

William Scott Gunter, Ph.D.

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Curriculum Vitae

Education

Ph.D. Geosciences, Texas Tech University, 2015

Dissertation: "Thunderstorm Outflow Winds as Measured by the TTUKa Mobile Doppler Radars and StickNet with Applications to Wind Engineering"

M.S. Atmospheric Science, Texas Tech University, 2010

Thesis: "Dual-Doppler Analysis of Shear Features within a Rainband of Hurricane Frances"

B.S. Geosciences, Mississippi State University, 2008

Emphasis: Professional Broadcast Meteorology
Minor: Communication

Experience

Professional Experience

Assistant Professor of Geography and Geosciences, July 2020 – Present
University of Louisville
Department of Geography and Geosciences

Assistant Professor of Atmospheric Science, August 2016 – July 2020
Columbus State University
Department of Earth and Space Sciences

Adjunct Faculty, February 2018 – Present
Fort Hays State University
Department of Geosciences

Adjunct Faculty, August 2016 – Present
Texas Tech University
Department of Geosciences

Independent Consultant, July 2016 – Present
dv/dz Consulting
Consultant

Postdoctoral Research Associate, September 2015 – July 2016
Texas Tech University
Department of Geosciences

Graduate Research Assistant, August 2010 – September 2015
Texas Tech University
Department of Geosciences

Graduate Teaching Assistant, August 2008 – August 2010
Texas Tech University
Department of Geosciences

Lecture Experience

University of Louisville

Fall 2020

GEOS 220 – Introduction to Weather and Climate

GEOS 590 – Physical Meteorology

Columbus State University

Spring 2020

ATSC 1112 – Understanding the Weather

ATSC 5117 U/G – Global and Climate Change

ENVS 5175 – Earth and Space Sciences Seminar

Fall 2019

ATSC 1112 – Understanding the Weather

ATSC 4175 – Research in Atmospheric Science

ENVS 1205 – Sustainability and the Environment

ENVS 5109 – Environmental Air Quality

ENVS 5175 – Earth and Space Sciences Seminar

Spring 2019

ATSC 1112 – Understanding the Weather

ATSC 5117 U/G – Global and Climate Change

ATSC 5125 – Severe and Hazardous Weather

ATSC 4175 – Research in Atmospheric Science

MATH 3139 – PIC MATH (co-instructing)

Fall 2018

ATSC 1112 – Understanding the Weather

ATSC 1112L – Understanding the Weather Laboratory

ATSC 5116 U/G – Meteorology

ATSC 4175 – Research in Atmospheric Science

Spring 2018

ATSC 1112 – Understanding the Weather

ATSC 1112L - Understanding the Weather Laboratory
ATSC 5117 U/G - Global and Climate Change
ATSC 4175 - Research in Atmospheric Science
ENVS 4698 - Environmental Science Internship

Fall 2017

ATSC 1112 - Understanding the Weather
ATSC 1112L - Understanding the Weather Laboratory
ATSC 5555 U/G - Special Topics in Atmospheric Science: Meteorology of the total solar eclipse

Spring 2017

GEOL 1112 - Understanding the Weather
GEOL 5116 U/G - Meteorology

Fall 2016

GEOL 1112 - Understanding the Weather
GEOL1112L - Understanding the Weather Laboratory
GEOL 5117 U/G - Global and Climate Change

Texas Tech University

Spring 2016

ATMO 5351 - Meteorological Measurement Systems

Fall 2015

ATMO 1300 - Introduction to Atmospheric Science

Summer 2013

ATMO 1300 - Introduction to Atmospheric Science

Awards and Honors

- 2020 Provost Reassigned Time Award. Release from one course to faculty who demonstrate success in research activities and a promising research agenda.
- 2019 Columbus State University *Educator of the Year* Nominee.

Grants

- 2019 Unfunded Spencer Foundation Large Research Grant. "Using real-time, local data to develop climate literacy in in-service and pre-service secondary teachers." \$248,118.00. Co-Primary Investigator.
- 2018 Funded Provost Seed Grant. "Using Authentic Research Grade Scientific Meteorological Monitoring Equipment and Measurement Experience to Improve High School Science Teacher Self-Efficacy with Research." \$3,500.00. Co-Primary Investigator.

- 2018 Funded Columbus State University Faculty Development Grant. "Development and Validation of the CSU Weather Research Station". \$5,925.00. Primary Investigator.
- 2017 Funded National Center for Atmospheric Research Educational Deployment Loan. "ARTSE: Atmospheric response to a total solar eclipse". Loaned Integrated Surface Flux Stations. Primary Investigator.

Refereed Publications

2019

Gunter, W.S., 2019: Exploring the feasibility of using commercially available vertically pointing wind profiling lidars to acquire thunderstorm wind profiles, *Frontiers in Built Environment*, DOI: 10.3389/fbuil.2019.00119.

