

# Brian Robert Greene, M.S. – Curriculum Vitae

---

## Personal Information

Pronouns	He, Him, His	Mobile	(+1) 847 513 2499
Address	120 David L. Boren Blvd., Ste. 5900 Norman, Oklahoma 73072, USA	Email	<a href="mailto:brian.greene@ou.edu">brian.greene@ou.edu</a>
Languages	English (Native)	Website	<a href="http://wxbrain.oucreate.com">wxbrain.oucreate.com</a>
		Google Scholar	<a href="#">Profile</a> , h-index: 7

## Education

- Aug 2018 – Present **University of Oklahoma** *Norman, Oklahoma, USA*  
Ph.D., Meteorology – Advisor: Dr. Scott T. Salesky  
Dissertation: *Stable Atmospheric Boundary Layers Through the Lens of Large Eddy Simulations and Unoccupied Aircraft Systems*
- Aug 2016 – Aug 2018 **University of Oklahoma** *Norman, Oklahoma, USA*  
M.S., Meteorology – Advisor: Dr. Phillip B. Chilson  
Thesis ([Link](#)): *Boundary Layer Profiling Using Rotary-Wing Unmanned Aircraft Systems: Filling the Atmospheric Data Gap*
- Aug 2012 – May 2016 **University of Illinois at Urbana-Champaign** *Urbana, Illinois, USA*  
B.S., *Cum Laude*, Physics and Atmospheric Sciences  
High Distinction in Physics and Highest Distinction in Atmospheric Sciences

## Research Experience

- Aug 2016 – Present **Graduate Research Assistant** School of Meteorology, Advanced Radar Research Center, Center for Autonomous Sensing and Sampling, and Cooperative Institute for Severe and High-Impact Weather Research Operations, University of Oklahoma, USA.
- Jan 2014 – May 2016 **Undergraduate Research Assistant** Department of Atmospheric Sciences – University of Illinois, USA. Advisor: Dr. Brian Jewett
- Jan 2016 – May 2016 **Undergraduate Research Assistant** US Army Engineer Research and Development Center, Construction Engineering Research Laboratory – Champaign, Illinois, USA.  
Advisor: Dr. Michelle Swearingen
- May 2015 – July 2015 **National Oceanic and Atmospheric Administration Ernest F. Hollings Undergraduate Scholar** National Weather Service Weather Forecast Office, Louisville, Kentucky, USA.  
Advisor: Theodore Funk

## Teaching Experience

### School of Meteorology, University of Oklahoma

- Jan 2021 – May 2021 Teaching Assistant, **METR 2613**: *Atmospheric In-Situ & Surface-Based Measurements*
- Aug – Dec 2018, '19, '20 Teaching Assistant, **METR 3613**: *Meteorological Measurement Systems*
- Jan – May 2019, '20 Teaching Assistant, **METR 1014**: *Introduction to Weather and Climate*
- Aug 2017 – Dec 2017 Teaching Assistant, **METR 3213**: *Physical Meteorology I: Thermodynamics*
- Jun 2017 – Jul 2017 Co-Instructor, **METR 2023**: *Introduction to Meteorology II*

### Department of Physics, University of Illinois at Urbana-Champaign

- Jan 2016 – May 2016 Teaching Assistant, **PHYS 214/213**: *University Physics: Quantum Physics/Thermal Physics*
- Aug 2015 – Dec 2015 Teaching Assistant, **PHYS 150**: *Physics of Societal Issues*
- Aug 2014 – May 2015 Teaching Assistant, **PHYS 102**: *College Physics: E&M & Modern*
- Jan 2014 – May 2014 Teaching Assistant, **PHYS 211**: *University Physics: Mechanics*

