

Curriculum Vitae

Candidate's Name: Sandip Pal

Date: 2023-10-19

I. GENERAL INFORMATION

Contact Information

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Education

- 03/2004-10/2008: Ph.D. in Atmospheric Science (*Magna cum laude*), Institute of Physics and Meteorology, University of Hohenheim, Stuttgart, Germany.
- 07/2002-03/2004: Master of Technology (M.Tech. Atmospheric Physics) University of Pune, India.
- 07/2000-06/2002: Master of Science (M.Sc. Physics), Department of Physics, University of Kalyani, India. Specialization: Advanced Electronics.
- 07/1997-06/2000: B.Sc. with Honors in Physics, Department of Physics, St. Paul's Cathedral Mission College, University of Calcutta, India.

Current Academic Position(s)

- Associate Professor, TTU-Department of Geosciences

Prior Academic Position(s)

- 09/2018-08/2023: Assistant Professor, TTU-Department of Geosciences
- 07/2017-08/2018: Assistant Research Professor, Graduate Faculty Member, Department of Meteorology and Atmospheric Science, The Pennsylvania State University, State College, PA, USA.
- 09/2015-06/2017: Research Associate, Graduate Faculty Member, Department of Meteorology and Atmospheric Science, The Pennsylvania State University, State College, PA, USA.
- 02/2013-08/2015: Research Associate, Department of Environmental Sciences, University of Virginia, VA, USA.
- 02/2012-01/2013: Postdoctoral Scholar, Laboratoire de Météorologie Dynamique (LMD), CNRS-Ecole Polytechnique, Paris, France.
- 10/2010-01/2012: Postdoctoral Scholar, Laboratoire des Sciences du Climat et de l'Environnement (LSCE), CEA, Paris, France.
- 11/2008-09/2010: Postdoctoral Scholar, Institute of Physics and Meteorology,

University of Hohenheim, Stuttgart, Germany.

Membership in Professional Organizations

- American Meteorological Society (AMS)
- American Geophysical Union (AGU)
- American Energy Society (AES)
- International Association for Urban Climate (IAUC)
- Indian Aerosol Science and Technology Association (IASTA)
- Mountain Research Initiative (MRI team)
- Optical Society of America (OSA)

Research Affiliations

- 2018- Present: Affiliated Faculty Member, National Wind Institute, TTU
- 2020-Present: Member, The Climate Center at TTU
- 2022-2027: Science Team Member for NASA's global ground-based remote sensing aerosol networks AERONET (AErosol RObotic NETwork) for operations and data analysis
- 2020-Present: Coordinator: ABL-ROAD (Atmospheric Boundary Layer Research Over Arid Domain)
- 2019-2021: Science Team Member, ACT-America Project of NASA-Earth Venture Suborbital Program.

II. TEACHING

ATMO 1100: Atmospheric Science Laboratory (IoR for 3 Sections)

ATMO 1300 - HONS: Introduction to Atmospheric Science (Spring 2023)

ATMO 1300: Introduction to Atmospheric Science (Fall 2018, 2019, 2020; Spring 2019)

HONS 3300: Individual Honors Research (Thesis Mentor, Fall 2020)

ATMO 3301: General Meteorology (Spring 2021, 2023)

HONS 4300: Individual Honors Research (Thesis Mentor, Spring 2021)

ATMO 4300-004: Independent Studies in Atmospheric Science (Spring 2021)

ATMO 5301: Individual Studies in Atmospheric Science (Fall 2019)

ATMO 5319: Boundary Layer Meteorology (Spring 2020, 2022)

TA-Coordinator: Fall 2020, 2022

Undergraduate Advisor: Atmospheric Science Minor Program (ATMO Minor)

