCAR resources at this time, we are unable to provide HPC support to Earth system scientists who have funding solely from non-NSF sources. However, researchers who want to analyze NCAR data sets can request use of NCAR analysis resources regardless of their funding source.

The University of Wyoming allocation opportunity has eligibility criteria that permit funding by sources other than NSF, for projects involving U Wyoming collaborators.