## Refereed Publications and Presentations (11 Total, 2 First-Author)

- 2021 Smith, E.N., **B.R. Greene**, T.M. Bell, W.G. Blumberg, R. Wakefield, D. Reif, Q. Niu, Q. Wang, and D.D. Turner, 2021: Evaluation and applications of multi-instrument boundary layer thermodynamic retrievals. *Boundary-Layer Meteorol.* <https://doi.org/10.1007/s10546-021-00640-2>.
- Pillar-Little, E.A., **B.R. Greene**, F.M. Lappin, T.M. Bell, A.R. Segalés, G. Britto Hupsel de Azevedo, W. Doyle, S.T. Kanneganti, D.D. Tripp, and P.B. Chilson, 2021: Observations of the thermodynamic and kinematic state of the atmospheric boundary layer over the San Luis Valley, CO, using the CopterSonde 2 remotely piloted aircraft system in support of the LAPSE-RATE field campaign. *Earth Syst. Sci. Data*, **13**, 269–280. <https://doi.org/10.5194/essd-13-269-2021>.
- 2020 Kral, S.T., J. Reuder, T. Vihma, I. Suomi, K. Flacké Haualand, G.H. Urbancic, **B.R. Greene**, G.-J. Steeneveld, T. Lorenz, B. Maronga, M.O. Jonassen, H. Ajosenpää, L. Båserud, P.B. Chilson, A.A.M. Holtslag, A.D. Jenkins, R. Kouznetsov, S. Mayer, E.A. Pillar-Little, A. Rautenberg, J. Schwenkel, A. Seidl, and B. Wrenger, 2020: The Innovative Strategies for Observations in the Arctic Atmospheric Boundary Layer Project (ISOBAR) — Unique fine-scale observations to progress detailed modelling studies. *Bull. Amer. Meteor. Soc.*, **102**, E218–E243, <https://doi.org/10.1175/BAMS-D-19-0212.1>.
- Jacobs, A.M., T.M. Bell, **B.R. Greene**, and P.B. Chilson, 2020: The Effect of Climatological Variables on Future UAS-Based Atmospheric Profiling in the Lower Atmosphere. *Remote Sens.*, **12**, 2947. <https://doi.org/10.3390/rs12182947>.
  - Bell, T.M., **B.R. Greene**, P.M. Klein, M.B. Carney, and P.B. Chilson, 2020: Confronting the Boundary Layer Data Gap: Evaluating New and Existing Methodologies of Probing the Lower Atmosphere. *Atmos. Meas. Tech.*, **13**, 3855–3872, <https://doi.org/10.5194/amt-13-3855-2020>.
  - Segalés, A.R., **B.R. Greene**, T.M. Bell, W. Doyle, J.J. Martin, E.A. Pillar-Little, and P.B. Chilson, 2020: The CopterSonde: an insight into the development of a smart unmanned aircraft system for atmospheric boundary layer research, *Atmos. Meas. Tech.*, **13**, 2833–2848, <https://doi.org/10.5194/amt-13-2833-2020>.
- 2019 Chilson, P.B., T.M. Bell, K.A. Brewster, G. Britto Hupsel de Azevedo, F.H. Carr, K. Carson, W. Doyle, C.A. Fiebrich, **B.R. Greene**, J.L. Grimsley, S.T. Kanneganti, J. Martin, A. Moore, R.D. Palmer, E.A. Pillar-Little, J.L. Salazar-Cerreno, A.R. Segales, M.E. Weber, M. Yeary, and K.K. Droegemeier, 2019: Moving towards a Network of Autonomous UAS Atmospheric Profiling Stations for Observations in the Earth's Lower Atmosphere: The 3D Mesonet Concept. *Sensors*, **19**, 2720. <http://dx.doi.org/10.3390/s19122720>.
- Barbieri, L., S.T. Kral, S.C.C. Bailey, A.E. Frazier, J.D. Jacob, J. Reuder, D. Brus, P.B. Chilson, C. Crick, C. Detweiler, A. Doddi, J. Elston, H. Foroutan, J. González-Rocha, **B.R. Greene**, M.I. Guzman, A.L. Houston, A. Islam, O. Kemppinen, D. Lawrence, E.A. Pillar-Little, S.D. Ross, M. Sama, D.G. Schmale III, T.J. Schuyler, A. Shankar, S.W. Smith, S. Waugh, C. Dixon, S. Borenstein, and G. de Boer, 2019: Intercomparison of Small Unmanned Aircraft System (sUAS) Measurements for Atmospheric Science during the LAPSE-RATE Campaign. *Sensors*, **19**, 2179. <http://dx.doi.org/10.3390/s19092179>.
  - **Greene, B.R.**, A.R. Segalés, T.M. Bell, E.A. Pillar-Little, and P.B. Chilson, 2019: Environmental and Sensor Integration Influences on Temperature Measurements by Rotary-Wing Unmanned Aircraft Systems. *Sensors*, **19**, 1470. <http://dx.doi.org/10.3390/s19061470>.
- 2018 **Greene, B.R.**, A.R. Segalés, S. Waugh, S. Duthoit, and P.B. Chilson, 2018: Considerations for temperature sensor placement on rotary-wing unmanned aircraft systems. *Atmos. Meas. Tech.*, **11**, 5519–5530, <https://doi.org/10.5194/amt-11-5519-2018>.
- 2017 Bailey, S.C.C., B.M. Witte, C. Schalgenhauf, **B.R. Greene** and P.B. Chilson, 2017: Measurement of High Reynolds Number Turbulence in the Atmospheric Boundary Layer Using Unmanned Aerial Vehicals. *Proceedings of the 10th International Symposium on Turbulence and Shear Flow Phenomena, Chicago, Illinois, USA*, 6–9, <http://www.tsfp-conference.org/proceedings/2017/2/212.pdf>.

