

CURRICULUM VITA

John L. Schroeder

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GENERAL INFORMATION

EDUCATION

Ph.D. Civil Engineering, Texas Tech University, December 1999
Dissertation Topic: Hurricane Wind Flow Characteristics
Advisor: Dr. Douglas Smith

M.S. Atmospheric Sciences, Texas Tech University, August 1997
Thesis Topic: Hurricane Boundary Layer Winds
Advisor: Dr. Richard Peterson

B.S. Civil Engineering, University of Missouri - Rolla, December 1994
Undergraduate Research Topic: Large Missile Impact Test
Advisor: Dr. Rodney Lentz

PROFESSIONAL CHRONOLOGY

Associate Professor, Department of Geosciences, Texas Tech University (2006-present)
Assistant Professor, Department of Geosciences, Texas Tech University (2001-2006)
Research Associate, Department of Geosciences, Texas Tech University (2001)
Director of Operations, G Systems Inc., Plano, TX (2000-2001)
Project Manager, G Systems Inc., Plano, TX (1999-2000)
Research Associate (part-time), Wind Engineering Research Center, Texas Tech University (1999-2000)
Research Associate, Wind Engineering Research Center and Manager, Wind Engineering Research Field Laboratory, Texas Tech University (1997-1999)
Research Assistant, Wind Engineering Research Center, Texas Tech University (1995-1997)
Teaching Assistant, University of Missouri-Rolla (1992-1994)

HONORS

Recognized Faculty – College of Engineering Honors Convocation, 23 February 2002
Visiting Researcher – Lawrence Livermore Laboratory, JOINT URBAN Experiment, July 2003
Protégé – Texas Academy of Medicine, Engineering and Science, 6-7 January 2005

PROFESSIONAL AFFILIATIONS

American Meteorological Society
American Association for Wind Engineering
American Society of Civil Engineers

TEACHING ACTIVITY

COURSE DEVELOPEMENT

Undergraduate

NA

Graduate

- ATMO 5351* – Meteorological Data Acquisition and Instrumentation Systems, Spring 2003
This course covers the exploration, design, integration and application of meteorological data acquisition and instrumentation systems. The laboratory used for this course was developed using the educational component of my NSF-CAREER award.
- ATMO 5352* – Meteorologic Research Methods, Spring 2002
The course provides a comprehensive survey of the meteorological research process including current analysis and presentation methods. Interpretation and dissemination of analysis results from various datasets is a major component of this course. The laboratory used for this course was developed using the educational component of my NSF-CAREER award.
- ATMO 5353* – Meteorologic Field Experiments, Summer 2004
This course provides for an overview of designing, planning, and completing atmospheric field experiments. The laboratory used for this course was developed using the educational component of my NSF-CAREER award. This course serves the NSF-IGERT supported Ph.D. program in Wind Science and Engineering.
- ATMO 5354* – Tropical Cyclones, Fall 2006
This course provides for an overview of tropical cyclone structure and hazards.

COURSE RESPONSIBILTIES

- ATMO 1300 – Introduction to Atmospheric Science (undergraduate) – 7 times
ATMO 5351 – Meteorological Data Acquisition and Instrumentation Systems (graduate) – 3 times
ATMO 5352 – Meteorologic Research Methods (graduate) – 2 times
ATMO 5353 – Meteorologic Field Experiments (graduate) – 3 times
ATMO 5354 – Tropical Cyclones (graduate) – 1 time

STUDENT DEVELOPMENT/MENTORING

Summary of Advisees (since 2001 unless otherwise noted)

- Undergraduate Research Aides – 6 (individual terms range from 1–3 years)
Undergraduate Internship Program, IGERT (since 2004) – 4
M.S. Atmospheric Science – 5 graduates, 0 currently in progress
Ph.D. Geosciences – 2 graduates, 1 currently in progress
Ph.D. Wind Science and Engineering, IGERT (since 2003) – no graduates, 3 in progress

I have been Chair of the Following M.S. or Ph.D. Thesis Committees (thesis titles/topics are provided):

