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Response to Dear Colleague Letter: NSF Intent to Restructure Critical Weather Infrastructure

This letter responds to the National Science Foundation (NSF) Dear Colleague Letter (DCL) regarding the potential restructuring of the National Center for Atmospheric Research (NCAR). We write in our capacity as individuals who rely on NCAR computational and other resources, collaborate with NCAR scientists, and mentor students whose research critically depends on Earth system and weather models developed at NCAR.

NCAR is a premier global center for atmospheric sciences and Earth system modeling. For decades, it has served national research priorities and helped keep the United States at the forefront of Earth system science. NCAR is the nation's only fully integrated atmospheric research institution and plays a critical role in supporting economic resilience, national security, and scientific advancement.

NCAR leads research in science that directly supports weather forecasting, aviation safety, wildfire management, natural disaster preparedness, transportation systems, and the insurance industry—all sectors with clear implications for national security and economic stability. Major community-driven modeling systems, including the Community Earth System Model (CESM) and the Weather Research and Forecasting (WRF) model, have been developed through deep collaboration among NCAR, UCAR member universities, and other national laboratories. These models underpin scientific information used by multiple federal agencies and throughout U.S. industry. They also provide essential tools for fundamental research in Earth system science across time scales ranging from years to millennia, while training generations of scientists.

The integrated structure of NCAR and its close partnership with the academic community provide extraordinary benefits to scientists, students, and the public. The U.S. is unique among Western nations in maintaining such a center that offers broad access to a national community of scientists—from undergraduate students to senior researchers. That is why atmospheric science in the U.S. is the envy of the world.

NCAR's integrated approach—combining theory, observations, and modeling—has substantially advanced our understanding of major atmospheric phenomena and hazards, including atmospheric rivers, hurricanes, tornadoes, flooding, wildfires, and extreme El Niño events. These events cause major economic damage, amounting to many billions of dollars, and significant loss of life. We believe that fragmenting or dispersing NCAR's capabilities would disrupt the synergy that has driven decades of scientific progress and would weaken U.S. leadership in global weather prediction, particularly as the merging of numerical modeling and artificial intelligence becomes crucial for forecasting.

NCAR should continue to serve as a collaborative hub connecting universities, federal agencies, and national laboratories. This structure provides researchers across the U.S. with access to world-class facilities, including high-performance computing systems, specialized research aircraft, radar networks, and advanced observational instrumentation. Many students rely on NCAR facilities and collaborations for their training and research. At a time when international competitors are expanding investments in prediction science, reducing the U.S. commitment would risk ceding global leadership in this strategically important field.

In summary, we strongly urge NSF not to dismantle NCAR or split it into separate pieces. Doing so would undermine the nation's leadership in Earth system science and diminish critical capabilities that support national security, economic stability, and public safety.

Sincerely,

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