

## NSF BIOGRAPHICAL SKETCH

NAME: Bruning, Eric

ORCID: 0000-0003-1959-442X

POSITION TITLE & INSTITUTION: Associate Professor, Texas Tech University

### (a) PROFESSIONAL PREPARATION -(see PAPPG Chapter II.C.2.f.(a))

INSTITUTION	LOCATION	MAJOR / AREA OF STUDY	DEGREE (if applicable)	YEAR YYYY
University of Oklahoma	Norman, OK	Meteorology	Ph.D.	2008
University of Oklahoma	Norman, OK	Meteorology	M.S.	2005
University of Oklahoma	Norman, OK	Meteorology	B.S.	2003

### (b) APPOINTMENTS -(see PAPPG Chapter II.C.2.f.(b))

2010 - 2016 Assistant Professor, Texas Tech University, Geosciences, Lubbock, TX  
2008 - 2010 Research Associate, University of Maryland at College Park, ESSIC/CICS, College Park, MD  
1999 - 2008 Research Assistant, Cooperative Institute for Mesoscale Meteorological Studies, NSSL, Norman, OK

### (c) PRODUCTS -(see PAPPG Chapter II.C.2.f.(c))

#### Products Most Closely Related to the Proposed Project

1. Bruning E, Tillier C, Edgington S, Rudlosky S, Zajic J, Gravelle C, Foster M, Calhoun K, Campbell P, Stano G, Schultz C, Meyer T. Meteorological Imagery for the Geostationary Lightning Mapper. *Journal of Geophysical Research: Atmospheres*. 2019 December 28; 124(24):14285-14309. Available from: <https://onlinelibrary.wiley.com/doi/10.1029/2019JD030874> DOI: 10.1029/2019JD030874
2. Salinas V, Bruning E, Mansell E. Examining the Kinematic Structures within which Lightning Flashes Are Initiated Using a Cloud-Resolving Model. *Journal of the Atmospheric Sciences*. 2022 February; 79(2):513-530. Available from: <https://journals.ametsoc.org/view/journals/atsc/79/2/JAS-D-21-0132.1.xml> DOI: 10.1175/JAS-D-21-0132.1
3. Souza J, Bruning E. Assessment of Turbulence Intensity in Different Spots of Lightning Flash Propagation. *Geophysical Research Letters*. 2021 November; 48(21):- . Available from: <https://onlinelibrary.wiley.com/doi/10.1029/2021GL095923> DOI: 10.1029/2021GL095923
4. Brune W, McFarland P, Bruning E, Waugh S, MacGorman D, Miller D, Jenkins J, Ren X, Mao J, Peischl J. Extreme oxidant amounts produced by lightning in storm clouds. *Science*. 2021 May 14; 372(6543):711-715. Available from: <https://www.science.org/doi/10.1126/science.abg0492> DOI: 10.1126/science.abg0492
5. Sharma M, Tanamachi R, Bruning E, Calhoun K. Polarimetric and Electrical Structure of the 19 May 2013 Edmond–Carney, Oklahoma, Tornadic Supercell. *Monthly Weather Review*. 2021 July; 149(7):2049-2078. Available from: <https://journals.ametsoc.org/view/journals/mwre/149/7/MWR-D-20-0280.1.xml> DOI: 10.1175/MWR-D-20-0280.1

#### Other Significant Products, Whether or Not Related to the Proposed Project

1. Bruning E, MacGorman D. Theory and Observations of Controls on Lightning Flash Size Spectra. *Journal of the Atmospheric Sciences*. 2013 December 01; 70(12):4012-4029. Available from: <https://journals.ametsoc.org/doi/10.1175/JAS-D-12-0289.1> DOI: 10.1175/JAS-D-12-0289.1
2. Bruning E.C., Thomas R.J.. Lightning channel length and flash energy determined from moments of the flash area distribution. *Journal of Geophysical Research*. 2015; 120(17):8925-8940. Available from: <http://www.scopus.com/inward/record.url?eid=2-s2.0-84943453713&partnerID=MN8TOARS> DOI: 10.1002/2015JD023766
3. Brothers M, Bruning E, Mansell E. Investigating the Relative Contributions of Charge Deposition and Turbulence in Organizing Charge within a Thunderstorm. *Journal of the Atmospheric Sciences*. 2018 September 01; 75(9):3265-3284. Available from: <https://journals.ametsoc.org/doi/10.1175/JAS-D-18-0007.1> DOI: 10.1175/JAS-D-18-0007.1
4. Schultz C, Lang T, Bruning E, Calhoun K, Harkema S, Curtis N. Characteristics of Lightning Within Electrified Snowfall Events Using Lightning Mapping Arrays. *Journal of Geophysical Research: Atmospheres*. 2018 February 27; 123(4):2347-2367. Available from: <http://doi.wiley.com/10.1002/2017JD027821> DOI: 10.1002/2017JD027821
5. Murphy K, Bruning E, Schultz C, Vanos J. A Spatiotemporal Lightning Risk Assessment Using Lightning Mapping Data. *Weather, Climate, and Society*. 2021 July; 13(3):571-589. Available from: <https://journals.ametsoc.org/view/journals/wcas/13/3/WCAS-D-20-0021.1.xml> DOI: 10.1175/WCAS-D-20-0021.1

**(d) SYNERGISTIC ACTIVITIES -(see PAPPG Chapter II.C.2.f.(d))**

1. Transitioned research Geostationary Lightning Mapper products into a National Weather Service operational prototype system in collaboration with NOAA NWS, NESDIS, and OAR, Jun 2008 – present.
2. Liaison to EUMETSAT Lightning Imager Science Team, May 2009 – Aug 2010, and member Meteosat Third Generation Lightning Imager Mission Advisory Group, November 2018 - present.
3. Exhibited Marcando el Rel'ampago (Marking the Lightning), Museum of Texas Tech University, Lubbock, TX. September 30, 2017 – January 28, 2018, with artist Tina Fuentes.
4. VORTEX-SE Scientific Steering Committee, Member, January 2018 - present.
5. University Corporation for Atmospheric Research, Unidata Strategic Advisory Committee, Member, October 2021 - present.