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Department of Geography  
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## EDUCATION

- 2006, Ph.D., Natural Resources Management and Engineering, University of Connecticut, Storrs, CT. Dissertation: *Aerosol transport and dispersion measurements in the near surface boundary layer* (advisor: David R. Miller)
- 2002, M.S., Electrical Engineering, The Pennsylvania State University, University Park, PA. Thesis: *A Rayleigh Lidar system for studying middle atmospheric dynamics over Maui* (advisor: Timothy J. Kane)
- 2000, B.S.E. with Honors, Electrical Engineering, University of Connecticut, Storrs, CT

## EMPLOYMENT

- 2016-present: Associate Professor, University of South Carolina, Department of Geography
- 2010-2016: Assistant Professor, University of South Carolina, Department of Geography
- 2008-2010: Assistant Professor, Louisiana State University, Department of Environmental Sciences
- 2006-2008: Post-Doctoral Research Fellow, University of Connecticut, Department of Natural Resources Management and Engineering

### *Additional Appointments*

- 2009- present: Adjunct Professor, Louisiana State University, School of Plant, Environmental, and Soil Sciences
- 2007-2012: Assistant Professor in Residence, University of Connecticut, Department of Natural Resources Management and Engineering

## PUBLICATIONS

(\*denotes student lead-authored publication)

### *Referred Journal Articles*

- \*McCombs, A.G., **Hiscox, A.L.**, and A.E. Suyker, "Point to Grind Conversion in Flux Footprints: Implications of Method Choice and Spatial Resolution for Regional Scale Studies", *Boundary Layer Meteorology*, *In-Press*
- \*McCombs, A.G., **Hiscox, A.L.**, C. Wang, A. Desai, A. Suyker, and S. Biraud, (2018) Carbon flux phenology from the sky: Evaluation for maize and soybean, *J. of Atmospheric and Oceanic Tech.* 35: 877-892, <https://doi.org/10.1175/JTECH-D-17-0004.1>
- Richardson, B., T. M. Strand, H. Thistle, **A. Hiscox**, M. O. Kimberley, and W. C. Schou (2017), Influence of a Young *Pinus Radiata* Canopy on aerial spray drift, *Trans. ASABE* 60(6): 1851-1861 doi: <https://doi.org/10.13031/trans.12497>. **ASABE Superior Paper Award**

- Hiscox, A.L.**, and S. Flecher. 2016. Introducing a smoke prediction tool for small scale agricultural burn management. *Southeastern Geographer*, **56** (3): 297-316., doi:10.1353/sgo.2016.0035.
- Shook, E., M.E. Hodgson, S.Wang, B.Behzad, K.Soltani, **A.L. Hiscox**, and J. Ajayakumar. 2016.CyberGIS and Parallel Cartographic Modeling. *International Journal of Geographical Information Science*. **30**:2355–2376, doi:10.1080/13658816.2016.1172714.
- Hiscox, A.L.**, M.R. Rudnicki, and D.R. Miller, 2015. Understanding turbulent kinetic energy (TKE) stationarity within a forest canopy. *Agricultural and Forest Meteorology* 214-215:124-133.
- Hiscox, A.L.**, S. Flecher, J.J.Wang, and H.P. Viator, 2015. A comparative analysis of potential impact area of common sugar cane burning methods. *Atmospheric Environment* 106: 154-164.
- Bagtzoglou, A. C., E. D. Kenney, **A. Hiscox**, and D. R. Miller, 2014. Optimization-Based Atmospheric Plume Source Identification. *Environmental Forensics* 15:147-158.
- Holmen, B. A., J. Kasumba, **A. Hiscox**, J. Wang, and D. R. Miller, 2013. Mechanized and Natural Soil-to-Air Transfer of Trifluralin and Prometryn from a Cotton Field in Las Cruces, New Mexico. *Journal of Agricultural and Food Chemistry* 61:9776-9783.
- \*Granucci, D.V., M. Rudnicki, **A.L. Hiscox**, H-B. Su, and D.R. Miller, 2013. Quantifying the effects of freezing on tree way frequency. *Agricultural and Forest Meteorology* 168: 10-14.
- Miller, D.R., L.R.Khot, **A.L. Hiscox**, M. Salyani, T.D. Walker, and M. Farooq, 2012. Effect of Atmospheric Conditions on Near ground Coverage of Fogger Applications in a Desert Surface Boundary Layer. *Transactions of the ASABE* 55(2): 351-361.
- \*Haggard, B.J., D. Weindorf, and **A. Hiscox**, 2012. Evaluation of the Predictive Capabilities of Landsat 7 ETM+ on 50 cm Mean Annual Soil Temperature in the Transylvanian Plain, Romania. *European Journal of Soil Science* 63(2): 299-310.
- Wang, J., T. W. Sammis, D. R. Miller, **A. L. Hiscox**, D. Granucci, B. Holmén, J. Kasumba, M. K. Shukla, and S. O. Dennis, 2011. Simulated regional PM10 dispersion from agricultural tilling operations using Hysplit4. *Transactions of the ASABE* 54(5): 1659-1667.
- Khot, L.R., D.R. Miller, **A.L. Hiscox**, M. Salyani, T.D. Walker, and M. Farooq, 2011. Lidar extrapolation of droplet catch measurements in aerosol application treatments. *Atomization and Sprays* 21(2):149-158
- \*Kasumba, J., B. A. Holmen, **A. Hiscox**, J. Wang, and D. Miller, 2011. Agricultural PM10 emissions from cotton field disking in Las Cruces, NM. *Atmospheric Environment* 45(9):1668-1674.
- Wang, J., D. R. Miller, T. W. Sammis, **A.L. Hiscox**, W. Yang, and B. A. Holmén, 2010. Local dust emission factors for agricultural tilling operations. *Soil Science* 175: 194-200.
- Hiscox, A.L.**, D. R. Miller, and C. Nappo, 2010. Plume Meander and Dispersion in a Stable Boundary Layer. *Journal of Geophysical Research* 115: D21105 2156-2202.
- Nappo, C., **A. L. Hiscox**, and D. R. Miller. 2010. A Note on Turbulence Stationarity and Wind Persistence within the Stable Planetary Boundary Layer. *Boundary Layer Meteorology* 136(10): 165-174.
- Wang, J., **A. L. Hiscox**, D. R. Miller, T. H. Meyer, and T. W. Sammis. 2009. A Comparison of Lagrangian Model Estimates to Light Detection and Ranging (LIDAR) Measurements of Dust Plumes from Field Tilling. *Journal of the Air and Waste Management Association* 59: 1370-1378.

