

located along the coast of the Gulf of Alaska.

Improve the winter season WSR-88D-based rain and snow QPEs. All six sites are influenced by complex topography.

Improve the accuracy (probability of detection) and lead time for airborne volcanic ash detection and tracking by better understanding source conditions and early developments of the ash cloud. Improvements must include remote sensing techniques.

Innovative approaches to remote sensing that result in the formulation and production of high resolution hydrometeorological forecasts of river and localized flash flooding produced by synoptic and mesoscale weather systems interacting with complex terrain in south-central Alaska. Emphasis should be placed on the Kenai River watershed.

FOR FURTHER INFORMATION CONTACT: Gary Hufford, NOAA/NWS/Alaska Region Environmental and Scientific Services Division, 907-271-3886, or on the Internet at gary.hufford@noaa.gov.

NWS Pacific Region Science Priorities

The science priorities of the NWS Pacific Region to be addressed in proposals are as follows:

Optimize the utility of new and existing observing systems, with emphasis on satellites and their use in providing precipitation estimations.

Develop, optimize, and utilize local high-resolution modeling capabilities aimed at providing operational real-time guidance as well as a tool for locally conducted research.

Conduct Pacific Basin synoptic climatological studies, with emphasis on flash-flood and high-wind events.

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NWS National Centers for Environmental Prediction Science Priorities

NCEP service centers have established the following science priorities which may be addressed in proposals:

Aviation Weather Center

Develop numerical and subjective techniques to improve the accuracy of convective forecasts in the 2-6 hour time scale.

Improve the treatment of drizzle-size droplets in clouds that lead to aircraft icing through improved parameterization and/or explicit micro physics techniques that are both economical and support cloud initialization using existing observational data sets, including the

Automated Surface Observing System, radar, and satellite data.

Enhance understanding of the triggering mechanisms associated with different families of clear-air turbulence events, including gravity waves emanating from convective systems, gravity waves induced by jet streaks, cross-mountain flow, critical boundary-layer flow regimes, etc.

Improve the observations, data assimilation, and modeling of the moisture profile in the boundary layer to better forecast the occurrence of fog and low cloud ceilings.

Climate Prediction Center

Develop dynamically and ensemble-based techniques to improve the prediction of weekly, monthly, and seasonal precipitation skill, including regional climate prediction systems.

Improve global and domestic forecasts of seasonal climate variability through better understanding and modeling of the coupled atmosphere/ocean system and the effect of variations on that coupling to ensemble prediction.

Hydrometeorological Prediction Center (HPC)

Conduct research addressing the broad geographical and seasonal ranges of problems associated with QPF, from initiation, duration, movement, to precipitation type. This includes the spectrum from drizzle to heavy rain and from lake-effect snow to synoptic-scale snowfall.

Develop new model verification techniques to enhance current methods of objectively assessing which models will perform best. The techniques should apply for all time ranges used by HPC, from less than 6 hours to 7 days.

Develop techniques for using output from model ensembles in forecast operations to improve the accuracy of both deterministic and probabilistic forecasts and to add information concerning uncertainty.

Develop techniques to modify gridded numerical guidance to produce gridded forecast products, which are made horizontally, vertically, and temporally consistent using sound meteorological theory.

Marine Prediction Center (MPC)

Develop a robust marine verification system that utilizes the various observations from both in-situ and remote sources. Parameters to be verified include, but are not limited to: Wind speed and direction; sea-state (height, period, direction); visibility; weather; and icing conditions.

Improve forecasting techniques for warnings and forecasts of hazardous

marine conditions through the use of additional data sources (especially in-situ), as well as improved use of all marine data sources in numerical weather prediction and model data assimilation techniques.

Storm Prediction Center

Develop mesoscale or storm-scale numerical prediction models, ensemble approaches, and verification techniques to improve forecasts of the location, timing, intensity, and mode of deep moist convection.

Develop three-dimensional mesoscale analysis techniques, observing systems, expert systems or statistical guidance, robust conceptual models, and scientific understanding to improve forecasts of the location, timing, intensity, and mode of deep moist convection.

Tropical Prediction Center (TPC)

Improve hurricane intensity forecasting using either empirical or dynamical forecasting techniques, especially those that combine atmospheric/oceanic interactions and which can be incorporated with existing TPC intensity guidance.

Improve forecasts for the size of tropical cyclones. A goal of this effort will be the generation of probabilistic guidance by MPC and TPC on 34, 50 kt, and 64 kt forecast wind radii for marine and emergency management interests.

Develop an "all-platform" surface wind display and analysis over marine areas for use by TPC and MPC that would cover the larger scale tropical storm environment and that would combine QuikScat, SSM/I, ERS, low-level cloud-drift winds, and conventional observations, including buoys and ships, etc.

Note: In all instances, projects are encouraged which not only address the priorities of individual NCEP service centers but also address aspects of the NCEP/Environmental Modeling Center's goals for improving data assimilation and numerical modeling of the atmosphere, oceans, and Earth's surface.

FOR FURTHER INFORMATION CONTACT: Ralph Petersen, NOAA/NWS/National Centers for Environmental Prediction, 301-763-8000 ext. 7200, or on the Internet at ralph.petersen@noaa.gov.

Eligibility

All accredited U.S. colleges and universities, including federally funded educational institutions such as the Naval Postgraduate School, are eligible for funding under this announcement. The restriction is needed because the results of the collaboration are to be incorporated in academic processes which ensure academic