

Curriculum Vitae
SUE ELLEN HAUPT

Senior Scientist

Deputy Director, Research Applications Laboratory
National Center for Atmospheric Research
3450 Mitchell Lane
Boulder, CO 80301
(303) 497-2763

Fellow, American Meteorological Society

Future Commissioner, AMS Weather, Water, and Climate Enterprise Commission

Affiliate Professor of Meteorology, The Pennsylvania State University

Contributing Founding Director, World Energy and Meteorology Council, U.K.

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Professional Interests

Boundary Layer Meteorology, Turbulence, Atmospheric Dispersion, Wind and Solar Renewable Energy, Dynamical Systems, Fluid Dynamics, Dynamic Meteorology, Numerical Modeling, Artificial Intelligence, Genetic Algorithms, Spectral Methods, Inverse Methods, Computational Fluid Dynamics, Geophysical Fluid Dynamics, Coherent Structures, Climate, Physical Oceanography, Nonlinear Wave Mechanics

Education

Postdoctoral Fellow, Advanced Study Program, National Center for Atmospheric Research, 1988-1990.

Research in coherent structures in geophysical flow.

Ph.D., Atmospheric and Oceanic Science, The University of Michigan, 1988.

Research emphasized nonlinear wave dynamics, asymptotic expansions of fluid problems, nonlinear resonance problems, and spectral methods. Attended 1986 Supercomputer Institute at NCAR, Boulder, CO.

M.S., Mechanical Engineering, Worcester Polytechnic Institute, 1984.

Studied primarily fluid mechanics and mathematical methods.

M.S., Engineering Management, Western New England College, 1981.

Massachusetts Institute of Technology/Woods Hole Oceanographic Institute, 1978.

Graduate study in physical oceanography.

B.S., Meteorology and Marine Science Certificate, The Pennsylvania State University, 1978.

Emphasized dynamic meteorology and physical oceanography. Spent term doing research projects at Wallops Island Marine Science Consortium, VA.

Professional Experience

Deputy Director, Research Applications Laboratory, National Center for Atmospheric Research, 2018-.

Responsible for RAL internal initiatives, back up RAL Director, Program Development, Project Leadership.

Senior Scientist, NCAR, 2014-

Director, Weather Systems and Assessment Program, Research Applications Laboratory, National Center for Atmospheric Research, 2011-2018.

Responsible for applications of weather information to applied problems, including renewable energy, surface transportation, artificial intelligence methods for decision support, societal impacts of weather, wildland fire applications, and international weather applications. Manage projects. Develop programs. Serve on the Executive Committee of the Research Applications Laboratory. Oversee all projects and personnel (about 25) within the Weather Systems and Assessment Program of RAL.

Affiliate Professor of Meteorology, Meteorology Department, The Pennsylvania State University, 2011-current, advise and co-advise Ph.D. students, serve on student thesis committees.

Scientific Program Manager, Renewable Energy, Weather Systems and Assessment Program, Research Applications Laboratory, National Center for Atmospheric Research, 2010-2011. Provide scientific direction for the renewable energy program. Develop programs.

Science Deputy, Weather Systems and Assessment Program, 2011.

Professor of Meteorology, Meteorology Department, The Pennsylvania State University, 2009-2011.

Senior Scientist, Computational Mechanics, Applied Research Laboratory, 2009-2011.

Head, Department of Atmospheric and Oceanic Physics, Applied Research Laboratory, 2007-2010.

Senior Research Associate and Associate Professor of Meteorology, Penn State University, 2004-09.

Research in computational fluid dynamics, meteorological modeling for wind energy, applications of Genetic Algorithms, atmospheric transport and dispersion, boundary layer meteorology, turbulence, weather forecasting, uncertainty analysis in numerical models.

Research Associate Professor, 2000-2003. Assistant Professor, 2003, Mechanical and Aerospace Engineering, Utah State University, Logan, UT. Associated Faculty with Environmental Education program. Funded research in microchannel flow and applications of Genetic Algorithms. Taught Numerical Methods I, Thermodynamics II, Heat and Mass Transfer.

Associate Research Professor, Mechanical Engineering, University of Nevada, Reno. 1997-1999. Externally funded research and taught engineering courses (Fluid Mechanics, Numerical Methods.)

Research Associate, Program in Atmospheric and Oceanic Science, The University of Colorado, Boulder, CO, 1993-1997. Principal investigator on National Science Foundation funded research on principal component analysis and inverse models of climate. Advised graduate students. Taught Atmospheric Dynamics and Climatology.

Visiting Scholar, Physics Department, US Air Force Academy, Colorado Springs, CO, 1996-1997.

Taught Atmospheric Dynamics, Atmospheric Energetics, and Introductory Physics (twice).

Visiting Scientist, National Center for Atmospheric Research, Boulder, CO, 1990-1997. During this period, many collaborations and office availability at NCAR. Climate modeling.

Visiting Faculty, Physics Department, The Colorado College, Colorado Springs, CO, Jan.-Feb. 1994.

Taught Introductory Physics, concentrating on laboratory learning.

Research Associate, Program in Applied Mathematics, University of Colorado, Boulder, CO, 1990-1993.

Principal investigator for National Science Foundation funded research on nonlinear mathematics in geophysical fluid dynamics and climate.

Visiting Scientist, Los Alamos National Laboratory, Los Alamos, NM, May-June 1992.

Postdoctoral Fellow, Advanced Study Program, National Center for Atmospheric Research, 1988-1990.

Research in coherent structures in geophysical flow. Attended 1988 Enrico Fermi course on Nonlinear Topics in Ocean Physics in Varenna, Italy.

Graduate Research Assistant, The University of Michigan, Ann Arbor, MI, 1984-1987. Theoretical and numerical models of nonlinear wave equations and nonlinear resonance.

Environmental Engineer, New England Electric System, Westborough, MA, 1982-1984. Air quality modeling and evaluating environmental issues such as climate change and acid rain. Power brokering.

Environmental Scientist, GCA/Technology Division, Bedford, MA, 1979-1982. Application, analysis, and improvement of air quality models. Emission inventories. Project management.

Research Assistant, Woods Hole Oceanographic Institute, Woods Hole, MA, 1978-1979. Participated in Joint Air-Sea Interaction Project, spending five weeks at sea in the North Atlantic and doing subsequent data reduction.

Student Trainee, National Weather Service, Radar Department, Silver Spring, MD, Summers 1977, 1978. Implemented quality control procedure for radar reporting. Rewrote portions of the Weather Radar Manual.

Honors and Awards

Climate and Space Alumni of the Year, University of Michigan. 2020.

ESIG Excellence Award, For contributions to advances in the use of probabilistic forecasts, from Energy Systems Integration Group, March 2020.

Fellow, American Meteorological Society, Jan. 2019.

UVIG Achievement Award, For major contributions to advancing the state-of-the-art of solar energy forecasting, from Utility Variable Generation Integration Group, March 2017.

Scientific and Technical Achievement Award for the Sun4Cast Solar Power Forecasting System, Research Applications Laboratory, NCAR, 2016.

CO-Labs Governor's Award for High Impact Research in Sustainability and Honorable Mention for Public-Private Partnerships, NCAR Wind Power Forecasting Team, "Optimizing Integration of Renewable Energy into the Power Grid in Colorado", 2014.

CO-Labs Honorable Mention in Sustainability, NCAR Team for "A Wind Power Forecasting System to Optimize Integration of Renewable Energy into the Power Grid," 2013.

Research Publication Award, Applied Research Laboratory, Penn State, 2012

Scientific and Technical Achievement Award for Wind Energy Prediction System, NCAR, 2011

Tau Beta Pi (Engineering Honor Society)

Chi Epsilon Pi (Meteorology Honor Society)

Phi Mu Epsilon (Mathematics Honor Society)

Society of Women Engineers Advising Award, Utah State University, 2003.

IEEE Junior Engineering and Science Organizing Award, 2003.

Outstanding Graduate Student in Atmospheric Science, University of Michigan, 1986

Professional Memberships

American Meteorological Society, **Fellow**

American Society of Mechanical Engineers

American Geophysical Union

Society of Women Engineers, **Senior Member**

Formal Teaching

Meteorology for Enabling Wind Energy: Focus on CO₂, PSU Collegiate Wind Class Guest Lecture, Oct. 3, 2019.

Applications of Computational Intelligence to Enable Renewable Energy, 20 hour graduate course, University of Trento, Trento, Italy, May 9-13, 2016.

European COST Action Renewable Energy for Weather Intelligence, Summer School, Montegut, France, July 1-5, 2013. 2 lectures by S.E. Haupt on Modeling for Renewable Energy.

Educational Forum on Computational Intelligence Techniques for Data Analysis and Knowledge Discovery, Seattle, WA, Jan. 23, 2011. lecture by S.E. Haupt.

Workshop on the Application of Artificial Intelligence to Environmental and Geospatial Sciences, Corpus, Christi, TX, Jan. 12-13, 2007. 3 lectures by S.E. Haupt.

Short Course on Artificial Intelligence Methods in Atmospheric and Oceanic Sciences: Neural Networks, Fuzzy Logic, and Genetic Algorithms, American Meteorological Society, Committee on Artificial Intelligence, Atlanta, GA, Jan. 28-29, 2006. 2 lectures by S.E. Haupt.

Short Course on Artificial Intelligence Methods in Atmospheric and Oceanic Sciences: Neural Networks, Fuzzy Logic, and Genetic Algorithms, American Meteorological Society, Committee on Artificial Intelligence, Seattle, WA, Jan. 10-11, 2004. 2 lectures by S.E. Haupt.

Meteo 596B – Artificial Intelligence Methods in the Environmental Sciences – Penn State - PhD level reading class, 3 cred., 2015.

Meteo 596B – Numerical Weather Prediction and Artificial Intelligence, Part II – Penn State – PhD level reading class, 3 cred., 2013.

Meteo 596B – Numerical Weather Prediction and Artificial Intelligence, Part I – Penn State – PhD level reading class, 3 cred., 2012.

Meteo 597F – Statistical Learning Methods in Environmental Science – Penn State – PhD level reading class.

Meteo 597F – Boundary Layer Turbulence Fundamentals – Penn State – PhD level reading class.

Meteo 597C – Ensemble Initialization – Penn State – PhD level reading class.

Meteo 597C – Advanced Metrics – Penn State – PhD level reading class.

Meteo 597C – Dynamical Systems and Spectral Methods – Penn State – PhD level reading class.

Meteo 600 – Thesis credits – Penn State - SE Haupt with section for own students (each semester).

Meteo 590 – Colloquium credits – Penn State - SE Haupt with section for own students (each semester).

Meteo 494H – Honors thesis – SE Haupt with section for honors student.

MAE 3440 – Heat and Mass Transfer – Utah State University - twice

MAE 3400 – Thermodynamics II – Utah State University - twice

Proposed and designed new Math course for Mechanical Engineers – Utah State University.

MAE 2200 – Numerical Methods I (Fortran, taught twice. 95 and 84 students) – Utah State University

ME 402/602 - Numerical Methods for Mechanical Engineers – University of Nevada, Reno

ME 367 - Introduction to Fluid Mechanics - University of Nevada, Reno

Phys. 431 – Atmospheric Energetics – US Air Force Academy

Phys. 430 – Atmospheric Dynamics – US Air Force Academy

Phys. 110 – Introductory Physics – US Air Force Academy (twice)

APAS 3200 - Climatology – University of Colorado/Boulder – half of course

APAS 5010 - Atmospheric Dynamics – University of Colorado/Boulder – 1/3 of course

Phys. 101 – Introductory Physics – Colorado College – lab

Funded Research

- Renewable Energy Forecasting for Kuwait, Kuwait Institute of Scientific Research, S.E. Haupt, PI, 7/7/17-7/6/20, \$5.1M / 3.5 yrs.
- Assessment and Leadership of Meso- to Micro- Model Coupling, Pacific Northwest National Laboratory from DOE, S.E. Haupt, PI; \$1.5M / 5.5 yrs. Uber-PI for 6 DOE labs + NCAR – about \$1.5-2 M / year for all labs, 2015-present. (renewed annually)
- Workshop to Promote Educating the Next Generation of Atmospheric Scientist for Industry Needs, NSF, S.E. Haupt, PI, 10/1/18-9/30/19, \$89,867 / 1 yr.
- Solar Power Forecasting for New York, Phase 3, Electric Power Research Institute subcontracted to New York Power Authority (prime), funding from New York State Energy Research & Development Office, J.A. Lee, PI; S.E. Haupt, co-PI, \$550K to NCAR / 2 yrs.
- Solar Power Forecasting for New York, Phase 1 & Phase 2, Electric Power Research Institute (prime) from New York Power Authority, 8/2/17-12/31/17, S.E. Haupt, PI; Phase 1 - \$35K. Phase 2 - \$130K
- A Public-Private-Academic Partnership for Solar Power Forecasting, Department of Energy, 1/30/13-3/31/16, S.E. Haupt, PI; Many partners and co-PIs. \$4.1M / 3 yrs.
- Wind Resource Modeling & Uncertainty Quantification for Wind Resource Assessment Application in Bangladesh, National Renewable Energy Laboratory from USAID, S.E. Haupt, PI; and F. Vandenberghe, co-PI. \$95K / 3 years.
- A Public-Private-Academic Partnership for Solar Power Forecasting applied to New York, New York Power Authority, S.E. Haupt, PI; \$150K / 1.5 yrs.
- Advanced Weather Analysis and Forecast Technologies for Global Weather Corporation: Task Order#9, 4/1/16-3/31/18, S.E. Haupt, P.I; G. Wiener, and S. Linden, co-PIs, \$100,000 / 2 yrs.
- Xcel Energy Variable Renewable Energy Forecast System, Phase III, Xcel Energy, 3/15/13-3/14/15, S.E. Haupt, PI; G. Wiener, co-PI, \$2.86M / 2.5 yrs.
- Advanced Weather Analysis and Forecast Technologies for Global Weather Corporation: Task Order#8, 3/1/15-2/28/16, S.E. Haupt, P.I; G. Wiener, and S. Linden, co-PIs, \$100,000 / 1 yr.
- DICast and LOGICast System Research & Development - General Forecasting and Renewable Energy Forecasting: Task Order#7, 4/1/13-5/31/14, G. Wiener, PI; S.E. Haupt and S. Linden, co-PIs, \$180,000 / 1 yr.
- Solar Resource Data and Mapping in Developing Countries, GL Garrad Hassan from USAID, 1/1/13-12/31/13, selected for specific projects.
- Collaboration for Wind Power Prediction with Vestas, Task 1: Application of Analog Methods, Vestas Global Research, 5/1/12-4/30/13, S.E. Haupt, PI; L. Delle Monache, co-PI; \$50,000 / 1 yr.
- Research on the Impact of Typhoons on Wind Turbines in Taiwan, Industrial Technology Research Institute, Taiwan, 4/1/12-12/31/12, S.E. Haupt, PI; B. Kuo, co-PI; \$66,000 / 9 mos.
- Modeling Stochastic Variability in Wind Power Forecasts for Storage Integration Studies, Center for Research and Education in Wind, D. Zimmerlee (CSU), PI; S.E. Haupt, co-PI, \$50,000 / 1 yr. (S.E. Haupt PI of NCAR subcontract: \$15,000).
- DICast and LOGICast System Research and Development - General Forecasting and Renewable Energy Forecasting, Global Weather Corporation, 4/1/12-9/30/12, G. Wiener, PI; S.E. Haupt and S. Linden, co-PIs, \$232,000 / 1 yr.
- Assessing the Inter-annual Variability of Wind and Solar Power over the Continental US for the NREL ReEDS Model, 11/1/11-9/30/12; National Renewable Energy Laboratory, S.E. Haupt, PI (previously Daran Rife); \$110,000 / 10 mos.
- Global Wind Resource Assessment and Downscaling, 11/1/11-2/28/12; National Renewable Energy Laboratory, S.E. Haupt, PI (previously Daran Rife); \$29,996 / 5 mos.

Xcel Energy Wind Prediction System - Optimizing Power Curves, 10/6/11-3/31/12, Xcel Energy, S.E. Haupt, PI; G. Wiener, co-PI; \$110,000 / 6 mos.

A HPC “Cyber Wind Facility” Incorporating Fully-Coupled CFD/CSD for Turbine-Platform-Wake Interactions with the Atmosphere and Ocean, 1/1/12-12/31/15, DOE. J. Bresseur, PI; E Patterson, R. Campbell, S. Schmitz, and S.E. Haupt, co-PIs, \$1,200,000 / 3 yrs. (S.E. Haupt PI of NCAR subcontract: \$60,000)

Advancing Weather Analysis and Forecasting Technologies, 10/1/11-5/31/11, Global Weather Corporation. S. Linden, PI; S.E. Haupt and G. Wiener, co-PIs; \$75,000 / 8 mos.

NASA Air Quality Team Member: Optimizing Air Quality Forecasts with NASA Observations and Economic Data, 3/8/11-3/7/26, NASA, A. Thompson, PI; S.E. Haupt and W. Ryan, co-Is; \$1,374,857 / 5 yrs. (S.E. Haupt PI of NCAR subcontract: \$106,363)

Applied Meteorology Research, 5/1/08-4/30/11, DTRA, S.E. Haupt P.I.; J.P. Wyngaard, G.S. Young, and D.R. Stauffer, co-PIs, (L.J. Peltier, co-PI first year) \$780,000 / 3 years.

Integrating and Testing Propagation Models in the ERDC Battlefield Signal Transmission and Sensing Model, submitted to Army Corps of Engineers, ERDC-CRREL; S.E. Haupt, PI; A.D. Hanford, R.L. Haupt, and D.O. Miller, co-PIs; 6/1/10-9/30/10, \$80,000. (left before it started)

Wind for Schools, DOE, S.W. Stewart, PI; S.E. Haupt among 10 co-Is, 12/22/10-12/21/13, \$180,000 / 3 yrs.

Building Integrated Wind Energy: Connecting Aesthetics and Performance, Application to Penn State Sustainability Seed Grant Program; U. Poerschke, PI; J. Srebric, S.W. Stewart, and S.E. Haupt, co-PIs; 6/1/10- 5/30/11, \$27,759 / 1 yr.

Proper Siting of Building Integrated Wind Energy Systems, ARL IR&D program, S.W. Stewart, P.I.; S.E. Haupt, co-PI; 11/15/09-11/14/10, \$75,000 / 1 year.

Building-Integrated Wind Energy Connecting Aesthetics and Performance, PSU application to the Raymond A. Bowers Program for Excellence in Design and Construction in the Built Environment, U. Poerschke, PI; T. Murtha, J. Srebric, S.E. Haupt, and S.W. Stewart, co-PIs; 6/1/10- 12/15/11, \$15,771 / 18 mos.

Integrating and Testing Propagation Models in the ERDC Battlefield Signal Transmission and Sensing Model, Army Corps of Engineers, ERDC-CRREL; S.E. Haupt, PI; A.D. Hanford, R.L. Haupt, and D.O. Miller, co-PIs; 6/1/10-9/30/10, \$80,000 / 4 mos.

Improving Detection of Outbreaks due to Aerosol Attacks, 9/30/07-9/29/08, PSU subcontracted to University of Pittsburgh from CDC, S.E. Haupt, PI. \$40,000 / 1 year.

Student Research Associate Program – Kerrie Long, PSU Blue Team Consortium (DTRA funded), S.E. Haupt, PI; K.J. Long, co-PI. \$6,000 / 2 mos.

Response to Tech Solution’s Proposal Request for a Non-pyrotechnic SAR marker (TS-004420), Office of Naval Research, TechSolutions, 9/1/08-8/30/09, Michael Hendrickson and S.E. Haupt co-PIs; \$318,651 / 18 mos.

University Strategic Partnership Applied Sciences, DTRA, M.F. Hayes, P.M., S.E. Haupt one of ten co-Is. \$1,666,000 / 2 years. (10%)

Student Research Associate Program – Luna Rodriguez, Blue Team Consortium (DTRA funded), 9/1/08-8/30/09, K.J. Long, PI; S.E. Haupt, Co-PI. \$40,000 / 1 yr.

Blending Chem-Bio Dispersion Forecasts and Sensor Data, 8/28/06-8/27/08. PSU subcontracted to CUBRC/Univ. Buffalo, from Defense Threat Reduction Agency. S.E. Haupt, PSU PI; G.S. Young and L.J. Peltier, co-PIs. \$700K / 2 years to PSU.

Advanced Atmospheric Dispersion Modeling Capability for the Bayesian Aerosol Release Detector, 9/30/06-9/30/07, PSU subcontracted to University of Pittsburgh from CDC, S.E. Haupt, PI. \$20,000.

Applied Meteorology Research, 5/11/07-5/10/08, DTRA via NAVSEA, L.J. Peltier and S.E. Haupt, PIs \$260K / 1 year.

Submarine Radar Reflectors, 9/1/06-2/28/08, ONR Tech Solutions, R.L. Haupt and S.E. Haupt, PIs. \$400K / 2 yrs.

Plume Modeling, 11/5/07-12/30/07, Lockheed Martin, D. Hall and S.E. Haupt, co-PIs, \$20,000 / 2 mos.

Modeling a Chlorine Release on the PSU Campus, PSU VP Research, 8/1/06-6/30/07, S.E. Haupt, PI; D.R. Stauffer, L.J. Peltier, co-PIs. \$15,000.

SCIPUFF Sensitivity Study, Student Research Associate Program Memorandum of Agreement, DTRA funded competitive PSU program to mentor minority student. S.E. Haupt, PI (through Jan Maher, IST) \$5K / 1 year.

Applied Meteorology Research, Defense Threat Reduction Agency, 9/1/05 – 9/30/06 (renewal), L.J. Peltier (Technical Lead), S.E. Haupt, J.C. Wyngaard, D.R. Stauffer, co-PIs. \$432,000.