---

## Refereed Articles Submitted and In Preparation

- **Greene, B.R.**, S.T. Kral, P.B. Chilson, and J. Reuder: Gradient-based Turbulence Estimates from Multicopter Profiles in the Arctic Stable Boundary Layer. *Boundary-Layer Meteorol.*, conditionally accepted.
- **Greene, B.R.** and S.T. Salesky: Random Error Analysis of Stable Boundary Layers and Implications for UAS Sampling. *Boundary-Layer Meteorol.*, in preparation.
- de Boer, G., J. Elston, A. Houston, E.A. Pillar-Little, B. Argrow, T. Bell, P.B. Chilson, C. Choate, **B.R. Greene**, A. Islam, J. Jacob, R. Martz, V. Natalie, M. Rhodes, D. Rico, M. Stachura, F.M. Lappin, S. Whyte, and M. Wilson: Evaluation and Intercomparison of Small Uncrewed Aircraft Systems Used for Atmospheric Research. *J. Atmos. Ocean. Tech.*, in preparation.
- Britto Hupsel de Azevedo, G., D. Schwartzman, T. Bell, P.B. Chilson, C. Davis, W. Doyle, C. Fiebrich, **B.R. Greene**, D. Grimsley, C. Hughes, J. Jacob, J. Martin, S. Mazuera, R. Palmer, E.A. Pillar-Little, and T.Y. Yu: The Lower Atmosphere Carbon Dioxide Acquisition System (LACAS): an open-source, low-cost, sUAS-based approach. In preparation.

---

## Curated Datasets and Software Distributions

- 2020 **Greene, B.R.**, T.M. Bell, E.A. Pillar-Little, A.R. Segales, G. Britto Hupsel de Azevedo, W. Doyle, D.D. Tripp, S.T. Kanneganti, and P.B. Chilson, 2020: University of Oklahoma CopterSonde Files from LAPSE-RATE. <https://doi.org/10.5281/zenodo.3737087>.
- Blunt, J., T.M. Bell, **B.R. Greene**, A.M. Jacobs, and G. Britto Hupsel de Azevedo, 2020: oucass-profiles 1.3.0. PyPI: <https://pypi.org/project/oucass-profiles/>, Github: <https://oucass.github.io/Profiles/>.

---

## Funding

- 2020 **Not Selected:** NASA Future Investigators in NASA Earth and Space Science and Technology
- **Selected:** Travel award, Field Experiment on Submesoscale Spatio-Temporal Variability in Lindenberg (FESSTVaL) Summer School, Lindenberg, Germany
- 2017 **Selected:** Travel award, International Symposium on Earth-Science Challenges, Kyoto, Japan

---

## Select Awards, Honors, and Certifications

- Dec 2021 Invited Speaker and Panelist: [Session IN014](#), Challenges and Best Practices for Using UAV in Field Research, American Geophysical Union Fall Meeting, New Orleans, Louisiana, USA
- Jul 2020 Invited Participant: Field Experiment on Submesoscale Spatio-Temporal Variability in Lindenberg ([FESSTVaL](#)) Summer School, Lindenberg, Germany
- Apr 2019 Invited Speaker: National Tropical Weather Conference, Storm Science Network, Inc., South Padre Island, Texas, USA
- Oct 2018 & Apr 2019 Advanced Radar Research Center Student Journal Paper Award
- Oct 2018 Weathernews Inc. Endowed Scholarship recipient and invited speaker
- Oct 2017 Invited Speaker: International Symposium on Earth-Science Challenges, Kyoto University, Kyoto, Japan
- May 2016 University of Illinois Department of Atmospheric Sciences Ogura Award for Undergraduate Research in Atmospheric Sciences
- Jan 2016 First Place, Best Undergraduate Student Poster, 15th Annual Student Conference of the American Meteorological Society's 96th Annual Meeting
- May 2015 University of Illinois Department of Physics Outstanding Teaching Assistant
- 2014 – 2016 University of Illinois Marching Illini section leader
- 2014 – 2016 NOAA Ernest F. Hollings Undergraduate Scholar