- Kirsten (Gast) Orwig (MS Atmospheric Science, Graduated Summer 2003)
A Comparison of Extreme Wind Events as Sampled in the 2002 Thunderstorm Outflow Experiment
- Maribel Martinez (MS Atmospheric Science, Graduated Fall 2003)
Lightning Signatures in Convective Storms on the High-Plains
- Matt Grzych (MS Atmospheric Science, Graduated Spring 2004)
Analysis of Rear-Flank Downdrafts Observed during Project ANSWERS
- Jeff Beck (MS Atmospheric Science, Graduated Fall 2004)
High-Resolution Dual-Doppler Analysis of the 29 May 2001 Kress, TX, Cyclic Supercell
- Ibrahim Sonmez (Ph.D. Geosciences, Graduated Summer 2005)
Determination of the Proper Site Spacing Density over Texas
- Brian Hirth (MS Atmospheric Science, Graduated Summer 2005)
Analysis of Rear-Flank Downdrafts and their Evolution during Project WIRL

Sylvie Lorsolo (Ph.D. Geosciences, Graduated December 2006)
Hurricane Boundary Layer Rolls and Wind Streaks
Steve Latimer (MS Atmospheric Science, Graduated May 2006)
Comparison of Wind Profiler Observations and Numerical Weather Prediction Forecasted Winds during Severe Weather Outbreaks
Becca (Paulsen) Edwards (Ph.D. Wind Science and Engineering IGERT)
Near Surface Hurricane Wind Flow in Bays and Inlets
Kirsten Orwig-Gast (Ph.D. Wind Science and Engineering IGERT)
Extreme Wind Flow Characterization
Brian Hirth (Ph.D. Geosciences)
Hurricane Wind Field Transition at the Coastline
Ian Giammanco (Ph.D. Wind Science and Engineering IGERT)
Topic TBD

I served on the Following M.S. Thesis Committees:

Erin Shaw – Atmospheric Science Student – *Graduated Spring 2002*
Caleb Midgley – Atmospheric Science Student – *Graduated Summer 2003*
Shawn Liebl – Atmospheric Science Student – *Graduated Summer 2004*
Ian Giammanco – Atmospheric Science Student – *Graduated Summer 2005*
Rob Slavens – Atmospheric Science Student
Jaret Rogers – Atmospheric Science Student

I served on the Following Ph.D. Dissertation Committees:

Gary Skwira – Atmospheric Science Student – *Graduated Spring 2003*
Rob Howard – Atmospheric Science Student – *Graduated Spring 2004*
Anna Gardner – Civil Engineering Student – *Graduated Spring 2004*
Mark Conder – Atmospheric Science Student – *Graduated Spring 2005*
Brian Zachery – IGERT (WISE) Student
Jeff Beck – Atmospheric Science Student

SCHOLARY ACTIVITY

Refereed Publications

(lead authors which were graduate^G and/or undergraduate^U students are noted)

Schroeder, J. L., D. A., Smith, and R. E. Peterson, 1998: "Variation of Turbulence Intensities, and Integral Scales during the Passage of a Hurricane," *Journal of Wind Engineering and Industrial Aerodynamics*, **77 & 78**, 65-72.

Letchford, C. W., A. G., Gardner, J. R., Howard, and J. L. Schroeder, 2001: "A Comparison of Wind Prediction Models for Transitional Flow Regimes Using Full-scale Hurricane Data," *Journal of Wind Engineering and Industrial Aerodynamics*, **89**, 925-945.

Schroeder, J. L., and D. A., Smith, 2003: "Hurricane Bonnie Wind Flow Characteristics," *Journal of Wind Engineering and Industrial Aerodynamics*, **91**, 767-789.

Skwira, G. D., J. L. Schroeder, and R. E. Peterson, 2005: "Surface Observations of Landfalling Hurricanes," *Monthly Weather Review*, **133**, 454-466.

Schroeder, J. L., W. S. Burgett, K. B. Haynie, I. Sonmez, G. D. Skwira, A. L. Doggett, and J. W. Lipe, 2005: "The West Texas Mesonet: A Technical Overview," *Journal of Atmospheric and Oceanic Technology*, **22**, 211-222.