2017

Denbath, M. G.V. Iungo, W.A. Brewer, A. Choukulkar, R. Delgado, **S. Gunter**, J.K. Lundquist, J.L. Schroeder, J.M. Wilczak, and D. Wolfe, **2017:** Assessment of virtual towers performed with wind scanning lidars and Ka-band radars during the XPIA experiment, *Atmospheric Measurement Techniques*, 10, 1215 – 1227.

Gunter, W.S., J.L. Schroeder, C.C. Weiss, and E.B. Bruning, **2017:** "Surface measurements of the 5 June 2013 damaging thunderstorm wind event near Pep, Texas", *Wind and Structures*, 24, 185 – 204.

Lundquist, J.K., J. M. Wilczak, R. Ashton, L. Bianco, W. A. Brewer, A. Choukulkar, A. J. Clifton, M. Debnath, R. Delgado, K. Friedrich, **W.S. Gunter**, A. Hamidi, G. V. Iungo, A. Kaushik, B. Kosović, P. Langan, A. Lass, E. Lavin, J. C.Y. Lee, R. K. Newsom, D. C. Noone, S. P. Oncley, P. T. Quelet, S. P. Sandberg, J. L. Schroeder, W. J. Shaw, L. Sparling, C. St. Martin, A. St. Pe, E. Strobach, K. Tay, B. J. Vanderwende, A. Weickmann, D. Wolfe, R. Worsnop, **2017:** "Assessing state-of-the-art capabilities for probing the atmospheric boundary layer: the XPIA field campaign," *Bulletin of the American Meteorological Society*, 98, 289 – 314.

2015

Gunter, W.S., J.L. Schroeder and B.D. Hirth, **2015:** "Validation of dual-Doppler wind profiles with in situ anemometry", *Journal of Atmospheric and Oceanic Technology*, 32, 943-960.

Gunter, W.S., and J.L. Schroeder, **2015:** "High-resolution full-scale measurements of thunderstorm outflow winds", *Journal of Wind Engineering and Industrial Aerodynamics*, 138, 13-26.

2013

Hirth, B.D., J.L. Schroeder, **W.S. Gunter**, and J. Guynes, **2013**: "Coupling Doppler radar-derived wind maps with operational turbine data to document wind farm complex flows", *Journal of Wind Energy*, 18, 529-540.

2012

Hirth, B.D., J.L. Schroeder, **W.S. Gunter**, and J. Guynes, **2012**: "Measuring a utility scale turbine wake using the TTUKa mobile research radars", *Journal of Atmospheric and Oceanic Technology*, 29, 765-771.

2008

Dixon, P.G., M.E. Brown, M.C. Carter, **W.S. Gunter**, J.S. Allen, A.M. Hayes, L.E. Becker, H.S. Eschete, R.P. Aylward, and K.N. Scheitlin, **2008**: "Predicting Atlantic hurricane paths using monthly surface pressure data", *The Geographical Bulletin*, 49, 77-86.

Select Conference Proceedings/Pre-prints

2019

Bartell, S. and **W.S. Gunter**, **2019**: "Modes of Convection for Severe Wind Events in North-Western Texas." Columbus State University Tower Day Undergraduate Research Symposium, Columbus, Georgia. *Oral Presentation*.

Wright, L.J. and **W.S. Gunter**, **2019**: "Is CSU Air Killing You?" Columbus State University Tower Day Undergraduate Research Symposium, Columbus, Georgia. *Poster Presentation*.

Halbrook, M.C., M.G. Newbrey, **W.S. Gunter**, R.C.P. Beamesderfer, and J.A. North, **2019**: The effect of a thermal gradient on age and growth characteristics of Largemouth Bass (*Micropterus salmoides*), Association of Southeastern Biologist, Memphis, Tennessee. *Poster Presentation*.

2018

Gunter, W.S. 2018: "Using vertically pointing wind profiling lidars to acquire thunderstorm outflow wind characteristics" 29th Conference on Severe Local Storms, Stowe, Vermont. *Oral Presentation*.

Skinner, P.S., **W.S. Gunter**, E.C. Bruning, C.C. Weiss, J.S. Schroeder, and S. Berkseth: Turbulence Characteristics of Severe Straight-line Winds in a Rear-Flank Downdraft and Bow Echo Observed by the Texas Tech University Ka-Band Mobile Doppler Radars, 29th Conference on Severe Local Storms, Stowe, Vermont. *Poster Presentation*.

