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**EDUCATION:**

Master of Science, Meteorology, May 1998  
The Pennsylvania State University, State College PA

Bachelor of Science, Meteorology, Distinction, May 1996  
The Pennsylvania State University, State College PA

**PROFESSIONAL EXPERIENCE:**

*Technical Research Scientist*, Radiological Science and Engineering Group, PNNL, Richland, WA. (2005-Current)

- Serve as a subject matter expert in the areas of meteorology/climatology, air quality, and accident analysis for the Nuclear Regulatory Commission (NRC) in evaluating environmental impacts associated with the licensing of new nuclear power reactors (Vogtle, Summer, Harris, Lee, and Bell Bend) as well as license renewal for existing reactors (Columbia Generating Station and NIST).
- Assist with the ongoing development of the NRC's Radiological Assessment System for Consequence Analysis (RASCAL) code for emergency response dose projections from atmospheric releases.
- Updating the NRC-sponsored PAVAN dispersion model for calculating site-specific atmospheric dispersion factors (per Regulatory Guide 1.145) for use in design basis accident analysis.
- Revised the NRC's "Tornado Climatology of the Contiguous United States" ([NUREG/CR-4461 Rev. 2](#)) to include the Enhanced Fujita Scale for determining tornado strike probabilities and maximum wind speeds for use in nuclear power plant design.
- Integrated real-time meteorological observations and forecasts into several operational applications for the Department of Homeland Security (DHS), including the Biological Warning and Incident Characterization (BWIC) system and the New York City Urban Dispersion Program.
- Participate in the ongoing development of a GIS-based dust transport (DUSTRAN) dispersion model for the Department of Defense (DoD) for estimating air impacts from active and fugitive dust emission sources.
- Provide meteorological and dispersion modeling expertise in support of Department of Energy's (DOE's) demolition activities of decommissioned radiological facilities and in support of emergency response at the Hanford Emergency Operational Center (EOC).
- Serve as committee chair for DOE's Consequence Assessment Modeling Working Group (CAMWG) under the Subcommittee on Consequence Assessment and Protective Actions (SCAPA).
- Participating in the development of two new American Nuclear Society (ANS) standards—ANS 2.15 "Criteria for Modeling and Calculating Atmospheric Transport of

Routine Releases from Nuclear Facilities” (co-author) and ANS 2.16 “Criteria for Modeling Design-Basis Accidental Releases for Nuclear Facilities” (co-chair).

*Technical Staff Member*, Risk Reduction and Environmental Stewardship Division, LANL, Los Alamos, NM. (2002-2005)

- Provided meteorological and dispersion modeling expertise in support of Laboratory programs, studies, and critical operations, including the Emergency Operations Center (EOC).
- Assured the quality and integrity of the LANL meteorological data archive, which consists of observations from seven, multi-level instrumented towers and a SODAR system.
- Developed and managed the Laboratory’s website for disseminating local climatology, weather observations, forecasts, and hazardous weather conditions.
- Analyzed meteorological observations to support Laboratory assessments, such as the Site-Wide Environmental Impact Statement (SWEIS), as well as reports on the LANL meteorological measurement network, instrument performance, and site characterization.
- Authored monthly and annual climate summaries and participated in several public-outreach events, such as a technical reviewer of the meteorological and dispersion modeling studies used to support New Mexico’s ozone early action compact (EAC).

*Meteorologist and Applications Specialist*, Trinity Consultants, Inc., RTP, NC. (1998 - 2001)

- Developed Windows and web-based interfaces to legacy Environmental Protection Agency (EPA) air dispersion modeling codes and utilities.
- Provided technical support to licensed customers on Trinity's air dispersion modeling software.
- Processed hourly surface meteorological data and twice-daily soundings from the National Climatic Data Center (NCDC) for use in the various EPA dispersion models.
- Instructed domestic and international air dispersion modeling and boundary layer meteorology training courses, including a technical course on the EPA’s AERMOD dispersion model for the United Kingdom Environmental Agency.
- Authored technical reports, software user guides, and application documentation.
- Attended and presented at several industry trade shows and user-group meetings.

## **SELECT REPORTS & PUBLICATIONS:**

- [\*Air Dispersion Modeling of Radioactive Releases During Proposed PFP Complex Demolition Activities\*](#). Napier BA, JG Droppo, Jr, and JP Rishel. 2011. PNNL-20173, Pacific Northwest National Laboratory, Richland, WA.
- [\*Air Monitoring Modeling of Radioactive Releases During Proposed PFP Complex Demolition Activities\*](#). Napier BA, JG Droppo, Jr, and JP Rishel. 2011. PNNL-20113, Pacific Northwest National Laboratory, Richland, WA.
- [\*Analysis of Radioactive Releases During Proposed Demolition Activities for the 224-U and 224-UA Buildings - Addendum\*](#). Napier BA, JP Rishel, JG Droppo, Jr, KE Joyce, and DJ Strom. 2010. PNNL-18332 Addendum, Pacific Northwest National Laboratory, Richland, WA.