RESEARCH MENTORING

Chair of Doctoral Committees

- Matthew Hamel: Thesis title: Characterization of daytime atmospheric boundary layer turbulence using simultaneous lidar and tower-based observations. Current student
- Hassanpreet Dhaliwal: Thesis title: Characterization of aerosol optical depth changes on diurnal, synoptic and seasonal timescales over an arid region. Current student
- Diya Das, Thesis title: Bottom-up and top-down intercomparison of precipitation using ground-based and spaceborne measurements over an arid region. Current student

Chair of Masters Committees

- Tyler Danzig: Thesis title: Observations and Simulations of Urban Heat Island and Heat Advection of Small-sized Cities. Current student.
- Zach Medley: Thesis title: Changes in Boundary Layer Thermodynamics and Tracer Concentrations across Frontal Boundaries in Four Seasons. Current student.
- Molly Sorensen: Thesis: Front-relative spatial variability in trace gases, greenhouse gases and aerosols within and above the atmospheric boundary. Current student.
- Nicholas Clark: Thesis title: Characterization of Entrainment Zone Thickness and Boundary Layer Dynamics using a Ground-based Scanning Doppler Lidar System. **Graduated; Summer 2023**
- Michael Anand: Thesis title: Impact of Synoptic Scale Processes on Boundary Layer Depth Variability over an Arid Region Using Radiosonde and Lidar Observations. **Graduated; Summer 2022**
- Matthew Hamel: Thesis title: Convective Boundary Layer Turbulence Profiling over an Arid Region using a 200m Tall-tower and Doppler Lidar Measurements. **Graduated; Summer 2022**
- Samantha Walley: Thesis title: Exploring XCO₂ Spatial Variability Across Frontal Boundaries Using Airborne Lidar Observations and Numerical Simulations. **Graduated; Summer 2021**

Member of Masters Committees

- Natalie Trout, Thesis title: Wind Flow Characteristics of Landfalling Hurricanes Observed by Texas Tech University StickNets, TB Graduated Summer 2023
- Jilliann Dufort. Thesis title: Improving the Short-Term Forecast Accuracy of Heavy Precipitation Events Using Time-Lagged Ensembles. **Graduated. Fall 2022**
- Lydia Bunting. Thesis title: Determining the Impact of Evaporative Cooling and Inversion Layer Height on Heat Burst Formation in Decaying Convective Storms. **Graduated; Summer 2022**
- Aaron J. Mehner: Thesis title: Extrapolating Surface Winds from an Elevated Dual-Doppler Wind Profile. **Graduated; Summer 2020**

- Taylor A. Adams: Thesis title: Evaluating the Impacts of the Lower Boundary Condition on Low-Level Supercell Structure in an Idealized Cloud Model. **Graduated: Summer 2020**
- Jordan Didio: Thesis title: Extracting Turbulence Parameters from Second-by-Second Wind Speed Projections of dual-Doppler Sector Scans. **Graduated: Summer 2020**

Undergraduate/Honors Committees

- Nicholas E Clark: HONS Thesis title: Exploring the Complexities in Atmospheric Boundary Layer Dynamics over Mountainous Regions and their Impact on Tracer Distribution. **Graduated; Spring 2021**. Role: HONS Thesis Advisor for 2-semesters.

Student Mentoring Activities (not listed above)

Graduate Researchers at TTU

- Remya V Menon, MS in Interdisciplinary Studies (INDS), TTU Graduate School. Fall 2023. ATMO 5301 Individual Studies in Atmospheric Science, Research topic: Characterization of thermodynamic environment around wind turbines in West Texas.
- Cesar Augusto Negri, Department of Electrical and Computer Engineering, TTU. Fall 2019. Individual Studies in Atmospheric Science (ATMO 5301): Application of Machine Learning Techniques to Improve SpiDAR Ground-Based Non-Doppler LIDARs Wind Speed Measurements.

