NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 21-040

Dear Colleague Letter: Leadership-Class Computing Facility Application Team Partners

January 26, 2021

Dear Colleagues:

For almost four decades, the National Science Foundation (NSF) has played a leading role in provisioning advanced cyberinfrastructure (CI) capabilities for our nation's researchers to advance science and engineering (S&E) discovery and innovation. Today, as part of a broad portfolio of advanced computing resources, NSF is supporting the planning and design of a future Leadership-Class Computing Facility (LCCF). The LCCF will be a follow-on to the Frontera supercomputer, which is located at the University of Texas at Austin's Texas Advanced Computing Center and provides unique computational and data analytics services enabling the largest and most computationally-intensive S&E research frontiers today.

NSF envisions the LCCF is to be an innovative community resource for *all S&E research* that will spur new modalities of discoveries through computing and data analytics at the largest scale, which will in turn enhance our nation's economic competitiveness and security. To support this vision, NSF's goal for the future LCCF is to enable a ten-fold time-to-solution improvement over the current Frontera system for broad classes of future S&E applications and workflows. These include but are not limited to applications that (i) require extreme scales, (ii) integrate data-intensive and possibly distributed analytics, and (iii) explore innovative uses of artificial intelligence and machine learning. In addition, the LCCF will provision unique computational services, distributed sets of resources, and expertise to transform our nation's S&E research with novel CI and discovery workflows.

With this Dear Colleague Letter (DCL), NSF seeks to inform the S&E community about an opportunity for research teams to become *S&E application partners* with the LCCF during the planning and construction stages of the project. The aim of the LCCF application partner program is to provide the LCCF with a set of application requirements representing a broad diversity of S&E fields that will drive the design for the LCCF project. The LCCF application partners will be selected to be representative of several different S&E fields and cross-cutting numerical methods, as well as computational patterns and workflows to be supported by the

future facility.

Proposers interested in becoming an application partner with the LCCF must submit directly to the NSF-funded LCCF project via LCCF's dedicated website (see https://lccf.tacc.utexas.edu/application-partners/). That website provides more information on the submission process, timeline, and review evaluation criteria. Note that the LCCF project will be conducting the proposal review, with input from NSF. Application partner submissions will be accepted between January 31, 2021, and February 26, 2021. Selected application partners will be funded by the LCCF project in the range of $120,000 to $150,000 for the initial year, with opportunities to continue participation through the remainder of LCCF planning and construction depending on progress. Please visit the LCCF's dedicated website referenced above for more details.

Questions about this DCL should be directed to the LCCF cognizant program director:

- Edward Walker, phone: (703) 292-4863, email: edwalker@nsf.gov.

Questions about the application process should be directed to the LCCF point of contact:

- email: lccf-community@tacc.utexas.edu

Sincerely,

Manish Parashar
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NSF

Joydip Kundu
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