



Dear Representative,

On behalf of the National Oceanic and Atmospheric Administration (NOAA) National Weather Service (NWS) National Centers for Environmental Prediction (NCEP) Environmental Modeling Center (EMC), I write this letter in strong support of the proposal entitled: "Application of an environmental justice air quality modeling (AQM-EJ) capability using machine learning and multifaceted data sources: Improving air quality understanding and guidance for underserved communities".

NOAA/NWS/NCEP/EMC and Dr. Patrick Campbell's group at George Mason University (GMU) have a longstanding collaborative history focused on the development and enhancement of the National Air Quality Forecasting Capability (NAQFC) and providing essential numerical guidance for air quality forecasting nationwide. We currently collaborate on a variety of initiatives, including the development and enhancement of the unified forecast system (UFS)-based online air quality prediction system, data assimilation, and emissions modeling.

Dr. Campbell's proposal aligns well with NOAA's mission to advance air quality forecasting by employing innovative approaches to better simulate air quality processes, constrain initial conditions, improve model performance, and refine air quality forecast products. EMC in response to transition to new innovative approaches, will collaborate closely with Dr. Campbell should the proposal be funded. This collaboration will not involve funding support from the proposal for activities at EMC.

Our collaborative efforts may include:

- Providing updates and guidance on the use of NOAA's Unified Forecast System (UFS)-based online air-quality prediction system.
- Providing operational NAQFC forecast products necessary for applying the proposed machine learning based downscaling technology for refining NAQFC forecast products.
- Preparation and submission of publications and conference presentations to disseminate project results.

These joint activities between EMC and the team from George Mason University will advance the capabilities of NOAA's UFS-AQM online systems, significantly improving NAQFC forecast products and enhancing their utility in providing air quality guidance to the public, most specifically to underserved communities. We are enthusiastic about the opportunity to collaborate with GMU on the development of machine learning and data fusion based downscaling techniques for further refining NAQFC forecast products and strongly encourage its consideration for funding.

Sincerely,

Jianping Huang, Ph.D.

*Jianping Huang* 6/7/2024

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