2011 Eagle Scout, Boy Scouts of America  
Professional Memberships American Meteorological Society, International Society for Atmospheric Research using Remotely piloted Aircraft, American Geophysical Union

---

## Computing and Technical Skills

Proficient: Python, MATLAB, L<sup>A</sup>T<sub>E</sub>X, GitHub, Bash, Microsoft Office, Mission Planner, NetCDF  
Experience with: FORTRAN, Large Eddy Simulation, Ardupilot  
Field equipment & hardware: Pixhawk autopilot, sonic anemometers, radiosondes, thermistors, capacitance hygrometers, piezoelectric barometers, Doppler wind lidars, hot wire anemometers

---

## Students Mentored

Summer 2020 Theresa Lincheck  
National Weather Center Research Experience for Undergraduates  
[Quantifying the Stable Boundary Layer Depth in the Arctic Region of Northern Finland](#)

Summer 2020 Jordan Robinson  
National Weather Center Research Experience for Undergraduates  
[Decoding the Stable Boundary Layer: Comparing Lower Atmosphere Dynamics of Alaska and Finland](#)

Spring 2020 – Fall 2020 Ariel Jacobs  
Undergraduate student, School of Meteorology, University of Oklahoma  
[Creating a climatology of atmospheric profiles above Oklahoma Mesonet sites using NARR](#)

Summer 2019 Cha'Lita Thompson  
National Weather Center Research Experience for Undergraduates  
[Observations of Ozone Concentrations in the Atmospheric Boundary Layer Using UAS](#)

Spring 2018 – Fall 2019 Additional OU undergraduate students mentored and/or collaborated with: 7

---

## Select Community Outreach, Volunteering, and DEI Involvement

Jan 2021 – May 2021 Unlearning Racism in Geoscience ([URGE](#)) pod member

May – Jul 2019, '20 Mentor: National Weather Center Research Experience for Undergraduates

Jul 2020 – Jul 2021 Graduate Representative: School of Meteorology Graduate Studies Committee

Aug 2018 – Jul 2021 PhD Representative (through Jul 2020) and Graduate Vice-Chair (Jul 2020 – Jul 2021): School of Meteorology Student Affairs Committee

Oct 2019 Rapporteur: CIMMS Workshop on Current and Future Uses of Unmanned Aircraft Systems (UASs) for Improved Forecasts/Warnings and Other Scientific Studies ([Workshop Summary](#))

2019 University of Oklahoma LGBTQ Ally training and [Diversity Ally Unlearning series](#) participant: Ableism, Classism, Racism, Sexism, and Trans+Homonegativity sessions

Sep 2019 – Present Reviewer of manuscripts for [Sensors](#), [Journal of Atmospheric and Oceanic Technology](#), [Atmospheric Measurement Techniques](#), and [Boundary-Layer Meteorology](#)

April 2019 Oklahoma Weather Lab guest speaker

Jan 2018 & Jan 2019 Poster judge: American Meteorological Society 17th and 18th Annual Student Conference

Sep 2017 & 2018 College of Atmospheric and Geographic Sciences Research Fair demonstration

October 2016 – 2019 National Weather Festival demonstration

July 2017 National Weather Center REU final presentation moderator

---

## Field Campaign Participation

May 2017 Environmental Profiling and Initiation of Convection (EPIC), Oklahoma. NOAA UAS Program Office.

June 2017 Collaboration Leading Operational UAS Development for Meteorology and Atmospheric Physics (CLOUD-MAP), Stillwater, Oklahoma. National Science Foundation.

- February 2018 Innovative Strategies for Observations in the Arctic Atmospheric Boundary Layer (ISOBAR), Hailuoto, Finland. Research Council of Norway.
- July 2018 Lower Atmospheric Process Studies at Elevation – a Remotely-piloted Aircraft Team Experiment (LAPSE-RATE), San Luis Valley, Colorado. International Society for Atmospheric Research using Remotely-piloted Aircraft.
- April 2021 Tracking Aerosol Convection Interactions Experiment (TRACER), Lamont, Oklahoma. United States Department of Commerce.
- June 2021 BLISS Field Universalization Laboratory (BLISS-FUL), Washington, Oklahoma. Boundary Layer Integrated Sensing and Simulation (BLISS) research group.

---

## Summary of Proceedings and Conference Presentations

Total conference and workshop presentations given: 20 (16 domestic / 4 international)

Total presentations including coauthorship: 42