- Wang, J., **A. L. Hiscox**, D. R. Miller, T. H. Meyer, and T. W. Sammis. 2008. A Dynamic Lagrangian, Field-Scale Model of Dust Dispersion from Agriculture Operations. *Transactions of the ASABE* 51(5): 1763-1774.
- Nappo, C. J., D. R. Miller, and **A. L. Hiscox**. 2008. Wave-modified flux and plume dispersion in the stable boundary layer. *Boundary Layer Meteorology* 129(2): 211-223.
- Holmén, B. A., D. R. Miller, **A. L. Hiscox**, W. Yang, J. Wang, T. Sammis, and R. Bottoms. 2008. Near-source particulate emissions and plume dynamics from agricultural field operations. *Journal of Atmospheric Chemistry* 59: 117-134.
- Hiscox, A.L.**, D. R. Miller, B. A. Holmén, W. Yang, and J. Wang. 2008. Near field dust exposure from cotton field tilling and harvesting. *Journal of Environmental Quality* 37: 551-556.
- Hiscox, A. L.** and D. R. Miller. 2006. Dispersion of fine spray from aerial applications in stable atmospheric conditions. *Transactions of the ASABE* 49 (5): 1513-1520.
- Hiscox, A.L.**, C. J. Nappo, and D. R. Miller. 2006. A Note on the use of lidar images of smoke plumes to measure dispersion parameters in the stable boundary layer. *Journal of Oceanic and Atmospheric Technology* 23 (8): 1150–1154.
- Meyer, T. and **A.L. Hiscox**. 2005. Position errors caused by GPS height of instrument blunders. *Survey Review* 38(296): 262-273.

### **Book Chapters**

- Kewei, Y., **A.L. Hiscox**, and R. DeLaune 2013. Greenhouse gas emissions by static chamber and eddy flux methods. In: *Method in Biogeochemistry of Wetlands*, R.D. DeLaune, Reddy, K.R., C.J. Richardson, and J. P. Megonigal (eds.). SSSA Book Series 10, Soil Science Society of America, Inc. Madison, WI., pp 427-438.
- Hiscox, A. L.** and M. Macaуда, 2012. Airborne toxic chemicals. In: *The Encyclopedia of Sustainability Science and Technology*, R. A. Meyers (ed), Springer, NY., pp 298-309.

### **Published Conference Proceedings**

- Hodgson, M.E., A. McCombs, A. Hiscox, 2015. Sensitivity of Flux Footprint Modelling to Geographic Resolutions and Autocorrelation. *Journal for Geographic Information Science: GI\_Forum*. S. 90 – 93 [doi:10.1553/giscience2015s90]
- Hiscox, A.L. 2013. Lidar measurement techniques for understanding smoke plume dynamics in sugarcane production. *Renewable Energy and the Environment*, OSA Technical Digest (online) (Optical Society of America 2013) paper EM2A.1 [doi: 10.1364/E2.2013.EMA2A.1] **[Invited]**
- Wang, J., T.W. Sammis, D.R. Miller, A.L. Hiscox, D. Granucci, B. Holmen, J. Kasumba, M. K. Shukla, and S. O. Dennis, 2010. Modeling PM10 regional transport from disking operations. *International Symposium on Air Quality and Manure Management for Agriculture*, Dallas, TX. ASABE Publication Number 711P0510cd. [doi:10.13031/2013.32614]
- Su, H., M. Rudnicki, A. Hiscox, V. Webb, and D. Miller, 2009. Large-eddy simulation of the aerodynamic interactions between canopy roughness sublayer turbulence and tree-sway motions. *Proceedings of the 2nd International Conference Wind Effects on Trees*, Freiburg, Germany. pp 59-65.

- Hiscox, A.L., D.R. Miller and C.J. Nappo, 2008. The use of lidar to measure plume dispersion in the stable boundary layer. *Proceedings of 24th International Laser Radar Conference*, Boulder, CO. paper no. S03O-03.
- Nappo, C.J., Hiscox, A.L., and D.R. Miller, 2008. Atmospheric turbulence and diffusion estimates derived from plume image analysis. 88th American Meteorological Society Annual Meeting, New Orleans, LA. *Amer. Meteor. Soc.* 4.5 [available at: <https://ams.confex.com/ams/pdfpapers/128980.pdf>]
- Wang, J., D.R. Miller, A.L. Hiscox, T. Sammis, 2008. Development and validation of a Lagrangian model for dust generated by agricultural tilling. 28th Conference on Agricultural and Forest Meteorology, Orlando, FL. *Amer. Meteor. Soc.* 3.5 [available at: <https://ams.confex.com/ams/pdfpapers/139021.pdf>]
- Hiscox, A.L., D.R. Miller, C.J. Nappo, J. Wang, D. Zajic, Y.P. Yee, E.D. Creegan, and R.M. Cionco, 2007. Nighttime aerosol dispersion and concentration measurements in the stable boundary layer via elastic backscatter lidar. 3rd Symposium on LIDAR Atmospheric Applications, San Antonio, TX. *Amer. Meteor. Soc.* 5.3 [available at: <https://ams.confex.com/ams/pdfpapers/117052.pdf>]
- Hiscox, A.L., D.R. Miller, and C.J. Nappo, 2006. Remote quantification of plume aerosol concentrations over agricultural and forest canopies. 27th Conference on Agricultural and Forest Meteorology, San Diego, CA, *Amer. Meteor. Soc.*, 1.15 [available at: <https://ams.confex.com/ams/pdfpapers/110396.pdf>]
- Miller, D.R., A.L. Hiscox, C.J. Nappo, J. Wang, D. Zajic, Y. Yee, E.D. Creegan, R.M. Cionco, R.E. Dumais, Jr., and J.B. Ross, 2006. Joint Observational Research on Nocturnal Atmospheric Dispersion of Aerosols: The JORNADA study. 17th Conference on Biometeorology and Aerobiology/27th Conference on Agricultural and Forest Meteorology, San Diego, CA, *Amer. Meteor. Soc.*, J3.6 [available at: <https://ams.confex.com/ams/pdfpapers/110395.pdf>]
- Nappo, C.J., D.R. Miller, A.L. Hiscox, E. Creegan, Y. Yee, and D. Zajic 2006. An episode of intermittent turbulence in the nighttime PBL during the JORNADA field study. 17th Symposium on Boundary Layers and Turbulence/27th Conference on Agricultural and Forest Meteorology, San Diego, CA. *Amer. Meteor. Soc.*, J4.4 [available at: <https://ams.confex.com/ams/pdfpapers/110394.pdf>]
- Hiscox, A.L. and D.R. Miller, 2006. Quantifying the amount of aerial spray in the air over time for vector control operations. *Proceedings of the American Society of Agricultural and Biological Engineers*, Portland, OR. Paper number 061008 [doi: 10.13031/2013.20571]
- Miller, D.R., B.A. Holmén, A.L. Hiscox, W. Yang, J. Wang, T. Sammis, and R. Bottoms, 2006. Dust emissions from cotton farming operations. *Proceedings of the American Society of Agricultural and Biological Engineers*, Portland, OR. Paper number 064024, [doi: 10.13031/2013.20905]
- Hiscox, A.L., D.R. Miller, 2006. Quantifying aerosol mass remotely from real-time lidar measurements. *Proceedings of Workshop on Agricultural Air Quality: State of the Science*, Potomac, MD, pp 756-759.
- Holmen, B.A., D.R. Miller, A.L. Hiscox, W. Yang, J. Wang, T.W. Sammis, and R. Bottoms, 2006. Aerosol emission from field planting operations. *Proceedings of Workshop on Agricultural Air Quality: State of the Science*, Potomac, MD, pp. 169-172.