Gunter, W.S. 2018: "ARTSE: Atmospheric Response to a Total Solar Eclipse", 98th Meeting American Meteorological Society, Austin, Texas. *Poster Presentation*

2016

Krupar III, R.J., M. Mason, **W.S. Gunter**, J.S. Schroeder 2016: "Examining the empirical relationships between high resolution dual-Doppler wind profiles and in situ anemometry", 18th Australasian Wind Engineering Society Workshop, McLauren Vale, South Australia. *Oral Presentation.*

Gunter, W.S., and J.L. Schroeder, 2016: "TTUKa XPIA results: data validation and boundary layer structure", 96th Meeting American Meteorological Society, New Orleans, Louisiana. *Oral Presentation.*

2015

Hirth B.D., J.L. Schroeder, and **W.S. Gunter**, 2015: "Dual-Doppler Investigation of Varying Wind Plant Flow Regimes using the TTUKa Radars", International Conference on Wind Engineering, Porto Alegre, Brazil. *Oral Presentation.*

Gunter, W.S., and J.L. Schroeder, 2015: "Dual-Doppler Radar and Surface Measurements of Thunderstorm Outflow Winds", International Conference on Wind Engineering, Porto Alegre, Brazil. *Oral Presentation.*

2014

Gunter, W.S. and J.L. Schroeder, 2014: "Low-Level Wind Profiles and Surface Observations of Extreme Thunderstorm Winds", Engineering Mechanics Institute Conference, Toronto, Ontario. *Oral Presentation.*

2013

Gunter, W.S., and J.L. Schroeder, 2013: "High-Resolution Full-Scale Observations of Thunderstorm Outflow Winds", 12th Americas Conference on Wind Engineering, Seattle, Washington. *Oral Presentation.*

2012

Gunter, W.S. and J.L. Schroeder, 2012: "High-Resolution Full-Scale Observations of Thunderstorm Outflow Winds", 26th Conference on Severe Local Storms, Nashville, Tennessee.

Skinner, P.S., C.C. Weiss, **W.S. Gunter**, and J.L. Schroeder, 2012: "Near-Surface Thunderstorm Outflow Characteristics Observed by the TTUKa Mobile Doppler Radars", 26th Conference on Severe Local Storms, Nashville, Tennessee. *Oral Presentation.*

Students Advised .

2016 - 2018 Kristin Youngquist (M.S. Natural Sciences). Thesis: "*Evaluating Columbus, Georgia Tree Canopy interactions with air pollutants using high spectral imagery and portable PM sensors*". Defended

Professional / Community Service

Journal Reviews

Journal of Wind Engineering and Industrial Aerodynamics (2)

Remote Sensing (2)

Monthly Weather Review (2)

Professional Societies

American Geophysical Union, 2020 – present

American Meteorological Society, 2016 – present

National Association of Geoscience Teachers, 2018 – present

National Weather Association, 2020 – present

University Service / Community Outreach

Columbus State University

Faculty Sponsor for Pride + Student Organization, Fall 2017 – Spring 2020

Faculty Sponsor for Meteorology Student Organization, Fall 2019 – Spring 2020

Weather and Climate Panelist for *The Wild and Scenic Film Festival*, Fall 2019

Dinner with Faculty Guest, Spring 2019

Science Olympiad Event Supervisor, Spring 2018

Graduate Conference Poster Judge, Fall 2017

Climate Symposium Speaker, Spring 2017

Science Olympiad Event Supervisor, Spring 2017

Texas Tech University

Tour Guide for the National Wind Institute facilities at Reese Technology Center, 2010-2016

Lubbock Annual Severe Weather Awareness Day, Annually in March 2009-2014

Lubbock Independent School District Science Fair Judge, January 2014

Welch Summer Scholar Invited Speaker, June 2012 and June 2013

Selected Field Experience

Atmospheric Response to a Total Solar Eclipse (ARTSE), August 20-22, 2017. Secured an NCAR Educational Deployment Loan to deploy boundary layer flux towers in the path of the total solar eclipse.

eXperimental Planetary boundary layer Instrumentation Assessment (XPiA), *March 2015-April 2015*. Designed and led the TTUKa mobile Doppler radar deployment, operating of the TTUKa mobile radars, and communicating with other teams to ensure coordinated data collection.

TTU Hurricane Research Team, *2010-2016*. Multiple forms of instrumentation were deployed to gather information on the wind field of landfalling hurricanes. Designed the TTUKa radar deployment for Hurricane Irene (2011) and participated in StickNet deployments in Hurricanes Isaac (2012) and Sandy (2012).

Severe Convective OUtflow in Thunderstorms (SCOUT), *Spring 2011-Summer 2015*. Designed and executed a field project to collect data in thunderstorms capable of producing severe winds.

Verification of the Origins of Rotation in Tornadoes Experiment 2 (VORTEX-2), *Spring 2009 and Spring 2010*. Deployed and operated meteorological instrumentation ahead of supercell thunderstorms and tornadoes.