

Scott T. Salesky

Curriculum Vitae

School of Meteorology
University of Oklahoma
120 David L. Boren Blvd. #5900
Norman, OK 73072
Phone: 405-325-1738
Email: salesky@ou.edu
Web: weather.ou.edu/~salesky
Google Scholar: [↗](#)

RESEARCH INTERESTS

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

EDUCATION

- 2014 **Ph.D. Meteorology**
The Pennsylvania State University, University Park, PA
Advisor: Marcelo Chamecki
Dissertation: *"Monin-Obukhov similarity and convective organization in the unstable atmospheric boundary layer"*
- 2010 **M.S. Meteorology**
The Pennsylvania State University, University Park, PA
Advisor: Marcelo Chamecki
Thesis: *"Similarity models of subfilter-scale energy and temperature variance for large eddy simulations of the atmospheric boundary layer."*
- 2008 **B.S. Science Education**
Martin Luther College, New Ulm, MN

PROFESSIONAL APPOINTMENTS

- 2023 – present **Associate Professor**
Associate Director for Graduate Studies (08/23 – present)
School of Meteorology, University of Oklahoma
- 2017 – 2023 **Assistant Professor**
School of Meteorology, University of Oklahoma
- 2014 – 2017 **Postdoctoral Fellow**
Department of Civil Engineering, University of British Columbia
Advisor: Marc Parlange
- 2008 – 2014 **Graduate Research Assistant**
Department of Meteorology & Atmospheric Science, Penn State University
Advisor: Marcelo Chamecki

SPONSORED RESEARCH

“CAREER: Advancing the Understanding of Turbulence-Microphysics Interactions in Clouds Through Multiscale Numerical Modeling” National Science Foundation, Physical and Dynamic Meteorology Program, PDM-2142982, \$763,930, 02/01/2022–01/31/2027.

“Effects of large-scale motions on turbulent heat and moisture transport in the convective boundary layer” U.S. Department of Energy, Atmospheric System Research Program, DE-SC0022124, \$517,697, 08/15/2021–08/14/2024.

“Collaborative Research: Snow transport in katabatic winds and implications for the Antarctic surface mass balance: observations, theory, and numerical modeling” National Science Foundation, Office of Polar Programs, OPP-2034874, \$530,296, 09/01/2021–08/31/2024.

“RII Track-4: Turbulence Effects on Cloud Microphysical Processes: Development and Testing of Subgrid-Scale Parameterizations for Large Eddy Simulation”, National Science Foundation Office of Integrative Activities, OIA-1929124, \$223,658. 12/1/2019–11/30/2022.

PEER-REVIEWED PUBLICATIONS

[†]denotes student/postdoc author advised by STS.

2024

S.T. Salesky, K. Gillis,[†] J. Anderson, I. Hellman, W. Cantrell, and R.A. Shaw (2024) Modeling the subgrid scale scalar variance: a priori tests and application to supersaturation in cloud turbulence. *Journal of the Atmospheric Sciences*, in press. [↗](#)

B.R. Greene[†] and **S.T. Salesky** (2024) Coherent structures in stably-stratified wall-bounded turbulent flows. Submitted to *Journal of Fluid Mechanics*.

2023

S.T. Salesky (2023) Uniform momentum and temperature zones in unstably stratified turbulent flows. *Journal of Fluid Mechanics*, **958**, A7. [↗](#)

S. Edris, J.B. Basara, J.I. Christian, E.D. Hunt, J. Otkin, **S.T. Salesky**, and B. Ilston (2023) Analysis of the critical components of flash drought using the standardized evaporative stress ratio. *Agricultural and Forest Meteorology*, **330**, 109288. [↗](#)

B.R. Greene[†] and **S.T. Salesky** (2023) Random errors in the stable boundary layer: implications for modern observational techniques. *Journal of the Atmospheric Sciences*, **80**, 569–591. [↗](#)

J.A. Gibbs, R. Stoll, and **S.T. Salesky** (2023) Inclination angles of turbulent structures in stably stratified boundary layers. *Boundary-Layer Meteorology*, **186**, 27–41. [↗](#)