Course, Curriculum, and Laboratory Improvement (CCLI): Enhancement of Computational Engineering within an Undergraduate Mechanical Engineering Curriculum, National Science Foundation, 10/01/03-9/30/04, R. Spall, PI; S.E. Haupt, Th. Hauser, co-PIs. \$68,224.

Genetic Algorithms for Solving Fluid Dynamics Problems, USU New Faculty Grants, 7/1/03-6/30/04, S.E. Haupt, PI. \$10,100.

SWE Development Grant – SWE Mentoring Girl Scouts, 1/1/03-12/30/03 – S.E. Haupt, PI. \$1,480.

Development for SWE Regional Conference trip, 1-2/03, S.E. Haupt responsible for \$5,000 fund raising.

SDL Enabling Technologies – Fluid Flow in MEMS Devices, 7/1/01-6/30/02. S.E. Haupt, PI with L. Powers, co-PI. \$25,898.

Utah Community/University Initiative Grant – Emphasizing Mathematics and Science Education: Integrative Opportunities at Community Nature Centers – 7/1/01-6/30/02. S.E. Haupt, PI; J.J. Barta, co-PI. \$21,298.

SDL IR&D – Empirical Modeling of MEMS Flow, 7/1/00-6/30/01. S.E. Haupt, PI; C. Hailey, co-PI. \$25,000.

UNR Instructional Enhancement Grant – Development of Technological Demonstrations for Numerical Methods in Engineering, 12/15/98-6/1/99, S.E. Haupt and R.L. Haupt. \$698.

UNR COE Travel/Equipment Award for Mobile Engineering Laboratory Demonstration, 1998, S.E. Haupt and R.L. Haupt. \$1000.

National Science Foundation, ATM-9312760, to University of Colorado/Boulder – Inverse Models in Atmospheric Science, 12/15/93-5/31/98, S.E. Haupt, PI; J. Curry, co-PI. \$198,287.

Intergovernmental Agreement IPAA 96-016 with US Air Force Academy for 10.7 month teaching assignment. July 1996-May 1997, S.E. Haupt, PI. \$53,676.

National Oceanographic and Atmospheric Administration, Predictability of the Coupled Ocean-Atmosphere System on Intraseasonal and Interannual Time Scales. April 1995- March 1998, P. Webster, PI; SE Haupt, co-I, among others. \$364,925.

National Science Foundation ATM-90-11413 – Numerical Equilibrium Solutions of the Quasigeostrophic Vorticity Equation, September 1990-August 1992, S.E. Haupt, PI. \$121,561.

Consulting

Red Team Reviewer for University of Oklahoma Proposal, 2020.

External Panel for evaluation of Solar Forecasting Proposals and Projects, Singapore Energy Market Authority, 2017-2020.

External Panel for DOE review of R&D project at Savannah River National Laboratory, Aiken, SC, 2006.

Professional curriculum development for the Cloudsat Outreach Program, Atmospheric Science Department, Colorado State University, 2002 –2003.

Publications

Authored and Edited Books

1. Troccoli, A., L. Dubus, and S.E. Haupt, eds., 2014: *Weather Matters for Energy*, Springer, 528 pp. ISBN: 978-1-4614-9220-7.
2. Haupt, S.E., A. Pasini, and C. Marzban, Eds. 2009: *Artificial Intelligence Methods in the Environmental Sciences*, Springer, 424 pp.
3. Haupt, R.L., and S.E. Haupt, 2011: *Practical Genetic Algorithms, Second Edition with CD*, John Wiley and Sons, New York, NY, Arabic Edition.
4. Haupt, R.L., and S.E. Haupt, 2004: *Practical Genetic Algorithms, Second Edition with CD*, John Wiley and Sons, New York, NY, 255 pp.
5. Haupt, R.L., and S.E. Haupt, 1998: *Practical Genetic Algorithms*, John Wiley and Sons, New York, NY, 177 pp.

Book Chapters (all peer reviewed)

1. Haupt, S.E., R.M. Rauber, B. Carmichael, J.C. Knievel, and J.L. Cogan, 2019: Chapter 22: 100 Years of Progress in Applied Meteorology, Part 2: Basic Applications, in *A Century of Progress in Atmospheric and Related Science: Celebrating the American Meteorological Society Centennial*, AMS Monograph Series, Boston, MA 24.1-24.35, DOI: 10.1175/AMSMONOGRAPHS-D-18-0012.1.
2. Haupt, S.E., S. Hanna, M. Askelson, M. Shepherd, M.A. Fragement, N. Debbage, and B. Johnson, 2019: Chapter 23: 100 Years of Progress in Applied Meteorology, Part 2: Applications that Address Growing Populations, in *A Century of Progress in Atmospheric and Related Science: Celebrating the American Meteorological Society Centennial*, AMS Monograph Series, Boston, MA. <https://doi.org/10.1175/AMSMONOGRAPHS-D-18-0007.1>
3. Haupt, S.E., S. McIntosh, B. Kosovic, K. Miller, F. Chen, M. Shepherd, M. Williams, and S. Drobot, 2019: Chapter 24: 100 Years of Progress in Applied Meteorology, Part 3: Modern Applications, in *A Century of Progress in Atmospheric and Related Science: Celebrating the American Meteorological Society Centennial*, AMS Monograph Series, Boston, MA, 24.1-24.35, DOI: 10.1175/AMSMONOGRAPHS-D-18-0012.1.
4. Jimenez, P.A., J.A. Lee, B. Kosovic, and S.E. Haupt, 2019: Solar Resource Evaluation with Numerical Weather Prediction Models, in *Green Energy and Technology: Solar Resources Mapping*, A. Sanfilippo, L. Pomares, J. Polo, Ed, Springer, pp 199-2019. DOI: [10.1007/978-3-319-97484-2_7](https://doi.org/10.1007/978-3-319-97484-2_7)
5. Haupt, S.E., B. Kosovic, J.A. Lee, and P. Jimenez, 2019: Mesoscale Modeling of the Atmosphere, in *Modeling and Simulation in Wind Plant Design and Analysis*, P. Veers, Ed., IET Press, Volume 1, pp 65-116. Book DOI: [10.1049/PBPO125F](https://doi.org/10.1049/PBPO125F), Chapter DOI: [10.1049/PBPO125F_ch3](https://doi.org/10.1049/PBPO125F_ch3), e-ISBN: 9781785615221
6. Haupt, S.E., 2018: Short-Range Forecasting for Energy, in *Weather and Climate Services for the Energy Industry*, A. Troccoli, ed., Palgrave Macmillan, London, UK, pp. 97-108. <https://link.springer.com/book/10.1007%2F978-3-319-68418-5>
7. Troccoli, A., M. Bruno Soares, L. Dubus, S.E. Haupt, M. Dadeck Boulahya, and S. Dorling, 2018: Forging a Dialogue Between the Energy Industry and the Meteorological Community, in *Weather*

- and *Climate Services for the Energy Industry*, A. Troccoli, ed., Palgrave Macmillan, London, UK, pp. 65-84. <https://link.springer.com/book/10.1007%2F978-3-319-68418-5>
8. Dubus, L. A. Troccoli, S.E. Haupt, M.S. Boulahya, and S. Dorling, 2018: Lessons Learned Establishing a Dialogue Between the Energy Industry and the Meteorological Community and a Way Forward, in *Weather and Climate Services for the Energy Industry*, A. Troccoli, ed., Palgrave Macmillan, London, UK, pp. 179-190. <https://link.springer.com/book/10.1007%2F978-3-319-68418-5>
 9. Haupt, S.E., P. Jimenez, J.A. Lee, and B. Kosovic, 2017: Principles of Meteorology and Numerical Weather Prediction, in *Renewable Energy Forecasting: From Models to Applications*, G. Kariniotakis, Ed., Elsevier, London, UK, pp. 3-28.
 10. Haupt, S.E. and D.J. Gagne, 2017: Use of Artificial Intelligence in Enabling Renewable Energy. In Nichols, G., S.E. Haupt, D.J. Gagne, A. Rucci, C. Toumey, G. Deshpande, P. Lanka, and S.A. Youngblood, 2017: *State-of-the-art Report: Artificial Intelligence and Machine Learning for Defense Applications*, HDIAD-SOAR-17-01, pp. 23-44. https://www.hdiac.org/wp-content/uploads/2017%20HDIAC%20SOAR%20-%20Artificial%20Intelligence%20and%20Machine%20Learning%20for%20Defense%20Applications_508.pdf
 11. Haupt, S.E., W.P. Mahoney, and K. Parks, Wind Power Forecasting. In. Troccoli, A., L. Dubus, and S.E. Haupt, eds., 2014: *Weather Matters for Energy*, Springer, 295-318. ISBN: 978-1-4614-9220-7.
 12. Schmehl, K.J., S.E. Haupt, and M. Pavolonis, 2012: A Genetic Algorithm Variational Approach to Data Assimilation and Application to Volcanic Emissions, in *Data Assimilation and its Applications*, M. Sharan and J.P. Issartel, eds., Springer, 676 pp.
 13. Haupt, S.E., V. Lakshmanan, A. Pasini, C. Marzban, J. Williams, 2009: Environmental Science Models and Artificial Intelligence, , In Haupt, S.E., A. Pasini, and C. Marzban, Eds., *Artificial Intelligence Methods in the Environmental Sciences*, Springer, pp. 1-14.
 14. Haupt, S.E., 2009: Introduction to Genetic Algorithms, , In Haupt, S.E., A. Pasini, and C. Marzban, Eds., *Artificial Intelligence Methods in the Environmental Sciences*, Springer, pp. 103-126.
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3. Haupt, S.E., J. Cowie, S. Linden, T.C. McCandless, B. Kosovic, and S. Alessandrini, 2018: Machine Learning for Applied Weather Prediction, IEEE eScience International Conference, Amsterdam, Netherlands, October 24.
4. Haupt, S.E. and B. Kosovic, 2015: Big Data and Machine Learning for Applied Weather Forecasts: Forecasting Solar Power for Utility Operations, IEEE Symposium Series on Computational Intelligence, Capetown, South Africa, December 9.
5. Jayaraman, B., J. Brasseur, T.C. McCandless, and S.E. Haupt, 2014: Nonequilibrium behavior of the daytime atmospheric boundary layer from LES. In Bulletin of the American Physical Society, 67th Annual Meeting of the APS Division of Fluid Dynamics, Vol. 59, Nov 2014.
6. Stewart, S.W., S.E. Haupt, and J.A. Cole, 2011: Addressing Wind Resource Potential in the Built Environment, ASME 5th International Conference on Energy Sustainability, Washington, DC, Aug. 7-10.
7. Haupt, S.E., G. Wiener, Y. Liu, B. Myers, J. Sun, D. Johnson, and W. Mahoney, 2011: A Wind Power Forecasting System to Optimize Power Integration, ASME 5th International Conference on Energy Sustainability, Washington, DC, Aug. 7-10.
8. Haupt, S.E., G. Wiener, J. Sun, S. Linden, B. Myers, Y. Liu, W. Mahoney, and D. Johnson, 2011: Forecasting Wind Power Ramps, 13th International Conference on Wind Engineering, Amsterdam, Netherlands, July 13, 2011.
9. Haupt, S.E., F.J. Zajaczkowski, K.J. Long, and A.J. Annunzio, 2010: Assimilating NWP data into CFD Models for Wind Prediction, Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27.
10. Haupt, S.E., K.J. Long, A.J. Annunzio, and L.M. Rodriguez, 2010: Predicting Realizations versus Averages: Applying Assimilation to Improve Dispersion Modeling for Security Analysis, Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27.
11. Haupt, S.E., G.S. Young, and A.J. Annunzio, 2010: Inverting Surface Observations: Convective and Stable Boundary Layer Depth Estimation Methods, Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27.

12. Zajackowski, F.J., S.E. Haupt, and K.J. Long, 2010: Wind Turbine Siting by Using Mesoscale Model Data Assimilation and Computational Fluid Dynamics, 48th AIAA Aerospace Sciences Meeting, Orlando, FL, 4-7 Jan.
13. Haupt, S.E., G.S. Young, K.J. Long, A. Beyer-Lout, and A. Annunzio, 2008: Data Fusion and Prediction for CBRN Transport and Dispersion for Security, 2008 IEEE Aerospace Conference with AIAA, Big Sky, MT, March 1-8.
14. Haupt, S.E., R.L. Haupt, and G.S. Young, 2007: Using Genetic Algorithms in Chem-Bio Defense Applications, ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security (BLISS-2007), Edinburgh, UK, Aug. 9-10.
15. Haupt, S.E., G.S. Young, K.J. Long, and A. Beyer, 2007: Data Requirements from Evolvable Sensor Networks for Homeland Security Problems, NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2007), Edinburgh, UK, Aug. 5-9.
16. Wilson, R.P., S.E. Haupt, L.J. Peltier, and R.F. Kunz, 2006: Detached Eddy Simulation of a Surface Mounted Cube at High Reynolds Number. Proceedings of the ASME Joint U.S. - European Fluids Engineering Summer Meeting, Miami, FL. July 17-20.
17. Haupt, S.E., R.F. Kunz, L.J. Peltier, J.J. Dreyer, and H.J. Gibeling, 2006: Impact of Heat Transfer on Contaminant Dispersion in a Public Building. Proceedings of the ASME Joint U.S. - European Fluids Engineering Summer Meeting, Miami, FL. July 17-20.
18. Haupt, S.E., C.T. Allen, and G.S. Young, 2006: A Genetic Algorithm Method for Sensor Data Assimilation and Source Characterization, World Congress on Computational Intelligence, Vancouver, Canada, July 16-20.
19. Haupt, S.E., 2003: Empirical Modeling of Unsteady Flows, Proceedings of the Fluid Engineering Division, 4th ASME-JSME Joint Fluids Engineering Conference Honolulu, HI, Paper FEDSM2003-45761.
20. Haupt, S.E. and C.E. Hailey, 2002: Empirical Modeling of Observed Microchannel Flow, Proceedings of the IEEE Aerospace Conference, Big Sky, MT.
21. Haupt, S.E. and R.L. Haupt, 1998: Genetic Algorithms in Complex Systems, Proceedings of the IEEE Aerospace Conference, 1998, Snowmass, CO.
22. Haupt, S.E. and R.L. Haupt, 1997: Phase Only Adaptive Nulling with a Genetic Algorithm, Proceedings of the IEEE Aerospace Conference, 1997 Snowmass, CO.
23. Haupt, S.E., 1996: Modon Stability, Abstract volume of the Mathematical Geophysics Symposium, Santa Fe, NM.
24. Haupt, S.E., R.L. Haupt, and J.C. Adams, 1991: Multigrid analysis of four-point-probe measurements of tapered resistive sheets, Fourth Copper Mountain Conference on Multigrid Techniques.
25. Haupt, R.L. and S.E. Haupt, 1991: Multigrid with MATLAB, Fourth Copper Mountain Conference on Multigrid Techniques.
26. Haupt, S.E. and R.L. Haupt, 1990: Multigrid analysis of four-point-probe measurements of tapered resistive sheets, 1990 National Radio Science Meeting, Boulder, CO.

Short Course and Workshop Presentations

1. Haupt, S.E., 2019: The General Circulation of the Atmosphere & Energy Transfer Across Scales: What you need to know for harvesting energy, International Conference on Energy and Meteorology, Preconference Seminar on Meteorology for Energy Professionals, Lyngby, Denmark, June 24, 2019.
2. Haupt, S.E., 2019: Data Exchange, Access, & Standards: Motivation & Recommendations, Workshop on Data at International Conference on Energy and Meteorology, Lyngby, Denmark, June 26, 2019.

3. Haupt, S.E., 2018: Practicum: Imagining/planning an energy climate service for your country, WMO/WEMC Training on Building Weather & Climate Services for the Energy Sector, Shanghai, China, May 18, 2018.
4. Haupt, S.E., 2018: Lessons Learned from the Shorter Ranges: Weather Forecasting for Energy Applications, WMO/WEMC Training on Building Weather & Climate Services for the Energy Sector, Shanghai, China, May 19, 2018.
5. Haupt, S.E., and various coauthors, 2017: Basic Meteorology and Artificial Intelligence for Energy, Course configured for Kuwait Institute for Scientific Research, S.E. Haupt led course and provided 5 lectures: a) NCAR's Method of Building Renewable Forecasting Systems, b) The General Circulation of the Atmosphere and its Relevance for Renewable Energy, c) Big Data and Machine Learning for Applied Weather Forecasts, d) Solar Nowcasting Systems, Blending, Verification, e) Load + Solar Prediction. Aug. 14-30, 2017.
6. Haupt, S.E., 2017: Updates on Weather Prediction for the Energy Industry. 4th International, Pre-Conference Seminar, Conference on Energy and Meteorology, Bari, Italy, June 26, 2017.
7. Haupt, S.E., 2017: Utility Variable Generation Integration Group Tutorial on Integration of Uncertainty Forecasts into the Power System Operations, Moderator and Lecturer, Atlanta, GA, June 20, 2017.
8. Haupt, S.E., 2016: Summer Course on Climate and Energy, offered by World Energy & Meteorology Council, Norwich, UK, July 4-6, 2016. Lecture, practicum, led workshops.
9. Haupt, S.E., 2016: Big Data and Machine Learning for Applied Weather Forecasts: Forecasting Solar Power for Utility Operations, Workshop on Big Data, Xuzhou, China, Aug. 1, 2016.
10. Haupt, S.E., 2015: Short-range Weather Forecasting (hours to days) for Energy Applications. International Conference on Energy and Meteorology Pre-Conference Seminar, Boulder, CO, June 22.
11. Haupt, S.E., 2015: Introduction to Probabilistic Forecasting, Utility Variable Generation Integration Group Tutorial on Stochastic Forecasting Methods and Applications, Lakewood, CO, Feb. 18, 2015.
12. Haupt, S.E., 2014: NCAR's Research including Renewable Energy, Kuwait Institute for Scientific Research presents Workshop on Solar Resource Assessment, Kuwait City, Nov. 17, 2014.
13. Haupt, S.E., 2013: Meteorological Forecasting I: Some Basic Considerations for Atmospheric Modeling, *COST Weather Intelligence for Renewable Energy Summer School*, Montegut, France, July 1, 2013.
14. Haupt, S.E., 2013: Meteorological Forecasting II: Predicting Atmospheric Realizations: Dealing with Uncertainty in Applied Meteorology, *COST Weather Intelligence for Renewable Energy Summer School*, Montegut, France, July 1, 2013.
15. Haupt, S.E., 2013: What is your mental model of using meteorological uncertainty information for energy? *Workshop on Uncertainty in Meteorology for the Energy Sector*, Preconference Seminar, International Conference on Energy and Meteorology, Toulouse, France, June 24.
16. Haupt, S.E., 2013: How can we better facilitate using meteorological uncertainty information for energy? *Workshop on Uncertainty in Meteorology for the Energy Sector*, Preconference Seminar, International Conference on Energy and Meteorology, Toulouse, France, June 24.
17. Haupt, S.E., 2011: Wind and Solar Power Forecasting, *Pre-Conference Seminar Programme*, 1st International Conference on Energy and Meteorology, Gold Coast, Australia, Nov. 7, 2011.
18. Haupt, S.E., 2011: Optimizing Model Parameters using Genetic Algorithms, *Educational Forum on Computational Intelligence Techniques for Data Analysis and Knowledge Discovery*, Seattle, WA, Jan. 23, 2011.
19. Haupt, S.E., 2007: Atmospheric Dispersion Modeling, workshop presented at University of Pittsburgh Medical School, Sept. 13, 2007.

20. Haupt, S.E., 2007: Introduction of workshop speakers and thoughts on the application of AI to Environmental Science, *Workshop on the Application of Artificial Intelligence to Environmental and Geospatial Sciences*, Corpus Christi, TX, Jan. 12-13.
21. Haupt, S.E., 2007: Applications of Genetic Algorithms in the Environmental Sciences, *Workshop on the Application of Artificial Intelligence to Environmental and Geospatial Sciences*, Corpus Christi, TX, Jan. 12-13.
22. Haupt, S.E., 2006: Genetic Algorithms I: Introduction to GAs, *Short Course on Artificial Intelligence Methods in Atmospheric and Oceanic Sciences*, Atlanta, GA, Jan. 28-29.
23. Haupt, S.E., 2006: Genetic Algorithms II: More Advanced Techniques and Applications, *Short Course on Artificial Intelligence Methods in Atmospheric and Oceanic Sciences*, Atlanta, GA, Jan. 28-29.
24. Haupt, S.E., 2004: Genetic Algorithms I: Introduction to GAs, *Short Course on Artificial Intelligence Methods in Atmospheric and Oceanic Sciences: Neural Networks, Fuzzy Logic, and Genetic Algorithms*, Seattle, WA, Jan. 10-11.
25. Haupt, S.E., 2004: Genetic Algorithms II: More Advanced Applications, *Short Course on Artificial Intelligence Methods in Atmospheric and Oceanic Sciences: Neural Networks, Fuzzy Logic, and Genetic Algorithms*, Seattle, WA, Jan. 10-11.