Paulsen, B. M., and J. L. Schroeder, 2005: "An Examination of Tropical and Extratropical Gust Factors and the Underlying Wind Speed Histograms," *Journal of Applied Meteorology*, **44**, 270-280.

Biggerstaff, M. I., L. J. Wicker, J. Guynes, C. Ziegler, J. M. Straka, E. N. Rasmussen, A. Doggett, L. D. Carey, J. L. Schroeder and C. Weiss, 2005: "The Shared Mobile Atmospheric Research and Teaching (SMART) Radar: A Collaboration to Enhance Research and Teaching," *Bulletin of the American Meteorological Society*, **86**, 1263-1274.

Midgley, C. J., and J. L. Schroeder, 2004: "Structural Characteristics of a Particularly Intense Convectively Driven High Wind Event," *National Weather Digest*, **28**, 33-42.

Ewing, B. T., J. B. Kruse, and J. L. Schroeder, 2006: "Time Series Analysis of Wind Speed with Time-Varying Volatility," *Environmetrics*, **17**, 119-127.

^GBeck, J., J. L. Schroeder, and J. Wurman, 2006: "High-Resolution Dual-Doppler Radar Observations of a Non-Tornadic Supercell," *Monthly Weather Review*, **134**, 3125-3148.

Ewing, B. T., J. B. Kruse, J. L. Schroeder and D. A. Smith, 2007: "Time Series Analysis of Wind Speed Using VAR and the Generalized Impulse Response," *Journal of Wind Engineering and Industrial Aerodynamics*, **95**, 209-219.

Refereed Publications (accepted)

^GOrwig, K. D., and J. L. Schroeder, 2006: "Near-Surface Wind Characteristics of Extreme Thunderstorm Outflows," *Journal of Wind Engineering and Industrial Aerodynamics*, accepted.

Refereed Publications (submitted)

Hirth B., J. L. Schroeder, and C. Weiss, 2006: "Surface Analysis of the Rear-Flank Downdraft in Two Tornadic Supercells," *Monthly Weather Review*, submitted.

Non-refereed Publications

Schroeder, J. L., 2003: "Chasing the Wind," *Weatherwise*, **56 (May)**, 23-25.

Other Publications and Reports

Marshall, R. D., and J. L. Schroeder, 1997: "Hurricane Marilyn in the Caribbean - Measured Wind Speeds and Design Wind Speeds Compared," NISTIR 5987, National Institute of Standards and Technology, 43 pp.

Smith, D. A., J. L. Schroeder, and J. R. Howard, 2001: "Final Report of Activities: 1998-1999 Wind Engineering Mobile Instrumented Tower Experiment (WEMITE)," Florida International University, 79 pp.

Schroeder, J. L., A. L. Doggett, D. A. Smith, J. R. Howard and R. M Paulsen, 2002: "Summary of 2001 WEMITE Deployments," National Institute of Standards and Technology, 30 pp.

Schroeder, J. L., G. D. Skwira, and R. M. Paulsen, 2003: "Summary of 2002 WEMITE Deployments," National Institute of Standards and Technology, 46 pp.

^GGast K. D., and J. L. Schroeder, 2003: "A Comparison of Extreme Wind Events as Sampled in the 2002 Thunderstorm Outflow Experiment" National Institute of Standards and Technology, 47 pp.

Schroeder, J. L., 2003: "Hurricane Isabel at Landfall: A Significant Field Effort" American Association of Wind Engineering November Newsletter, 9-10.

Schroeder, J. L., and R. M. Edwards, 2004: "Summary of 2003 WEMITE Deployments," National Institute of Standards and Technology, 29 pp.

Schroeder, J. L., and R. M. Edwards, 2005: "Summary of 2004 WEMITE Deployments," National Institute of Standards and Technology, 40 pp.

Giammanco, I. M. and J. L. Schroeder, 2006: "Hurricanes at Landfall Project 2005," National Institute of Standards and Technology, 26 pp.

Conference Preprints/Proceedings (oral presentations^P are noted)

^PSchroeder, J. L., D. A. Smith, and R. E. Peterson, 1997: "Turbulence Intensities, Gust Factors and Integral Scales Generated within the Boundary Layer of a Hurricane," *Preprints, Twenty-Second AMS Conference on Hurricanes and Tropical Meteorology*, Ft. Collins, Colorado, 80-81.

