

# Scott T. Salesky

## Curriculum Vitae

School of Meteorology  
University of Oklahoma  
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### RESEARCH INTERESTS

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Turbulence, Atmospheric Boundary Layer, Large Eddy Simulation, Environmental Fluid Mechanics, Earth-Atmosphere Interactions, Multiphase Flows, Surface Hydrology, Evaporation

### EDUCATION

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- 2014 **Ph.D. Meteorology**  
The Pennsylvania State University, University Park, PA
- 2010 **M.S. Meteorology**  
The Pennsylvania State University, University Park, PA
- 2008 **B.S. Science Education**  
Martin Luther College, New Ulm, MN

### PROFESSIONAL APPOINTMENTS

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- 2017 – present **Assistant Professor**  
School of Meteorology, University of Oklahoma
- 2014 – 2017 **Postdoctoral Fellow**  
Department of Civil Engineering, University of British Columbia
- 2008 – 2014 **Graduate Research Assistant**  
Department of Meteorology & Atmospheric Science, Penn State University

### PEER-REVIEWED PUBLICATIONS

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#### 2018

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**S.T. Salesky** and W. Anderson (2018). Buoyancy effects on large-scale motions in convective atmospheric boundary layers: implications for modulation of near-wall processes. *Journal of Fluid Mechanics* **856**:135-168. [↗](#) (**Note:** This article was featured in “Focus on Fluids” in J. Fluid Mech.)

**Salesky, S.T.**, M.G. Giometto, M. Chamecki, M. Lehning, and M.B. Parlange (2018) The transport and deposition of heavy particles in complex terrain: insights from an Eulerian model for large eddy simulation. Submitted to *Water Resources Research*, in revision.

F. Comola, M.G. Giometto, **S.T. Salesky**, M.B. Parlange, and M. Lehning (2018) Preferential deposition of dust and snow over hills: governing processes and relevant scales. Submitted to *Journal of Geophysical Research – Atmospheres*.

## 2017

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Chamecki, M., N.L. Dias, **S.T. Salesky**, and Y. Pan (2017) Scaling laws for the longitudinal structure function in the atmospheric surface layer. *Journal of the Atmospheric Sciences*, **74**:1127-1147. [↗](#)

**Salesky, S.T.**, M. Chamecki, and E. Bou-Zeid (2017) On the nature of the transition between roll and cellular organization in the convective boundary layer. *Boundary-Layer Meteorology*, **163**:41-68. [↗](#)

## 2016

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Ghannam, K., T. Duman, **S.T. Salesky**, M. Chamecki, and G. G. Katul (2016) The nonlocal character of turbulence asymmetry in the convective atmospheric boundary layer. *Quarterly Journal of the Royal Meteorological Society* **143**:494-507. [↗](#)

Li, D., **S.T. Salesky**, and T. Banerjee (2016) Connections between the Ozmidov scale and mean velocity profile in stably stratified atmospheric surface layers. *Journal of Fluid Mechanics*, **797**, R3. [↗](#)

## 2014

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Banerjee, T., G.G. Katul, **S.T. Salesky**, and M. Chamecki (2014) Revisiting the formulations for longitudinal velocity variance in the unstable atmospheric surface layer. *Quarterly Journal of the Royal Meteorological Society*, **141(690)**:1699–1711. [↗](#)

## 2013

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**Salesky, S.T.**, G.G. Katul, and M. Chamecki (2013) Buoyancy effects on the integral lengthscales and mean velocity profile in atmospheric surface layer flows. *Physics of Fluids*, **25**,105101. [↗](#)

## 2012

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**Salesky, S.T.** and M. Chamecki (2012) Random errors in turbulence measurements in the atmospheric surface layer: implications for Monin-Obukhov similarity theory. *Journal of the Atmospheric Sciences*, **69(12)**:3700-3714. [↗](#)

**Salesky, S.T.** and M. Chamecki (2012) A similarity model of subfilter-scale energy for large eddy simulations of the atmospheric boundary layer. *Boundary-Layer Meteorology*, **145(1)**:69-91. [↗](#)

**Salesky, S.T.**, M. Chamecki, and N.L.Dias (2012) Estimating the random error in eddy-covariance based fluxes and other turbulence statistics: the filtering method. *Boundary-Layer Meteorology*, **144(1)**:113-135. [↗](#)

## INVITED TALKS

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**Salesky, S.T.**, 2017. Inner-outer interactions in the convective atmospheric boundary layer. AGU Fall Meeting. New Orleans, LA. December 11-15, 2017.

**Salesky, S.T.**, 2017. Large eddy simulations of turbulent transport over complex surfaces. Department of Mechanical Engineering, University of Texas at Dallas.

**Salesky, S.T.**, 2017. Turbulent transport in the atmospheric boundary layer: effects of buoyancy and complex terrain. School of Meteorology, University of Oklahoma.

**Salesky, S.T.**, 2017. Large eddy simulations of atmospheric flows in complex terrain: implications for heavy particle transport and atmospheric dispersion. Department of Meteorology and Atmospheric Science, The Pennsylvania State University.

**Salesky, S.T.**, 2016. Coherent structures and turbulent transport in the atmospheric boundary layer: Insights from large eddy simulation. Department of Biological and Ecological Engineering

Seminar. Oregon State University.

**Salesky, S.T.**, 2014. Turbulent transport and convective organization in the unstable atmospheric boundary layer. Fluids Laboratory Seminar. University of British Columbia.

## CONFERENCE PRESENTATIONS

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Presentations as a coauthor are omitted for the sake of brevity.

### 2018

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**Salesky, S.T.** and W. Anderson, 2018. Modulation of surface-layer turbulence by large-scale motions in the convective boundary layer. American Meteorological Society 23rd Symposium on Boundary Layers and Turbulence. Oklahoma City, OK, June 11-15, 2018.