2022

S.T. Salesky, M. Calaf, and W. Anderson (2022) Unstable turbulent channel flow response to spanwise-heterogeneous heat fluxes: Prandtl’s secondary flow of the third kind. *Journal of Fluid Mechanics*, **934**, A46. [↗](#)

2021

W. Anderson and **S.T. Salesky** (2021) Uniform momentum zone scaling arguments from DNS of inertia-dominated channel turbulence. *Journal of Fluid Mechanics*, **906**, A8. [↗](#)

2020

S.T. Salesky and W. Anderson (2020) Coherent structures modulate atmospheric surface layer

flux-gradient relationships. *Physical Review Letters*, **125**(12), 124501. [↗](#)

R. Stoll, J.A. Gibbs, **S.T. Salesky**, W. Anderson, and M. Calaf (2020) Review: Large-Eddy Simulation of the Atmospheric Boundary Layer. *Boundary-Layer Meteorology*. [↗](#)

2019

S.T. Salesky and W. Anderson (2019) Revisiting inclination of large-scale motions in unstably stratified channel flow. *Journal of Fluid Mechanics* **884**, R5. [↗](#)

F. Comola, M.G. Giometto, **S.T. Salesky**, M.B. Parlange, and M. Lehning (2019) Preferential deposition of dust and snow over hills: governing processes and relevant scales. *Journal of Geophysical Research—Atmospheres*. **124**:7951–7974. [↗](#)

2018

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. [↗](#) (Link to “Focus on Fluids” commentary by G.G. Katul [↗](#))

2017

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

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

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

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

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

Salesky, S.T., 2023. Coherent structures, scaling laws, and scalar transport in the convective boundary layer. *New Horizons in Environmental Mechanics: A Festschrift in Honour of John J. Finnigan*. National Center for Atmospheric Research, Boulder, CO, July 24–27, 2023.

Salesky, S.T., 2021. Subgrid-scale modeling in large eddy simulation: application to the scalar variance in the Pi chamber. Department of Physics, Michigan Technological University, Houghton, MI. June 16, 2021.

Salesky, S.T., 2019. The effects of large-scale motions on surface fluxes in the convective atmospheric boundary layer: Monin-Obukhov similarity revisited. Department of Physics, Michigan Technological University. May 22, 2019.

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

[†]denotes presentation by student/postdoc author advised by STS.

2023

Greene, B.R.[†], L.M. Otterstatter, and **S.T. Salesky**. A Parametric Study on the Turbulent Transport of Heat and Humidity in the Convective Boundary Layer. AGU Fall Meeting, San Francisco, CA, December 11-15, 2023.

Frost, R.,[†] B.R. Greene, and **S.T. Salesky**. The Effects of Non-Stationary Forcing on Large-Scale Structures in the Convective Boundary Layer. AGU Fall Meeting, San Francisco, CA, December 11-15, 2023.

Salesky, S.T., K. Gillis, J. Anderson, I. Hellman, W. Cantrell, and R.A. Shaw. Modeling the Subgrid Scale Supersaturation Variance in Cloud Turbulence: Insights From A Priori Tests. AGU Fall Meeting, San Francisco, CA, December 11-15, 2023.

Greene, B.R.[†] and **S.T. Salesky**. Coherent structures in stably stratified wall-bounded turbulent flows. American Physical Society Division of Fluid Dynamics 75th Annual Meeting, Washington, DC, November 19-21, 2023.

Salesky, S.T., K. Gillis, J. Anderson, I. Hellman, W. Cantrell, and R.A. Shaw. Modeling the

subgrid scale scalar variance: a priori tests and application to supersaturation in cloud turbulence. American Physical Society Division of Fluid Dynamics 75th Annual Meeting, Washington, DC, November 19-21, 2023.

Greene, B.R.[†], L.M. Otterstatter, and **S.T. Salesky**. Effects of Large-Scale Motions on Turbulent Heat and Moisture Transport in the Convective Boundary Layer. U.S. Department of Energy Joint ARM User Facility and ASR PI Meeting. Bethesda, MD and virtual, August 7–10, 2023.