Undergraduate Researchers at TTU

- Adrian Olano (Undergraduate Student, BS-Math, ATMO Minor 2023-). Project: Impact of land-atmosphere feedback on near-surface temperature in contrasting synoptic conditions.
- Emily Key: Spring 2022: Independent Studies in Atmospheric Science (ATMO 4300): Research Topic: Long-term monitoring of ABL depths using ground-based lidars.
- Derek Curtis: Fall 2021 and Spring 2022: Independent Studies in Atmospheric Science (ATMO 4300): Research topic: Urban Heat Island Intensity of Houston and Dallas and Associated Heat Advection.
- Zachary Brown: Spring 2021. Independent Studies in Atmospheric Science. Research topic: Tracer Variability at a Mountaintop Site in the Mid-Atlantic Region
- Nicholas Clark: Texas Tech Pi2 Scholar. Fall 2018 – Summer 2020: Research topic: Frontal boundaries and their Impact on Atmospheric Boundary Layer Parameters and ABL depths.
- Alina Warraich: Texas Tech Pi2 Scholar, Fall 2019-Summer 2020: Research topic: On the Spatial Variability in Soil Moisture Control on Land-atmosphere Feedback over an Arid Region.

- Orin Gotchey: Texas Tech Honors College Scholar: Fall 2018 - Fall 2019: Research topic: Lidar Observations of Columnar Content of Atmospheric Carbon Dioxide in the Eastern US.
- Temple R. Lee: Ph.D. (Environmental Sciences), Department of Environmental Sciences, University of Virginia, Co-supervised. Guidance for research papers and dissertation work between 02/2013 and 08/2015. Title of Ph.D. Dissertation: The Impact of Planetary Boundary Layer Dynamics on Mountaintop Trace Gas Variability.
- Mark Sghiatti, M.Sc. (Environmental Sciences), Department of Environmental Sciences, University of Virginia, Co-supervised. Guidance for MS Thesis work between 08/2013 and 08/2015. Title of M.Sc. Thesis: The Spatial Variability and Structure of Turbulent Kinetic Energy in the Convective Boundary Layer over an Isolated Mountain.
- Lamia Ammoura, M.Sc. (M2, Enseignant de Sciences Physiques), University of Paris VI: Thesis supervised at the Laboratoire des Sciences du Climat et de l'Environnement, CEA, Saclay; Title of Thesis: Atmospheric Boundary Layer Height Variability around Paris Megacity.
- Kylie Hoffman: Summer-2017 REU student from North Carolina State University in Department of Meteorology and Atmospheric Science at the Pennsylvania State University, Co-supervised. Research topic: Do Synoptic Weather Patterns Have an Effect on Atmospheric Boundary Layer Depths?
- Marcel Briguglio: Summer-2018 REU student visiting from Department of Civil and Environmental Engineering, Rowan University, NJ in Department of Meteorology and Atmospheric Science at the Pennsylvania State University, Co-supervised. Thesis topic: Spatial Variability in Greenhouse Gas Concentrations over Three Regions in the Eastern US.
- Kylie Hoffman: 2017 Fall Internship Project (MEA) Student at the Department of Marine, Earth and Atmospheric Sciences at the North Carolina State University. Supervised. Research topic: Airborne lidar investigation of atmospheric boundary depths during frontal passages.
- Lyndsie Slater: Summer-2016 REU student from Texas Tech University at the Penn State Department of Meteorology and Atmospheric Science, Co-supervised. Research topic: How Carbon Dioxide Variability Changes with a Synoptic Weather Event?
- Kelsey Everard, B.Sc. Environmental Sciences. Co-supervised between 08/2014 and 04/2015 for her Distinguished Major at the Department of Environmental Sciences, University of Virginia, Co-supervised. Thesis title: Spatiotemporal variability in cloud base height and cloud fraction across the Virginia Blue Ridge Mountains.
- Alejandro M Ayala: UG Senior Researcher at Pennsylvania State University; Supervised. Working on ACT-America flight data analyses including lidar data processing.
- Benjamin Yang: 2018-19: UG Researcher at Pennsylvania State University. Co-supervised. Research topic: Exploring boundary layer versus free tropospheric

tracers from airborne measurements in winter under shallow boundary layer scenarios.