- *Engineering Evaluation of X/Q Values Consistent with Regulatory Guide 1.145*. Ross SB, JP Rishel, and PP Lowry. 2010. PNNL-19217, Pacific Northwest National Laboratory, Richland, WA.
- [\*Aerosol Modeling Testbed: MILAGRO Field Campaign Data in the Analysis Toolkit\*](#). Rishel JP, EG Chapman, WI Gustafson, Jr, and JD Fast. 2009. PNNL-SA-67292, Pacific Northwest National Laboratory, Richland, WA.
- *An Evaluation of a Diagnostic Wind Model (CALMET)*. Wang W, WJ Shaw, TE Seiple, JP Rishel, and YL Xie. 2008. *Journal of Applied Meteorology and Climatology* 47(6):1739-1756.
- *An Evaluation of the Wind Erosion Module in DUSTRAN*. Shaw WJ, KJ Allwine, BG Fritz, FC Rutz, JP Rishel, and EG Chapman. 2008. *Atmospheric Environment* 42(8):1907-1921. doi:10.1016/j.atmosenv.2007.11.022.
- [\*Meteorological Integration for the Biological Warning and Incident Characterization \(BWIC\) System: General Guidance for BWIC Cities\*](#). Shaw WJ, W Wang, FC Rutz, EG Chapman, JP Rishel, YL Xie, TE Seiple, and KJ Allwine. 2007. PNNL-16422, Pacific Northwest National Laboratory, Richland, WA.
- [\*Final Technical Report: Development of the DUSTRAN GIS-Based Complex Terrain Model for Atmospheric Dust Dispersion\*](#). Allwine KJ, FC Rutz, WJ Shaw, JP Rishel, BG Fritz, EG Chapman, BL Hoopes, and TE Seiple. 2007. PNNL-16588, Pacific Northwest National Laboratory, Richland, WA.
- [\*NUREG-1872: Final Environmental Impact Statement for an Early Site Permit \(ESP\) at the Vogtle Electric Generating Plant Site\*](#). August 2008. [Meteorology and Air Quality Chapter Author].
- [\*NUREG-1873: Environmental Impact Statement for License Renewal of the National Bureau of Standards Reactor\*](#). December 2007. [Meteorology and Air Quality Chapter Author].
- [\*NUREG/CR-4461, Rev. 2: Tornado Climatology of the Contiguous United States\*](#). Ramsdell JV, Rishel JP. February 2007.
- [\*Regional Atmospheric Transport Code for Hanford Emission Tracking, Version 2 \(RATCHET2\)\*](#). Ramsdell JV, Jr, and JP Rishel. 2006. PNNL-16071, Pacific Northwest National Laboratory, Richland, WA.
- [\*DUSTRAN 1.0 User's Guide: A GIS-Based Atmospheric Dust Dispersion Modeling System\*](#). Allwine KJ, FC Rutz, WJ Shaw, JP Rishel, BG Fritz, EG Chapman, BL Hoopes, and TE Seiple. 2006. PNNL-16055, Pacific Northwest National Laboratory, Richland, WA.
- [\*Using DUSTRAN to Simulate Fog-Oil Dispersion and Its Impacts on Local Insect Populations at Ft. Hood: Final Report\*](#). Rishel JP, EG Chapman, FC Rutz, and KJ Allwine. 2006. PNNL-16321, Pacific Northwest National Laboratory, Richland, WA.
- [\*Dust Plume Modeling at Fort Bliss: Move-Out Operations, Combat Training and Wind Erosion\*](#). Chapman EG, JP Rishel, FC Rutz, TE Seiple, RK Newsom, and KJ Allwine. 2006. PNNL-16123, Pacific Northwest National Laboratory, Richland, WA.
- *Quality Assurance Project Plan for the Meteorology Monitoring Project*. Rishel, JP. Los Alamos Publication: ESH-17-MET-R7, August 2003.
- [\*Facility-Wide Air Quality Impact Analysis\*](#). Jacobson K, S Johnson, JP Rishel. Los Alamos Publication: LA-UR-03-3983, July 2003.

- [Meteorological Monitoring at Los Alamos](#). Rishel JP, S Johnson, D Holt. Los Alamos Publication: LA-UR-03-8097, June 2003.
- *Identifying Coherent Structures in the Marine Atmospheric Boundary Layer*, The Marine Boundary Layer, Kluwer Academic Publisher, 1999.
- *A Methodology for Objectively Identifying Coherent Structures within the Marine Atmospheric Surface Layer*, MS Thesis, The Pennsylvania State University, 1998.

**PROFESSIONAL AFFILIATIONS:**

- The American Meteorological Society (AMS)
- Department of Energy (DOE) Meteorological Coordinating Council (DMCC)