2022

B.R. Greene[†] and **S.T. Salesky**, 2022. Turbulent Coherent Structures in the Stable Atmospheric Boundary Layer: A Large-Eddy Simulation Study. AGU Fall Meeting, Chicago, IL, December 12-16, 2022.

Frost, R.[†], B.R. Greene[†], and **S.T. Salesky**, 2022. The Effects of Nonstationary Forcings on Organization and Turbulent Transport in the Convective Boundary Layer. AGU Fall Meeting, Chicago, IL, December 12-16, 2022.

Salesky, S.T., 2022. Uniform momentum and temperature zones in the convective boundary layer. AGU Fall Meeting, Chicago, IL, December 12-16, 2022.

Salesky, S.T., 2022. Uniform momentum and temperature zones in unstably-stratified turbulent channel flow. American Physical Society Division of Fluid Dynamics 75th Annual Meeting, Indianapolis, IN, November 20-22, 2022.

Salesky, S.T., 2022. Subgrid-scale modeling of turbulence-microphysics interactions in large eddy simulations. Kavli Institute for Theoretical Physics, Program on Multiphase Flows in Geophysics and the Environment. Santa Barbara, CA, October 27, 2022.

Salesky, S.T., 2022. Uniform momentum and temperature zones in the convective boundary layer. U.S. Department of Energy Joint ARM User Facility and ASR PI Meeting. Rockville, MD and virtual, October 24–27, 2022. (Virtual poster presentation)

R.D. Palmer, D.J. Bodine, P. Kirstetter, C. Fulton, M. Yeary, B. Cheong, J. Salazar, T.Y. Yu, M.I. Biggerstaff, H.B. Bluestein, N. Goodman, P. Heinselman, C.R. Homeyer, J. Kelly, D.S. LaDue, E.R. Martin, J. McDaniel, G.M. McFarquhar, A. McGovern, J. Metcalf, J. Redemann, J. Ruyle, A. Ryzhkov, N. Sakaeda, **S.T. Salesky**, D. Schwartzman, A. Shapiro, H. Sigmarsson, S. Torres, X. Wang, N. Yussouf, L.D. Casey, P. Gatlin, M. Kumjian, L.D. White, S.W. Nesbitt, and A.K. Rowe, 2022. Transportable Phased Array Radar: Meeting Weather Community Needs. American Meteorological Society Annual Meeting, virtual, Jan. 23–27, 2022.

2021

R.D. Palmer, D.J. Bodine, C. Fulton, P.-E. Kirstetter, M.B. Yeary, B.L. Cheong, J. Salazar-Cerrenon, T.-Y. Yu, M.I. Biggerstaff, H.B. Bluestein, N. Goodman, P. Heinselman, C.R. Homeyer, J. Kelly, D.S. LaDue, E.R. Martin, J. McDaniel, G.M. McFarquhar, A. McGovern, J. Metcalf, J. Redemann, J. Ruyle, A. Ryzhkov, **S.T. Salesky**, D. Schwartzman, A. Shapiro, H. Sigmarsson, S. Torres, X. Wang, N. Yussouf, L.D. Carey, P.N. Gatlin, M.R. Kumjian, L.D. White, and S.W. Nesbitt, 2021. The transportable phased array radar: meeting community imperatives in weather science. AGU Fall Meeting, New Orleans, LA, December 13-17, 2021.

D. Candela,[†] J. Gibbs, G. Torkelson, **S.T. Salesky**, and R. Stoll, 2021. The impact of surface heterogeneity parameterizations on surface flux estimations in single column model simulations of the stable atmospheric boundary layer. AGU Fall Meeting, New Orleans, LA, December 13-17, 2021.

Greene, B.R.[†], and **S.T. Salesky**, 2021. Random error analysis of stable boundary layers and implications for UAS sampling. AGU Fall Meeting, New Orleans, LA, December 13-17, 2021.