- Miller, D.R., A.L. Hiscox, B.A. Holmen, W. Yang, T. Sammis, and R. Bottoms, 2005. Aerosol Plumes Emitted from Field Planting Operations Measured with lidar. American Society of Agricultural Engineers International Meeting, Tampa, FL.
- Hiscox, A.L., C.J. Nappo, and D.R. Miller, 2005. Plume Model Dispersion Parameters Measured with lidar. American Society of Agricultural Engineers International Meeting, Tampa, FL.
- Hiscox, A.L., C.J. Nappo, and D.R. Miller, 2004. Evidence of nighttime wave-turbulence interactions above a hardwood forest canopy. 26th Conference on Agricultural and Forest Meteorology, Vancouver, British Columbia., *Amer. Meteor. Soc.*, 8.5 [available online f <https://ams.confex.com/ams/pdfpapers/79440.pdf>]
- Miller, D.R., M. Salyani, and A.L. Hiscox, 2003. Remote measurement of spray drift from orchard sprayers using LIDAR. *Proceedings of the American Society of Agricultural and Biological Engineers*, Las Vegas, NV, Paper number 021093.
- Hiscox, A.L., B. Hallowell, J. Enderle, 2000. Tap-Tap Environmental Controls Unit and Intercom. In *Proceedings of the IEEE 26th Annual Northeast Bioengineering Conference*, Storrs, CT. pp 149-150, and pp 151-152. [3rd Place Undergraduate Student Paper Competition.]

### ***Other Publications***

- Hiscox, A.L., 2010. Lidar: A new way to see, *ASABE Resource Magazine*, July/August 2010, 17(4) pp12-13. [Invited]
- Wang, J., A.L. Hiscox, D.R. Miller, T.W. Sammis, W. Yang, and B. Holmen, 2009. A note on the measurement of dust emissions from moving sources in agricultural field operations. NM State University, Agricultural Experiment Station, Research Report 767.

## **GRANTS AND FELLOWSHIPS (DIRECT TOTAL: \$862,685)**

### ***External Grants and Funding Received***

- NSF – Physical and Dynamic Meteorology 2017-2020: Collaborative Research: SAVANT – Stable Atmospheric Variability AND Transport (PI: A. Hiscox, co-PIs: J. Wang, D. Kristovich, total: \$904,554, Hiscox: \$410,865)
- South Carolina Space Grant. 2016. Carolina Eclipse Initiative Proposal: The Air Across the Path (A. Hiscox \$1,925)
- U.S. Forest Service. 2016-2018. Identifying Maimaiga Source Strength (A. Hiscox, \$40,000)
- Scion Sabbatical Fellowship. 2015. Use of Backscatter Lidar to Quantify the Influence of Mechanical Turbulence on Spray Drift Above A Forest Canopy. (A. Hiscox and T. Strand, \$30,000NZD.)
- U.S. Forest Service. 2013-2015. Regional Models for Use in Understanding Maimaiga Outbreaks, (A. Hiscox \$55,000)
- U.S. Forest Service. 2012-2013. Mixing Height Calculation for Aerial Spray Applications, (A. Hiscox \$10,000)
- U.S. Department of Agriculture – AFRI. 2010-2014. Atmospheric Emissions of Nitrous Oxide, Ammonia, and Particulate Matter from Subtropical Sugarcane Production (PI: J.J.Wang, co-PIs: A. Hiscox, S. Viator, R. DeLaune, T. Hymel, and R. Sheffield, total: \$595,956, Hiscox sub-award: \$100,216)

- NSF-Physical and Dynamic Meteorology. 2009-2014. Collaborative Research: Measurement and Modeling of Aerodynamic Interactions between Tree-Sway Motion and Turbulence in and above a Forest Canopy. (A. Hiscox, \$ 147,524)
- U.S. Forest Service. 2008- 2012. Mixing Height from Lidar Returns for Use in Aerial Spray Dispersion Modeling (A. Hiscox, \$45,000)
- U.S.D.O.D.: Armed Forces Pest Management Board. 2008-2009. Improving Application Methods for Effective Control of Sand Flies in Military Environments. (PI: M. Salyani, co-PIs: M. Farooq, T. Walker, D. Miller, and A. Hiscox. total: \$200,000, UConn sub-award: \$22,155)