Theses and Technical Reports

1. Haupt, S.E., D. Allaerts, L. Berg, M. Churchfield, A. DeCastro, C., Draxyl, D.J. Gagne, P. Hawbecker, P. Jimenez, A. Jonko, T. Juliano, C. Kaul., B. Kosovic, RT.C. McCandless, J. Mirocha, D. Munoz-Esparza, E. Quon, R. Rai, J. Sauer, W. Shaw, 2019: FY19 Report of the Atmosphere to Electrons Mesoscale to Microscale Coupling Project: Pacific Northwest Laboratory Report PNNL-28259, 127 pp.
2. Haupt, S.E., D. Allaerts, L. Berg, M. Churchfield, A. DeCastro, C., Draxyl, E. Koo, B. Kosovic, R. Kotamarthi, B. Kravitz, L. Mazzaro, J. Mirocha, E. Quon, R. Rai, J. Sauer, G. Sever, W. Shaw, 2019: FY18 Report of the Atmosphere to Electrons Mesoscale to Microscale Coupling Project:, Pacific Northwest Laboratory Report PNNL-28259, 124 pp.
3. Haupt, S.E., A. Anderson, L. Berg, B. Brown, M. Churchfield, C., Draxyl, C. Kalb, E. Koo, B. Kosovic, R. Kotamarthi, L. Mazzaro, J. Mirocha, E. Quon, R. Rai, G. Sever, 2018: Third Year Report of the Atmosphere to Electrons Mesoscale to Microscale Coupling Project:, Pacific Northwest Laboratory Report PNNL-XXXXX, 137 pp.
4. Nichols, G., S.E. Haupt, D.J. Gagne, A. Rucci, C. Toumey, G. Deshpande, P. Lanka, and S.A. Youngblood, 2017: *State-of-the-art Report: Artificial Intelligence and Machine Learning for Defense Applications*, HDIAD-SOAR-17-01, 73 pp.. https://www.hdiac.org/wp-content/uploads/2017%20HDIAC%20SOAR%20-%20Artificial%20Intelligence%20and%20Machine%20Learning%20for%20Defense%20Applications_508.pdf
5. Haupt, S.E., A. Anderson, R. Kotamarthi, J.J. Churchfield, Y. Feng, C. Draxl, J.D. Mirocha, E. Quon, E. Koo, W. Shaw, R. Linn, L. Berg, B. Kosovic, R. Rai, B. Brown, B.L. Ennis, 2017: Second Year Report of the Atmosphere to Electrons Mesoscale to Microscale Coupling Project: Nonstationary Modeling Techniques and Assessment, Pacific Northwest Laboratory Report PNNL-26267, 156 pp.
6. Haupt, S.E., B. Kosovic, T. Jensen, J. Lee, P. Jimenez, J. Lazo, J. Cowie, T. McCandless, J. Pearson, G. Weiner, S. Alessandrini, L. Delle Monache, D. Yu, Z. Peng, D. Huang, J. Heiser, S. Yoo, P. Kalb, S. Miller, M. Rogers, and L. Hinkleman, 2016: The SunCast Solar Power Forecasting System: The Results of the Public-Private-Academic Partnership to Advance Solar Power Forecasting. NCAR Technical Report TN-526+STR, 307 pp, doi:10.5065/D6N58JR2.

7. Jensen, T.L., T.L. Fowler, B.G. Brown, J. Lazo, S.E. Haupt. 2016: Metrics for evaluation of solar energy forecasts. NCAR Technical Report TN-527+STR, 67 pp, doi:10.5065/D6RX99GG.
8. Haupt, S.E., A. Anderson, L. Berg, B. Brown, MJ Churchfield, C Draxl, B.L. Ennis, Y. Fang, B. Kosovic, R. Kotamarthi, R. Linn, J.D. Mirocha, P. Moriarty, D. Munoz-Esparaza, R. Rai, W.J. Shaw, 2015: First Year Report of the A2e Mesoscale to Microscale Coupling Project, Pacific Northwest Laboratory Report PNNL-25108, 124 pp.
9. Hanford, A.D., A.R. Barnard, M.L. Jonson, K.J. Long, and S.E. Haupt, 2009: Atmospheric Acoustic Modeling Using the Crank Nicholson Parabolic Equation Method, ARL Technical Memorandum No. 09-016.
10. Haupt, S.E., G.S. Young, K.J. Long, A. Beyer-Lout, L.M. Rodriguez, A.J. Annunzio, and C.T. Allen, 2008: Assimilating Concentration and Wind Data for Dispersion Modeling, ARL Technical Report: ARL TR 08-005.
11. Haupt, R.L., S.E. Haupt, D. Aten, and K.J. Long, 2008L Submarine Radar Reflectors, ARL Technical Report: ARL TR 08-004.
12. Haupt, S.E., G.S. Young, L.J. Peltier, 2005: On using data assimilation and sensor fusion techniques in dispersion modeling, ARL TR 05-011.
13. Haupt, S.E., 1988: Solving nonlinear wave problems with spectral boundary value techniques, Ph.D. dissertation, The University of Michigan.
14. Haupt, S.E., 1984: Modeling synoptic conditions characteristic of maximum short-term ambient sulfur dioxide impacts from power plant plumes, Master's Thesis, Worcester Polytechnic Institute.
15. Haupt, S.E., 1981: Modification of APRAC-2 and IMM to include MOBILE2 Emissions Model, Prepared for East-West Gateway Coordinating Council, St. Louis, MO by GCA/Technology Division.
16. Haupt, S.E., et al., 1982: Ohio VOC and NOX emission inventory update for NECRMP, Prepared for U.S. Environmental Protection Agency, Research Triangle Park, NC by GCA/Technology Division.
17. Haupt, S.E., et al., 1982: Northeast Corridor Regional Modeling Project annual emission inventory compilation and formatting - Volume X: Ohio emission inventory, Prepared for U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards Research Triangle Park, NC by GCA/Technology Division.
18. The Narragansett Electric Company, 1983: Air quality analysis supporting a SIP revision for conversion to coal at South Street Station, (S.E. Haupt - Sole author).
19. Baci, L.A., S.E. Haupt, et al., 1981: Technical and policy guidance for SO₂ and TSP 'bubble' regulations, Prepared for the U.S. Environmental Protection Agency, Regulatory Reform Staff, Washington, D.C. by GCA/Technology Division.
20. Wojcik, M. and S.E. Haupt, 1981: Sensitivity of air quality near power plants to key model parameters, Prepared for U.S. Dept. of Energy by GCA/Technology Division.
21. Wiltsee, K.W., S.E. Haupt, and M. Wojcik, 1981: Documentation of APRAC-2 and IMM air quality models, Prepared for East-West Gateway Coordinating Council, St. Louis, MO by GCA/Technology Division.
22. Wojcik, M., S.E. Haupt, et al., 1982: Cost analysis of proposed changes to the air quality modeling guidelines, Prepared for U.S. Environmental Protection Agency by GCA/Technology Division.
23. Wiltsee, K.W., S.E. Haupt, and M.W. Kozenko, 1979: Guide to use of the UNAMAP package, Prepared for U.S. Department of Energy by GCA/Technology Division.

More than 20 other technical GCA/Technology Division and New England Electric System reports.

Conference and Workshop Proceedings, Abstracts, and Presentations (> 350 listed at end of CV)

Recent (10 years) Invited Seminars:

- Mesoscale to Microscale Coupling for Wind Energy, DOE Wind Energy Technology Office Headquarters, Washington, D.C., March 3, 2020.
- The Use of AI for Weather and Climate Applications, University of Albany, Oct. 11, 2019.
- Mesoscale to Microscale Coupling for Wind Energy Applications, Wind Energy Technology Office, Washington, D.C., June 11, 2019.
- Advances in Mesoscale to Microscale Coupling for Wind Energy Applications, University of Trento, Trento, Italy, May 24, 2019.
- Integrating Weather and Climate Information for Renewable Energy, Lecture at University of East Anglia and Webinar for COPERNICUS Project in EU, Norwich, UK, April 9, 2018.
- Big Data Applications of Weather Forecasting: Renewable Energy & Surface Transportation, Columbia University, October 5, 2017.
- Short-Range Forecasting for Renewable Energy Applications, EDF, Paris, France, March 24, 2017.
- Applications of Meteorology for Energy, University of Connecticut, Storrs, CT, November 4, 2016.
- NCAR's Applied Atmospheric Modeling Research, Institute for Plateau Meteorology, Chengdu, China, July 25, 2016.
- Evolving Realizations with Assimilation: Blending Observations with Models, Xuzhou University, Xuzhou, China, Sept. 16, 2015.
- NCAR's Research in Meteorology for Renewable Energy, Nanjing University of Information Science and Technology, Nanjing, China, Sept. 15, 2015.
- NCAR's Research in Solar Power Forecasting, Chinese Electric Power Research Institute, Nanjing, China, Sept. 14, 2015.
- Evolving Realizations with Assimilation, South China Institute of Oceanology, Guangzhou, China, Sept. 11, 2015.
- Solar Power Forecasting, University of Lisbon, April 14, 2015.
- NCAR Statistical Learning and Assessment Initiatives, NOAA Meteorological Development Laboratory, Silver Spring, MD, Feb. 23, 2015.
- Solar Power Forecasting, Army Research Laboratory, White Sands Missile Range, NM, January 21, 2015.
- NCAR's Renewable Energy Research, Enel Green Energy, Rome, Italy, October 6, 2014.
- NCAR's Renewable Energy Research, Danish Technical University, Roskilde, Denmark, October 3, 2014.
- NCAR's Wind Energy Research, Women of Wind Energy Meeting, Boulder, CO, Aug. 20, 2014.
- NCAR's Irradiance Models for Solar Energy, National Ecological Observatory Network, Boulder, CO, August 12, 2014.
- Predicting Atmospheric Realizations: Dealing with Uncertainty in Applied Meteorology, Meteogroup seminar, Netherlands, April 9, 2014.
- Evolving Realizations with Assimilation, NCAR Research Application Laboratory Seminar, Boulder, CO, March 19, 2014.
- Meteorology Applications: NCAR's Research Applications Laboratory, Institute for Urban Meteorology, Beijing, China, Nov. 20, 2013.
- Meteorology Applications: NCAR's Research Applications Laboratory, Feng Huang Mountain WMO Base Station, Harbin, China, Nov. 17, 2013.
- Wind Power Meteorology, Department of Civil, Environmental, and Mechanical Engineering, University of Trento, Trento, Italy, Sept. 17, 2013.
- Some Examples of Atmospheric Science Research: Predicting Atmospheric Realizations, Institute for Atmospheric Sciences, Torino, Italy, Sept. 12, 2013.
- Predicting Atmospheric Realizations: Dealing with Uncertainty in Applied Meteorology, ASP Seminar, NCAR Foothills Laboratory, Feb. 13, 2013.

Meteorological Variability and Wind Energy, Inaugural Meeting of the North American Wind Energy Academy, Amherst, MA, Aug. 8, 2012.

The Research Applications Lab's Wind Energy Research, Climate and Global Dynamics Division Seminar, March 27, 2012.

Wind Power Forecasting and NCAR Wind Energy R&D. presented at Vaisala, Inc., Louisville, CO. Dec. 19, 2011.

Challenges to Exploiting Wind Energy: Typhoons and Offshore Wind Farms. presented at 2011 International Offshore Wind Power Technology Seminar, Taipei, Taiwan, Nov. 2, 2011.

NCAR's Wind Power Prediction System, Seminar for Center for Research and Education in Wind (CREW) of the Colorado Collaboratory for Renewable Energy, Sept. 9, 2011.

Blending Numerical Weather Prediction with Computational Fluid Dynamics for Wind Resource Assessment, National Renewable Energy Laboratory, Wind Technology Center, April 6, 2011.

Research Students and Postdoctoral Fellows Mentored and Supervised

Postdocs and Students Mentored or Committee Member while at NCAR

Curtis Walker, ASP Postdoctoral Fellow, co-advise with W.P. Mahoney, 2018-present.

Rodrigo de Silva, Ph.D. Student, University of Lisbon, Meteorology, Co-Advisor. Defended March 2020.
Thesis title: Spatio-Temporal Solar Forecasting.

Laura Harding-Clemente, Ph.D., Geography, 2015-2020. Defended Oct. 2019. Thesis title: Extension of the Analog Ensemble Technique to the Spatial Domain.

Hadrian Verbois, National University of Singapore, Thesis reviewer. Thesis title: Solar Irradiance Forecasting in the Tropics using Numerical Weather Prediction and Statistical Learning. October 2019.

Jessica Tomaszewski, Ph.D. student, Atmospheric Science, University of Colorado, Boulder, Committee Member. 2016-2020. Defended May 2020. Thesis title: Simulating Impacts of Wind Energy on the Atmospheric Boundary Layer.

Sarah Balkissoon, Ph.D. student – Atmospheric Science, University of Missouri, Committee member, 2018 - ...

Steven Naegele, Ph.D. Student – Meteorology, The Pennsylvania State University, Committee Member, 2018 - ...

William Chapman, Ph.D. Student – Scripps Institute of Oceanography, Committee Member.

Kate Duffy, Ph.D. Student – Interdisciplinary Engineering, Northeastern University, Committee Member.

David John Gagne – ASP Postdoctoral Fellow, Co-Advisor with D. Nychka, 2016-2018.

Eliot Simon, NCAR Visitor from Danish Technical University, Ph.D. Student, Feb.-May, 2018.

Nicholas Engerer – The Australian National University, Ph.D. Student, Thesis reviewer, 2016.

Paul Quelet – University of Colorado, Boulder, Ph.D. Student, Committee member, 2016.

Meghan Mitchell, Texas Tech M.S. student in Meteorology, SOARS summer intern, 2016.

David John Gagne – University of Oklahoma, Ph.D. Student, Committee member. Visiting ASP Graduate Student. At NCAR July 2014- July 15.

Tyler McCandless, Ph.D. Meteorology, Artificial Intelligence Techniques for Short-Range Solar Irradiance Prediction, (S.E. Haupt, thesis advisor/co-chair), defended August 24, 2015.

Neil Davis – Technical University of Denmark, Ph.D. Student. Committee member/examiner. Icing Impacts on Wind Energy Production. Defended October 3, 2014.

Matthew O'Connell – CSU M.S. Student in Mechanical Engineering, NCAR visitor, 2013-2014.

David O. Miller, Ph.D., Meteorology, Application of Image-Processing Techniques for Determining

Convective Boundary-Layer Depth from Aerosol-Lidar Measurements, Defended Nov. 11, 2013. (S.E. Haupt, committee member)

Jared A. Lee, Meteorology, Ph.D. student, “Techniques for Down-Selecting Numerical Weather Prediction Ensembles,” Ph.D. defended June 10, 2012. (S.E. Haupt, thesis advisor/co-chair)

Luna Rodriguez, Ph.D. student, “Source Term Estimation using FFT07 Data,” Ph.D. 2012. (S.E. Haupt, thesis co-advisor/co-chair)

Andrew J. Annunzio, Ph.D., “Assessing the Lagrangian Framework and State Estimation for Forward and Inverse Atmospheric Transport and Dispersion Modeling,” Ph.D. defended March 1, 2011. (S.E. Haupt, thesis chair/advisor with G.S. Young)

David C. Maniaci, Ph.D, Aerospace Engineering, “Wind Turbine Design using a Free-Wake Vortex Method with Winglet Application, Ph.D. defended Sept. 14, 2012. (S.E. Haupt, committee member)

Walter C. Kolczynski, Ph.D., “Evaluation of Linear Variance Calibration for use in Atmospheric Transport and DIspersion Forecasting,” Ph.D. defended June 22, 2011. (S.E. Haupt, thesis co-chair/co-advisor with D.R. Stauffer)

Laura Imbler - CSU Undergraduate in Mechanical Engineering, NCAR Intern, summers 2011, 2012.

Glen Hanson – US Air Force Academy cadet, NCAR intern, summer 2013.

The Pennsylvania State University (As Faculty 2003-2010)

Christopher T. Allen, “Source Characterization and Meteorological Data Optimization with a Genetic Algorithm-Coupled Dispersion/Backward Model,” Meteorology, M.S. May 2006. (S.E. Haupt, thesis chair/co-advisor)

Francis Kredensor – Meteorology Honors Student (Schreyers). DTRA funding May-August 2005. Processing 1.5TB ensemble mesoscale model data for the purpose of defining new length scale for large scale variability and testing with SCIPUFF. Francis processed major amounts of our data and was coauthor on a conference paper.

Monique Holmes – Florida A&M student (B.S. Biology), summer visitor 2006 – 8 weeks. Primary supervisor. Funded under DTRA SRAP program. Demonstrated sensitivity of SCIPUFF to various turbulence parameters. Prepared poster for conference presentation.

Adam Goss – Aerospace Engineering Undergraduate Honors Student – Joint Supervision with LJ Peltier. 2006. Funded under DTRA Applied Meteorology Project. Built and tested Lagrangian particle model to be embedded in MM5 mesoscale wind field for comparison with SCIPUFF.

Robert P. Wilson, “Detached Eddy Simulation of Atmospheric Flow about a Surface Mounted Cube at High Reynolds Number,” Mechanical Engineering, B.S. with Honors, May 2006. (S.E. Haupt, honors thesis advisor)

Kerrie J. Long, “Improving Contaminant Source Characterization and Meteorological Data Forcing with a Genetic Algorithm,” Meteorology, M.S. May 2007. (S.E. Haupt, thesis chair/co-advisor)

Steven J. Greybush, “The Regime Dependence of Optimally Weighted Ensemble Model Consensus Forecasts,” Meteorology and Computer Science, Minor in Mathematics, B.S. with Honors in Meteorology, May 2007. (S.E. Haupt, honors thesis advisor)

Jared A. Lee, “Improving Predictions of Contaminant Dispersion with SCIPUFF using Meteorological Ensemble Uncertainty,” Meteorology, M.S. August 2007. (S.E. Haupt, thesis chair/co-advisor)

Walter C. Kolczynski, “Short-range Ensemble Forecast Variance Calibration and its Impact on Dispersion Calculations in SCIPUFF,” Meteorology, M.S. August 2007. (S.E. Haupt, thesis co-chair/co-advisor)

Anke Beyer-Lout, “Concentration Assimilation into Wind Field Models for Dispersion Modeling,” Meteorology, M.S. Dec. 2007. (S.E. Haupt, thesis co-chair/co-advisor)

Yuki Kuroki – Meteorology M.S. student. Committee member. (includes weekly contact). 2006-2008.
M.S. May 2008.

McKenzie McNeal – Ph.D. Electrical Engineering student – summer visitor from Tennessee State University, July-Aug. 2008.

Andrew J. Annunzio, “Source Characterization including Atmospheric Boundary Layer Depth,” Meteorology, M.S. August 2008. (S.E. Haupt, thesis chair/co-advisor)

Luna Rodriguez, “Source Term Estimation using a Genetic Algorithm and Incorporating Sensor Characteristics,” Meteorology, M.S. August 2008. (S.E. Haupt, thesis chair/advisor)

Jonathon Stergiou, “Numerical Simulation of Two-Dimensional Laminar Flow over Bluff Bodies using the Immersed Boundary Method with Cartesian Grids,” Aerospace Engineering, M.S. December 2008. (S.E. Haupt, thesis co-advisor)

Kathleen Walls - Meteorology M.S. student. Committee member. 2007-2009.

Brendon Burley – Architectural Engineering Ph.D. student. Committee member, 2006-2009

Tyler McCandless, Meteorology, ARL Honors Student, IUG Program, B.S./M.S. Student, Meteorology, “Regime dependent weather prediction using Artificial Intelligence Techniques”, B.S./M.S. May 2010. (S.E. Haupt, thesis chair/advisor)

Julia Cole, Aerospace Engineering, Ph.D. student, supervised summer CFD project.

Lili Lei – Meteorology Ph.D. student. A Hybrid Nudging-Ensemble Kalman Filter Approach to Data Assimilation,” Committee member (includes weekly contact). Ph.D. defended Aug. 2011. 2006-2011.

Utah State University

Vance Robinson – BSME BYU. REU summer 2001, summer research supervisor.

Robert Henry – BSME USU. RA/SDL summer/fall 2001, research supervisor.

Christine Merrill – B.S.M.E. USU. REU summer 2002 & RA/SDL 2002-2003, research supervisor.

Andrea Fischer - M.S. Env. Ed. 2002 – RA/state sponsored research, provided research funding.

Douglas Cook – B.S.M.E. USU. RA/SDL 2003 (6 mos), research supervisor.

Jaymon Knight – B.S. M. E. USU. REU summer 2003 & RA/USU, research supervisor.

Jessica Gregory – BS/MS EE USU. RA summer 2003/state R&D funds, research supervisor.

Jesse Warrick – BSME USU. RA/USU 2003, research supervisor.

David Omer – BSME USU. RA/USU 2003, research supervisor.

University of Nevada/Reno

Van Van – BSME. REU summer 1998. Heat exchanger research, research supervisor.

University of Colorado/Boulder

Gregory Duane – Ph.D., 1995-1997. Supported on NSF funds for 2 years, Primary Supervisor, “Atmospheric Self-Organization: A Thermodynamic View and a Dynamical Systems View.”