Salesky, S.T., M. Calaf, and W. Anderson, 2021. Turbulence secondary flows in the convective boundary layer driven by spanwise thermal gradients. AGU Fall Meeting, New Orleans, LA, December 13-17, 2021.

Zheng, Y., W. Anderson, and **S.T. Salesky**: Uniform momentum zone scaling arguments from direct numerical and large-eddy simulation of inertia-dominated channel turbulence. AGU Fall Meeting, New Orleans, LA, December 13-17, 2021.

Salesky, S.T., M. Calaf, and W. Anderson, 2021. Thermally-driven secondary flows in turbulent channel flow: Prandtl's secondary flow of the third kind. 74th Annual Meeting of the APS Division of Fluid Dynamics. Phoenix, AZ, November 21-23, 2021.

Zheng, Y., W. Anderson, and **S.T. Salesky**: Uniform momentum zone scaling arguments from direct numerical simulation of inertia-dominated channel turbulence. APS Division of Fluid Dynamics Meeting, Phoenix, AZ, November 21-23, 2021.

Basara, J., S. Edris, J. Christian, B. Ilstono, B. Hunt, J. Otkin, and **S.T. Salesky**: Decomposing the Critical Components of Flash Drought Using the Standardized Evaporative Stress Ratio. EGU General Assembly 2021, online, 19-30 Apr 2021, EGU21-13683, <https://doi.org/10.5194/egusphere-egu21-13683>, 2021

2020

van Kleeck, R.H.[†] and **S.T. Salesky**, 2020. The effects of urban geometry on point-source scalar plume statistics: a large eddy simulation study. AGU Fall Meeting, held virtually, December 1–17, 2020.

S.T. Salesky and W. Anderson, 2020. A revised surface flux similarity theory for land-atmosphere interactions. American Meteorological Society Annual Meeting. Boston, MA, January 12-16, 2020.

van Kleeck, R.H.[†] and **S.T. Salesky**, 2020. The effects of urban geometry on point source scalar plume statistics: a large eddy simulation study. American Meteorological Society Annual Meeting. Boston, MA, January 12-16, 2020.

2019

S.T. Salesky and W. Anderson, 2019. A revised surface flux similarity theory for land-atmosphere interactions. AGU Fall Meeting. San Francisco, CA, December 9-13, 2019.

S.T. Salesky and W. Anderson, 2019. Morphological properties of large-scale motions remain self-similar across thermal regimes. 72nd Annual Meeting of the APS Division of Fluid Dynamics. Seattle, WA, November 23-26, 2019.

S.T. Salesky and W. Anderson, 2019. Buoyancy effects on large-scale motions in the convective boundary layer: implications for Monin-Obukhov similarity theory. Pi Chamber Cloud Modeling Workshop. Houghton, MI, May 23–24, 2019.

Lynch, B.M.[†], R. Stoll, A. Christen, W.F. Mahaffee, and **S.T. Salesky**, 2019. The influence of urban form and vegetation on near-source dispersion in a realistic urban canopy. American Meteorological Society Student Meeting, Phoenix, AZ, January 6-10, 2019.

2018

Salesky, S.T. and W. Anderson, 2018. The effects of large-scale motions on surface fluxes in the convective atmospheric boundary layer. AGU Fall Meeting Washington, DC, December 10-14,

2018.

Salesky, S.T. and W. Anderson, 2018. Buoyancy effects on large scale motions and amplitude modulation. American Physical Society Division of Fluid Dynamics Meeting. Atlanta, GA, November 18-20, 2018.

Stoll, R., **S.T. Salesky**, M. Giometto, A. Christen, W. Mahaffee, and E.R. Pardyjak, 2018. The impact of urban form on particle dispersion in a residential neighborhood. American Meteorological Society 23rd Symposium on Boundary Layers and Turbulence. Oklahoma City, OK, June 11-15, 2018.

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.

