Mr. Brian Stone, Acting Director
National Science Foundation
2415 Eisenhower Ave
Alexandria, VA 22314

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We, the Board of Trustees of the University Corporation for Atmospheric Research (UCAR), are responding to the NSF Intent to Restructure Critical Weather Infrastructure to urge you to keep the original vision for the NSF National Center for Atmospheric Research (NSF NCAR) and its relationship to universities intact.

UCAR represents the interests of 129 member universities and manages NSF NCAR in accordance with a cooperative agreement with NSF. Through their membership, universities are part of the governance of UCAR; the members elect the UCAR Trustees and provide direct input on the scientific priorities and investments of NSF NCAR. This unique and united governance structure was designed to make NSF NCAR a highly-competitive central hub—one that concentrates shared capabilities and talent to deliver results at national scale, rather than dispersing effort across a collection of distributed projects. As a result, researchers from universities across the country, federal agencies, industry, professional organizations, and international partners have access to facilities that no individual university could afford.

Fragmenting NSF NCAR would undermine this cost-effective and efficient model, which cannot be replicated by dispersing assets across multiple entities. **We urge NSF to preserve what is best and uniquely valuable about NSF NCAR—its integrated, university-serving hub model—while continuing to strengthen and evolve it to meet the needs of our nation.**

NSF NCAR, in collaboration with the university community, provides the scientific foundation needed for decisions that protect lives and commerce on land and sea, helping agencies, private sectors, and the general public reduce disaster-related losses; the resulting fundamental research and applied products directly support national security, transportation, aviation safety, public health, wildfire and water management, and the insurance industry. Earth-system and space-weather modeling from NSF NCAR, developed in collaboration with the university research community, provides weather information across timescales, from hourly to decadal projections, that are used by multiple federal agencies, including DOD, FAA, NASA, NOAA, and DOE. The Community Earth System Model (CESM) is a fully coupled, community-driven, global model that provides state-of-the-art computer simulations of the past, present, and future states of the Earth system. The Weather Research and Forecasting (WRF) model has **over 71,000 registered users** dependent on UCAR-NCAR's integrated efforts. They are the most widely used Earth system and weather prediction models in the world, with direct relevance to public- and private-sector decision-making. Building on these foundations, the Model for Prediction Across Scales (MPAS) provides a next-generation Earth system model to advance seamless prediction. UCAR and NSF NCAR also offer programs in education and workforce training, data and software services, and scientific support for researchers using these sophisticated models. This community support is integral to the success of NSF NCAR in its FFRDC mission.

From improving the accuracy of hurricane forecasts for the Gulf and Atlantic Coasts, to advancing wildfire and smoke-impact modeling critical for the Western U.S., to supporting U.S. national security interests in the Arctic, NSF NCAR's collaborative research tackles the nation's most pressing regional threats. Tornadoes, hailstorms, hurricanes, flooding, and wildfires destroy lives and cause billions of dollars in property damage in a given year. We advance our understanding of these phenomena through a complementary blend of theory (e.g., fluid dynamics), real-world observations, advanced numerical modeling enabled by high-performance computing, and modern data science with AI/ML methods that accelerate discovery and improve prediction. For decades, NSF NCAR, with its specialized aircraft, radars, and other advanced instrumentation, has provided leadership for complex field projects (i.e., multi-week deployments to observe and measure important weather phenomena) in collaboration with the university community and other agencies to collect logistically complex and crucial observations. Similarly, NSF NCAR models and high-performance computing have supported the modeling efforts of researchers across the country. This collaboration has allowed us to directly improve risk management for American families and companies.

Further advances in our scientific understanding are at risk if there is significant fragmentation or dismantling of NSF NCAR, which would alter the synergies within NSF NCAR and its relationship with the university community. NSF NCAR is the only integrated and strategic scientific investment that is designed to engage with and support Earth system science research in every state across the nation. It is imperative to U.S. economic and national security goals to remain at the leading edge of this predictive science. Global prediction is a fiercely competitive arena, and NSF NCAR is the national leader with premier integrated capability linking observations, modeling, AI-enabled data science, and prediction.

Dismantling NSF NCAR would adversely affect the scientific and technological workforce across the U.S. The career path of virtually every U.S. atmospheric scientist has personally intersected with NSF NCAR facilities, capabilities, and/or researchers. Our international competitors are significantly investing in science and scientific training. Stepping back from NSF NCAR would signal a U.S. withdrawal from scientific leadership in Earth system science. We urge you to keep this national treasure intact for the benefit of society. With the rapid changes that are occurring as a result of AI, NSF NCAR is uniquely positioned to rapidly advance AI-based forecasting for extreme events—a task requiring a level of coordination with universities in education and workforce development that no other organization can replicate.

We appreciate this opportunity to provide input on this question of major national importance. We are prepared to provide additional documentation related to the strategic and scientific value of NSF NCAR to our nation.

Sincerely,

The UCAR Board of Trustees
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