



RAL SEMINAR SERIES

Navigating the Research Currents

From Weather Geek to Interdisciplinary Scientists and Beyond

ANDY NEWMAN

Project Scientist, NSF NCAR



Tuesday, May 6, 2025 1-2 PM (MT)

HYBRID MEETING FL2-1022 | [Watch Live](#)

Actionable Earth system science is more critical than ever to helping us address vexing societal problems. Yet, cultivating the skills necessary to design and carry out research that leads to practical solutions often require navigating a dynamic and non-linear path—one shaped by decision points, inconclusive results, and iterative learning. This talk traces a journey that flows from an interest in weather forecasting through atmospheric science centered research, and eventually into interdisciplinary endeavors focusing on actionable outcomes bridging hydrometeorology and hydrology, regional climate change, and impacts on water and health. Central to this journey is that novel domain-specific research developments serve as a knowledge, information, and relationship base in support of innovative interdisciplinary activities spanning domains.

Domain-specific research concentrated on in situ and remotely sensed snowfall observations was the headwater tributary, which led to the development of new sensor capabilities and algorithms for a video disdrometer and vertically pointing profiling radars. Then a fork was met. Focus shifted to atmospheric mesoscale modeling of precipitation events in the North American Monsoon, deepening understanding of the event-scale dynamics. A return current toward snow introduced surface hydrology and climate change impacts for water resources, resulting in significant advances in large-sample catchment hydrology, hydrological modeling, hydrometeorological datasets, and new relationships.

Most recently, maneuvering the currents has led to concurrent and intertwined domain-specific and highly interdisciplinary activities integrating experiences to date. Partner co-designed model development advances, novel regional climate datasets of historical and projected future hydroclimates, advances in downscaling uncertainty quantification and method evaluation, as well as research into heat and human health impacts have resulted, supported by strong relationships. Looking ahead, future research directions include continued improvement of our models and datasets, advancing uncertainty quantification, and deeper integration of societally motivated interdisciplinary and convergence science across RAL and NCAR. [Event website](#)