Christina Perez - Ph.D. candidate, 1997. Supported on NSF funds for 1 year and supervised (not for full degree – left before she finished)

Professional Service

- Future Commissioner*, AMS Commission on the Weather, Water, Climate Enterprise, 2020-present.
(serve 2 years as Future Commissioner before becoming Commissioner).
- Contributing Founding Director*, World Energy and Meteorology Council, 2015-.
- Executive Committee*, Research Applications Laboratory, NCAR, 2011-.
- Councilor*, American Meteorological Society, 2016-19.
- Member*, AMS Nominating Committee, 2019-present. *Chair-Elect* for 2021.
- Member*, AMS Ethics Committee, 2019-present.
- Guest Editor*, Special Issue of *Energies* on AI and Energy.
- Scientific Organizing Committee*, International Conference on Energy and Meteorology, Lyngby, Denmark, June 2019.
- Co- Organizer*, Joint Session between AMS 19th Conference on Artificial Intelligence and its Applications to Environmental Science and Twelfth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2020.
- Scientific Organizing Committee and Session Co-Organizer*, IEEE PVSC Conference, Session on Solar Resource Modelling and PV Forecasting, Virtual conference June 2020 (was planned for Calgary, Canada).
- Committee Member*, Search for CISL Director of Technology Development Division
- Member*, NCAR Appointment Review Group, 2014-2017.
- Advisory Panel Member*, UCAR COMET Program, 2017-9.
- Co- Organizer*, Joint Session between AMS 18th Conference on Artificial Intelligence and its Applications to Environmental Science and Eleventh Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2019.
- AMS Council Representative*, Drafting Committee for AMS Statement on Communicating Uncertainty in the Weather, Water, and Climate Enterprise, 2017-18.
- Member*, AMS Energy Committee, 2014-9.
- Organizing Committee*, International Conference on Energy and Meteorology, Shanghai, China, May 2018.
- Session Chair and Organizer*, Joint Session between AMS 17th Conference on Artificial Intelligence and its Applications to Environmental Science and Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2018.
- Chair, Organizing Committee*, WindTech 2017, Boulder, CO, October 26-28, 2017.
- Member*, Search Committee for NCAR Research Applications Laboratory Director position.
- Organizing Committee*, International Conference on Energy and Meteorology, Bari, Italy, June 2017.
- Moderator*, UVIG Tutorial on Use of Uncertainty Information in Energy Forecasting, June 2017.
- Session Chair and Organizer*, Joint Session between AMS 16th Conference on Artificial Intelligence and its Applications to Environmental Science and Ninth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2017.
- Organizer*, UVIG Forecasting Workshop Preconference Tutorial on Solar Power Forecasting, Sept. 2016.
- Member*, Search Committee for NCAR Earth Observing Laboratory, Facility Director position.
- Member*, 2016 AMS Annual Meeting President's Program Committee.
- Session Chair and Organizer*, Joint Session between AMS 15th Conference on Artificial Intelligence and its Applications to Environmental Science and Eighth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2016.
- Moderator and Organizer*, Utility Variable Integration Group Tutorial on Stochastic Forecasting Methods and Applications, Feb. 16, 2015.

Session Chair and Organizer, Joint Session between AMS 14th Conference on Artificial Intelligence and its Applications to Environmental Science and Seventh Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2015.

Member, NCAR Supercomputer Allocations Committee, 2012-2014.

Session Chair and Organizer, Joint Session between AMS 13th Conference on Artificial Intelligence and its Applications to Environmental Science and Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Jan., 2014.

Session Chair, Winterwind Conference, Sundsvall, Sweden, Feb. 2013.

Session Chair and Organizer, Joint Session between the AMS 12th Conference on Artificial Intelligence and its Applications to Environmental Science and Fifth Conference on Weather, Climate, and the New Energy Economy, 2013.

Panel Moderator, Challenges and Opportunities in Applying AI Techniques to Environmental Science Problems, AMS Annual Meeting, Atlanta, GA, 2013.

Member, Organizing Committee for International Conference on Energy and Meteorology Conference and Local Organizing Committee (Leadership role) for Boulder, CO, 2013-2015.

Member, Organizing Committee, 2013 AMS Conference on Artificial Intelligence and its Applications to Environmental Science.

Member, UCAR Management Committee Working Group on University Relations, 2012-13.

Member, Organizing Committee for International Conference on Energy and Meteorology Conference for Toulouse, France, 2011-2013.

Member, Organizing Committee for AMS Washington Forum, 2011-2013.

Chair, Organizing Committee, 2012 Artificial Intelligence Forecasting Contest, Wind Power Forecasting, jointly sponsored by AMS Committee on Artificial Intelligence and its Applications to Environmental Science, Energy Committee, and Probability and Statistics Committee.

Group Lead (Mesoscale modeling group) for DOE *Complex Flow Workshop*, Jan. 2012.

Member, Organizing Committee for AMS Washington Forum, 2011-2012.
Organized and Chaired session on *Training the New Workforce*.

Session Organizer and Chair, Offshore Wind Power Summit, Washington, D.C., 2011.

Working Group Lead, Atmospheric Sciences, North American Wind Energy Academy, 2011-.

Member, AMS Board on Enterprise and Economic Development (BEED), 2011-2014.

Member, Organizing Committee for Energy and Meteorology Conference, Australia, 2010-2011.
Included chairing a session, moderating a panel, serving as a contact for press (interview with Australia Public Radio), and on committee for post-conference book publication.

Session Chair, Joint Session on Applications of Artificial Intelligence Techniques to Air Pollution Problems between the 17th Conference on Applications of Air Pollution Meteorology and the Ninth Conference on Artificial Intelligence and its Applications to Environmental Sciences, Jan. 24, 2011.

Session Chair and Organizing Committee, Artificial Intelligence Forecasting Contest, as part of the Eighth Conference on Artificial Intelligence and its Applications to Environmental Sciences, Jan. 25, 2011.

Session Chair, 14th George Mason University Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 15, 2010.

Session Chair, ABL and Turbulence Models for CWE I, Fifth International Symposium on Computational Wind Engineering, Charlotte, NC, May 24, 2010.

Session Chair, Joint Session on Applications of Artificial Intelligence Techniques to Air Pollution Problems between the 16th Conference on Applications of Air Pollution Meteorology and the Eighth Conference on Artificial Intelligence and its Applications to Environmental Sciences, Jan. 19, 2010.

Committee Member, PSU Search for Position #015-5, Wind Energy Position, Department of Aerospace Engineering, 2009-2010.

Chair, Artificial Intelligence Committee of American Meteorological Society, 2006-09.

Program Chair, Seventh Conference on Applications of Artificial Intelligence in the Environmental Sciences, Phoenix, AZ, Jan. 2009.

Organizing Committee for American Meteorological Society Annual Meeting, Phoenix, AZ, 2009.

Session Chair, Joint Session between the 21st Conference on Climate Variability and Change and the Seventh Conference on Artificial Intelligence and its Applications to Environmental Sciences, Jan. 14, 2009.

Session Chair, 13th George Mason University Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 9, 2009.

Editor, Special Issue of *Journal of Soft Computing* related to Bio-Inspired Learning for Security Systems.

Committee Member, PSU Search for Position #015-5, Wind Energy Position, Department of Aerospace Engineering, 2008-2009.

Session Chair, 12th George Mason University Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 8, 2008.

Committee Member, Organizing Committee for 2008 ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security (BLISS-2008), Aug. 10-11, Edinburgh, UK.

Program Chair, Sixth Conference on Applications of Artificial Intelligence in the Environmental Sciences, New Orleans, LA, Jan. 2008.

Committee Member, Organizing Committee for American Meteorological Society Annual Meeting, New Orleans, LA, 2008.

Session Chair, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA; January 24, 2008.

Technical Committee Member, IEEE World Congress on Computational Intelligence 2008.

Committee Member, Organizing Committee for 2007 ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security (BLISS-2007), Aug. 9-10, Edinburgh, UK.

Chair, Search Committee, PSU Position #25552.

Moderator, Panel Discussion of Gender and Equity in Engineering, ARL, State College, PA, 2007.

Program Chair, Fifth Conference on Applications of Artificial Intelligence in the Environmental Sciences, San Antonio, TX, Jan. 2007.

Committee Member, Organizing Committee for American Meteorological Society Annual Meeting, San Antonio, TX, 2007.

Committee Member, Organizing Committee, Workshop on the Application of Artificial Intelligence to Environmental and Geospatial Sciences, Corpus Christi, TX, Jan. 12-13, 2007.

Committee Member, Sensor Data Fusion Working Group, Organized by DTRA, 2006-.

Committee Member, Scientific and Technological Activities Commission of the American Meteorological Society, 2006-09.

Panel Member, Review Panel for DOE Program Review at Savannah River National Laboratory, 8/06.

Chair, Panel Review for National Science Foundation, June 7-10, 2006.

Committee Member, Smart Systems for Scenario Simulation and Response (S4R) Committee, under the purview of Hank Foley, PSU Associate VP Research, 2006-.

Presenter, Take our Daughters and Sons to Work Day, 4/27/06.

Committee Member, Artificial Intelligence Committee of American Meteorological Society, 2003-2009.

Committee Member, Program Development Grant Committee of the National Society of Women Engineers, Review and recommend program development grants, write column for *SWE Magazine* on those grants.

Faculty Advisor, Society of Women Engineers, Penn State, 2005-2008.

Judge, Mr. Engineering Contest 2007, sponsored by PSU Society of Women Engineers, 1/31/07.
Session Chair, Unsteady Flow Forum, ASME Fluid Engineering Meeting, Honolulu, HI, 2003.
Faculty Advisor, Society of Women Engineers, Utah State University, 2002-2003.
Member, Advisory Board, Women and Gender Research Institute, USU 2002-2003.
Coordinator, Cadette/Senior Girl Scout Engineering Day at Utah State Univ. and Tiered Mentoring Program involving professional women, Society of Women Engineers, and Girl Scouts. 2003.
Co-Chair, Junior Science and Engineering Conference, IEEE Aerospace Committee, Snowmass, CO, March 1998, 1999, 2000, 2001, 2002.

Organizing Committee for IEEE Aerospace Conference, 1998, 1999, 2000, 2001, 2002.

Reviewer for: *CHOICE* Books & Website reviews (many published reviews)
Promotion and tenure reviews - various universities, U.S. and international
NSF Proposals
NOAA Proposals
DOE Proposals
Cambridge University Press
McGraw Hill Publishers
Oxford University Press
NRL/ASEE Postdoctoral Fellowship Program
Advances in Artificial Neural Systems
Advances in Water Resources
Atmospheric Environment
Boundary Layer Meteorology
Bulletin of the American Meteorological Society
Data Mining and Knowledge Discovery
Computer Methods in Applied Mechanics and Engineering
Computers and Fluids
Geoscientific Model Development
International Statistical Review, published book review
Journal of Applied Meteorology and Climatology
Journal of the Atmospheric Sciences
Journal of Climate
Journal of Environmental Management
Journal of Geophysical Research - Atmospheres
Journal of the Meteorological Society of Japan
Journal of Physical Oceanography
Journal of Renewable and Sustainable Energy
Journal of Wind Engineering and Industrial Applications
Monthly Weather Review
Solar Energy
Tellus
Transactions on Geoscience and Remote Sensing
Water Resources Research
Weather and Forecasting
Wind Energy
Wind Energy Science
WIRES Energy and Environment
AMS Conferences
ASEE Conferences

ASME Conferences
ICEM Conferences
IEEE Conferences

Counselor, Society of Women Engineers, USU, 2001-2002.

Coordinator, Junior Girl Scout Engineering Badge-in-a-Day at Utah State Univ., May 2001, April 2002, April 2003.

Panel Member, Cadette/Senior Girl Scout Engineering Day at Univ. Utah, April, 2001.

Committee Member, Retention Committee, College of Engineering, USU, Winter/Spring 2001.

Committee Member, Pre-engineering Articulation Committee, USU, 2000-2001.

Judge, Mt. Logan Middle School Science Fair, Logan, UT, Feb. 2001.

Environmental Engineering Demonstrations, Edith Bowen Laboratory School, Logan, UT, Sept. 2000.

Judge, Junior Engineering State Projects, Feb. 2000.

Helped with Mt. Logan Middle School's Internet in Elementary Classrooms Project, Oct. 1999.

Coordinated Brownie Troop 747 Science Fair, Reno, NV, Spring 1999.

Science projects for 3rd graders at Roy Gomm Elementary, Reno, NV, April 1999.

Helped lead tour of 6th graders from Roy Gomm Elementary to UNR College of Engineering, Oct. 1998.

Science demos for 2nd graders at Roy Gomm Elementary, Reno, NV, May 1998.

Coordinated Girl Scout Troop 582 shadowing of women in UNR Engineering & Science labs, Reno, NV, April 1998.

Scientific Advisor for Science Wonders Girl Scout Day Camp, Wagon Wheel GS Council, Colorado Springs, CO, July 1997.

Weather demonstrations for 3 4/5 continuum classes and 3 first grade classes, and organized a science field trip for the 4/5 continuum and 4th grade classes, Lewis Palmer Elementary School, Monument, CO, 1996-97.

Judge, Odyssey of the Mind, Colorado Springs, CO, 1996.

Session Chair, AMS Waves and Stability Conference, Big Sky, Montana, June 1995.

Scientist-in-Residence, Lewis Palmer Elementary 2/3 continuum classes. Gave 8 science weather demonstrations throughout the school year, Monument, CO, 1994-1995.

Judge, Pikes Peak Regional Science Fair, Colorado Springs, CO, 1994.

Scientist-in-Residence, Lewis Palmer Elementary School, gave science demonstrations to 500 students, Monument, CO, March 1993.

Science demonstrations for Shepherd and Lambs Children's Center, Monument, CO, from 1992-1996.

Guest Lecturer for course in Numerical Methods for Scientists and Engineers, USAF Academy, CO, 1990.

Conference and Workshop Proceedings, Abstracts, and Presentations (presenter in Bold)

1. **Haupt, S.E.**, 2020: The History of AI in the Environmental Sciences, 19th Conference on Artificial Intelligence for Environmental Science, AMS Annual Meeting, Boston, MA, Jan. 14. **Core Science Keynote.**
2. **Haupt, S.E.**, R.M. Rauber, B. Carmichael, J.C. Knievel, J.L. Cogan, S. Hanna, M. Askelson, M. Shepherd, M.A. Fragomeni, N. Debbage, B. Johnson, B. Kosovic, S.W. McIntosh, F. Chen, K. Miller, M. Williams, and S. Drobot, 2020: 100 Years of Progress in Applied Meteorology, 18th History Symposium, AMS Annual Meeting, Boston, MA, Jan. 14.
3. **Haupt, S.E.**, B. Kosovic, L. Berg, W. Shaw, J. Mirocha, M. Churchfield, 2020: Mesoscale to Microscale Coupling for Wind Energy, 11th Conference on Weather, Climate, & the New Energy Economy, AMS Annual Meeting, Boston, MA, Jan. 14.
4. **McCandless, T.C.**, S. Naegele, and S.E. Haupt, 2020: Multistage Regime-Dependent Machine Learning Approach to Short-Term Wind Power Forecasting, 11th Conference on Weather, Climate, & the New Energy Economy, AMS Annual Meeting, Boston, MA, Jan. 13.
5. **Walker, C.L.**, S.E. Haupt, T.C. McCandless, and A.R. Siems-Anderson, 2020: Machine Learning to Predict Vehicular Crash Severity from Weather Conditions, 19th Conference on Artificial Intelligence for Environmental Science, AMS Annual Meeting, Boston, MA, Jan. 13.
6. **Haupt, S.E.**, 2020: Mind the Gap: Efforts to Prepare Students for the Real World, 8th AMS Conference for Early Career Professionals, AMS Annual Meeting, Boston, MA, Jan. 13. Panel Presentation.
7. **Lee, J.A.**, S.E. Haupt, B. Kosovic, G. Wiener, and M. Al-Rasheedi, 2020: Development of the Kuwait Renewable Energy Prediction System (KREPS), 11th Conference on Weather, Climate, & the New Energy Economy, AMS Annual Meeting, Boston, MA, Jan. 13.
8. **McCandless, T.C.**, B. Kosovic, W. Petzke, P.A. Jimenez, S. Massie, A. Anderson, A. DeCastro, and S.E. Haupt, 2020: Gridded Fuel Moisture Content Prediction System Utilizing Machine Learning Models based on MODIS Satellite Observations, 19th Conference on Artificial Intelligence for Environmental Science, AMS Annual Meeting, Boston, MA, Jan. 15.
9. **Knievel, J.C.**, S.E. Haupt, and J. Cogan, 2020: A Century of Symbiosis between Applied Meteorology and National Security, 100th American Meteorological Society Annual Meeting, Jan. 16, Invited Presentation.
10. **McCandless, T.C.**, S. Dettling, and S.E. Haupt, 2020: Comparing Implicit vs. Explicit Regime Identification in Machine Learning Approaches to Short-Range Solar Power Forecasting, 100th American Meteorological Society Annual Meeting, Jan. 16.
11. **Gagne, D.J.**, T.C. McCandless, B. Kosovic, A. DeCastro, R.D. Loft, and S.E. Haupt, 2020: Machine Learning Parameterization of the Surface Layer: Integration with WRF, 100th American Meteorological Society Annual Meeting, Jan. 16.
12. **Naegele, S.M.**, T.C. McCandless, S.E. Haupt, G.S. Young, and S.J. Greybush, 2020: Wind Variability Analysis for the Kuwait Region Using Self-Organizing Maps, 100th American Meteorological Society Annual Meeting, Jan. 15.
13. **Kosovic, B.**, T.C. McCandless, D.J. Gagne, T. Brumett, and S.E. Haupt, 2020: Machine Learning Models for replacing Monin Obukhov Similarity Theory Based Surface Layer Parameterization, 100th American Meteorological Society Annual Meeting, Jan. 14.
14. **Clemente-Harding, L.**, G.S. Young, G. Cervone, W. Hu, and S.E. Haupt, 2020: An Exploration of the Analog Ensemble Search Space Extension and Spatio-Temporal Reconstruction, 100th American Meteorological Society Annual Meeting, Jan. 14.

15. **Juliano, T.W.**, P.Jimenez-Munoz, B. Kosovic, and S.E. Haupt, 2020: Wind Energy Forecasting Using a Three-Dimensional Planetary Boundary Layer Parameterization. 100th American Meteorological Society Annual Meeting, Jan. 14.
16. **Nguyen, N.**, W. Petzke, J.A. Lee, T. Brummet, G. Weiner, S.E. Haupt, and B. Kosovic, 2020: Kuwait Renewable Energy Grid Operator's Display, 100th American Meteorological Society Annual Meeting, Jan. 14.
17. **Haupt, S.E.**, L. Berg, M. Churchfield, B. Kosovic, W. Shaw, J. Mirocha, 2019: Mesoscale to Microscale Coupling for Wind Energy Applications: Addressing the Challenges, NAWEA/WindTech Conference, Amherst, MA, October 15, 2019.
18. **Haupt, S.E.**, 2019: Machine Learning for Applied Weather Prediction, Workshop on Machine Learning in Weather and Climate Modeling, Oxford, UK, Sept. 3, 2019.
19. **Haupt, S.E.**, A. Anderson, G. Wiener, S. Linden, B. Petzke, T. Brummet, J. Cowie, C. Walker, W. Mahoney, D.J., Gagne, 2019: Weather Decision Support using Big Data: A Surface Transportation Example, ENVI Analytics Symposium, Denver, CO, Aug. 15, 2019.
20. **Haupt, S.E.**, 2019: Advances in Mesoscale to Microscale Coupling for Wind Energy Applications, 6th International Conference on Energy and Meteorology, Lyngby, Denmark, June 25, 2019.
21. **Lee, J.A.**, S.E. Haupt, B. Kosovic, G. Wiener, P.A. Jimenez, and M. Al-Rasheedi, 2019: Renewable Energy Forecasting for Kuwait: A Progress Update, 6th International Conference on Energy and Meteorology, Lyngby, Denmark, June 27, 2019.
22. **Haupt, S.E.**, T.C. McCandless, J.A. Lee, B. Kosovic, S. Alessandrini, G. Wiener, and J. Al-Rasheedi, 2019: Advances in Wind Power Forecasting for Kuwait Using Artificial Intelligence, Wind Energy Science Conference, Cork, Ireland, June 19, 2019.
23. **Haupt, S.E.**, 2019: Data Special Interest Group (SIG) of the World Energy & Meteorology Council, Wind Energy Science Conference, Cork, Ireland, June 17, 2019. **Invited Panel Presentation.**
24. **Haupt, S.E.**, 2019: Mesoscale to Microscale Coupling for Wind Energy Applications, Energy Systems Integration Group Meteorology & Market Design for Grid Services Workshop, Denver, CO, June 5, 2019. **Invited Panel Presentation.**
25. **Haupt, S.E.**, D.J. Gagne, T.C. McCandless, J. Cowie, W. Petzke, 2019: Machine Learning at NCAR, NOAA 1st Workshop on Leveraging AI on the Exploitation of Satellite Earth Observations and Numerical Weather Prediction, College Park, MD, April 23, **Invited Talk.**
26. **Haupt, S.E.**, 2019: Artificial Intelligence and Meteorology Empowering Renewable Energy, Joint Session between Applications in Artificial Intelligence and Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 10. **Invited Fellow Keynote Talk.**
27. **Gagne, D.J.**, T. C. McCandless, T. Brummet, B. Kosovic, and S. E. Haupt, 2019: Surface Layer Flux Machine Learning Parameterizations, Applications in Artificial Intelligence Conference, AMS Annual Meeting, Phoenix, AZ, Jan. 8.
28. **Walker, C.L.**, D. Steinkruger, M. R. Anderson, S. E. Haupt, A. R. S. Anderson, P. Gholizadeh, S. Hasanzadeh, B. Esmaeili, and B. Dao, 2019: Development of a Department of Transportation Winter Severity Index, AMS Annual Meeting, Phoenix, AZ, Jan. 10.
29. **Lee, J.A.**, S. Dettling, S. E. Haupt, and T. Brummet, 2019: Advancing Solar Irradiance Nowcasts of Long Island: Blending WRF-Solar with Observations, Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
30. **Lee, J.A.**, M. Jacobson, T. Capozzola, C. Draxl, F. Vandenbergh, T. Jimenez, and S. E. Haupt, 2019: Assessment of the Wind Energy Potential in Bangladesh, Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 9.
31. **Rai, R.**, L. K. Berg, B. Kravitz, B. Kosovic, J. D. Mirocha, B. Ennis, and S. E. Haupt, 2019: Improving Simulation of Turbulence in WRF-LES of Stable Condition Using Velocity Fluctuations,

- Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 8.
32. **McCandless, T.C.**, S. Dettling, and S.E. Haupt, 2019: Comparison of a Regime-Dependent Artificial Neural Network Method to a Regression Tree Method for Short-Range Solar Power Forecasting, Applications in Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
 33. Naegele, S.M., **T. C. McCandless**, S. E. Haupt, G. S. Young, and S. J. Greybush, 2019: Climatoloty of Wind Energy Variability for the Kuwait Region, Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 9.
 34. McCandless, T.C. and S.E. Haupt, 2019: The Super Turbine Wind Power Conversion Paradox: Using Machine Learning to Overcome Jensen’s Inequality, Joint Session between Applications in Artificial Intelligence and Tenth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 10.
 35. **Clemente-Harding, L.**, W. Hu, G. S. Young, G. Cervone, S.E. Haupt, and L. Delle Monache, 2019: Machine Learning Classification to Inform the search Space Extension Variant for the Analog Ensemble Technique, Applications in Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
 36. **Haupt, S.E.**, 2019: Status of AI, Panel presentation, Applications in Artificial Intelligence Conference, AMS Annual Meeting, Phoenix, AZ, Jan. 9.
 37. **Haupt, S.E.**, J. Cowie, S. Linden, T. McCandless, B. Kosovic, and S. Alessandrini, 2018: Machine Learning for Applied Weather Prediction, 14th eScience International Conference Session on Weather and Climate Science in the Digital Era, Amsterdam, The Netherlands, 31 October 2018.
 38. **Haupt, S.E.**, 2018: NCAR’s Research in Smart Cities, Smart City Denver, Sept. 19, 2019. (invited panel presentation).
 39. **Haupt, S.E.**, 2018: Meteorology, Climate, and the Electric Sector – Forecasting for an Integrated Energy System, ESIG Forecasting Workshop, St. Paul, MN, June 19, 2018 (Invited Panel talk).
 40. **Haupt, S.E.**, 2018: The Evolution of Artificial Intelligence at NCAR, NCAR Machine Learning Showcase, Boulder, CO, August 22, 2018.
 41. **Haupt, S.E.**, B. Kosovic, P. Jimenez, D. Munoz-Esparza, E. Gutman, R. Kumer, 2018: Applications of Boundary-Layer Research: Modeling Across Scales, NCAR Boundary Layer Workshop, Boulder, CO, July 20, 2018.
 42. **Haupt, S.E.**, B. Kosovic, W. Shaw, L. Berg, R. Rai, J. Mirocha, M. Churchfield, C. Draxl, M. Robinson, 2018: Recent Advances in Mesoscale to Microscale Coupling, AMS Conference on Boundary Layers and Turbulence, Oklahoma City, OK, June 14, 2018.
 43. **Berg, L.K.**, R. K. Rai, B. Kosovic, S. E. Haupt, J. D. Mirocha, C. Draxl, and B. Ennis, 2018: Sensitivity of Simulated Turbulence to Terra Incognita: Implications for Linking Mesoscale and Microscale Models, AMS Conference on Boundary Layers and Turbulence, Oklahoma City, OK, June 13, 2018.
 44. **Mirocha, J.D.**, R. K. Rai, M. J. Churchfield, Y. Feng, C. Draxl, J. S. Rodrigo, B. Ennis, B. Kosovic, and S. Haupt, 2018: An Investigation of the Suitability of Different Mesoscale-Microscale Coupling Techniques during Unsteady Meteorological Conditions for Wind Energy Applications, AMS Conference on Boundary Layers and Turbulence, Oklahoma City, OK, June 14, 2018.
 45. **Haupt, S.E.**, 2018: Where in the World is the Collaboration between Energy and Meteorology Going? International Conference on Energy & Meteorology, Shanghai, China, May 24, **Invited Plenary Talk.**
 46. **Haupt, S.E.**, 2018: Progress in Mesoscale to Microscale Coupling: Modeling Nonstationary Conditions in Flat and Complex Terrain, International Conference on Energy & Meteorology, Shanghai, China, May 22, 40 min. lecture.