### ***Internal Grants and Funding Received***

- CAS Teaching Incubator Associate
- CAS Undergraduate Research Enhancement Award: Sean McGill: Ballooning for the Scientific Method \$1,000
- SPARC: Alexandria McCombs: Agricultural Land Use Change Effects on Atmospheric Carbon Dioxide in the US Great Plains. 2016. \$5,000
- ASPIRE: Advanced Support for Innovative Research Excellence, Track I. 2015-2016. Characterization of Forest Fire Smoke Plume Dynamics with an Eye-Safe Scanning Lidar. \$14,912.
- Provost Visiting Scholar's Program. 2015-2016. Collaborative Work on the Quantification of above Canopy Mechanical Turbulence. (visitor Dr. Tara Strand – Scion Forestry Research, New Zealand). \$8,601.
- Provost Visiting Scholar's Program. 2012. Meteorology of Forests in Motion, Provost Visiting Scholar's Program. (visitor Dr. Mark Rudnicki – The University of Connecticut) \$9,000.
- LSU Council on Research. 2009 Summer Stipend Award. \$5,000.

### **INVITED SEMINARS**

- Hiscox, A.L., “Smoke and Mirrors: Measuring the Atmospheric Boundary Layer in Time and Space for Understanding Land-Air Interactions”, Nelson School of the Environment, University of Wisconsin, Madison Wisconsin, 2018.
- Hiscox, A.L., B. Richardson, and T. Strand, “Aerial Spraying for Pest Eradication: Lidar and Turbulence Observations for New Insights”, Ministry of Primary Industries, Wellington, New Zealand. 2015.
- Hiscox, A.L., “Seeing the Wind in A New Light: Exploring New Measurement Techniques for Forest Meteorology” Scion Science Seminar Series, Rotorua, New Zealand. 2015.
- Hiscox, A.L., “Seeing the Wind Through the Forest: Understanding the Dynamic Interactions of Turbulence and Tree Sway”, Department of Geography and Earth Sciences, University of North Carolina-Charlotte, Charlotte, NC. 2014.
- Hiscox, A.L., “Exploring the Dispersion and Turbulence in the Near Surface Boundary Layer”, Laboratory for Environmental Physics, University of Georgia-Griffin, Griffin, GA. 2012.
- Hiscox, A.L., “Aerodynamic Interactions Between Tree-Sway Motion and Turbulence In and Above a Forest Canopy: Preliminary Results”, School of Renewable Natural Resources, Louisiana State University, Baton Rouge, LA. 2010.

- Hiscox, A.L., “Dispersion in the Atmospheric Boundary Layer: Implications for Agriculture”, LSU Department of Plant Pathology and Crop Physiology, Louisiana State University, Baton Rouge, LA. 2010.
- Hiscox, A.L., “Dust and Dispersion from Agricultural Operations”, School of Plant, Environmental and Soil Sciences Seminar Series, Louisiana State University, Baton Rouge, 2009.
- Hiscox, A.L. “Understanding Lidar Measurements: The nitty-gritty on dealing with all the Data!”, Space Dynamics Laboratory, Logan, UT. 2008.

## CONFERENCES

*Oral Presentations* (presenter in bold, \*denotes student presented)

- Hiscox, A.L.**, J. Wang, D.A.R. Kristovich, E.G. Patton, J. Sun, W.O. Brown, N.J. Sokol, A.R. Desai, G.W. Petty, and C. J. Nappo. 2019. SAVANT: A Field Campaign for the Stable Boundary Layer. Ninth Symposium on Lidar Atmospheric Applications. Phoenix, AZ.
- \*Sokol, N.** and A.L. Hiscox. 2018. Analyzing Sweep-Ejection Momentum Transfer in a Forest Canopy. 23rd Symposium on Boundary Layers and Turbulence. Oklahoma City, OK.
- Dunker, C.**, T. Strand, and A. Hiscox. 2018. Turbulence Statistics Within and Above a Nearly Sparse Forest Canopy. 23rd Symposium on Boundary Layers and Turbulence. Oklahoma City, OK.
- Hiscox, A.L.**, A.G. McCombs, and S. McGill, 2018. Balloons, Lasers, and Drones: The Great American Eclipse of 2017, Combining Research and Outreach in Total Darkness. 98<sup>th</sup> Annual Meeting of the American Meteorological Society, January 2018, Austin, TX.
- Hiscox, A.L.**, A. G. McCombs, and M. J. Stewart, 2017. First results of eclipse induced pressure and turbulence changes in South Carolina. AGU Fall Meeting, New Orleans, LA.
- Hiscox, A.L.** 2017. Intermittency, Stationarity, and Stability: Tools to parameterize the grey zone? Meteorology And Climate - Modeling for Air Quality, Davis, CA September 13-15 2017. [Invited]
- Richardson, B.**, T. Strand, H. Thistle, and A. Hiscox. 2016. The influence of a young pine canopy on aerial spray drift. 2016 ASABE Annual International Meeting, Orlando, FL.
- Hiscox, A.L.**, T. Strand, H. Thistle, and B. Richardson. 2016. Using Lidar to Compute and Above Canopy Mass Balance of Aerially Applied Sprays. 32<sup>nd</sup> Conference on Agricultural and Forest Meteorology, Salt Lake City, UT.
- \*McCombs, A.** Hiscox, B. Marosites, C. Wang, and A. Suyker. 2016. Correlation of Net Ecosystem Carbon Exchanges observations and remotely sensed spectral signals at Maize Fields in Nebraska. 32<sup>nd</sup> Conference on Agricultural and Forest Meteorology, Salt Lake City, UT.
- \*McCombs, A.G.**, S.T., Allen, April L. Hiscox, K.W. Krauss, J. Duberstein, and W.H. Connor, 2016: Atmospheric Carbon Flux Drivers in a Degraded Coastal Swamp. 22<sup>st</sup> Annual Palmetto Chapter of the American Meteorological Society Allen Weber Mini-Technical Conference. March 4, 2016. Columbia, SC.
- \*McCombs, A.G.\***, S.T., Allen, April L. Hiscox, K.W. Krauss, J. Duberstein, and W.H. Connor, 2016: Atmospheric Carbon Flux Drivers in a Degraded Coastal Swamp. 2016 Hobcaw Research Symposium, February 12, 2016. Georgetown, SC.
- Hiscox, A.L.**, A. McCombs and S. Allen. 2016. Carbon and Water Fluxes in a Degraded Coastal Swamp. 2016 AAG Annual Meeting, San Francisco, CA.