^PSchroeder, J. L., D. A., Smith, and R. E. Peterson, 1997: "Variation of Turbulence Intensities, Gust Factors, and Integral Scales during the Passage of a Hurricane," *Preprints, Eighth National Conference on Wind Engineering*, Baltimore, Maryland, 114-114A.

Schroeder, J. L., D. A., Smith, and R. E. Peterson, 1997: "Variation of Micro-Meteorological Wind Characteristics during the Passage of a Hurricane," *Preprints, Twelfth Symposium on Boundary Layers and Turbulence*, Vancouver, Canada, 334-335.

^GConder, M. R., R. E., Peterson, J. L., Schroeder, and D. A. Smith, 1999: "Comparison of Hurricane Wind Data during Hurricane Bonnie: The Texas Tech Wind Engineering Mobile Instrumented Tower

Experiment (WEMITE) and the NWS Wilmington ASOS,” *Proceedings, Thirteenth Symposium on Boundary Layers and Turbulence*, Dallas, Texas, 484-487.

^PSchroeder, J. L., and D. A. Smith, 1999: “Hurricane Bonnie Wind Flow Characteristics as Determined from WEMITE,” *Wind Engineering into the 21st Century: Proceedings, Tenth International Conference on Wind Engineering*, A. Larsen, G. L. Larose and F. M. Livesey, Eds., Copenhagen, Denmark, 329-335.

^GHoward, J. R., J. L., Schroeder, and A. L. Doggett, 2000: “The Texas Tech University Wind Engineering Mobile Instrumented Tower Experiment (WEMITE): Deployment Operations during the 1999 Atlantic Hurricane Season,” *Preprints, Twenty-Fourth Conference on Hurricanes and Tropical Meteorology*, Fort Lauderdale, Florida, 335-336.

^PSchroeder, J. L., J. R., Howard, and D. A. Smith, 2000: “Boundary Layer Characteristics in Hurricanes Bonnie (1998), Dennis (1999), and Floyd (1999) as Determined from the Texas Tech University Wind Engineering Mobile Instrumented Tower Experiment (WEMITE),” *Preprints, Twenty-Fourth Conference on Hurricanes and Tropical Meteorology*, Fort Lauderdale, Florida, 337-338.

^GConder, M. R., A. L., Doggett, R. E., Peterson, and J. L. Schroeder, 2000: “Texas Tech Mobile Boundary Layer Observation Systems: Past Successes, Current Plans and Future Goals,” *Proceedings, Fourth Symposium on Integrated Observing Systems*, Long Beach, California, 10-13.

^GGardner, A. G., C. W. Letchford, and J. L. Schroeder, 2000: “A Comparison of Wind Prediction Models for Transitional Regimes,” *Proceedings, Fourteenth Symposium on Boundary Layers and Turbulence*, Aspen, Colorado, 167-170.

^PSchroeder, J. L., and J. R. Howard, 2001: “Hurricane Wind Flow Characteristics as Determined from Data Collected during the Wind Engineering Mobile Instrumented Tower Experiment (WEMITE),” *Proceedings, First Americas Conference on Wind Engineering*, Clemson, South Carolina.

Doggett, A. L., M. R. Conder, T. E. Gill, C. Chang, R. E. Peterson and J. L. Schroeder, 2002: “Observations of Localized Outflow in an Urban Area,” *Preprints, Fourth Symposium on Urban Environments*, Norfolk, Virginia.

^GHoward, J. R., and J. L. Schroeder, 2002: “A Coastal Internal Boundary Layer within a Tropical Cyclone,” *Preprints, Twenty-Fifth Conference on Hurricanes and Tropical Meteorology*, San Diego, California, 11-12.

^GHoward, J. R., J. L. Schroeder, G. D. Skwira, A. L. Doggett and A. Sims, 2002: “TTU WEMITE: A Summary of Data Collected from Landfalling Tropical Cyclones During 2000-2001,” *Preprints, Twenty-Fifth Conference on Hurricanes and Tropical Meteorology*, San Diego, California, 671-672.

