Brian Robert Greene, M.S. – Curriculum Vitae

Personal Information

Pronouns	He, Him, His
Address	120 David L. Boren Blvd., Ste. 5900 Norman, Oklahoma 73072, USA
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Google Scholar	Profile, h-index: 6

Education

Aug 2018 – Present **University of Oklahoma** *Norman, Oklahoma, USA*
Ph.D., Meteorology – Advisor: Dr. Phillip B. Chilson

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, and Center for Autonomous Sensing and Sampling, 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

2021 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

- Smith, E.N., **B.R. Greene**, T.M. Bell, W.G. Blumberg, R. Wakefield, D. Reif, Q. Niu, Q. Wang, and D.D. Turner: Evaluation and applications of multi-instrument boundary layer thermodynamic retrievals. *Boundary-Layer Meteorology*, in review.
- **Greene, B.R.**, S.T. Kral, P.B. Chilson, and J. Reuder: Arctic Stable Boundary Layer Turbulence During the 2018 ISOBAR Campaign. *Boundary-Layer Meteorology*, 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

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

Computing and Technical Skills

Proficient:	Python, MATLAB, LaTeX, GitHub, Bash, Microsoft Office, Mission Planner, NetCDF
Experience with:	FORTRAN, Large Eddy Simulation, Ardupilot
Field equipment & hardware:	Pixhawk autopilot, sonic anemometers, radiosondes, thermistors, capactivite hygrometers, piezzoelectric 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: 6

Select Community Outreach, Volunteering, and DEI Involvement

January 2021 – Present	Unlearning Racism in Geoscience (URGE) pod member
May – Jul 2019, '20	Mentor: National Weather Center Research Experience for Undergraduates
Jul 2020 – Present	Graduate Representative: School of Meteorology Graduate Studies Committee
Aug 2018 – Present	PhD Representative (through Jul 2020) and Graduate Vice-Chair (Jul 2020 – Present): 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*, and *Atmospheric Measurement Techniques*
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.

Summary of Proceedings and Conference Presentations

Total conference and workshop presentations given: 18 (14 domestic / 4 international)

Total presentations including coauthorship: 38