- \*McCombs, A.** and A.L. Hiscox. 2016. Drought Impacts on Carbon Concentrations at the Duke Forest AmeriFlux Station. 2016 AAG Annual Meeting, San Francisco, CA.
- Hiscox, A.L.** 2016. Choosing and Academic Adviser. 15th Annual Student Conference/96th American Meteorological Society Annual Meeting, New Orleans, LA. [**Invited**]
- Hiscox, A.L.,** T. Strand, H. Thistle, and B. Richardson. 2016. Lidar Calibration Techniques for Quantifying Spray Drift. 18th Symposium on Meteorological Observation and Instrumentation/96th American Meteorological Society Annual Meeting, New Orleans, LA.
- \*McCombs, A.,** A. L. Hiscox and A. R. Desai. 2016. Quality Control in the AmeriFlux Network: Filling the Gaps. 18th Symposium on Meteorological Observation and Instrumentation/96th American Meteorological Society Annual Meeting, New Orleans, LA.
- \*Allen, S.,** A. McCombs, A. L. Hiscox, K. W. Krauss, J. Duberstein, W. H. Conner, and R. F. Keim, 2016 Salinity and Hydrology Control Evapotranspiration From a Degraded Coastal Swamp. 14th Symposium on the Coastal Environment/96th American Meteorological Society Annual Meeting, New Orleans, LA.
- \*McCombs, A.,** A. L. Hiscox, S. T. Allen, K. W. Krauss, J. Duberstein, and W. H. Conner. 2016. The Effects of Chronic Salinity on the Carbon Cycle of Strawberry Swamp, SC. 14th Symposium on the Coastal Environment/96th American Meteorological Society Annual Meeting, New Orleans, LA.
- Hiscox, A.L.** 2015. Canopy Scavenging Trials. PM 23/6/3 Workshop at Annual Meeting of the Association of Agricultural and Biological Engineers, New Orleans, LA. [**Invited**]
- Miller, D.R.,** Z. Xue, M. Rudnicki, and A. Hiscox, 2014. Group Tree Sway in a Coniferous Forest. 20th International Congress of Biometeorology, Cleveland, OH.
- Hiscox, A.L.,** 2014. Some aspects of TKE in the CRSL. 31st Conference on Agricultural and Forest Meteorology, Portland, OR.
- Hiscox, A.L.,** G. Carbone, 2014. Updates on Observational Capabilities at USC. Palmetto Chapter AMS Mini-Technical Conference, Columbia, SC.
- Hiscox, A.L.,** M. Rudnicki, and D. Miller, 2014. Application of Planar Fit Corrections to Turbulence in a Forest Canopy Roughness Sublayer. 18th Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA/94th Annual Meeting of the AMS, Atlanta, GA.
- Hiscox, A.L.,** 2013. Long Term Statistics of Tree-Sway, Winds, and Turbulence in a Forest Canopy. Annual Meeting of the Assoc. of American Geographers, Los Angeles, CA.
- Hiscox, A.L.,** J.J. Wang, S. Viator and R. Sheffield, 2012. Wind Influences on the Dispersion of Aerosols Emitted from Pre- and Post- Harvest Sugarcane Field Burning Practices. 30th Conference on Agricultural and Forest Meteorology, Boston, MA.
- Su, H-B,** M. Rudnicki, A. Hiscox, and D. Miller, 2012. SwayLES: A coupled large-eddy simulation tree-sway model. 30th Conference on Agricultural and Forest Meteorology, Boston, MA.
- Rudnicki, M.,** A.L. Hiscox, D. Miller, and H-B Su, 2012. Sway Measurement of a Large Array of Trees Coupled With Canopy Turbulence – An Overview. First Conference on Atmospheric Biogeosciences, Boston, MA.
- \*Newman, A.,** R. Kiem, and A.L. Hiscox, 2012. Evaporation as a Factor in Coastal Wetland Forest Hydrology. State of the Coast, New Orleans, LA.

- Hiscox, A.L.**, M. Rudnicki, H-B Su, and D. R. Miller, 2012. Long-Term Statistics of Turbulence, Winds, and Pressure Fluctuations in a Forested Environment. 20th Symposium on Boundary Layers and Turbulence, Boston, MA.
- Hiscox, A.L.**, J. J. Wang, S. Viator, R. DeLaune, R. Sheffield, and T. Hymel, 2012. A Comparison of the Spatial Distribution of Smoke Plumes Emitted From Pre- And Post-Harvest Sugarcane Field Burning Practices. Annual Meeting of the Assoc. of American Geographers, New York, NY.
- Hodgson, M.E.** and A. Hiscox, S. Wang, B. Behzad, S. Flecher, Y. Liu, and A. Padmanabhan, 2012. Cartographic Modeling Language Approach for CyberGIS: A Demonstration with Footprint Models. First International Conference on Space, Time, and CyberGIS, Urbana, IL. [Invited]
- Hodgson, M.E.** and A. Hiscox, S. Wang, B. Behzad, S. Flecher, K. Soltani, Y. Liu, and A. Padmanabhan, 2012. A Parallelized Cartographic Modeling Language (CML)-Based Solution for Footprint Models. First International Conference on Space, Time, and CyberGIS, Urbana, IL. [Invited]
- Rudnicki, M, D.**, Granucci, D. Miller, A. Hiscox, and H-B. Su, 2011. Quantifying the Effects of Freezing on Tree Sway Frequencies. 6th International Conference on Wind and Trees, Athens, GA.
- Su, H-B**, M. Rudnicki, A. Hiscox and D. Miller, 2011. A coupled 3-D Large Eddy Simulation Tree-Sway Model (SwayLES). 6th International Conference on Wind and Trees, Athens, GA.
- Miller, D. R.**, M. Rudnicki, A. Hiscox, and H-B. Su, 2011. Wind in Trees Biomechanical Responses. Society of American Foresters Annual Meeting, Oahu, HI.
- Hiscox, A.L.**, H. Thistle and E. Furtak-Cole, 2011. Lidar Derived Mixing Heights for Dispersion Modeling. Annual Meeting of the Assoc. of American Geographers, Seattle, WA.
- \*Haggard, B.**, D. Weindorf, A. Hiscox, T. Rusu, and H. Cacoven, 2010. 10cm Soil Temperature Data Validation and Model in the Transylvanian Plain, Romania. American Society of Agronomy, Association, Crop Science Society of America, and Soil Science Society of America International Annual Meetings, Long Beach, CA.
- Hiscox, A.L.**, D. R. Miller and C. J. Nappo, 2010. Quantification of Plume Meandering Motions in the Stable Boundary Layer. 19th Symposium on Boundary Layers and Turbulence, Keystone, CO.
- Nappo, C.J.**, A.L. Hiscox, and D. R. Miller, 2010. The Stationarity of Sub-Mesoscale Turbulence in the Stable Planetary Boundary Layer. 19th Symposium on Boundary Layers and Turbulence, Keystone, CO.
- Miller, D.R.**, A.L. Hiscox, and J. Wang, 2010. Dispersion of Spray from Insect Foggers in Stable Boundary Layers. 19th Symposium on Boundary Layers and Turbulence, Keystone, CO.
- Wang, J.**, T.W. Sammis, D.R. Miller, A.L. Hiscox, and D.V. Granucci, 2009. Simulate Regional PM10 Dust Dispersion from Tilling Operations Using Hysplit4. 7th World Congress on Computers in Agriculture, Reno, NV.
- \*Kasumba, J.**, B. Holmen, A. Hiscox, J. Wang, and D. Miller, 2009. Measurement of Agricultural Field Emissions – Real World Herbicides in Vapor and Particle Phases. 36th Northeast Regional Meeting of the American Chemical Society, Hartford, CT.