- Erika Algaard: 2018-19: UG Researcher at Pennsylvania State University for the ACT-America Project; Supervised. Working on the synthesis of field campaign data sets
 - Hanna Haas: 2018: UG Researcher at Pennsylvania State University for the ACT-America Project; Supervised. Working on the field campaign organization, meteorological forecasts for research flights.
 - Quinn Lease: 2016-2017: Senior UG Researcher at Pennsylvania State University for his research on ACT-America project. Co-supervised.
 - Ann Rodden: 2017: UG Researcher at Pennsylvania State University. Analyzing weather events during the ACT winter field campaign 2017. Supervised.
 - Ralph Kurash: 2007: M.Sc. student, Part time summer job at the University of Hohenheim, Germany, Co-supervised.
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III. RESEARCH

PUBLICATIONS

Articles (refereed)

- [52] Lee, T.R., **Pal, S.**, Krishnan, P., Heuer, M., Hirth, B., Meyers, T.P., Kochendorfer, J., Saylor, R., Schroeder, J., **2023**. The applicability of new surface-atmosphere parameterizations exchanges for arid regions, **Journal of Applied Meteorology and Climatology**. <https://doi.org/10.1175/JAMC-D-23-0092.1> **Impact Factor: 3.56**
- [51] Wang, Q., Crowell, S., **Pal, S.**, **2023**. Atmospheric variations in column integrated CO₂ on synoptic and seasonal time scale over the U.S., **Journal of Geophysical Research-Atmospheres**. *In Press/Accepted*. <https://doi.org/10.1002/essoar.10505706.2> **Impact Factor: 5.22.**
- [50] Crosman, E., Ward, A.M., Bieda, S., Lindley, T., Gittinger, M., **Pal, S.**, Vepuri, H., **2023**. Engaging Undergraduate Students in Collaborative Field Research with the National Weather Service: The SCORCHER Study, **Bulletin of American Meteorology Society**, Accepted. **Impact Factor: 9.12**
- [49] Walley, S*, **Pal, S.**, Campbell, J.F., Dobler, J., Bell, E., Weir, B., Feng, S., Baker, D., Erxleben, W., Fan, T., Lauvaux, T., Lin, B., McGregor, D., Obland, M.D., O'Dell, C., and Davis, K.J., **2022**. Airborne lidar measurements of XCO₂ in synoptically active environment and associated comparisons with numerical simulations, **Journal of Geophysical Research-Atmospheres**, 127, e2021JD035664. <https://doi.org/10.1029/2021JD035664> **Impact Factor: 5.22.**
- [48] Anand, M*, and **Pal, S.**, **2022**. Exploring Atmospheric Boundary Layer Depth Variability in Frontal Environments over an Arid Region, **Boundary Layer Meteorology**; <https://doi.org/10.1007/s10546-022-00756-z>. **Impact factor: 3.48.**

