



Marty Ralph

Marty Ralph is a synoptic and mesoscale research meteorologist focused on understanding the physical processes that create extremes in precipitation ranging from flood to drought, and on advancing associated observations, predictions, climate projections and decision support tools. A primary topic has been atmospheric rivers and their role in mid latitude precipitation. From 2001 - 2013 he was Chief of the Water Cycle Branch at NOAA's Earth System Research Laboratory in Colorado where he led the development of the Hydrometeorology Testbed. He also managed NOAA's Science, Technology and Infusion Program, Chaired NOAA's US Weather Research Program Executive Committee, and led the creation of NOAA's Unmanned Aircraft Systems Program. In 2013 he moved to the University of California San Diego/Scripps Institution of Oceanography where he is developing the "Center for Western Weather and Water Extremes."

A major goal through his career has been to better understand, monitor, and predict key elements of the global water cycle including water vapor transport, precipitation and runoff. Scientific understanding of atmospheric rivers, which are critical to both the global water cycle and to the distribution of precipitation and flooding in key parts of the world, is a major thrust. Using these results to evaluate and improve short-term precipitation forecasting and to provide reliable regional climate projections of flooding and water supplies in several areas of the world, are desired outcomes. The application of these findings to key users of weather and climate information on extreme events in the Western U.S. is being developed through new observing strategies, modeling and the creation of decision support tools tailored to user needs.

Marty has published over 75 peer-reviewed scientific articles, roughly 25 as the lead author. He has helped lead the establishment of testbeds as a method to accelerate the development and infusion of new science and technology into weather and climate forecasting operations. He has developed new projects, experiments and teams on several subjects, most having to do with observations, physical understanding, precipitation extremes, predictions and decision support tools.