- Hiscox, A.L.**, D.R. Miller, M. Salyani, T. Walker, and M. Farooq, 2009. Effects of Atmospheric Stability on Aerosol Spray. American Society of Agricultural and Biological Engineering International Meeting, Reno, NV.
- Hiscox, A.L.**, Lidar for Monitoring Spray Drift, 1st North American Conference on Precision Fruit Spraying, Canandaigua, NY. 2008 [**Invited**]
- Hiscox, A.L.**, D.R. Miller, and C.J. Nappo, 2008. Plume Behavior as Controlled by the Stable Boundary Layer. 18th Symposium on Boundary Layers and Turbulence, Stockholm, Sweden.
- Hiscox, A.L.**, D. R. Miller, W. C. Hoffman, B. K. Fritz, and D. Martin, 2008. The Effect of Atmospheric Surface Layer Turbulent Structures on Aerially Applied Agricultural Sprays. 28th Conference on Agricultural and Forest Meteorology, Orlando, FL.
- Wang, J.**, T. Sammis, A.L. Hiscox, D. R. Miller, W. Yang, and B. A. Holmen, 2007. Field-Scale Dynamic Modeling of Agricultural-Operation Dust Dispersion. International Symposium on Air Quality and Waste Management for Agriculture, Broomfield, CO.
- Hiscox, A.L.**, W.C. Hoffmann, and D.R. Miller, 2007. Measuring Aerial Spray Swaths and Drift with Lidar. American Society of Agricultural and Biological Engineering International Meeting, Minneapolis, MN.
- Hiscox, A.L.**, D.R. Miller, and J. Wang, 2007. Dust Exposure and Emissions Factors From Cotton Field Preparation Determined from Lidar Measurements. American Society of Agricultural and Biological Engineering International Meeting, Minneapolis, MN.
- Hiscox, A.L.**, D.R. Miller, and C.J. Nappo, 2006. Remote Quantification of Plume Aerosol Concentrations and Plume Spread over Agricultural Canopies. 7th International Aerosol Conference, St. Paul, MN.
- Miller, D.R.**, A.L. Hiscox, C.J. Nappo, J. Ross, 2005. Aerial Spray Plume Dispersion Measured with Lidar. American Society of Agricultural Engineers/National Agricultural Aviation Association Technical Session, Reno, NV.
- Hiscox, A.L.**, and D.R. Miller, 2003. Lidar Calibration of Orchard Spray Drift. Northeast Agricultural and Biological Engineering Conference, Storrs, CT.

***Poster Presentations*** (\*denotes student authored and presented)

- \*McGill, S. and A. L. Hiscox, 2019. Ballooning for the Scientific Method: How I Learned to Stop Worrying and Love the Weather Balloon. American Meteorological Society 28<sup>th</sup> Symposium on Education. Phoenix, AZ.
- McCombs, A., S.T. Allen, and A.L. Hiscox, 2018. Carbon Flux Drivers in a Degraded Coastal Swamp. 33<sup>rd</sup> Conference on Agricultural and Forest Meteorology. Boise, ID.
- McCombs, A., S.T. Allen, and A.L. Hiscox, 2018. The Influence of Cold fronts Passage on Turbulent Fluxes in a Forested Coastal Wetland. 19<sup>th</sup> Symposium on Meteorological Observations and Instrumentation/98<sup>th</sup> American Meteorological Society of America Annual Meeting, Austin, TX.
- Hiscox, A.L., 2017. Correlating Tree Vibration Frequencies with Turbulence Events to Interpret Gust Impressions, Special Symposium on Meteorological Observations and Instrumentation/97<sup>th</sup> American Meteorological Society of America Annual Meeting, Seattle, WA.
- \*McCombs A. and A.L. Hiscox, 2017. Influence of Boundary Layer Height Parameterization of 2D Footprint Models for Short Flux Towers. 21<sup>st</sup> Conference on Integrated Observing