### 2017

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**Salesky, S.T.**, M.G. Giometto, A. Christen, and M.B. Parlange, 2017. Scalar dispersion from point and area sources in realistic urban environments. AMS Annual Meeting. Seattle, WA. January 22-26, 2017.

### 2016

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**Salesky, S.T.**, M.G. Giometto, A. Christen, R. Stoll, and M.B. Parlange, 2016. Scalar dispersion from point sources in realistic urban environments. AGU Fall Meeting. San Francisco, CA. December 12-16, 2016.

**Salesky, S.T.**, M.G. Giometto, M. Lehning, and M.B. Parlange, 2016. The preferential erosion and deposition of heavy particles over erodible beds. 69th Annual Meeting, APS/DFD. Portland, OR, November 20-22, 2016.

**Salesky, S.T.**, M. Chamecki, and E. Bou-Zeid, 2016. On the nature of the transition from roll to cellular organization in the convective boundary layer. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

### 2015

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**Salesky, S.T.**, M. Giometto, M. Chamecki, M. Lehning, and M.B. Parlange, 2015. The preferential deposition of snow in complex terrain: An LES investigation. Fall Meeting, AGU. San Francisco, CA, December 14-18, 2015.

**Salesky, S.T.**, M. Giometto, M. Chamecki, and M.B. Parlange, 2015. Blowing snow in complex terrain - an LES investigation. International Conference on Model Integration Across Disparate Scales in Complex Turbulent Flow Simulation. State College, PA, June 15-17, 2015.

### 2013

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**Salesky, S.T.**, G.G. Katul, and M. Chamecki, 2013. Buoyancy effects on the mean velocity profile in atmospheric surface layer flows. 66th Annual Meeting, APS/DFD. Pittsburgh, PA, November 24-26, 2013.

### 2012

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**Salesky, S.T.** and M. Chamecki, 2012. Scatter in plots of Monin-Obukhov similarity functions: random errors or missing physics? American Meteorological Society 20th Symposium on Boundary Layers and Turbulence. Boston, MA, July 8-13, 2012.

### 2011

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**Salesky, S.T.**, and M. Chamecki, 2011. Spatial locality of turbulent fluxes: the filtering approach. 64th Annual Meeting, APS/DFD. Baltimore, MD, November 20, 2011.

**Salesky, S.T.** and M. Chamecki, 2011: A similarity model of subfilter-scale scalar variance for large eddy simulations of the atmospheric boundary layer. 14th Annual Environmental Chemistry Student Symposium. The Pennsylvania State University, April 9, 2011.

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## 2010

**Salesky, S.T.** and M. Chamecki, 2010: A local model of the subfilter-scale energy for LES of the atmospheric boundary layer. 19th Symposium on Boundary Layers and Turbulence, Keystone, CO, August 6, 2010.

**Salesky, S.T.** and M. Chamecki, 2010: A similarity model of the subfilter-scale energy for LES of the ABL. John C. Wyngaard Symposium, The Pennsylvania State University, June 25, 2010.

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## TEACHING EXPERIENCE

### University of Oklahoma

Fall, 2018 Instructor, **METR 3613: Meteorological Measurement Systems** (3 credits; enrollment: 46)  
Fall, 2017 Instructor, **METR 1111: Orientation to Professional Meteorology** (1 credit; enrollment: 110)

### The Pennsylvania State University

Spring, 2014 Substitute Lecturer, **METE0 421: Atmospheric Dynamics** (6 lectures)  
Spring, 2013 Teaching Assistant, **METE0 473: Application of Computers to Meteorology**  
Fall, 2008 Teaching Assistant, **METE0 003: Introductory Meteorology**

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## ADVISING

<b>Student</b>	<b>Degree</b>	<b>Topic</b>	<b>Graduation Date</b>
Briana Lynch	MS (Meteo.)	Effects of urban form on heavy particle dispersion	Summer, 2019
Robert van Kleeck	MS (Meteo.)	Idealized simulations of scalar transport in urban environments	Summer, 2020

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## HONORS AND AWARDS

2018 Article "Buoyancy effects on large-scale motions in convective atmospheric boundary layers: implications for modulation of near-wall processes" by Salesky and W. Anderson (doi:10.1017/jfm.2018.711) was featured in the "Focus on Fluids" section of the Journal of Fluid Mechanics

2014 **Penn State Alumni Association Dissertation Award**  
The Pennsylvania State University

2014 **John C. Wyngaard Graduate Research Award**  
Department of Meteorology & Atmospheric Science  
The Pennsylvania State University

## PROFESSIONAL MEMBERSHIPS

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American Geophysical Union  
American Physical Society  
American Meteorological Society

## OTHER PROFESSIONAL ACTIVITIES

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Reviewer of manuscripts for *Advances in Water Resources*, *Agricultural and Forest Meteorology*, *Atmosphere*, *Atmospheric Measurement Techniques*, *Atmospheric Science Letters*, *Boundary-Layer Meteorology*, *Environmental Fluid Mechanics*, *Journal of the Atmospheric Sciences*, *Journal of Geophysical Research*, *Journal of Turbulence*, *Meteorological Monographs*, *Quarterly Journal of the Royal Meteorological Society*, *Weather and Forecasting*

Session chair, 22nd Symposium on Boundary Layers and Turbulence (June 2016).

Session chair, 23rd Symposium on Boundary Layers and Turbulence (June 2018).

Invited attendee to The Burgers Program 2010 Research School in Fluid Dynamics, Topics in Turbulence (May 2010). Center for Scientific Computation and Mathematical Modeling, University of Maryland, College Park, MD

## PERSONAL

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Married, United States citizen