- [47] Clark, N.E*, **Pal, S.**, and Lee, T.R., **2022**. Empirical evidence for frontal modifications of atmospheric boundary layer depth variability over land, **Journal of Applied Meteorology and Climatology**, 61(8). <https://doi.org/10.1175/JAMC-D-21-0099.1> **Impact Factor: 3.56**
- [46] Zhang, L., Davis, K.J., Schuh, A.E., Jacobson, A.R., **Pal, S.**, Cui, Y., Baker, D., Crowell, S., Chevallier, F., Liu, J., Weir, B., Philip, S., Johnson, M.S., and Deng F., **2021**. Multi-Season Evaluation of CO₂ Weather in OCO-2 MIP Models, **Journal of Geophysical Research-Atmospheres**. <https://doi.org/10.1029/2021JD035457>. **Impact Factor: 5.22.**
- [45] DiGangi, J.P., Choi, Y., Nowak, J.B., Halliday, H.S., Diskin, G.S., Feng, S., Barkley, Z.R., Lauvaux, T., **Pal, S.**, Davis, K.J., Baier, B.C., Colm Sweeney, C., **2021**. Seasonal Variability in Local Carbon Dioxide Combustion Sources over the Central and Eastern US using Airborne In-Situ Enhancement Ratios, **Journal of Geophysical Research-Atmospheres.**, <https://doi.org/10.1029/2020JD034525>. **Impact Factor: 5.22..**
- [44] **Pal, S.**, Clark, N.E., Lee, T.R., Conder, M., and Buban, M., **2021**. When and where horizontal advection is critical to alter the atmospheric boundary layer features over land: Need for a conceptual framework, **Atmospheric Research**, <https://doi.org/10.1016/j.atmosres.2021.105825>, **Impact Factor: 5.97.**
- [43] Christensen, M. W., Gettelman, A., Cermak, J., Dagan, G., Diamond, M., Douglas, A., Feingold, G., Glassmeier, F., Goren, T., Grosvenor, D. P., Gryspeerd, E., Kahn, R., Li, Z., Ma, P.-L., Malavelle, F., McCoy, I. L., McCoy, D. T., McFarquhar, G., Mülmenstädt, J., **Pal, S.**, Possner, A., Povey, A., Quaas, J., Rosenfeld, D., Schmidt, A., Schrödner, R., Sorooshian, A., Stier, P., Toll, V., Watson-Parris, D., Wood, R., Yang, M., and Yuan, T.: Opportunistic experiments to constrain aerosol effective radiative forcing, **Atmospheric Chemistry and Physics**, 22, 641–674, <https://doi.org/10.5194/acp-22-641-2022>, 2022, **Impact Factor: 6.13.** *Co-authors were listed in alphabetical order.*
- [42] Davis, K.J., Browell, E.V., Feng, S., Lauvaux, T., Obland, M., **Pal, S.**, Baier, B., Baker, D.F., I. Baker, Z.R. Barkley, K. Bowman, A.S. Denning, J.P. Digangi, J. Dobler, A. Fried, T. Gerken, K. Keller, B. Lin, A. Nehrir, C. Normile, C. O’Dell, L. Ott, A. Roiger, A. Schuh, Y. Wei, B. Weir, C. Williams, and M. Xue, **2021**. The Atmospheric Carbon and Transport (ACT) - America Mission. **Bulletin of American Meteorological Society**. <https://doi.org/10.1175/BAMS-D-20-0300.1> **Impact Factor: 9.12.** *First six potential co-authors were listed in alphabetical order and then other co-authors were also ordered in alphabetical order.*
- [41] Zheng, T., Feng, S., Davis, K. J., **Pal, S.**, and Morguá, J. A., **2021**. Development and evaluation of CO₂ transport in MPAS-A v6.3, **Geoscientific Model Development**, 14, 3037–3066, <https://doi.org/10.5194/gmd-14-3037-2021>; **Impact Factor: 4.67.**
- [40] Wei, Y., Shrestha, R., **Pal, S.**, Gerken, T., McNelis, J., Singh, D., et al., **2021**. The ACT-America Datasets: Description, Management and Delivery, **Earth and Space Science**. <https://doi.org/10.1029/2020EA001634>. **Impact Factor: 3.68.**
- [39] Gaudet, B.J., Davis, K.J., **Pal, S.**, Jacobson, A.R., Schuh, A., Lauvaux, T., Feng, S., and Browell, E.V., **2021**. Regional-scale evaluation of global CO₂ inversion models using aircraft data from the Atmospheric Carbon and Transport–America project,

Journal of Geophysical Research-Atmospheres. 126, e2020JD033623.
<https://doi.org/10.1029/2020JD033623> Impact Factor: **5.22**.