- and Assimilation Systems for the Atmosphere, Oceans, and Land Surface/97<sup>th</sup> American Meteorological Society Annual Meeting, Seattle, WA.
- Hiscox, A.L. and K. Ertell, 2014. Measuring Turbulent Gust Impressions in a Forested Canopy. American Geophysical Union Fall Meeting, San Francisco, CA.
- \*McCombs, A. and A. L. Hiscox, 2014. Changes in Carbon Flux at the Duke Forest Hardwood AMERIFLUX Site Due to Land Cover/Land Use Changes. American Geophysical Union Fall Meeting. San Francisco, CA.
- \*Datta Mudi, S., J. J. Wang, S. K. Dodla and A.L. Hiscox, 2014. Micrometeorological Analysis of Diurnal Ammonia Emissions from Subtropical Sugarcane Production. American Society of Agronomy Annual Meeting, Long Beach, CA.
- Hiscox, A.L. and S. Battersby, 2014. Visualization Techniques for Identification of Coherent Wind Motions Through Waving Vegetation In A Forested Ecosystem. Annual Meeting of the Assoc. of American Geographers. Tampa, FL.
- Hodgson, M.E. and A.L. Hiscox, S. Wang, B. Behzad, S. Flecher, Y. Liu, and A. Padmanabhan, 2012. Cartographic Modeling Language Approach for CyberGIS: A Demonstration with Footprint Models. The First International Conference on Space, Time, and CyberGIS, Urbana, IL.
- \*Newman, A., R. Kiem, and A.L. Hiscox, 2011. Evaporation from the Free Water Surface of a Flooded Forest. American Geophysical Union Fall Meeting, San Francisco, CA.
- \*Dodla, S., J. Wang, C. Jeong, S. Dattanudi, R. DeLaune, S. Viator, A.L. Hiscox, R. Sheffield and T. Hymel, 2011. Effect of Nitrogen Fertilization, Harvesting and Residue Management Practices on Greenhouse Gas, Ammonia, and Particulate Matter Emissions in Sugarcane Production. Soil Science Society of America Annual Meeting, San Antonio, TX.
- Hiscox, A.L., M. Rudnicki, H-B Su, A. Finger and E. Furtak-Cole, 2011. Persistence of Turbulence In and Above a Forest Canopy. IUFRO Wind and Trees Conference, Athens, GA.
- \*Kasumba, J., B. A. Holmen, A.L. Hiscox, J. Wang and D.R. Miller 2010. Measurement of Real-World Herbicides in Vapor and Particle Phases on a Cotton Field In Las Cruces, NM. 29th Annual Conference of the American Association for Aerosol Research, Portland, OR.
- \*Granucci, D.V., M. Rudnicki, A.L. Hiscox, H.B. Su and D.R. Miller, 2010. Sway Frequency Analysis of Wind-Loaded Trees Under Freezing Conditions. 29th Conference on Agricultural and Forest Meteorology, Keystone, CO.
- \*Finger, A., E. Furtak-Cole, A.L. Hiscox, M. Rudnicki and H.B. Su, 2010. Turbulence Stationarity within a Forest Canopy. 29th Conference on Agricultural and Forest Meteorology, Keystone, CO.
- Hiscox, A.L., D.R. Miller, and C.J. Nappo, 2009. Measuring Plume Meander in the Nighttime Stable Boundary Layer with Lidar. American Geophysical Union Fall Meeting, San Francisco, CA.
- \*Kasumba, J., A.L. Hiscox, J. Wang, D.R. Miller, B.A. Holmen, 2009. Measurement of Agricultural Field Emissions – Real World Herbicides in Vapor and Particle Phases. 28th Annual Conference of the American Association for Aerosol Research, Minneapolis, MN.

- Hiscox, A.L., T. Kane, A. Gerrard and S. Eckermann, 2002. Atmospheric Wave Propagation: Modeling and Results Associated with Maui-MALT. American Geophysical Union, Spring Meeting, Washington D.C.
- Hiscox, A.L., T. Kane, A. Gerrard and S. Eckermann, 2001. Atmospheric Wave Propagation: Modeling and Results Associated with Maui-MALT. Advanced Maui Optical and Space Surveillance Technical Conference, Maui, HI.

## **TEACHING**

### ***University of South Carolina***

GEOG 104: Introduction to Physical Geography  
GEOG 202: Introduction to Weather and Climate  
GEOG 371: Air Pollution Climatology  
GEOG 571: Microclimatology  
GEOG 740: Research Trends in Geography  
GEOG 746: Seminar in Climatology

### ***Louisiana State University***

ENVS 7950: Environmental Physics  
ENVS 4950: Remote Sensing for Environmental Science  
ENVS 7950: Air Pollution Meteorology

### ***University of Connecticut***

NRME 242: Natural Resources Measurements

## **SERVICE**

***Student Committees*** (6 complete and 2 in-progress as chair; 8 complete and 4 in-progress as member)

### **Completed Graduate Advisees**

Michael Stewart, M.S., Geography, May 2018 “Internal gravity wave detection and prediction during the 21 August 2017 total solar eclipse”

Alexandria McCombs, PhD, Geography, May 2017, “Representing the relationships between field collected carbon exchanges and surface reflectance using geospatial and satellite-based techniques”

Wesley Skeeter, M.S. Geography, May 2015, “Ammonium concentrations above a Louisiana sugarcane field”

Katherine Ertell, M.S. Geography, December 2014, “Dynamic mapping of tree-sway frequency and the turbulent co-spectral gap in a dense canopy environment”

Sara Flecher, M.S. Geography, August 2013, “An assessment of technology adoptability in sugarcane burning smoke plume mitigation”

Danielle Tabb, M.S., Natural Sciences, June 2009, (non-thesis program at LSU)

Completed Undergraduate Honors Thesis

Patrick Harsggard, B.S., May 2012, “An assessment on weather to use rocket science”

Current Graduate Advisees

Nicole Steeves, M.S. Geography

Current Graduate Committees (other than as Chair)

Zhao Xue, PhD, Natural Resources, University of Connecticut

Mayra Roman-Riveria, PhD., Geography, University of South Carolina

Erika Chin, PhD, Geograophy, University of South Carolina

Peter Tereszkiwicz, PhD, Geography, University of South Carolina

Paul Bauer, M.S., Geography, University of South Carolina

Graduate Committee Member (Completed)

Jennifer Simmons, M.S., Geography, 2017

Sanku Datta Mudi, PhD, Plant, Environmental and Soil Science, Louisiana State University,  
2016

Kristy Carter, M.S., Geography, 2016

Kim Rodgers, M.S., Geography, 2015 (non-thesis)

Bonnie Epstein, M.S., Geography, 2014 (non-thesis)

Patrick Barrineau, M.S., Geography, 2012

B.J. Haggard, PhD, Plant, Environmental and Soil Science, Louisiana State University, 2012

Stephanie Johnson, M.S., Plant, Environmental and Soil Science, Louisiana State University,  
2010