Christen, A., R. Stoll, W. Mahaffee, **S.T. Salesky**, and A. Therias, 2018. A tracer experiment to study near-source dispersion of heavy particles within a vegetated urban canopy layer. European Geophysical Union Annual Meeting. Vienna, Austria, April 8-13, 2018.

2017

Giometto, M. G., J. Fang, **S. T. Salesky**, and M. B. Parlange, 2017. Large- and Very-Large-Scale Motions in Katabatic Flows Over Steep Slopes. AMS Annual Meeting. Seattle, WA. January 22-26, 2017.

R. Stoll, A. Christen, W. Mahaffee, **S.T. Salesky**, A. Therias, and C. Semmens, 2017. An experimental study of the impact of tress and urban form on the turbulent dispersion of heavy particles from near ground point sources. AGU Fall Meeting. New Orleans, LA. December 11-15, 2017.

M.F. Schmid, M.G. Giometto, A. Christen, E.S. Kravynhoff, **S.T. Salesky**, and M.B. Parlange, 2017. Modeling the horizontally averaged wind profile within and above the urban canopy layer. AGU Fall Meeting. New Orleans, LA. December 11-15, 2017.

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

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.

M.G. Giometto, J. Fang, **S.T. Salesky**, and M.B. Parlange, 2016. Large- and very-large scale motions in katabatic flows over steep slopes. AGU Fall Meeting. December 12-16, 2016.

Parlange, M.B., M.G. Giometto, P. Egli, M.F. Schmidt, R.T. Tooke, N.C. Coops, **S.T. Salesky**, and A. Christen, 2016. Effects of urban trees on mean wind, turbulence and momentum exchange within and above a realistic urban canopy. AGU Fall Meeting. 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.

Parlange, M.B., **S.T. Salesky**, M.G. Giometto, M. Chamecki, and M. Lehning, 2016. The preferential deposition of snow in complex terrain: an LES investigation. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Chamecki, M., Y. Pan, N.L. Dias, and **S.T. Salesky**, 2016. Scaling laws for structure functions in the lowest layers of the ABL. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Giometto, M.G., E. Trujillo, K.C. Leonard, T.L. Maksym, F. Comola, **S.T. Salesky**, C. Meneveau, M. Lehning, and M.B. Parlange, 2016. LES modeling of wind over Antarctic snow-ice formations using a dynamic surface roughness approach. 22nd Symposium on Boundary Layers and Turbulence. Salt Lake City, UT, June 20-24, 2016.

Ghannam, K., G.G. Katul, **S.T. Salesky**, and M. Chamecki, 2015. Closure of the heat flux budget with the ejection-sweep cycle in the convective boundary layer. Fall Meeting, AGU. San Francisco, CA, December 14-18, 2015.

2015

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.

Banerjee, T., G.G. Katul, **S.T. Salesky**, and M. Chamecki, 2014. Logarithmic scaling in the longitudinal velocity variance explained by a spectral budget in a neutral and unstable atmosphere. APS March Meeting, Denver, CO, March 3-7, 2014.

2013

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

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.

Chamecki, M. and **S.T. Salesky**, 2012. A new approach to estimate random errors in turbulence statistics. American Meteorological Society 20th Symposium on Boundary Layers and Turbulence. Boston, MA, July 8-13, 2012.

Chamecki, M., and **S.T. Salesky**, 2011. Spatial locality of turbulent fluxes: toward local flux-gradient relationships in the atmospheric surface layer. Fall Meeting, AGU. San Francisco, CA, December 5-9, 2011.

2011

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.

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.