47. **Haupt, S.E.**, Integrating Weather and Climate Information for Renewable Energy, Lecture at University of East Anglia and Webinar for COPERNICUS Project in EU, Norwich, UK, April 9, 2018.
48. **Haupt, S.E.**, D.J. Gagne II, J. Cowie, S. Linden, G. Wiener, and J. Lee, 2018: NCAR's Gridded Atmospheric Forecast System (GRAFS), 17th Conf on Artificial Intelligence and its Application to the Environmental Sciences, AMS Annual Meeting, January 9, 2018.
49. Haupt, S.E., 2018 Communicating Risk in the Energy Sector: Variability, Uncertainty, and Risk, AMS Themed Joint Session, AMS Annual Meeting, January 9, 2018. **Invited Panel Talk.**
50. Cline, J.W., **W. J. Shaw** and S.E. Haupt, 2018: Meteorology Research in DOE's Atmosphere to Electrons (A2e) Program, Ninth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, January 8, 2018.
51. **Clemente-Harding, L.**, G. S. Young, G. Cervone, L. Delle Monache, and S. E. Haupt, 2018: A Smart Extension of the Search Space for Use with the Analog Ensemble Technique, 25th Conference on Probability and Statistics, AMS Annual Meeting, January 8, 2018.
52. **Gagne II, D.J.**, S.E. Haupt, and D. Nychka, 2018: Spatial Structure Evaluation of Unsupervised Deep Learning for Atmospheric Data, 17th Conf on Artificial Intelligence and its Application to the Environmental Sciences, AMS Annual Meeting, Austin, TX, January 9, 2018.
53. Alessandrini, S., **L. Delle Monache**, S. Sperati, and S. E. Haupt, 2018: Improving the Analog Ensemble Wind Power Forecasts for Rare Events, Ninth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, January 9, 2018.
54. **Mirocha, J.D.** and S.E. Haupt, 2018: The U.S. DOE Mesoscale to Microscale Coupling Project: Extending Boundary Layer Flow Simulation to Complex Environments, Ninth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, January 8, 2018.
55. **Haupt, S.E.**, 2017: Welcome to WindTech 2017 and NCAR's Renewable Energy Research, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 24.
56. **Brasseur, J.G.**, A.W. Lavelly, T. Nandi, G. Vijayakumar, B. Jayaraman, S.E. Haupt, J. Lee, J. Keller, 2017: Wind Turbine Response across Scales: Simulation and Experiment, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 24.
57. **Cline, J.**, S.E. Haupt, and W. Shaw, 2017: Meteorology Research in DOE's Atmosphere to Electrons (A2e) Program, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 24.
58. **Jimenez, P.A.**, B. Kosovic, A. Martilli, S.E. Haupt, J.B. Olson, and J. Bao, A three dimensional PBL parameterization to improve wind forecasting at sub-kilometer scales, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 25.
59. **Mirocha, J.D.**, R.K. Rai, M.J. Churchfield, Y. Feng, C. Draxl, J. Sanz Rodrigo, B.L. Ennis, B. Kosović , and S.E. Haupt, 2017: An investigation of online and offline mesoscale-microscale coupling techniques during unsteady meteorological conditions, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 25.
60. **Rai, R.K.**, L.K. Berg, B. Kosovic, J.D. Mirocha, S.E. Haupt, B.L. Ennis, and C. Draxl, 2017: Evaluation of the Impact on Terra Incognita for Mesoscale and Microscale WRF Simulations, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 25.
61. **Kosovic, B.**, J.D. Mirocha, M.J. Churchfield, D. Munoz-Esparza, R.K. Rai, Y. Feng, S.E. Haupt, B. Brown, B.L. Ennis, C. Draxl, J.SanzRodrigo, W. J. Shaw, L.K. Berg, P. Moriarty, R. Linn, R. V. Kotamarthi, 2017: Assessment of Large-eddy Simulations of the Atmospheric Boundary Layer for Wind Energy Applications, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 25.

62. **Delle Monache, L.** S. Alessandrini, S.E. Haupt, B. Kosovic, Wind Power Forecasting with the Analog Ensemble, WindTech International Conference on Future Technologies in Wind Energy, Boulder, Co, October 25.
63. **Haupt, S.E.**, 2017: Solving the Last Mile Problems and Spurring Multi-Institutional Collaborations in the Cloud, Earth Analytics in the Cloud, Boulder, CO, October 19, 2017.
64. **Haupt, S.E.**, A. Anderson, G. Wiener, S. Linden, W. Petzke, T. Brummet, J. Cowie, P. McCarthy, W.P. Mahoney, 2017: Integrating Weather Information for Smart Transportation, Chinese Conference of IEEE Third International Smart Cities Conference, Wuxi, China, September 17 2017.
- Invited Presentation**
65. **Haupt, S.E.**, A. Anderson, G. Wiener, S. Linden, W. Petzke, T. Brummet, J. Cowie, P. McCarthy, W.P. Mahoney, 2017: Integrating Weather Information for Connected Vehicles for Smart Cities: A Big Data Problem, IEEE Third International Smart Cities Conference, Wuxi, China, September 14, 2017. **Invited Keynote Presentation**
66. **Haupt, S.E.**, 2017: Using Artificial Intelligence in Renewable Forecasting Systems, Artificial Intelligence Conference, Wuxi, China, September 12, 2017. **Invited Keynote Presentation**
67. **Haupt, S.E.**, 2017: Short-Range Wind Power Forecasting, Workshop on Performance and Potential of Wind Energy Systems in India, Bangalore, India, August 23, 2017. **Invited Presentation.**
68. **Haupt, S.E.**, 2017: Workshop on Data Exchange, Access, and Standards: A Broad Overview, International Conference on Energy and Meteorology, Bari, Italy, June 27.
69. **Haupt, S.E.**, L. Berg, M. Churchfield, J. Cline, J. Mirocha, B. Kosovic, C. Draxl, R. Rai, R. Kostmarthi, M. Robinson, W. Shaw, 2017: The US DOE A2e Mesoscale to Microscale Coupling Project: Nonstationary Modeling Techniques and Assessment, International Conference on Energy and Meteorology, Bari, Italy, June 28.
70. **Haupt, S.E.**, 2017: Perspectives on Energy and Meteorology + Climate, UVIG Forecasting Workshop, Atlanta, GA, June 20.
71. Haupt, S.E., **J. Cline**, W. Shaw, L. Berg, M. Churchfield, J. Mirocha, B. Kosovic, C. Draxl, R. Rai, R. Kotamarthi, 2017: The US DOE A2e Mesoscale to Microscale Coupling Project: Nonstationary Modeling Techniques and Assessment, European Geophysical Union, Vienna, Austria, April 26.
72. **Haupt, S.E.**, B. Kosovic, T. Jensen, J. Cowie, S. Linden, L. Delle Monache, S. Alessandrini, 2017: Big Data and Weather Forecasting: Applications for Forecasting Solar Power for Utilities, Joint AI and Energy, AMS Annual Meeting, Phoenix, AZ, 25 Jan.
73. **Jimenez**, P.A., B. Kosovic, S. E. Haupt, J. B. Olson, J. W. Bao, E. Grell, and J. Kenyon, 2017: A Three Dimensional PBL Parameterization to Improve Wind Simulations over Complex Terrain, AMS Annual Meeting, Phoenix, AZ, 25 Jan.
74. **Jensen, T.L.**, S. E. Haupt, B. Kosovic, B. Brown, J. Lazo, and T. L. Fowler, 2017: The Formal Assessment of a Collaborative Solar Forecasting Project, AMS Annual Meeting, Phoenix, AZ, 26 Jan.
75. **Mitchell**, M.J., B. Ancell, J. A. Lee, S. Haupt, and L. Delle Monache, 2017: Development of Statistical Post-Processing Techniques for Improved Low-Level Wind Speed Forecasts in West Texas, AMS Annual Meeting, Phoenix, AZ, 25 Jan.
76. **Clemente-Harding**, L., G. Cervone, L. Delle Monache, and S. E. Haupt, 2017: Examination of Spatial Relationships Using Machine Learning Techniques, AMS Annual Meeting, Phoenix, AZ, 23 Jan.
77. **Gagne II**, D.J., S. E. Haupt, A. McGovern, J. K. Williams, and S. Linden, 2017: The Performance Impacts of Machine Learning Design Choices for Gridded Solar Irradiance Forecasting, AMS Annual Meeting, Phoenix, AZ, 26 Jan.

78. **Gagne II, D.J.**, A. McGovern, R. A. Sobash, S. E. Haupt, and J. K. Williams, 2017: Evaluation of Real-Time Machine Learning Hail Forecasts from the NCAR Convection-Allowing Ensemble, AMS Annual Meeting, Phoenix, AZ, 25 Jan.
79. **Lazo, J.K.**, K. Parks, S. E. Haupt, and T. L. Jensen, 2017: Economic Value of Research to Improve Solar Power Forecasting, AMS Annual Meeting, Phoenix, AZ, 26 Jan.
80. **Haupt, S.E.**, W.J. Shaw, B. Kosovic, J. Cline, M. Churchfield, J. Mirocha, C. Draxl, R. Rai, R. Kotamarthi, L. Berg, 2016: The DOE A2e Mesoscale to Microscale Coupling Project, A2e Meeting, Boulder, CO, Sept. 19, 2016.
81. **Haupt, S.E.**, B. Kosovic, T. Jensen, J. Cowie, P. Jimenez, G. Wiener, S. Linden, T. McCandless, S. Miller, M. Rogers, 2016: Short Term Forecasting of Solar: The Sun4Cast System, UVIG Forecasting Workshop, Denver, CO, Sept. 28. **Invited**
82. **Haupt, S.E.**, B. Kosovic, T. Jensen, J. Cowie, P. Jimenez, G. Wiener, J. Lee, S. Linden, S. Alessandrini, J. Lazo, 2016: The Sun4Cast System: System Overview, UVIG Forecasting Workshop Preconference Workshop, Denver, CO, Sept. 7. **Invited**
83. **Haupt, S.E.**, B. Kosovic, T. Jensen, J. Cowie, P. Jimenez, G. Wiener, S. Linden, 2016: Improvements in Solar Power Forecasting: The SolarCast System, American Solar Energy Society Meeting, San Francisco, CA, July 12.
84. **Haupt, S.E.**, S. Dettling, J. Williams, J. Pearson, T. Jensen, B. Kosovic, T. Brummet, G. Wiener, T. McCandless, 2016: Impact of Distributed PV on Demand Load Forecasts, American Solar Energy Society Meeting, San Francisco, CA, July 12.
85. **Haupt, S.E.**, W. Shaw, B. Kosovic, 2016: The DOE A2e Mesoscale to Microscale Coupling Project, AMS Symposium on Boundary Layers and Turbulence, Salt Lake City, UT, June 20.
86. **Haupt, S.E.**, 2016: Meteorology Models Enabling Wind Energy, Wyoming Renewable Energy Summit, Laramie, WY, June 13. **Invited Keynote**
87. **Haupt, S.E.**, 2016: Solar Power Forecasting: Methods, Challenges, and Performance. Singapore Energy Innovation Summit. June 3. **Invited**
88. Haupt, S.E., **B. Kosovic**, S. Dettling, J. Williams, J. Pearson, T. Jensen, T. Brummet, G. Wiener, T. McCandless, 2016: Impact of Distributed PV on Demand Load Forecasts, IEEE Photovoltaic Specialists Conference, Portland, OR, June 14.
89. Haupt, S.E., **B. Kosovic**, T. Jensen, J. Cowie, P. Jimenez, G. Wiener, J. Lazo, 2016: Comparing and Integrating Solar Power Forecasts IEEE Photovoltaic Specialists Conference, Portland, OR, June 14.
90. **Haupt, S.E.**, 2016: Scientific Advances in Solar Power Forecasting, Utility Solar Conference of the Solar Electric Power Association, April 14. (**invited** panel presentation)
91. **Haupt, S.E.**, 2016: Comparison of Solar Power Forecasting Techniques, Joint Session between 14th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences and Seventh Conference on Weather, Climate, Water, and the New Energy Economy, AMS Annual Meeting, New Orleans, LA, Jan. 12.
92. **Haupt, S.E.**, 2016: Integrating and Operationalizing Renewable Energy Forecasts: It Takes a Community, Seventh Conference on Weather, Climate, Water, and the New Energy Economy, AMS Annual Meeting, New Orleans, LA, Jan. 11. **Invited** Panel Presentation
93. McCandless, T.C., **S.E. Haupt**, and G.S. Young, 2016: A Regime-Dependent Neural Network Approach to Short-Range Solar Irradiance Prediction Using Surface Observations and Satellite Data, Joint Session between 14th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences and Seventh Conference on Weather, Climate, Water, and the New Energy Economy, AMS Annual Meeting, New Orleans, LA, Jan. 12.
94. **Jimenez, P.**, S. Alessandrini, S.E. Haupt, and A. Deng, 2016: Accounting for the Effects of Unresolved Clouds in the Shortwave Irradiance Forecast of the WRF-Solar Model to Improve Solar

- Power Forecasts, Seventh Conference on Weather, Climate, Water, and the New Energy Economy, AMS Annual Meeting, New Orleans, LA, Jan. 11.
95. **Gagne II, D.J.**, A. McGovern, N. Snook, R.A. Sobash, J.K. Williams, S.E. Haupt, and M. Xue, 2016: Severe Hail Forecasting Evaluation: Machine Learning and Severe Weather Proxy Variables, 14th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences, AMS Annual Meeting, New Orleans, LA, Jan. 12.
 96. **Pelliccioni, A.** and S.E. Haupt, 2016: Optimization of Input Data for a Neural Network with a Mathematical Argument Diagram: A Case Study of Ozone Prediction, 14th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences, AMS Annual Meeting, New Orleans, LA, Jan. 13.
 97. Sperati, S., S. Alessandrini, **L. Delle Monache**, G. Cervone, L. Harding, and S.E. Haupt, 2016: Gridded Probabilistic Forecasts of Weather Parameters with an Analog Ensemble, 23rd Conference on Probability and Statistics in the Atmospheric Sciences, AMS Annual Meeting, New Orleans, LA, Jan. 12.
 98. **Jensen, T.L.**, B.G. Brown, S.E. Haupt, B. Kosovic, and J.K. Lazo, 2016: User-Centric Metrics for Evaluating Solar Forecasts, 23rd Conference on Probability and Statistics in the Atmospheric Sciences, AMS Annual Meeting, New Orleans, LA, Jan. 13.
 99. **Gagne, D.J.**, S.E. Haupt, S. Linden, and G. Wiener, 2016: An Evaluation of Statistical Learning Methods for Gridded Solar Irradiance Forecasting, Joint Session between 14th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences and Seventh Conference on Weather, Climate, Water, and the New Energy Economy, AMS Annual Meeting, New Orleans, LA, Jan. 12.
 100. **Lee, J.A.**, S.E. Haupt, P.A. Jimenez, T.C. McCandless, M.A. Rogers, S.D. Miller, and X. Zhong, 2016: Nowcasting Case Studies with SunCast, Seventh Conference on Weather, Climate, Water, and the New Energy Economy, AMS Annual Meeting, New Orleans, LA, Jan. 11.
 101. **Haupt, S.E.** and B. Kosovic, 2015: Big Data and Machine Learning for Applied Weather Forecasts: Forecasting Solar Power for Utility Operations, IEEE Symposium Series on Computational Intelligence, Capetown, South Africa, December 9.
 102. **Haupt, S.E.**, W. Shaw, and B. Kosovic, 2015: Meso- to Microscale Coupling Project, WindTech Workshop, London, Ontario, Canada, October 19.
 103. **Haupt, S.E.**, 2015: The SunCast Solar Power Forecasting Decision Support System, American Solar Energy Society Conference, State College, PA, July 28.
 104. **Haupt, S.E.**, J. Pearson, S. Dettling, J.K. Williams, T. Brummet, B. Kosovic, G. Wiener, and T.C. McCandless, 2015: Integrating Distributed PV Forecasts with Load Forecasts, American Solar Energy Society Conference, State College, PA, July 28.
 105. **Haupt, S.E.**, S. Drobot, T. Jensen, 2015: The SunCast Solar Power Forecasting System. International Conference on Energy and Meteorology, Boulder, CO, June 23.
 106. **Delle Monache, L.**, S. Alessandrini, G. Cervone, C. Junk, D. Rife, J. Ma, S. Sperati, S.E. Haupt, T. Brummet, P. Prestopnik, G. Wiener, J. Nielsen, S. Hawkins, 2015: The Analog Ensemble for Renewable Energy Applications: An Overview. International Conference on Energy and Meteorology, Boulder, CO, June 25
 107. **Gagne, D.J.**, S.E. Haupt, S. Linden, G. Wiener, 2015: A Community Gridded Atmospheric Forecast System for Calibrated Solar Irradiance. International Conference on Energy and Meteorology, Boulder, CO, June 24.
 108. **Jensen, T.L.**, S.E. Haupt, S. Drobot, B. Brown, T. Fowler, J. Lazo, 2015: A Comparison of Metrics for Evaluating Solar Forecasts. International Conference on Energy and Meteorology, Boulder, CO, June 23.