***Departmental Service***

Graduate Admissions (Chair) 2018/19

Core Assessment Coordinator 2019/20

Colloquium Coordinator 2016/17

Undergraduate Advisor 2014-present

Faculty Senator 2013-2015

Weather Station Supervisor 2010-present

Search Committees:

Undergraduate Coordinator, 2016

Assistant Professor, GIS, 2014-2015

Associate Professor, Remote Sensing, 2012-2013

Professor, Remote Sensing, 2011-2012

Assistant Professor, Human Dimensions of Natural Resources (UCONN), 2006-2007

***College and University Service***

ASPIRE II Review Committee, 2016

Provost Social Sciences Grant Review Committee, 2014, 2016

University Move-In Crew, 2016

University of South Carolina Faculty Welfare Committee, 2012-2015

First Year Reading Experience Discussion Leader 2011, 2012, 2015  
Preston Associate, 2011-present  
Faculty Advisor, USC Fencing Club, 2013-present  
LSU Faculty Friend, 2009-2010  
UCONN College of Agriculture and Natural Resources, Graduate Student Council, 2003-2004

***Public Outreach/Community Service***

White Knoll Elementary School High Altitude Ballooning for The Scientific Method, 2018  
Co-Instructor Duke TIP program, “Eye of the Storm”, 2017  
Contributor, “Ask the Expert”, Charlotte Observer, 2015  
Activity Assistant, Duke TIP program, “Weather and Climate”, 2014, 2015  
Content Lecturer, GEOFEST, 2011  
Judge, Gamma Sigma Delta Special Award, Louisiana State Science Fair, 2009  
Judge, Louisiana Junior Science and Humanities Symposium, 2009, 2010  
Guest Speaker, Boardman Foundation for Women in Science Luncheon, 2005  
Guest Speaker, Girl Scouts of State College, 2002

***Scholarly/Professional Organizations and Journals***

*Association of American Geographers, member 2010-present*  
Judge, Climate Specialty Group Student Presentation Competition, 2011-2016

*American Meteorological Society, member 2004-present,*  
Editorial Board, Journal of Applied Meteorology and Climatology, 2019  
Member, Ad-Hoc awards policy committee, 2016  
Chair and Organizer, 31st Conference on Agricultural and Forest Meteorology, 2014  
Scientific and Technical Advisory Committee- Agricultural and Forest Meteorology,  
2011-present, Chair 2016-present  
Board on Atmospheric Biogeosciences, 2014-present  
Chair for Sessions 30<sup>th</sup> and 31<sup>st</sup> Conference on Agricultural and Forest Meteorology  
Member, Palmetto Chapter 2011-present

*American Society of Agricultural and Biological Engineers, member 2005-2012, 2016-present*  
Chair, Committee PM-23/6 Application Systems, 2009-2011  
Secretary, Committee PM-23/6 Application Systems, 2007-2009

*The American Geophysical Union, member 2002-present*  
Co-Convener "Student Contributions to Aeronomy Research" Spring 2002 AGU Meeting

*IEEE, The Institute of Electrical and Electronic Engineers, 1997-2006*  
Treasurer, IEEE Student Chapter, The University of Connecticut 1998-2000

***Workshops and Panels***

Participant, ASCENT Workshop, 2009  
Panel Member, American Society of Environmental Sciences Symposium, 2008, 2009  
Participant, NSF Lower Atmospheric Observing Facilities Users' Workshop, 2007

### *Proposal Reviews*

NSF – MRI, 2019  
NSF – Geography and Spatial Systems, 2015  
NSF – Physical and Dynamic Meteorology, Panel, 2015  
NSF – Physical and Dynamic Meteorology, 2009, 2010, 2011, 2014, 2019  
NSF-CAREER, 2011, 2012  
USDA SBIR Phase I and II, 2010, 2011, 2013, 2014, 2016  
Hong-Kong Research Grant Program 2010, 2012

### *Manuscript Reviews*

Boundary Layer Meteorology (2019), Earth-Space Science (2018), Annals of The AAG (2017), Agricultural and Forest Meteorology (2016, 2017), Journal of Geophysical Research(2014, 2017), Atmospheric Environment (2016), Sensors (2016), Biofuels and Bioenergy (2016), Quarterly Journal of the Royal Meteorological Society (2014), Geophysical Research Letters (2014), Journal of Atmospheric and Oceanic Technology (2012, 2013, 2015), Journal of Applied Meteorology and Climatology (2013, 2014, 2018, 2019), International Journal of Biometeorology (2012), Atmospheric Research (2011), Journal of ASTM International (2010), Applied Optics (2010), Optics Letters (2009), Journal of Environmental Quality (2008, 2010,2013), CIGR EJournal (2008), Journal of Cotton Science (2008), Transactions of the American Society of Agricultural and Biological Engineers (2006, 2008, 2009, 2010, 2011, 2012, 2013,2016, 2019)

### *Book Reviews*

Accuracy Reviewer, “Exercises for Weather and Climate 9th Edition” for Pearson Education  
Reviewer, “Living Physical Geography” for Macmillan Education  
Reviewer, “Physical Geography” for Oxford University Press  
Reviewer, Book proposal, “Physical Geography Tomorrow” for W.H. Freeman  
Reviewer, 3rd Edition of “Environmental Physics” for Elsevier Press  
Reviewer, “Introduction to Air Pollution Science” for Jones and Bartlett Learning

## **HONORS AND AWARDS**

2018 ASABE Superior Paper Award  
2003-2006 University of Connecticut College of Agricultural Ph.D. Research Assistantship  
2005 Recipient Bishop-Carder Scholarship  
2005 2nd place Student paper competition, College of Agriculture and Natural Resources  
Graduate Research Forum  
2000-2001 First Year Weiss Fellow, Pennsylvania State University  
2001 Fred C. and M. Joan Thompson Graduate Fellowship in Electrical Engineering  
1996-2000 University of Connecticut Presidential Scholarship Recipient

### *Honor Societies*

Tau Beta Pi National Engineering Honor Society  
Eta Kappa Nu National Electrical Engineering Honor Society

Golden Key National Honor Society  
New England Scholar, 1999, 1998  
Who's Who Among America Colleges and Universities 2000