Schroeder, J. L., M. R. Conder and J. R. Howard, 2002: “Additional Insights into Hurricane Gust Factors,” *Preprints, Twenty-Fifth Conference on Hurricanes and Tropical Meteorology*, San Diego, California, 39-40.

^PSchroeder, J. L., R. M. Paulsen, and J. R. Howard, 2003: “A Summary of Hurricane Gust Factors from Five Years of Field Data,” *Preprints, Fifty-Seventh Interdepartmental Hurricane Conference*, Miami, Florida.

^UPaulsen, R. M., J. L. Schroeder, M. R. Conder, and J. R. Howard, 2003: “Further Examination of Hurricane Gust Factors,” *Proceedings, Eleventh International Conference on Wind Engineering*, Lubbock, Texas, 2005-2012.

^GSkwira, G. D., R. E. Peterson, D. A. Smith, C. Chang, A. L. Doggett, and J. L. Schroeder, 2003: “Surface Observations of Landfalling Hurricane Rainbands along the United States Atlantic Coastline,” *Proceedings, Eleventh International Conference on Wind Engineering*, Lubbock, Texas, 2013-2020.

^GConder, M. C., R. E. Peterson, J. L. Schroeder, and D. A. Smith, 2003: “An Analysis of Wind Characteristics during the ERODE Experiment, April-May 2002,” *Proceedings, Eleventh International Conference on Wind Engineering*, Lubbock, Texas, 2029-2036.

^GHoward, J. R., P. Dodge, A. L. Doggett, J. Finney, K. Gurley, M. Levitan, T. Reinhold, J. L. Schroeder, and G. Stone, 2003: “The Landfall of Hurricane Lili in Louisiana: A Summary of Cooperative Data Collection Efforts,” *Proceedings, Eleventh International Conference on Wind Engineering*, Lubbock, Texas, 2577-2584.