109. **Jimenez, P.A.**, S.E. Haupt, J.P. Hacker, J. Dudhia, 2015: WRF-Solar: An Augmented NWP Model for Solar Power Prediction. International Conference on Energy and Meteorology, Boulder, CO, June 24.
110. **McCandless, T.C.**, Haupt, S.E., Young, G.S., 2015: A Bayesian Approach to Statistical Short-Term Solar Irradiance Forecasting. International Conference on Energy and Meteorology, Boulder, CO, June 23.
111. **Alessandrini, S.**, L. Delle Monach, S. Haupt, B. Kosovic, 2015: A Probabilistic Load Forecast System based on the Analog Ensemble Method, International Conference on Energy and Meteorology, Boulder, CO, June 24.
112. **Kosovic, B.**, S.E. Haupt, G. Wiener, L. Delle Monache, Y. Liu, M. Politovich, J. Sun, J. Williams, D. Adriaansen, S. Alessandrini, S. Dettling, S. Linden, 2015: Comprehensive Forecasting System for Variable Renewable Energy, International Conference on Energy and Meteorology, Boulder, CO, June 24.
113. **Liu, Y.**, W.Y.Y. Cheng, G. Roux, Y. Liu, T. Hopson, L. Delle Monache, B. Kosovic, S. E. Haupt, D. Bartlett, S. Feng, C. Liu, W. Wang, 2015: Data Assimilation, Ensemble NWP, and Post-processing Technologies for Wind Energy Prediction, International Conference on Energy and Meteorology, Boulder, CO, June 25.
114. **Vaucher, G.**, S.E. Haupt, D. Sauter, 2015: A Review of Atmospheric Forecasting Tools being Developed for Renewable Energy, 83rd Military Operations Research Society Symposium [MORSS] in Alexandria, VA, Jun 22-25.
115. **Haupt, S.E.**, B. Kosovic, G. Wiener, 2015: NCAR's Recent Advances in Wind Power Forecasting, Meeting of the North American Wind Energy Association, Blacksburg, VA, June 11.
116. **Kosovic, B.**, S.E. Haupt, G. Wiener, L. Delle Monache, Y. Liu, S. Linden, M. Politovich, and J. Sun, 2015: Scientific Advances in Wind Power Forecasting, American Wind Energy Association, Orlando, FL, May 21.
117. **Haupt, S.E.**, 2015: Renewable Energy Needs, Rapid Update Analysis/Nowcasting Workshop, NOAA ESRL, Boulder, CO, June, 4.
118. **Haupt, S.E.**, 2015: NCAR's Solar Power Forecasting Research, California Utility Forecasting Meeting, Folsom, CA, April 29 (invited).
119. **Haupt, S.E.**, 2015: Counting on Solar Production: Advances in Forecasting, Utility Solar Conference of the Solar Electric Power Association, San Diego, CA, April 28 (invited).
120. **Haupt, S.E.**, 2015: New A2e Initiatives: Meso to Micro Coupling, Meeting of the Merit Review Panel of the DOE A2e Initiative, Washington, D.C., March 31.
121. **Haupt, S.E.**, 2015: Solar Power Forecasting: SunCast and GRAFS, Utility Variable Generation Integration Group Forecasting Workshop, Lakewood, CO, Feb. 19, 2015.
122. **Haupt, S.E.**, 2015: The Suncast Solar Power Forecasting System, Joint Session between Sixth Conference on Weather, Climate, and the New Energy Economy and 13th Conference on Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
123. **Jimenez, P.A.**, S.E. Haupt, J. Hacker, and J. Dudhia, 2015: WRF-Solar to Advance Solar Power Forecasting, Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 6.
124. **Pearson, J.M.**, S.E. Haupt, D.J. Gagne, T.L. Jensen, T.C. McCandless, T. Brummet, and S. Dettling, 2015: Predicting Distributed Solar Power Production for Utilities, Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 6.
125. **Lee, J.A.**, S.E. Haupt, P. Jimenez-Munoz, T.C. McCandless, M.A. Rogers, and S.D. Miller, 2015: Comparison of Solar Energy Nowcasting Techniques, Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 6.

126. Pelliccioni, A., A. Cristofari, and **S.E. Haupt**, 2015: Calculation of PAH Maps using SVM in Urban Areas, 13th Conference on Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
127. **Jensen, T.L.**, A.R.S. Anderson, B.G. Brown, S.E. Haupt, and T. Fowler, 2015: Solar Metrics – The Relationship Between Forecast System Component Behavior and the Overall Score, Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 6.
128. **Alessandrini, S.**, L. Delle Monache, T. Brummet, S.E. Haupt, and G. Wiener, 2015: An Application of an Analog Ensemble for Short-Term Solar Power Forecasting, Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 6.
129. **Rogers, M.A.**, S.D. Miller, J.M. Haynes, A. Heidinger, S.E. Haupt, and M. Sengupta, 2015: Improvements in Satellite-Derived Short-Term Insolation Forecasting: Statistical Comparisons, Challenges for Advection-Based Forecasts, and New Techniques, Sixth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Phoenix, AZ, Jan. 6.
130. **Williams, J.K.**, G. Wiener, S.E. Haupt, T. Brummet, S. Dettling, and J.M. Pearson, 2015: An AI Approach to Forecasting Net Loads and Distributed Solar Production for Utilities, Joint Session between Sixth Conference on Weather, Climate, and the New Energy Economy and 13th Conference on Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
131. Wiener, G., **S.E. Haupt**, B. Myers, and E. Wiener, and, 2015: Quality Controlling Wind Power Data for Data Mining Applications, Joint Session between Sixth Conference on Weather, Climate, and the New Energy Economy and 13th Conference on Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
132. **McCandless, T.C.**, S.E. Haupt, G.S. Young, and A.J. Annunzio, 2015: A Regime-Dependent Bayesian Approach to Short-Term Solar Irradiance Forecasts, Joint Session between Sixth Conference on Weather, Climate, and the New Energy Economy and 13th Conference on Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan. 7.
133. **Gagne, D.J.**, S.E. Haupt, S. Linden, J.K. Williams, A. McGovern, G. Wiener, J.A. Lee, and T.C. McCandless, 2015: Scaling Machine Learning Models to Produce High Resolution Gridded Solar Power Forecasts, 13th Conference on Artificial Intelligence, AMS Annual Meeting, Phoenix, AZ, Jan.7.
134. Haupt, S.E., **B. Kosovic**, and S. Drobot, 2014: Advances in Solar Power Forecasting, Fall Meeting of the American Geophysical Union, San Francisco, CA, Dec. 15.
135. **Rogers, M.**, S. Miller, J. Haynes, A. Heidinger, S.E. Haupt, M. Sengupta, 2014: Improvements in Satellite-Derived Short-Term Insolation Forecasting: Statistical Comparisons, Challenges for Advection-Based Forecasts, and New Techniques. Oral presentation GC42B-06, Renewable Energy II Session, Annual Fall Meeting of the American Geophysical Union, 18 December, 2014, San Francisco, CA.
136. **Haupt, S.E.** and S. Drobot, 2014: New Irradiance Models for Solar Energy, Solar 2014 sponsored by the American Solar Energy Society, San Francisco, CA, July 7. (full paper).
137. **Williams, J.K.**, J. Pearson, S.E. Haupt, and T.C. McCandless, 2014: Distributed Solar and Net Load Forecasts for Utilities, Solar 2014 sponsored by the American Solar Energy Society, San Francisco, CA, July 8. (full paper).
138. **Jayaraman, B.**, J. Brasseur, T.C. McCandless, and S.E. Haupt, 2014: Nonequilibrium behavior of the daytime atmospheric boundary layer from LES. In Bulletin of the American Physical Society, 67th Annual Meeting of the APS Division of Fluid Dynamics, Vol. 59, Nov 2014. (full reviewed paper)
139. **Haupt, S.E. and S. Drobot**, 2014: A Public-Private-Academic Partnership to Advance Solar Power Forecasting, Sunshot Summit, Anaheim, CA, May 20. **Invited** Poster Presentation and Review.

140. **Haupt, S.E.**, 2014: Understanding Ensemble Forecasting, Windpower 2014, meeting of the American Wind Energy Association, Las Vegas, NV, May 6. **Invited** Panel Presentation.
141. **Haupt, S.E.**, 2014: Renewable Energy, UCAR Research and Partnership Meeting, Boulder, CO, April 22.
142. **Delle Monache, L.**, S. Alessandrini, S. Haupt, S. Sperati, F. Davo, and J. Niessen, 2014: On the Value of Uncertainty Quantification and Probabilistic Wind Power Predictions, EWEA, poster presentation, Barcelona, Spain, 13 March.
143. **Haupt, S.E.**, 2014: NCAR-led Sunshot Solar Forecasting Project, Utility Variable Generation Forecasting Workshop, Tuscon, AZ, Feb. 26. **Invited** Panel Presentation.
144. **Haupt, S.E.**, 2014: Winter Wind Energy Research at NCAR, Winterwind Conference, Sundsvall, Sweden, Feb. 11. **Invited Keynote Talk**.
145. **Haupt, S.E.**, 2014: Advances in Predicting Solar Power for Utilities, Fifth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Atlanta, GA, Feb. 6.
146. Cervone, G., J. Lin, T. C. McCandless, and **S. Haupt**, 2014: Development of Clear sky models for solar energy using Machine Learning, Joint Session between the 12th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences and the Fifth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Atlanta, GA, Feb. 5.
147. **Sun, J.**, Y. Zhang, G. Wiener, and S. Haupt, 2014: A rapid-update wind analysis and nowcasting system based on mesoscale model, radar, and surface data, Fifth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Atlanta, GA, Feb. 3.
148. **McCandless, T.C.**, S. E. Haupt and G. S. Young, 2014: Short Term Solar Radiation Forecasts Using Weather Regime Dependent Artificial Intelligence Techniques, Joint Session between the 12th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences and the Fifth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Atlanta, GA, Feb. 5.
149. **Sun, J.**, Y. Zhang, G. Wiener, and S. Haupt, 2014: High Density Weather Observing Networks Utilized in Wind/Solar Electric Generation, Fifth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Atlanta, GA, Feb. 3.
150. **Williams, J.K.**, G. Wiener, W. Myers, S. E. Haupt, T. Brummet, S. Dettling, S. Linden, and J. M. Pearson, 2014: Using AI to integrate weather into electrical and natural gas load forecasts, Joint Session between the 12th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences and the Fifth Conference on Weather, Climate, and the New Energy Economy, AMS Annual Meeting, Atlanta, GA, Feb. 5.
151. **Haupt, S.E.**, 2014: Using Artificial Intelligence to Inform Physical/Dynamical Models, 12th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences, Invited Panel Presentation, Feb. 3. **Invited** Panel Presentation.
152. **Rogers, M.**, S. Miller, J. Haynes, A. Heidinger, S. Benjamin, M. Sengupta, S.E. Haupt, and T. Auligne, 2013: Results From a Satellite-Derived Short-Term Insolation Forecast Technique: Comparison Against Surface Observations, NWP Predictions, and Challenges. Proceedings, 2013 Fall Meeting of the Amer. Geophy. Union, San Francisco, CA. 9-13 December.
153. **Brockway, A.**, V. Banunarayanan, M. Marquis, S.E. Haupt, B. Brown, T. Fowler, T. Jensen, H. Hamann, S., B. Mathias Hodge, J. Zhang, A. Florita, 2013: Creating a Standard Set of Metrics to Assess Accuracy of Solar Forecasts: Preliminary Results, poster presented at American Geophysical Union Fall Meeting. San Francisco, CA. 9-13 December.
154. **Haupt, S.E.**, 2013: A Public-Private-Academic Partnership to Advance Solar Power Forecasting, International Conference on Energy and Meteorology, Toulouse, France, June 25.

155. **Haupt, S.E.**, J. Copeland, Y. Zhang, W. Cheng, C. Amman, P. Sullivan, 2013: Quantifying Wind and Solar Resources and their Interannual Variability Under Current and Projected Future Climate Conditions, International Conference on Energy and Meteorology, Toulouse, France, June 28.
156. Delle Monache, L., and **S.E. Haupt**, 2013: Power Predictions and Wind Resource Assessment with an Analog Ensemble, International Conference on Energy and Meteorology, Toulouse, France, June 28.
157. **Haupt, S.E.**, 2013: Using Models for Resource Assessment and Forecasting Renewable Energy, 23rd Annual Conference of The Environmetrics International Society, Anchorage, AK, June 10, 2013. (**Invited** panel presentation)
158. **Haupt, S.E.**, 2013: A Systems Approach to Wind Power Forecasting, International Energy Association Workshop on Modeling Techniques, Milan, Italy, April 23, 2013. (**Invited** presentation)
159. **Haupt, S.E.**, 2013: A Public-Private-Academic Partnership to Advance Solar Power Forecasting, American Solar Energy Society Meeting, Baltimore, MD, April 18.
160. **Haupt, S.E.**, 2013: A Public-Private-Academic Partnership to Advance Solar Power Forecasting, Utility Variable Generation Integration Group Workshop on Variable Generation Forecasting Application, Salt Lake City, UT, Feb. 27. (**Invited** panel presentation)
161. **Haupt, S.E.**, 2013: A Public-Private-Academic Partnership to Advance Solar Power Forecasting, AMS Solar Metrics Workshop, AMS Annual Meeting, Austin, TX., Jan. 9.
162. **Haupt, S.E.**, A.A. Annunzio, and K.J. Schmehl, 2013: Recovering an Event Realization with a Genetic Algorithm, Eleventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences, AMS Annual Meeting, Austin, TX., Jan. 8.
163. Copeland, J., Yongxin Zhang, W. Cheng, C. Amman, **S.E. Haupt**, and P. Sullivan, 2013: Climate Scenarios of Wind and Solar Resources in the 2040-2070 Period for Use by the NREL ReEDS Model, AMS Annual Meeting, Austin, TX., Jan. 8.
164. **Bieringer**, P., A. Annunzio, L. M. Rodriguez, B. Kosovic, F. Vandenberghe, G. Young, and S. E. Haupt, 2013: The Challenges and Methods for Source Term Estimation of the Airborne Radiation Release from the Fukushima Dai-ichi Nuclear Power Plant, Special Symposium on the Transport and Diffusion of Contaminants from the Fukushima Dai-ichi Nuclear Power Plant: Present Status and Future Directions, AMS Annual Meeting, Austin, TX., Jan. 6.
165. **Jared A. Lee**, NCAR, Boulder, CO; and S. E. Haupt and G. S. Young, 2013: Investigating Seasonal Impacts on Clustering and Ensemble Down-selection, 11th Conference on Artificial and Computational Intelligence and its Applications to the Environmental Sciences, AMS Annual Meeting, Austin, TX., Jan. 9.
166. **Haupt, S.E.**, 2012: Data Assimilation for Applied Meteorology, AGU Fall Meeting, San Francisco, CA, Dec. 3. **Invited Presentation.**
167. **Haupt, S.E.** and J. Sun, 2012: Variational Doppler Radar Analysis System and Short-term Ramp Forecasting, UWIG Fall Technical Meeting, Omaha, NB, Oct. 25, 2012.
168. **Nissen, J.**, L. Delle Monache, and S.E. Haupt, 2012: Analog Ensemble Based Power Forecasting, presented at ES1002 Workshop on Weather Intelligence for Renewable Energy, Denmark, May 23, 2012.
169. **Haupt, S.E.**, 2012: NCAR's Wind Power Forecasting System, World Renewable Energy Forum, Denver, CO, May 17 (**invited** panel presentation).
170. Delle Monache, L., **E. Vanvyve**, F.A. Eckel, J. Nissen, S.E. Haupt, D. Rife, B. Nagarajan, and K. Searight, 2012: Probabilistic Power Predictions Based on the Analog Ensemble, World Renewable Energy Forum, Denver, CO, May 17.
171. **Myers, B.**, S. Linden, G. Wiener, and S.E. Haupt, 2012: A Consensus Wind Forecasting System, World Renewable Energy Forum, Denver, CO, May 17.

172. **Wiener, G.**, S.E. Haupt, B. Myers, S. Linden, J. Pearson, and L. Imbler, 2012: Techniques for Improving Wind to Power Conversion, World Renewable Energy Forum, Denver, CO, May 17 (conference paper included).
173. **Haupt, S.E.**, 2012: Renewable Energy Resource Assessment Databases, World Renewable Energy Forum, Denver, CO, May 16 (invited panel presentation).
174. **Haupt, S.E.**, 2012: Understanding Meteorological Variability and How it Affects Renewable Energy: An Example of How Science Can Inform Policy, AGU Policy Forum, Washington, D.C., May 2 (invited panel presentation).
175. **Haupt, S.E.**, 2012: Estimating Uncertainty in Wind Power Forecasts, Workshop on Variable Generation Forecasting Applications to Utility Planning and Operations, Tuscon, AZ, Feb. 8, (invited panel presentation)
176. **Haupt, S.E.** and J.G. Brasseur, 2012: Wind Energy Research and the Cyber Wind Facility Program at NCAR and Penn State, Symposium on Wind Farms' Underperformance and Partnerships: Building Partnerships to Meet the 2030 Grand Challenge, Lubbock, TX, March 28.
177. **Haupt, S.E.**, A. Annunzio, and K. Schmehl, 2012: A Genetic Algorithm Variational Approach to Dynamic Assimilation, 10th Conference on Artificial Intelligence Applications to Environmental Science, held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA, Jan. 24.
178. **Haupt, S.E.**, G. Wiener, W.P. Mahoney, and J. Pearson, 2012: The Need for Wind Power Forecasting and Review of Current Methods, 10th Conference on Artificial Intelligence Applications to Environmental Science, held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA, Jan. 24.
179. **Pearson, J.**, S.E. Haupt, G. Wiener, B. Lambi, J.K. Williams, and S. Linden, 2012: The AMS Wind Power Forecasting Contest, 10th Conference on Artificial Intelligence Applications to Environmental Science, held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA, Jan. 24.
180. Lee, J.A., **S.E. Haupt**, G.S. Young, W.C. Kolczynski, and T.C. McCandless, 2012: Evaluating Methods for Down-selecting NWP Multiphysics Ensembles for Wind Prediction, 10th Conference on Artificial Intelligence Applications to Environmental Science, held in conjunction with the 92nd AMS Annual Meeting, New Orleans, Jan. 24.
181. **D. Johnson**, W.P. Mahoney, S.E. Haupt, G. Wiener, B. Myers, Y. Liu, W. Cheng, J. Pearson, T. Hopson, L. Delle Monache, and J. Sun, 2012: New Enhancements to NCAR's Advanced Wind Forecasting System for Integrating Wind Resources into the New Energy Economy, Third Conference on Weather, Climate, and the New Energy Economy held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA.
182. F. McDonough, L. Imbler, G. Weiner, and **S.E. Haupt**, 2012: Identification and Prediction of Icing Conditions which Impact Wind Turbine Power Production, Third Conference on Weather, Climate, and the New Energy Economy held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA. (poster presentation)
183. **T. Hopson**, L. Delle Monache, L., Y. Liu, G. Roux, W. Wu, W. Cheng, J.C. Kneivel, and S.E. Haupt, 2012: Comparing and Contrasting Post-Processing Approaches to Calibrating Ensemble Wind and Temperature Forecasts, 21st Conference on Probability and Statistics in the Atmospheric Sciences, held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA, Jan. 25.
184. **Linden, S.**, S.E. Haupt, and B. Myers, 2012: Observation-Based Wind Power Ramp Forecast System, held in conjunction with the 92nd AMS Annual Meeting, New Orleans, LA (Conference paper included).
185. **Lee, J.A.**, S.E. Haupt, G.S. Young, W.C. Kolczynski, and T.C. McCandless, 2011: Statistical post-processing methods for down-selecting numerical weather prediction multiphysics ensembles for wind forecasting. 2011 AGU Fall Meeting, San Francisco, CA, 5 Dec 2011.

186. Kolczynski, W.C., **D.R. Stauffer**, R.I. Sykes, R. Long, S.E. Haupt, and A. Deng, 2011: Impact of Linear Variance Calibration on HPAC/SCIPUFF Predictions, DTRA Chem-Bio Defense Science and Technology Conference, Las Vegas, NV, Nov. 14-18. poster presentation.
187. **Haupt, S.E.**, L. Delle Monache, T. Hopson, Y. Liu, B. Myers, G. Weiner, W.P. Mahoney, 2011: Quantifying Uncertainty in Wind Power Forecasts, 1st International Conference on Energy and Meteorology, Gold Coast, Australia, Nov. 9, 2011. **Best Oral Presentation Award.**
188. **Haupt, S.E.** 2011: Understanding Meteorological Variability and How it Affects Grid Integration, Optimizing Wind Power Performance, Chicago, IL, Sept. 28, 2011. **Invited Talk.**
189. **Haupt, S.E.**, G. Wiener, Y. Liu, B. Myers, J. Sun, D. Johnson, and W. Mahoney, 2011: A Wind Power Forecasting System to Optimize Power Integration, ASME 5th International Conference on Energy Sustainability, Washington, DC, Aug. 7-10. (fully reviewed paper)
190. **Stewart, S.W.**, S.E. Haupt, and J.A. Cole, 2011: Addressing Wind Resource Potential in the Built Environment, ASME 5th International Conference on Energy Sustainability, Washington, DC, Aug. 7-10. (fully reviewed paper)
191. **Haupt, S.E.**, G. Wiener, J. Sun, S. Linden, B. Myers, Y. Liu, W. Mahoney, and D. Johnson, 2011: Forecasting Wind Power Ramps, 13th International Conference on Wind Engineering, Amsterdam, Netherlands, July 13, 2011. (fully reviewed paper)
192. **Rodriguez, L.M.**, S.E. Haupt, G.S. Young, and A.J. Annunzio, 2011: Genetic Algorithm Variational (GA-Var) Technique with Limited Information, George Mason University Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 11, 2011.
193. **Annunzio, A.**, P. Bieringer, S.E. Haupt, L.M. Rodriguez, and G.S. Young, 2011: A Multi-Entity Field Approximation for Hazard Origin Estimation, 15th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 12-14.
194. Kolczynski, W., **D.R. Stauffer**, S.E. Haupt, R.I. Sykes, R. Long, and A. Deng, 2011: Impact of Linear Variance Calibration on HPAC/SCIPUFF Predictions, 15th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 12-14.
195. **Myers, W.**, G. Wiener, S. Linden, and S.E. Haupt, 2012: A Consensus Forecasting Approach for Improved Turbine Hub Height Wind Speed Predictions, Proceedings of WindPower 2011, Anaheim, CA, May 24, 2011.
196. **Haupt, S.E.** and W.P. Mahoney, 2011: Offshore Wind Resource Characterization, Offshore Wind Power Summit, Washington, D.C., 4/29/2011. **Invited Talk.**
197. **Haupt, S.E.**, 2011: A Wind Power Forecasting System to Optimize Power Integration, COST ES1002 Weather Intelligence for Renewable Energies State-of-the-Art Workshop, 22-23 March, Nice, France, **Keynote Presentation.**
198. **Haupt, S.E.**, A.J. Annunzio, and K.J. Schmehl, 2011: Using a Genetic Algorithm to Assimilate Transport and Dispersion Variables, Joint Session between Ninth Conference on Artificial Intelligence and its Applications to the Environmental Sciences and Special Symposium on Applications of Air Pollution Meteorology, Seattle, WA, Jan. 23-27.
199. **Haupt, S.E.**, F.J. Zajackowski, and K.J. Schmehl, 2011: Downscaling by Assimilating NWP fields into a CFD Model, Joint Session with 15th Symposium on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans and Land Surface (IOAS-AOLS) and 24th Conference on Weather and Forecasting/20th Conference on Numerical Weather Prediction, Seattle, WA, Jan. 23-27.
200. **Haupt, S.E.**, S.W. Stewart, J.A. Cole, F.J. Zajackowski, and K.J. Schmehl, 2011: Simulating Wind Power Density around Buildings for Siting Building Integrated Wind Turbines, Second Conference on Weather, Climate, and the New Energy Economy, Seattle, WA, Jan. 23-27. poster presentation.