TEACHING EXPERIENCE

University of Oklahoma, instructor of record

Spring, 2024 **METR 5103:** *Boundary Layer Meteorology*, 3 credits, enrollment: 8
Fall, 2023 **METR 2004:** *Atmospheric Circulations*, 3 credits, enrollment: 61
Spring, 2023 **METR 6103:** *Turbulence*, 3 credits, enrollment: 5
Fall, 2022 **METR 2004:** *Atmospheric Circulations*, 3 credits, enrollment: 70
Spring, 2022 **METR 5103:** *Boundary Layer Meteorology*, 3 credits, enrollment: 15
Fall, 2021 **METR 2004:** *Atmospheric Circulations*, 3 credits, enrollment: 66
Spring, 2021 **METR 6103:** *Turbulence*, 3 credits, enrollment: 5
Fall, 2020 **METR 3613:** *Meteorological Measurement Systems*, 3 credits, enrollment: 50
Spring, 2020 **METR 5103:** *Boundary Layer Meteorology*, 3 credits, enrollment 5
Fall, 2019 **METR 3613:** *Meteorological Measurement Systems*, 3 credits, enrollment: 58
Spring, 2019 **METR 6103:** *Turbulence*, 3 credits, enrollment: 11
Fall, 2018 **METR 3613:** *Meteorological Measurement Systems*, 3 credits, enrollment: 46
Fall, 2017 **METR 1111:** *Orientation to Professional Meteorology*, 1 credit, enrollment: 110

The Pennsylvania State University

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

ADVISING

*anticipated

Postdoctoral Fellows

Researcher	Dates Advised
Brian Greene	01/2023–present

Graduate Research Assistants

Student	Degree	Graduation Date
Leia Otterstatter	MS	Spring, 2025*
Claire Doyle	MS	Summer, 2024*
Kendra Gillis	MS	Spring, 2023
Brian Greene	PhD	Fall, 2022
Dominic Candela	MS	Summer, 2022
Robert van Kleeck	MS	December, 2020
Briana Lynch	MS	December, 2019

Undergraduate Research Assistants

Student	Degree	Graduation Date
Robert Frost	BS	Spring, 2024*
Leia Otterstatter	BS	Spring, 2023

HONORS AND AWARDS

- 2022 NSF CAREER Award, “CAREER: Advancing the Understanding of Turbulence-Microphysics Interactions in Clouds Through Multiscale Numerical Modeling, \$763,930
- 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 [↗](#) was featured in “Focus on Fluids” article by Prof. G. Katul, Duke University [↗](#)
- 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

OTHER PROFESSIONAL ACTIVITIES

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

Proposal reviewer for *Deutsche Forschungsgemeinschaft (German Research Foundation)*, *NOAA Climate Program Office*, *National Science Foundation*, *Israel Science Foundation*.

Convener of *Boundary Layer Processes and Turbulence* session at 2023 AGU Fall Meeting, together with Marco Giometto and Tirtha Banerjee. This included one poster session and four oral sessions.

Session chair, American Physical Society Division of Fluid Dynamics 75th Annual Meeting, Washington, DC, November 19-21, 2023.

Lead convener of *Boundary Layer Processes and Turbulence* session at 2022 AGU Fall Meeting, together with Marco Giometto and Shane Mayor. This included one poster session and four oral sessions.

Session chair, American Physical Society Division of Fluid Dynamics 75th Annual Meeting. Indianapolis, IN, November 20-22, 2022.

Participant in Program on Multiphase Flows in Geophysics and the Environment, Kavli Institute for Theoretical Physics, University of California Santa Barbara. Santa Barbara, CA, October 17-28, 2022.

Visiting Scholar, Department of Physics, Michigan Technological University. Houghton, MI, 05/2022–08/2022. Supported by NSF EPSCoR Track-4 grant (OIA-1929124).

Convener of *Boundary Layer Processes and Turbulence* session at 2021 AGU Fall Meeting, together with Marco Giometto, Shane Mayor, and Ying Pan.

Visiting Scholar, Department of Physics, Michigan Technological University. Houghton, MI, 06/2021–08/2021. Supported by NSF EPSCoR Track-4 grant (OIA-1929124).

Session chair, AGU Fall Meeting (virtual, December 2020).

Member of the DOE Atmospheric Radiation Measurement (ARM) Science Board, 2020–present.

Member of AGU Committee for Large-scale Field Experimentation in Hydrology.

Session chair, AGU Fall Meeting (virtual, December 2020).

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

PROFESSIONAL MEMBERSHIPS

American Geophysical Union

American Physical Society

American Meteorological Society