- ^GGast, K. D., and J. L. Schroeder, 2003: "Supercell Rear-Flank Downdraft as Sampled in the 2002 Thunderstorm Outflow Experiment," *Proceedings, Eleventh International Conference on Wind Engineering*, Lubbock, Texas, 2233-2240.
- ^GPaulsen, B. M., and J. L. Schroeder, 2004: "A Summary of Wind Speed Measurements as Collected by Texas Tech during the Landfall of Hurricane Isabel," *Preprints, Twenty-Sixth Conference on Hurricanes and Tropical Meteorology*, Miami, Florida, 487-488.
- ^GLorsolo, S., and J. L. Schroeder, 2004: "Hurricane Boundary Layer Rolls Observed During the Landfall of Hurricane Isabel," *Preprints, Twenty-Sixth Conference on Hurricanes and Tropical Meteorology*, Miami, Florida, 609-610.
- ^GHoward, J. R., A. L. Doggett, R. E. Peterson, P. G. Black, J. L. Schroeder, D. A. Smith, and J. P. Dunyak, 2004: "Transition in Onshore Boundary Layer Winds During the Landfall of Hurricane Lili (2002)," *Preprints, Twenty-Sixth Conference on Hurricanes and Tropical Meteorology*, Miami, Florida, 526-527.
- Letchford, C. W., D. James, and J. L. Schroeder, 2004: "The Effect of Thunderstorm Winds on Low-Rise buildings," *Preprints, ASCE Structures Congress*, New York, New York.
- Conder, M. R., S. Cobb, G. D. Skwira, and J. L. Schroeder, 2004: "An Observational Study of the Interaction between a Supercell and a Mesoscale boundary," *Preprints, Twenty-Second Conference on Severe Local Storms*, Hyannis, Massachusetts.
- ^GGast, K. D., and J. L. Schroeder, 2004: "Extreme Wind Events Observed in the 2002 Thunderstorm Outflow Experiment," *Preprints, Twenty-Second Conference on Severe Local Storms*, Hyannis, Massachusetts.
- ^GBeck, J., J. L. Schroeder, J. Wurman, and C. Alexander, 2004: "High-Resolution Dual-Doppler Radar Observations of a Non-Tornadic Supercell," *Preprints, Twenty-Second Conference on Severe Local Storms*, Hyannis, Massachusetts.
- ^GGrzych, M. L., B. D. Lee, C. A. Finley, and J. L. Schroeder, 2004: "Thermodynamic Characterization of Supercell Rear Flank Downdrafts in Project ANSWERS 20," *Preprints, Twenty-Second Conference on Severe Local Storms*, Hyannis, Massachusetts.
- ^GMartinez, M., and J. L. Schroeder, 2004: "Lightning Signatures in Convective Storms on the High Plains," *Preprints, Twenty-Second Conference on Severe Local Storms*, Hyannis, Massachusetts.
- Schroeder, J. L., 2005: "Observing Hurricane Boundary Layer Phenomena using Mobile Research Radars," *Preprints, Fifty-Ninth Interdepartmental Hurricane Conference*, Jacksonville, Florida.
- ^GOrwig-Gast, K. D., and J. L. Schroeder, 2005: "Extreme Wind Events Observed in the 2002 Thunderstorm Outflow Experiment," *Proceedings, Tenth Americas Conference on Wind Engineering*, Baton Rouge, Louisiana.
- ^GEdwards, B. P., and J. L. Schroeder, 2005: "A Summary of the Wind Engineering Mobile Instrumented Tower Experiment during the 2004 Atlantic Hurricane Season," *Proceedings, Tenth Americas Conference on Wind Engineering*, Baton Rouge, Louisiana.
- ^PSchroeder, J. L., S. Lorsolo, J. Beck, and C. Weiss, 2005: "Using Mobile Research Radar to Extract Hurricane Boundary Layer Wind Information," *Proceedings, Tenth Americas Conference on Wind Engineering*, Baton Rouge, Louisiana.
- ^PSchroeder, J. L., B. P. Edwards and M. Martinez, 2005: "A Study Coupling Wind Speed and Radar Observations," *Proceedings, Tenth Americas Conference on Wind Engineering*, Baton Rouge, Louisiana.
- Haynie, B., J. L. Schroeder, I. Sonmez, and W. Burgett, 2005: "An Overview of the West Texas Mesonet," *Proceedings, Thirteenth Symposium on Meteorological Observations and Instrumentation*, Savannah, Georgia.
- ^GSonmez, I., J. L. Schroeder, W. S. Burgett, and K. B. Haynie, 2005: "The Enhancement of QA/QC Tests for West Texas Mesonet Wind Parameters," *Proceedings, Thirteenth Symposium on Meteorological Observations and Instrumentation*, Savannah, Georgia.

^GLorsolo, S., and J. L. Schroeder, 2005: "Hurricane Boundary Layer Small-Scale Features using RHI Data Coupled with VAD Analysis," *Preprint, Thirty-Second Conference on Radar Meteorology*, Albuquerque, New Mexico.

^GLorsolo, S., and J. L. Schroeder, 2006: "Small-Scale Features Observed in the Boundary Layer of Hurricanes Isabel (2003) and Frances (2004)," *Preprint, 14th Conference on Interaction of the Sea and Atmosphere*, Atlanta, Georgia, submitted.

^GLorsolo, S., and J. L. Schroeder, 2006: "Tower and Doppler Radar Observations from the Boundary Layer of Hurricanes Isabel (2003) and Frances (2004)," *Preprint, 27th Conference on Hurricanes and Tropical Meteorology, Monterrey California*, submitted.

^GGiammanco, I., J. L. Schroeder, and B. Edwards, 2006: "A Summary of Texas Tech University's 2005 Hurricanes at Landfall Project," *Preprint, 27th Conference on Hurricanes and Tropical Meteorology, Monterrey California*, submitted.

Mark Powell, et al., 2006: "Hurricane Katrina's Wind Field: Synthesizing Wind Observations to Construct an Analysis of Record," *Preprint, 27th Conference on Hurricanes and Tropical Meteorology, Monterrey California*, submitted.

JOURNAL REVIEWS

Journal of Wind Engineering and Industrial Aerodynamics (2)

Journal of the American Society of Civil Engineers (1)

Journal of Atmospheric and Oceanic Technology (2)

Weather and Forecasting (1)

Bulletin of the American Meteorological Society (1)