NATIONAL SCIENCE FOUNDATION
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NSF 22-051

Dear Colleague Letter: Pilot for the Allocation of High-Throughput Computing Resources (HTC)

February 24, 2022

Dear Colleagues:

Computational resources are critical for sustaining progress in modern scientific and engineering research and development activities. As such, NSF recognizes[1] that lowering barriers to the prompt allocation of computational resources can accelerate progress and enable discovery, while at the same time democratize access and facilitate the onboarding of new communities that could benefit from advanced computing resources and services

Through this Dear Colleague Letter (DCL), NSF announces a Pilot for the Allocation of High-Throughput Computing (HTC) resources made available through the Partnership to Advance Throughput Computing (PATh) project supported by NSF[2]. HTC supports the automated execution of workloads that consist of large ensembles of self-contained inter-dependent tasks that may require large amounts of computing power over long periods of time to complete. Available resources include large-scale compute and GPU servers and nearline storage, as described in more detail on the PATh credit accounts web page. Investigators may contact credit-accounts@path-cc.io with questions about PATh resources, using HTC, or estimating credit needs.

The following programs and responsible Program Officers will participate in this Pilot in FY 2022 and FY 2023:

- Computational and Data-Enabled Science and Engineering (CDS&E), NSF, PO: Christina Payne, cpayne@nsf.gov
- Cyberinfrastructure for Sustained Scientific Innovation (CSSI), CISE/OAC, PO: Tevfik Kosar, tkosar@nsf.gov
- Innovation: Bioinformatics, BIO/DBI, PO: Jean X. Gao, jgao@nsf.gov
- Neural Systems, BIO/IOS, PO: Evan Balaban, ebalaban@nsf.gov
- Collaborative Research in Computational Neuroscience (CRCNS), CISE/IIS, PO:

Kenneth Whang, kwhang@nsf.gov – see also NSF DCL 22-022

- Astronomy and Astrophysics Research Grants (AAG), MPS/AST, PO: Andreas Berlind, aberlind@nsf.gov
- Chemical Theory, Models, and Computational Methods (CTMC), MPS/CHE, PO: Richard Dawes, rdawes@nsf.gov
- Condensed Matter and Materials Theory (CMMT), MPS/DMR, PO: Daryl Hess, dhess@nsf.gov
- Atomic, Molecular and Optical Physics – Theory, MPS/PHY, PO: Robert Forrey, rforrey@nsf.gov
- Nuclear Physics – Theory, MPS/PHY, PO: Bogdan Mihaila, MPS/PHY, bmihaila@nsf.gov
- Geoinformatics (GI), GEO/EAR, PO: Raleigh Martin, ramartin@nsf.gov
- Geophysics (PH), GEO/EAR, PO: Eva Zanzerkia, ezanzerk@nsf.gov
- Arctic Research Opportunities, GEO/OPP, POs: Marc Stieglitz, mstiegli@nsf.gov, Allen Pope, apope@nsf.gov
- Antarctic Research, GEO/OPP, PO: Allen Pope, apope@nsf.gov

ELIGIBILITY

This opportunity is open to PIs interested in including requests for HTC resources in regular proposal submissions to the Programs participating in this Pilot. This opportunity is also open to NSF PIs with active awards supported by the Programs participating in this Pilot.

HOW TO APPLY

Interested investigators are required to submit a request for HTC resources that includes, in no more than two pages: (1) the anticipated total HTC resources required, with yearly breakdown; and (2) a technical description and justification for the request. The latter should include information regarding (a) the expected number of self-contained tasks per ensemble – note that each task can be packaged into one or more batch job(s); (b) the resource requirements for each task type in the ensemble – for example, requirements for cores, memory, wall-time, and scratch space; (c) the expected number of ensembles; (d) the expected input and output data requirements for each task type; and (e) the expected number and size of shared input files within an ensemble – expected number of times each file is read per ensemble.

Investigators are encouraged to consult the PATh web page, https://path-cc.io/services/credit-accounts/, for the latest up-to-date information and contact PATh support staff at credit-accounts@path-cc.io with questions regarding PATh resources, using HTC or estimating credit needs.

New Proposals: In the case of new proposal submissions to the participating programs, PIs

should include the request for HTC resources as a Supplementary Document.

Existing Awards: PIs with active awards supported by the participant programs should contact the NSF cognizant program officer of their project by e-mail, with the description of their HTC resource request. Please include "HTCAccess" and the award number for the funded project in the e-mail subject line.

HTC resource requests will be internally reviewed, but Program Officers may elect to obtain external reviews to inform their decisions. NSF will work directly with PATh to provide credits for approved requests.

Sincerely,

Joanne S. Tornow
Assistant Director, Biological Sciences

Margaret Martonosi
Assistant Director, Computer and Information Science and Engineering

Sylvia Butterfield
Assistant Director (acting), Education and Human Resources

Susan Margulies
Assistant Director, Engineering

Alexandra R. Isern
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Alicia Knoedler
Office Head, Office of Integrative Activities

Kendra Sharp
Office Head, Office of International Science and Engineering

Manish Parashar
Office Director, Office of Advanced Cyberinfrastructure

REFERENCES

[1] Transforming Science Through Cyberinfrastructure, NSF's Blueprint for a National Cyberinfrastructure Ecosystem for Science and Engineering in the 21st Century, https://www.nsf.gov/cise/oac/vision/blueprint-2019/.

[2] NSF #2030508, Partnership to Advance Throughput Computing (PATh), PI: Miron Livny, University of Wisconsin-Madison, https://path-cc.io/.