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Academic Background:

Ph.D., Mechanical and Aeronautical Engineering, University of California at Davis, 2001.

M.S., Mechanical Engineering, Arizona State University, Tempe 1997.

B.S., Mechanical Engineering, University of Colorado at Boulder, 1994.

Areas of Expertise: Modeling and Simulation, Computational Fluid Dynamics (CFD), Transport and Dispersion (T&D) Modeling, Chem-Bio T&D Modeling, Nuclear Blast and Effects Modeling, Aerosols, Experimental Fluid Mechanics, Meteorology, Atmospheric Dynamics, Environmental Turbulence, Transport Processes, Finite Element Methods, Acoustics, and Low-speed Wind Tunnels

Professional Experience:

- **Teaching Associate Professor/Teaching Assistant Professor/Lecturer, Mech. and Mat. Eng.,** University of Denver, Sept. 2014 to Present
- **Senior Research Scientist/Engineer,** ITT/Exelis May 2007—July 2014
- **Assistant Professor Mech. and Aero. Eng.,** University of Colorado at Colorado Springs, Aug. 2002 – June 2007
- **Modeler/Atmospheric Modeler,** Sonoma Technology, Inc., Petaluma, CA, May 2001-June 2002
- **Independent Consultant,** DBA RMWE Consulting (since 2007) May 2001-Present
- Post-Doctoral Researcher/Lecturer, University of California at Davis, April 2001-June 2001
- Research/Teaching Assistant, University of California at Davis, Sept 1997-March 2001
- ABLWT Lab Assistant, University of California at Davis, Aug 1997-May 2001
- Graduate Research Assistant/GEM Fellow, Arizona State University, Aug. 1995-Aug. 1997
- GEM Intern, BFGoodrich Aerospace R&D, Brecksville, OH, Summer 1995 and Summer 1996
- NSF REU Undergraduate Researcher, Materials Science, University of Minnesota, Summer 1994
- NSF REU Undergraduate Researcher, Fluid Mechanics, University of Wyoming, Summer 1993
- Engineering Intern, Fluor Daniel, Inc., Irvine, CA, Summer 1992

Specialty Skills

- **Computer:** OpenFOAM (CFD), RUSTIC (ITT Quasi-CFD for Urban flow and topographic flow), RMAT (ITT-developed micrometeorological model), MESO (ITT Lagrangian Particle Dispersion model), SHAMRC (Hydrodynamic Code), CALMET/CALPUFF, AERMOD, CAMx, MM5, STAR-CD (CFD), FORTRAN, C++, C, Matlab, Tecplot, Surfer, VISIT, SigmaPlot, MS Office Software, and familiarity with LabVIEW, CAD programs and LINUX based systems
- **Equipment:** Performed analysis in low-speed aeronautical and atmospheric boundary layer wind tunnels and water flow tanks. Pressure transducers, pitot-static probes, hot-wire anemometers, weather station instrumentation, DustTrak PM10 monitors, thermocouples, Hydrocarbon Analyzers (Beckman), ADV (Acoustic Doppler Velocimeter), and data acquisition systems.
- **Teaching: At the University of Denver:** Thermodynamics II, Intro. to Aerospace Engineering I and II, Aerospace Flight Dynamics (Lockheed Martin), Space Systems Design I (Lockheed Martin), Mechanical Energy Systems Engineering, System Dynamics, and Mechanical Engineering Lab II/Capstone Lab, Engineering Scientific Discovery Series. **At the University of Colorado at Colorado Springs and UC Davis:** CFD, Graduate Fluid Dynamics, Undergraduate Fluid Mechanics, Astrodynamics, Mechanical Engineering Laboratory, and Numerical Labs in Aircraft Structures, Heat Transfer, and Engineering Analysis. Taught various short technical courses for ITT Corporation on physics models and software use to clients such as Toyon Research Corporation, Naval Surface Warfare Center (NSWC), and the Institute for Defense Analysis (IDA).

Hobbies and Interests

Running (5K—Marathon), Hiking, Traveling, Reading, Yurt building/trail building