David R. Stauffer

Dr. Stauffer is an Associate Professor of Meteorology and Senior Research Associate at The Pennsylvania State University. He holds B.S., M.S. and Ph.D. degrees from The Pennsylvania State University. He directs graduate-level research and teaches undergraduate and graduate-level courses in the Department of Meteorology. He leads his numerical weather prediction (NWP) group, consisting currently of four M.S. level and five Ph.D. research faculty, and four graduate students, in basic and applied research projects spanning areas from military / defense to designing and building operational NWP systems. Dr. Stauffer has more than 26 years of experience in meteorology, mesoscale numerical modeling, data assimilation, and software development and management. He is PI on many large research projects and he leads several multi-institutional science teams.

Dr. Stauffer is a principal developer of the Penn State University / National Center for Atmospheric Research (PSU/NCAR) MM5 modeling system which has become the most widely used mesoscale modeling system in the world. He and his Penn State NWP Group have completed a project with Smiths Detection to build and field a highly automated, rapidly relocatable numerical forecast and data assimilation system based on the MM5 for the U.S. Army called the Meteorological Measuring Set – Profiler (MMS-P).   This system runs on the battlefield in the back of a specially equipped Humvee (see photo). There are currently 45 systems fielded/delivered/ordered with plans for 108 by 2011. Currently, he and his team have partnered with Smith Detection to design and build a new mobile nowcast-prediction system for the U.S. Marine Corps, called Meteorological Mobile Facility Replacement Next Generation (METMF(R) NEXGEN). This system will replace the legacy METMF(R) using current and emerging state-of-the-art technologies to offer smaller size and increased mobility/scalability, which will significantly improve the provision of Marine Air Ground Task Force (MAGTF) meteorological and oceanographic (METOC) support in every clime and place.

Dr. Stauffer and his team also designed and built the in-house NWP system for the Department of Defense (DoD), Defense Threat Reduction Agency (DTRA), and they provide operational reachback support to DTRA for worldwide events and the support of the warfighter. [Click here](#) for summary paper on our various modeling systems for military and defense.

Dr. Stauffer has several DoD DTRA contracts ([click for quad charts](#)), focusing on high resolution meteorological modeling, advanced data assimilation and probabilistic weather for atmospheric transport and dispersion, and basic research on land-surface and cloud heterogeneity effects on the convective boundary layer, and high resolution modeling and field analysis of the stable boundary layer. His projects span areas from fundamental scientific research to operational transition of new technologies.

Prof. Stauffer has also served on the new Weather Research and Forecasting (WRF) Model Science Board, and he is also a member of the WRF Model Physics Working Group and Ensemble Forecasting Working Group (see http://wrf-model.org).