201. **Schmehl, K.J.**, S.E. Haupt, and D. Truesdell, 2011: Source Term Estimation of a Volcanic Ash Cloud using a Genetic Algorithm, Joint Session between 9th Conference on Artificial Intelligence and its Applications to the Environmental Sciences and Special Symposium on Applications of Air Pollution Meteorology, Seattle, WA, Jan. 23-27.
202. **Schmehl, K.J.**, S.E. Haupt, B. Reen, A. Annunzio, 2011: Impact of Uncertainty in Planetary Boundary Layer Depth on Concentration Predictions, Joint Session between Ninth Conference on Artificial Intelligence and its Applications to the Environmental Sciences and Special Symposium on Applications of Air Pollution Meteorology, Seattle, WA, Jan. 23-27.
203. **Annunzio, A.J.**, S.E. Haupt, G.S. Young, and L.M Rodriguez, 2011: Multi-Entity Field Approximation for Hazard Origin Estimation, Joint Session between Ninth Conference on Artificial Intelligence and its Applications to the Environmental Sciences and Special Symposium on Applications of Air Pollution Meteorology, Seattle, WA, Jan. 23-27. **Honorable Mention in Paper Contest.**
204. **Rodriguez, L.M.**, S.E. Haupt, G.S. Young, A.J. Annunzio, and K.J. Schmehl, 2011: Source Term Estimation Uncertainty Analysis using a Genetic Algorithm Coupled with Dispersion Models, Joint Session between Ninth Conference on Artificial Intelligence and its Applications to the Environmental Sciences and Special Symposium on Applications of Air Pollution Meteorology, Seattle, WA, Jan. 23-27. **Honorable Mention in Paper Contest.**
205. **Kolczynski, W.C.**, D. R. Stauffer, S.E. Haupt, R.I. Sykes, R. Long, and A. Deng, 2011: Impact of Linear Variance Calibration on Ensemble Wind Variance in Atmospheric Transport and Dispersion Forecasts, NWP, Seattle, WA, Jan. 23-27.
206. **Lee, J.A.**, W.C. Kolczynski, T.C. McCandless, S.E. Haupt, D.R. Stauffer, A. Deng, and K.J. Schmehl, 2011: Down-Selection of NWP Ensemble Configurations, 24th Conference on Weather and Forecasting/20th Conference on Numerical Weather Prediction, Seattle, WA, Jan. 23-27.
207. **Abernathy, J.**, S.E. Haupt, A. Pelliccioni, and J.K. Williams, 2011: The 4th Annual AMS Artificial Intelligence Forecasting Contest, Ninth Conference on Artificial Intelligence and its Applications to the Environmental Sciences, Seattle, WA, Jan. 23-27.
208. **Haupt, S.E.**, F.J. Zajackzowsk, and K.J. Schmehl, 2010: Modeling Fluctuating Winds by Blending Mesoscale Model Data with Computational Fluid Dynamics, AGU Meeting, Special Session on Wind Energy Meteorology, San Francisco, CA, Dec. 16. **Invited Talk.**
209. Haupt, S.E., **A.J. Annunzio**, K.J. Schmehl, L.M. Rodriguez, and G.S. Young, 2010: Evolving Chem-Bio Dispersion Predictions Using a Genetic Algorithm, DTRA Chem-Bio Defense Science and Technology Conference, Orlando, FL, Nov. 15-19. poster presentation.
210. **Annunzio, A.J.**, S.E. Haupt, G.S. Young, L.M. Rodriguez, and K.J. Schmehl, 2010: Multi-Entity Field Approximation for Hazard Origin Estimation, DTRA Chem-Bio Defense Science and Technology Conference, Orlando, FL, Nov. 15-19. poster presentation.
211. **Rodriguez, L.M.**, A.J. Annunzio, K.J. Schmehl, S.E. Haupt, and G.S. Young, 2010: Reanalysis of FFT07 Phase I: Genetic Algorithm Coupled with Dispersion Models, DTRA Chem-Bio Defense Science and Technology Conference, Orlando, FL, Nov. 15-19. poster presentation.
212. **Lee, J.A.**, W.C. Kolczynski, T.C. McCandless, S.E. Haupt, D.R. Stauffer, A. Deng, and K.J. Schmehl, 2010: Down-selecting NWP Ensemble Configurations for AT&D Applications, DTRA Chem-Bio Defense Science and Technology Conference, Orlando, FL, Nov. 15-19. poster presentation.
213. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, R.I. Sykes, R. Long, and A. Deng, 2010: Improvement of CBRN AT&D Uncertainty Forecasts by Including Accurate Wind Uncertainty Information, DTRA Chem-Bio Defense Science and Technology Conference, Orlando, FL, Nov. 15-19. poster presentation.

214. **Haupt, S.E.** and L. Buja, 2010: Climate Change and Renewable Energy: How Modeling and Statistics can Inform Decisions, Workshop on Environmetrics, Boulder, CO, Oct. 14-16. **Invited Talk.**
215. **Haupt, S.E.,** K.J. Schmehl, F.J. Zajackowski, and A.J. Annunzio, 2010: Observing and Modeling Dispersion Realization in a Time Varying Wind Field, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 15.
216. **Annunzio, A.J.,** S.E. Haupt, G.S. Young, and L.M. Rodriguez, 2010: Multi-Entity Field Approximation (MEFA) for Hazard Origin Estimation, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15.
217. **Lee, J.A.,** W.C. Kolczynski, T.C. McCandless, S.E. Haupt, D.R. Stauffer, and A. Deng, 2010: Down-Selection of NWP Ensemble Configurations for AT&D Applications, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15.
218. **McNeal, M.,** W. Chen, S. Aungst, and S.E. Haupt, 2010: Robust Networking Architectures and Secured Communication Schemes for Contaminant Sensors, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15. (poster presentation)
219. **Rodriguez, L.M.,** S.E. Haupt, G.S. Young, A.J. Annunzio, and K.J. Schmehl, 2010: Reanalysis of FFT07 Phase I using a Genetic Algorithm Coupled with Dispersion Models, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15.
220. **Schmehl, K.J.,** S.E. Haupt, and B. Reen, 2010: Planetary Boundary Layer Depth and its Impact on Dispersion, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15.
221. **Kolczynski, W.C.,** D.R. Stauffer, S.E. Haupt, and A. Deng, 2010: Year-Long Study of the Sensitivity of Linear Variance Calibration Parameters, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15.
222. **Cole, J.A.,** S.E. Haupt, and S.W. Stewart, 2010: CFD Investigation of Near Building Flows for Integrated Wind Applications, 14th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 13-15. (poster presentation)
223. **Haupt, S.E.,** 2010: Evolving Dispersion Realization using Observations and Ensemble Averaged Models,” Atmospheric Turbulence and Boundary Layers: A Symposium in Honor of John C. Wyngaard, Penn State University, PA, June 24-25, **Invited talk.**
224. **Haupt, S.E.,** F.J. Zajackowski, K.J. Long, and A.J. Annunzio, 2010: Assimilating NWP data into CFD Models for Wind Prediction, Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27. (fully reviewed paper)
225. **Haupt, S.E.,** K.J. Long, A.J. Annunzio, and L.M. Rodriguez, 2010: Predicting Realizations versus Averages: Applying Assimilation to Improve Dispersion Modeling for Security Analysis, Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27. (fully reviewed paper)
226. **Haupt, S.E.,** G.S. Young, and A.J. Annunzio, 2010: Inverting Surface Observations: Convective and Stable Boundary Layer Depth Estimation Methods, Fifth International Symposium on Computational Wind Engineering, Chapel Hill, NC, May 23-27. (fully reviewed paper)
227. **Haupt, S.E.,** J.C. Wyngaard, G.S. Young, and K.J. Long, 2010: Modeling the Stable Boundary Layer Depth and its Uncertainty for Dispersion, 16th Conference on Air Pollution Meteorology, January 18.
228. **Haupt, S.E.,** F.J. Zajackowski, and K.J. Long, 2010: Modeling the Atmospheric Boundary Layer for Wind Power, First Conference on Weather, Climate, and the New Energy Economy, January 19.

229. **Long, K.J.**, S.E. Haupt, M. Hendrickson, and J. Keay, 2010: Applying Photogrammetric Techniques to Study Smoke Plumes, 16th Conference on Air Pollution Meteorology, January 18.
230. **Long, K.J.**, D. Truesdell, S.E. Haupt, G.S. Young, 2010: Using a Genetic Algorithm to Estimate Source Term Parameters of Volcanic Ash Clouds, 8th Conference on Artificial Intelligence Applications to Environmental Science, January 20.
231. **Rodriguez, L.M.**, S.E. Haupt, G.S. Young, A.J. Annunzio, and K.J. Long, 2010: Source Term Characterization of FFT07 Data using a Genetic Algorithm, 16th Conference on Air Pollution Meteorology joint session with 8th Conference on Artificial Intelligence Applications to Environmental Science, January 19.
232. McCandless, T.C., **S.E. Haupt**, and G.S. Young, 2010: Improving Snowfall Accumulation Predictions by Post-Processing Ensemble Forecasts with an Artificial Neural Network, 8th Conference on Artificial Intelligence Applications to Environmental Science, January 19.
233. **Young, G.S.**, A.J. Annunzio, and S.E. Haupt, 2010: Inverting Surface Observations to Find Boundary Layer Depth, 16th Conference on Air Pollution Meteorology, January 18.
234. **Annunzio, A.J.**, S.E. Haupt, and G.S. Young, 2010: Determining Turbulence Scaling Variables and Source Characteristics from Contaminant Concentration Data, 16th Conference on Air Pollution Meteorology, poster presentation, January 20.
235. **Lee, J.A.**, S.E. Haupt, D.R. Stauffer, A. Deng, L.J. Peltier, and J. Wyngaard, 2010: Evaluating NWP Ensemble Configurations for AT&D Applications, 16th Conference on Air Pollution Meteorology, January 21. **Best Overall Presentation Award**
236. **Annunzio, A.J.**, S.E. Haupt, G.S. Young, and L.M. Rodriguez, 2010: Combined Methods from Entity and Field Frameworks to Determine the Source Characteristics of a Contaminant, 16th Conference on Air Pollution Meteorology joint session with 8th Conference on Artificial Intelligence Applications to Environmental Science, January 18.
237. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2010: Investigation of the Linear Variance Calibration using an Idealized Stochastic Ensemble, 20th Conference on Probability and Statistics in the Atmospheric Sciences, January 21.
238. **Kolczynski, W.C.** and S.E. Haupt, 2010: Statistical Turbulence Prediction, 8th Conference on Artificial Intelligence Applications to Environmental Science, January 20.
239. **Zajackowski, F.J.**, S.E. Haupt, and K.J. Long, 2010: Wind Turbine Siting by Using Mesoscale Model Data Assimilation and Computational Fluid Dynamics, 48th AIAA Aerospace Sciences Meeting, Orlando, FL, 4-7 Jan.
240. **Annunzio, A.J.**, S.E. Haupt, G.S. Young, and L.M. Rodriguez, 2009: Mixed Lagrangian/Eulerian Methods to Determine the Source Characteristics of a Contaminant, Chemical and Biological Defense Science and Technology Conference, Dallas, TX, Nov. 16-20, poster presentation.
241. **Rodriguez, L.M.**, S.E. Haupt, G.S. Young, A.J. Annunzio, and K.J. Long, 2009: Source Term Estimation of FFT07 Data using a Genetic Algorithm, Chemical and Biological Defense Science and Technology Conference, Dallas, TX, Nov. 16-20, poster presentation.
242. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2009: Sub-Regional and Gridded-Analysis versus Observation—Based Linear Variance Calibration for Predicting Wind Uncertainty for Atmospheric Transport and Dispersion, Chemical and Biological Defense Science and Technology Conference, Dallas, TX, Nov. 16-20, poster presentation.
243. **Haupt, S.E.**, S.E. Young, J.C. Wyngaard, K.J. Long, A.J. Annunzio, and L.M. Rodriguez, 2009: Dispersion Realizations versus Averages: Implications for Measurements, Theory, and Modeling, Chemical and Biological Defense Science and Technology Conference, Dallas, TX, Nov. 16-20, poster presentation.

244. **McNeal III, M.**, W. Chen, S. Aungst, and S.E. Haupt, 2009: Secured Communication Schemes and Robust Networking Architectures for Contaminant Sensors, Chemical and Biological Defense Science and Technology Conference, Dallas, TX, Nov. 16-20, poster presentation.
245. **Lee, J.A.**, S.E. Haupt, D.R. Stauffer, A. Deng, and L.J. Peltier, 2009: Training an NWP Ensemble for AT&D Applications, Chemical and Biological Defense Science and Technology Conference, Dallas, TX, Nov. 16-20, poster presentation.
246. **Haupt, S.E.**, J.C. Wyngaard, G.S. Young, K.J. Long, J.A. Lee, D.R. Stauffer, A. Deng, F.J. Zajackowski, 2009: Modeling the Stable Boundary Layer for Dispersion, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14.
247. Lee, J.A., **S.E. Haupt**, D.R. Stauffer, L.J. Peltier, A. Deng, B.J. Gaudet, and J.C. Wyngaard, 2009: Toward an NWP Ensemble Configuration for AT&D Applications, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14.
248. **Truesdell, D.**, K.J. Long, S.E. Haupt, and G.S. Young, 2009: Source Term Estimation of a Volcanic Eruption, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14-16, poster presentation.
249. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2009: Investigation of the Linear Variance Calibration for Atmospheric Transport and Dispersion Using an Idealized Ensemble, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14.
250. **McNeal III, M.**, W. Chen, S. Aungst, S.E. Haupt, 2009: Secured Communication Schemes and Robust Networking Architectures for Contaminant Sensors, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14-16, poster presentation.
251. **Long, K.J.**, S.E. Haupt, M. Hendrickson, J. Keay, D.O. Miller, M. Coslo, J.A. Lee, and L.M. Rodriguez, 2009: Smoke Plume Characterization using Photogrammetry Techniques, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 16.
252. **Annunzio, A.J.**, S.E. Haupt, G.S. Young, and L.M. Rodriguez, 2009: Entity Methods Applied to the FFT07 Data Set, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 16.
253. **Rodriguez, L.M.**, S.E. Haupt, G.S. Young, A.J. Annunzio, and K.J. Long, 2009: Source Term Estimation of FFT07 Trial Data using a Genetic Algorithm Coupled with a Dispersion Model: Gaussian and SCIPUFF Models, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 16.
254. **McCandless, T.M.**, S.E. Haupt, and G.S. Young, 2009: Using a Neural Network to Improve Numerical Weather Prediction, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14-16, poster presentation.
255. **Zajackowski, F.J.**, S.E. Haupt, and K.J. Long, 2009: A Combined Computational Fluid Dynamic (CFD) and Mesoscale Model Approach to Atmospheric Dispersion Using Data Assimilation, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14.
256. Young, G.S., **A.J. Annunzio**, and S.E. Haupt, 2009: Inverting Surface Observations to Find Boundary Layer Depth, 13th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, Fairfax, VA, July 14-16, poster presentation.
257. **Haupt, S.E.**, 2009: High Fidelity Modeling and Data Assimilation in the Atmospheric Boundary Layer, poster presentation at Women's International Research Engineering Summit, Barcelona, Spain, June 2-4, 2009.

258. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2009: Ensemble-Derived Estimation of Wind Uncertainty using a Linear Variance Calibration for Probabilistic Weather Applications, AMS Numerical Weather Prediction Conference, Omaha, NB, June 1-5. **Second Place** – student paper competition.
259. Haupt, R.L., **D. Aten**, and S.E. Haupt, 2009: Radar reflectors for submarines, 2009 IEEE AP-S Symposium, Charlestown, SC, June 1-5.
260. **Haupt, R.L.**, S.E. Haupt, and D. Aten, 2009: Modeling Maritime Radar Reflectors using FEKO, ACES Conference, Monterey, CA, March 2009.
261. Young, G.S., Y. Kuroki, and **S.E. Haupt**, 2009: Rule-based UAV Navigation for Contaminant Mapping, Seventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15. (presented by S.E. Haupt)
262. Young, G.S., J. Limbacher, S.E. Haupt, and **A.J. Annunzio**, 2009: Back Trajectories for Hazard Origin Estimation: BackHOE, Seventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
263. **Long, K.J.**, S.E. Haupt, G.S. Young, L.M. Rodriguez, and M. McNeal, 2009: Source Characterization using a Genetic Algorithm and SCIPUFF, Seventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
264. **Rodriguez, L.M.**, A.J. Annunzio, S.E. Haupt, and G.S. Young, 2009: Sheared Gaussian Coupled with Hybrid Genetic Algorithm for Source Characterization using CFD and FFT07 Data, Seventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
265. **Haupt, S.E.**, K.J. Long, A. Beyer-Lout, G.S. Young, 2009: Assimilating Chem-Bio Data into Dispersion Models with a Genetic Algorithm, Seventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
266. **Haupt, S.E.**, F.J. Zajackowski, L.J. Peltier, K.J. Long, D.R. Stauffer, and J.R. Zielonka, 2009: Assimilating Mesoscale Model Data into Computational Fluid Dynamics Models, 13th Conference on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
267. **Annunzio, A.J.**, S.E. Haupt, and G.S. Young, 2009: Sheared Gaussian Coupled with Hybrid Genetic Methods of Mitigating Uncertainty in Contaminant Dispersion in a Turbulent Flow: Data Assimilation vs. Multisensor Data Fusion, 13th Conference on Integrated Observing and Assimilation Systems for Atmosphere, Oceans, and Land Surface at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
268. **Lee, J.A.**, L.J. Peltier, S.E. Haupt, D.R. Stauffer, J.C. Wyngaard, and A. Deng, 2009: Impacts on Dispersion Prediction Resulting from Different Types of NWP Ensembles, 11th Conference on Atmospheric Chemistry at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15. **Third Place Student Oral Presentation Award**.
269. **McCandless, T.C.**, S.E. Haupt, and G.S. Young, 2009: Replacing Missing Data for Ensemble Systems, Seventh Conference on Artificial Intelligence and its Applications to the Environmental Sciences at AMS Annual Meeting, Phoenix, AZ, Jan. 11-15.
270. **Haupt, S.E.**, G.S. Young, and K.J. Long, 2008: A Paradigm for Source Term Estimation, Chemical and Biological Defense Physical Science and Technology Conference, New Orleans, LA, Nov. 17-21.
271. **Long, K.J.**, S.E. Haupt, G.S. Young, and A. Beyer-Lout, 2008: Data Assimilation to Improve the Forecast of Chemical and Biological Contaminant Transport and Dispersion, Chemical and Biological Defense Physical Science and Technology Conference, New Orleans, LA, Nov. 17-21.

272. **Annunzio, A.J.**, S.E. Haupt, and G.S. Young, 2008: Comparison of Data Assimilation and Multi-sensor Data Fusion Techniques in Atmospheric Transport and Dispersion, Chemical and Biological Defense Physical Science and Technology Conference, New Orleans, LA, Nov. 17-21.
273. **Rodriguez, L.M.**, S.E. Haupt, and G.S. Young, 2008: Source Term Estimation with Realistic Sensor Data, Chemical and Biological Defense Physical Science and Technology Conference, New Orleans, LA, Nov. 17-21.
274. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2008: Ensemble Variance Calibration for Representing Meteorological Uncertainty, Chemical and Biological Defense Physical Science and Technology Conference, New Orleans, LA, Nov. 17-21.
275. **Lee, J.A.**, L.J. Peltier, S.E. Haupt, J.C. Wyngaard, D.R. Stauffer, and A. Deng, 2008: Impact of Types of NWP Ensembles on Dispersion Prediction, Chemical and Biological Defense Physical Science and Technology Conference, New Orleans, LA, Nov. 17-21.
276. **Zajackowski, F.J.**, S.E. Haupt, and K.J. Long, 2008: Micrositing Wind Energy Power Plants by Coupling Mesoscale and Computational Fluid Dynamics Models, Pennsylvania Wind Energy Symposium - Power for the Future, November, 16-18, 2008.
277. **Haupt, S.E.**, A. Beyer-Lout, G.S. Young, and K.J. Long, 2008: On Assimilating Concentration Data into Wind Field Models, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 9, 2008.
278. **Long, K.J.**, S.E. Haupt, G.S. Young, 2008: Coupling a Genetic Algorithm with SCIPUFF to Extract Source and Meteorological Information, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 8, 2008.
279. **Lee, J.A.**, L.J. Peltier, S.E. Haupt, J.C. Wyngaard, D.R. Stauffer, and A. Deng, 2008: Using NWP Ensembles and Meteorological Ensemble-Uncertainty Information to Improve SCIPUFF Dispersion Forecasts, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 8, 2008.
280. **Annunzio, A.J.**, S.E. Haupt, and G.S. Young, 2008: Source Characterization Considering Atmospheric Boundary Layer Depth as a Variable, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 10, 2008.
281. **Rodriguez, L.M.**, S.E. Haupt, and G.S. Young, 2008: Source Term Estimation Incorporating Sensor Characteristics, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 8, 2008.
282. **McCandless, T.M.**, S.E. Haupt, G.S. Young, and S.J. Greybush, 2008: The Effects of Imputing Missing Data, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, poster presentation, July 8-10, 2008.
283. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2008: Evaluating the Use of a Meteorological Ensemble "Best Member" in a SCIPUFF Case Study, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 8, 2008.
284. **Peltier, L.J.**, S.E. Haupt, J.C. Wyngaard, D.R. Stauffer, A. Deng, 2008: The Lagrangian Integral Time Scale for Apparent Dispersion from Numerical Weather Prediction Uncertainty, 12th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling, July 8, 2008.
285. **Haupt, S.E.**, G.S. Young, K.J. Long, A. Beyer-Lout, and A. Annunzio, 2008: Data Fusion and Prediction for CBRN Transport and Dispersion for Security, 2008 IEEE Aerospace Conference with AIAA, Big Sky, MT, March 1-8.
286. **Haupt, S.E.** and G.S. Young, 2008: Paradigms for Source Characterization, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.

287. **Long, K.J.**, S.E. Haupt, G.S. Young, 2008: Source Characterization and Meteorology Retrieval using a Genetic Algorithm with SCIPUFF, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
288. **Rodriguez, L.M.**, S.E. Haupt, and G.S. Young, 2008: Adding Realism to Source Characterization with a Genetic Algorithm, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
289. **Long, K.J.**, S.E. Haupt, F.J. Zajackowski, and L.J. Peltier, 2008: Examining Various Spatial Scales of a Hypothetical Chlorine Release on a College Campus, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
290. **Annunzio, A.J.**, S.E. Haupt, and G.S. Young, 2008: Similarities and Differences between Multi-sensor Data Fusion and Data Assimilation: Implications for Over-determined vs. Under-determined Systems, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
291. **Annunzio, A.J.**, S.E. Haupt, and G.S. Young, 2008: Source Characterization and Meteorology Retrieval Including Atmospheric Boundary Layer Depth using a Genetic Algorithm, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
292. **Beyer-Lout, A.**, G.S. Young, and S.E. Haupt, 2008: Concentration Assimilation into Wind Field Models for Dispersion Modeling, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
293. Trujillo, M.F., A. Parkhill, and **S.E. Haupt**, 2008: Particle Dispersion in an Urban Environment, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
294. **Haupt, S.E.**, K.J. Long, G.S. Young, and A. Beyer-Lout, 2008: Data Requirements for Assimilating Concentration Data with a Genetic Algorithm, Sixth Conference on Artificial Intelligence Application to Environmental Science, New Orleans, LA, Jan. 20-24.
295. **Peltier, L.J.**, S.E. Haupt, J.C. Wyngaard, D.R. Stauffer, A. Deng, and J. Lee, 2008: Parameterization of NWP uncertainty for dispersion modeling, 15th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA, New Orleans, LA, Jan. 20-24.
296. **Lakshmanan, V.**, E.E. Ebert, and S.E. Haupt, 2008: The 2008 Artificial Intelligence Competition, Sixth Conference on Artificial Intelligence Application to Environmental Science, New Orleans, LA, Jan. 20-24.
297. Haupt, S.E., **R.L. Haupt**, and G.S. Young, 2007: Using Genetic Algorithms in Chem-Bio Defense Applications, ECSIS Symposium on Bio-inspired, Learning, and Intelligent Systems for Security (BLISS-2007), Edinburgh, UK, Aug. 9-10.
298. **Haupt, S.E.**, G.S. Young, K.J. Long, and A. Beyer, 2007: Data Requirements from Evolvable Sensor Networks for Homeland Security Problems, NASA/ESA Conference on Adaptive Hardware and Systems (AHS-2007), Edinburgh, UK, Aug. 5-9.
299. **Haupt, S.E.**, G.S. Young, A. Beyer, and K.J. Long, 2007: Assimilating Sensor Concentration Data into a Dispersion Model in a Meandering Flow Field, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12.
300. **Long, K.J.**, S.E. Haupt, and G.S. Young, 2007: Applying a Genetic Algorithm to Identify Source and Meteorological Data Characteristics, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12.
301. **Beyer-Lout, A.**, G.S. Young, and S.E. Haupt, 2007: Dispersion Modeling with Uncertain Wind Conditions, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12.

302. **Lee, J.A.**, L.J. Peltier, S.E. Haupt, J.C. Wyngaard, D.R. Stauffer, A. Deng, and J.R. Zielonka, 2007: Using NWP Ensembles to Improve Dispersion Forecasts using SCIPUFF, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12.
303. **Annunzio, A.J.**, S.E. Haupt, G.S. Young, 2007: Comparing Assimilation and Sensor Data Fusion Techniques for Dispersion Modeling, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12, (Poster presentation).
304. **Kolczynski, W.C.**, D.R. Stauffer, S.E. Haupt, and A. Deng, 2007: SCIPUFF Sensitivity to Meteorological Uncertainty Data, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12.
305. **Zajackowski, F.J.**, S.E. Haupt, K.J. Long, and L.J. Peltier, 2007: Modeling a Hypothetical Chlorine Release on PSU Campus, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12.
306. **Greybush, S.J.**, S.E. Haupt, and G.S. Young, 2007: The Regime Dependence of Ensemble Model Consensus Forecasts and Implications for Transport and Dispersion, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12, (poster presentation).
307. **Stergiou, J.**, S.E. Haupt, and P.J. Morris, 2007: A High Resolution CFD Simulation of the Atmospheric Boundary Layer, GMU Conference on Atmospheric Transport and Dispersion, Fairfax, VA, July 10-12, (poster presentation).
308. **Greybush, S.**, S. E. Haupt, and G. Young, 2007: The Regime Dependence of Optimally Weighted Ensemble Model Consensus Forecasts. Twenty-second Conference on Weather Analysis and Forecasting/Eighteenth Conference on Numerical Weather Prediction, Park City, UT, June 28, 2007.
309. **Kolczynski, W.C.**, D.R. Stauffer, and S.E. Haupt, 2007: A Simple Method for Calibrating Ensemble Variability to Represent Meteorological Model Uncertainty. Twenty-second Conference on Weather Analysis and Forecasting/Eighteenth Conference on Numerical Weather Prediction, Park City, UT, June 27, 2007.
310. **Haupt, S.E.**, G.S. Young, and L.J. Peltier, 2007: Assimilating Monitored Data into Dispersion Models, Fifth Conference on Artificial Intelligence Applications to Environmental Science at AMS Annual Meeting, San Antonio, TX, Jan. 16, Paper number 4.3.
311. **Beyer, A.**, G.S. Young, and S.E. Haupt, 2007: On using Data Assimilation in Dispersion Modeling, 11th Symposium on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS) at AMS Annual Meeting, San Antonio, TX, Jan. 16, Paper number 3.13.
312. Young, G.S and **S.E. Haupt**, 2007: Going Nonlinear: Towards Automated Puff Intercept, Fifth Conference on Artificial Intelligence Applications to Environmental Science at AMS Annual Meeting, San Antonio, TX, Jan. 15-16, Paper number P1.1.
313. **Long, K.J.**, C.T. Allen, S.E. Haupt, and G.S. Young, 2007: Characterizing Contaminant Source and Meteorological Forcing using Data Assimilation with a Genetic Algorithm, Fifth Conference on Artificial Intelligence Applications to Environmental Science at AMS Annual Meeting, San Antonio, TX, Jan. 16, Paper number 4.3.
314. **Peltier, L. J.**, S.E. Haupt, and J.C. Wyngaard, D.R. Stauffer, and A. Deng, 2007: Assessing the Impact of Meteorological Data Uncertainty on SCIPUFF Concentration Predictions, Chemical and Biological Information Systems Conference, Austin, TX, Jan. 8-12.
315. **Kolczynski, W.**, D.R. Stauffer, S.E. Haupt, and M. Roulston, 2007: A Practical Method for Calibration of Ensemble Spread for Representation of Meteorological Uncertainty in Atmospheric Transport and Dispersion Models, Chemical and Biological Information Systems Conference, Austin, TX, Jan. 8-12.

316. **Haupt, S.E.**, C.T. Allen, and G.S. Young, 2006: A Genetic Algorithm Method for Sensor Data Assimilation and Source Characterization, World Congress on Computational Intelligence, Vancouver, Canada, July 16-20.
317. **Haupt, S.E.**, C.T. Allen, and G.S. Young, 2006: A Genetic Algorithm Method to Assimilate Sensor Data for Homeland Defense Applications, SMCals06: 2006 IEEE Mountain Workshop on Adaptive and Learning Systems, Logan, UT, July 24-26.
318. Haupt, S.E., **R.F. Kunz**, L.J. Peltier, J.J. Dreyer, and H.J. Gibeling, 2006: Impact of Heat Transfer on Contaminant Dispersion in a Public Building. Proceedings of the ASME Joint U.S. - European Fluids Engineering Summer Meeting, Miami, FL. July 17-20.
319. **Wilson, R.P.**, S.E. Haupt, L.J. Peltier, and R.F. Kunz, 2006: Detached Eddy Simulation of a Surface Mounted Cube at High Reynolds Number. Proceedings of the ASME Joint U.S. - European Fluids Engineering Summer Meeting, Miami, FL. July 17-20.
320. **Holmes, M.A.**, S.E. Haupt, and G.S. Young, 2006: Sensitivity of SCIPUFF Concentration to Boundary Layer Height Calculation, 10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Fairfax, VA, Aug. 1-3. (poster)
321. **Long, K.J.**, C.T. Allen, S.E. Haupt, and G.S. Young, 2006: Improving Contaminant Source Characterization by Optimizing Meteorological Data with a Genetic Algorithm, 10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Fairfax, VA, Aug. 1-3. (poster)
322. **Beyer, A.**, S.E. Haupt, and G.S. Young, 2006: On Using Data Assimilation in Dispersion Modeling, 10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Fairfax, VA, Aug. 1-3. (poster)
323. **Lee, J.A.**, L.J. Peltier, S.E. Haupt, and J.C. Wyngaard, 2006: Dispersion Uncertainty with Wind Uncertainty, 10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Fairfax, VA, Aug. 1-3. (poster)
324. **Wilson, R.P.**, S.E. Haupt, and L.J. Peltier, 2006: Flow and Dispersion about a Surface Mounted Cube: Zonal Detached Eddy Simulation vs. Water Tunnel Measurements, 10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Fairfax, VA, Aug. 1-3. (poster)
325. **Kolczynski, W.**, D. Stauffer, S.E. Haupt, and M. Roulston, 2006: Toward a Practical Predictor of Error Covariance from Ensembles for Inclusion in Atmospheric Transport and Dispersion Models, 10th Annual George Mason University Conference on Atmospheric Transport and Dispersion Modeling. Fairfax, VA, Aug. 1-3.
326. **Haupt, S.E.**, R.P. Wilson, L.J. Peltier, and R.F. Kunz, 2006: Fine scale modeling of urban structures: dependence on grid and model features. Proceedings of 14th Joint Conference on Applications of Air Pollution Meteorology, Atlanta, GA, Jan. 30, 2006. Paper 1.2.
327. **Haupt, S.E.**, L.J. Peltier, J.J. Dreyer, and R.F. Kunz, 2006: Thermal effects on dispersion about structures. Proceedings of 14th Joint Conference on Applications of Air Pollution Meteorology, Atlanta, GA, Jan. 30, 2006. Paper 1.3.
328. **Allen, C.T.**, Haupt, S.E., and G.S. Young, 2006: Application of a genetic algorithm-coupled receptor-dispersion model to the Dipole Pride 26 Experiments. Proceedings of 14th Joint Conference on Applications of Air Pollution Meteorology, Atlanta, GA, Jan. 31, 2006. Paper 4.2.
329. **Peltier, L.J.**, S.E. Haupt, J.C. Wyngaard, D. Stauffer, A. Deng, and F. Kredensor, 2006: Meteorological uncertainty effects in atmospheric transport and dispersion modeling: A demonstration. Proceedings of 14th Joint Conference on Applications of Air Pollution Meteorology, Atlanta, GA, Jan. 30, 2006. Paper J2.4.

330. **Peltier, L.J.**, S.E. Haupt, and J.C. Wyngaard, 2006: High fidelity modeling of urban features. Proceedings of 14th Joint Conference on Applications of Air Pollution Meteorology, Atlanta, GA, Jan. 30, 2006. Paper J2.5.
331. **Allen, C.T.**, S.E. Haupt, and G.S. Young, 2005: Validation of a Genetic Algorithm-Coupled Receptor/Dispersion Model Incorporating SCIPUFF, 9th Annual George Mason University Transport and Dispersion Modeling Conference, Fairfax, VA. July 18-20.
332. **Peltier, L.J.**, S.E. Haupt, J. Wyngaard, D. Stauffer, A. Deng, F. Kredensor, S. Hamilton, and P. Hayes, 2005: Assessment of Meteorological Uncertainty Effects on Atmospheric Transport and Dispersion Modeling, 9th Annual George Mason University Transport and Dispersion Modeling Conference, Fairfax, VA. July 18-20.
333. **Peltier, L.J.**, S.E. Haupt, R.F. Kunz, and J.J. Dreyer, 2005: Fine-Scale CFD of Building Flows with Diurnal Heating/Cooling, 9th Annual George Mason University Transport and Dispersion Modeling Conference, Fairfax, VA. July 18-20.
334. **Haupt, S.E.** and G.S. Young, 2005: Validation of Receptor/Dispersion Model Coupled with a Genetic Algorithm, AMS 4th Conference on Artificial Intelligence, San Diego, CA, paper 1.2.
335. **Marzban, C.** and S.E. Haupt, 2005: On Genetic Algorithms and Discrete Performance Measures, AMS 4th Conference on Artificial Intelligence, San Diego, CA, paper 1.1.
336. Young, G.S. and **S.E. Haupt**, 2005: Teaching Artificial Intelligence to Meteorology Undergraduates, AMS 4th Conference on Artificial Intelligence, San Diego, CA, paper P1.1.
337. **Haupt, S.E.**, 2004: Coupled Receptor/Dispersion Modeling with a Genetic Algorithm, AMS 13th Conference on Applications of Air Pollution Meteorology, Vancouver, BC, Canada, paper 6.4.
338. **Haupt, S.E.**, 2004: Coupling Receptor and Dispersion Models with AI, 8th Annual George Mason University Conference on Transport and Dispersion Modeling, Fairfax, VA, July 15.
339. **Haupt, S.E.** and J.D. Gregory, 2004: Planning Approach for the Society of Women Engineers Mentoring Girl Scouts, Proceedings of the 2004 American Society for Engineering Education Annual Conference & Exposition, Salt Lake City, UT.
340. **Haupt, S.E.**, 2004: Nonlinear Empirical Modeling, Proceedings of the 17th Conference on Probability and Statistics in the Atmospheric Sciences, Seattle, WA, Jan. 14.
341. **Haupt, S.E.**, 2004: Meteorology and Weather Monitoring Display for Nature Centers, Proceedings of the 13th Symposium on Education, Seattle, WA,
342. **Haupt, S.E.**, 2003: Equilibrium Solution for Global Climate, Proceedings of the 2003 SWE National Conference, Society of Women Engineers, Birmingham, AL, paper 021, 50 minute talk.
343. **Haupt, S.E.** and J.D. Gregory, 2003: Society of Women Engineers Mentoring Girl Scouts, Proceedings of the 2003 SWE National Conference, Society of Women Engineers, Birmingham, AL, paper 020.
344. **Gregory, J.D.** and S.E. Haupt, 2003: Planning for Girl Scout Projects, Program Development Workshop of the 2003 SWE National Conference, Society of Women Engineers, Birmingham, AL, **Invited Paper**.
345. **Haupt, S.E.**, 2003: Empirical Modeling of Unsteady Flows, Proceedings of the Fluid Engineering Division, 4th ASME-JSME Joint Fluids Engineering Conference Honolulu, HI, Paper FEDSM2003-45761.
346. **Haupt, S.E.** and R.L. Haupt, 2003: Genetic Algorithms and their Applications in Environmental Sciences, Proceedings of the Third Conference on Artificial Intelligence Applications to Environmental Sciences, American Meteorological Society, Long Beach, CA, 1.1A. 45 minute talk, **Invited Paper**.
347. **Haupt, S.E.**, 2003: Genetic Algorithms in Geophysical Fluid Dynamics, Proceedings of the Third Conference on Artificial Intelligence Applications to Environmental Sciences, American Meteorological Society, Long Beach, CA, P1.7.

348. **Haupt, S.E.** and J.J. Barta, 2003: Integrative Meteorology Opportunities at Community Nature Centers, Proceedings of the 12th Education Symposium, American Meteorological Society, Long Beach, CA, P1.28.
349. **Haupt, S.E.** and C.E. Hailey, 2002: Empirical Modeling of Observed Microchannel Flow, Proceedings of the IEEE Aerospace Conference, Big Sky, MT.
350. **Haupt, S.E.** and R.L. Haupt, 2002: Junior Engineering and Science Conference, Proceedings of the 11th Education Symposium, American Meteorological Society, Orlando, FL, P1.22.
351. **Haupt, S.E.** and J.J. Barta, 2002: Meteorology Education Through Nature Centers, Proceedings of the 11th Education Symposium, American Meteorological Society, Orlando, FL 1.6.
352. **Haupt, S.E.** and R.L. Haupt, 2001: Creative Algorithms in the Classroom, Rocky Mountain Section of ASEE, Salt Lake City, UT, 4/7/01.
353. **Haupt, S.E.** and R.L. Haupt, 1999: Using Genetic Algorithms to Find Equilibrium Solutions in Geophysical Fluid Dynamics, Abstract Volume of the 24th General Assembly of the European Geophysical Society, The Hague. Presented by SEH 4/20/99.
354. Haupt, R.L. and **S.E. Haupt**, 1999: Introduction to Genetic Algorithms, Abstract Volume of the 24th General Assembly of the European Geophysical Society, The Hague. Presented by SEH 4/20/99.
355. **Haupt, S.E.**, 1999: The Junior Engineering and Science Conference of the IEEE Aerospace Conference, Panel presentation at the IEEE Aerospace Conference Education Section.
356. **Haupt, S.E.** and J. Weiss, 1998: A Quadratic Inverse Model of the Lorenz Equations, Abstract Volume of the 1998 Fall Meeting of the American Geophysical Union Abstract Volume, San Francisco, CA.
357. **Haupt, S.E.** and R.L. Haupt, 1998: Genetic Algorithms in Complex Systems, Proceedings of the IEEE Aerospace Conference, 1998, Snowmass, CO.
358. **Haupt, S.E.**, 1997: Genetic Algorithms in the Atmospheric Sciences, Presented at AMS Waves and Stability Conference, Tacoma, WA.
359. **Haupt, S.E.** and R.L. Haupt, 1997: Phase Only Adaptive Nulling with a Genetic Algorithm, Proceedings of the IEEE Aerospace Conference, 1997 Snowmass, CO.
360. **Haupt, S.E.**, 1996: Modon Stability, Abstract volume of the Mathematical Geophysics Symposium, Santa Fe, NM.
361. **Haupt, S.E.** and G. Branstator, 1995: An empirical inverse model of a Global Climate Model, Abstract volume of IUGG XXI, Boulder, CO.
362. **Haupt, S.E.**, 1995: Modon Stability: A comparison of several approaches, Presented at AMS Waves and Stability Conference, Big Sky, Montana.
363. **Branstator, G.** and S.E. Haupt, 1995: An empirical atmospheric model for use in forecasts of the coupled atmosphere/ocean system. Preprint volume Sixth International Meeting on Statistical Climatology, Galway, Ireland.
364. **Haupt, S.E.**, 1992: A Dynamical Systems Approach to the Stability of Geophysical Features, Abstract Volume: Applications of Dynamical Systems, Snowbird, UT.
365. **Dahleh, M.D.** and S.E. Haupt, 1992: A Particle Method Formulation for Modons, Abstract Volume: SIAM 40th Anniversary Meeting, Los Angeles, CA.
366. **Haupt, S.E.**, 1991: Modons in Shear Flow: The stability of numerical equilibrium solutions. Preprint Volume: Eighth Conference on Atmospheric and Oceanic Waves and Stability, Denver, CO.
367. **Haupt, S.E.**, 1991: Modons in shear flow: Numerical equilibrium solutions, Abstract volume: XX International Union of Geodesy and Geophysicists, IAMAP Symposium M6: Vortex Dynamics in the Atmosphere and Oceans, Vienna, Austria.
368. **Haupt, S.E.**, R.L. Haupt, and J.C. Adams, 1991: Multigrid analysis of four-point-probe measurements of tapered resistive sheets, Preprint volume of the Fourth Copper Mountain Conference on Multigrid Techniques.

369. **Haupt, R.L.** and S.E. Haupt, 1991: Multigrid with MATLAB, Preprint Volume of the Fourth Copper Mountain Conference on Multigrid Techniques.
370. **Haupt, S.E.** and R.L. Haupt, 1990: Multigrid analysis of four-point-probe measurements of tapered resistive sheets, Abstract Volume, 1990 National Radio Science Meeting, Boulder, CO.
371. **Haupt, S.E.**, 1989: Modons in shear flow: A model of atmospheric blocking, Abstract Volume, Seventh Conference on Atmospheric and Oceanic Waves, San Francisco, CA.
372. Haupt, S.E. and **J.P. Boyd**, 1987: Using boundary value techniques to solve nonlinear wave problems, Abstract volume, Sixth Conference on Atmospheric and Oceanic Waves, Seattle, WA.
373. Haupt, S.E. and **B.J. Saviolis**, 1985: Modeling short-term SO₂ impacts from power plant plumes, Preprint Volume of Energy Sources Technology Conference.
374. Haupt, S.E. and D. Carter, 1982: Sensitivity of air quality near power plants to key model parameters, Proceedings of the Third Joint Conference on Applications of Air Pollution Meteorology.