- [38] Samaddar, A.^{*}, Feng, S., Lauvaux, T., **Pal, S.**, and Davis, K.J., **2021**. Carbon dioxide distribution, origins, and transport along a frontal boundary during summer in mid-latitudes, **Journal of Geophysical Research-Atmospheres**, 126, e2020JD033118. <https://doi.org/10.1029/2020JD033118>. Impact Factor: **5.22**.
- [37] Lee, T.R.^{*}, and **Pal, S.**, **2020**. The Impact of Height-independent Errors in State Variables on the Determination of the Daytime Atmospheric Boundary Layer Depth using the Bulk Richardson Approach. **Journal of Atmospheric and Oceanic Technology**, <https://doi.org/10.1175/JTECH-D-20-0135.1>; Impact Factor: **2.53**.
- [36] **Pal, S.**, Lee, T.R., and **Clark, N.E.**, **2020**. 2019 Mississippi and Missouri River Flooding and Its Impact on Atmospheric Boundary Layer Dynamics, **Geophysical Research Letters**, <https://doi.org/10.1029/2019GL086933>. Impact Factor: **5.58**.
- [35] **Pal, S.**, Davis, K.J., Lauvaux, T., Browell, E.V., Gaudet, B.J., Stauffer, D.R., Obland, M.D., Choi, Y., DiGangi, J.P., Feng, S., Lin, B., Miles, N.L., Pauly, R.M., Richardson, S.J., and Zhang, F., **2020**. Observations of Greenhouse Gas Changes across Summer Frontal Boundaries in the Eastern United States, **Journal of Geophysical Research-Atmospheres**, 125, e2019JD030526. <https://doi.org/10.1029/2019JD030526>; Impact Factor: **5.22**.
- [34] Campbell, J.F., Lin, B., Dobler, J., **Pal, S.**, Davis, K.J., Obland, M.D., Erxleben, W., McGregor, D., O'Dell, C., Emily Bell, E., Weir, B., Fan, T., Kooi, S., Gordon, I., Corbett, A., and Kochanov, R., **2020**. Field Evaluation of Column CO₂ Retrievals from Intensity-Modulated Continuous-Wave Differential Absorption Lidar Measurements during ACT-America, **Earth and Space Science**, AGU/Wiley Journal, <https://doi.org/10.1029/2019EA000847> ; Impact Factor: **3.68**.
- [33] Bell, E., O'Dell, C., Campbell, J., Davis, K.J., Lin, B., Kooi, S., Fan, T., Browell, E., Dobler, J., Erxleben, W., **Pal, S.**, Weir, B., and Denning, S., **2020**. Evaluation of OCO-2 XCO₂ variability at local and synoptic scales using lidar and in situ observations from the ACT-America campaign, **Journal of Geophysical Research-Atmospheres**, <https://doi.org/10.1029/2019JD031400>; Impact Factor: **5.22**.
- [32] **Pal, S.**, and Lee, T.R., **2019**. Advected air mass reservoirs in the downwind of mountains and their roles in overrunning boundary layer depths over the plains, **Geophysical Research Letters**, 46. <https://doi.org/10.1029/2019GL083988>; Impact Factor: **5.58**.
- [31] **Pal, S.**, and Lee, T.R., **2019**: Contrasting air mass advection explains significant differences in boundary layer depth seasonal cycles under onshore versus offshore flows, **Geophysical Research Letters**, 46(5), 2846-2853, <https://doi.org/10.1029/2018GL081699>. Impact Factor: **5.58**
- [30] Chen, H.^{*}, Zhang, L.N., Zhang, F., Davis, K.J., Lauvaux, T., **Pal, S.**, Gaudet, B., and DiGangi, J.P., **2019**. Evaluation of regional CO₂ mole fractions in the ECMWF CAMS real-time atmospheric analysis and NOAA CarbonTracker Near-Real Time reanalysis with airborne observations from ACT-America field campaigns, **Journal of Geophysical Research: Atmospheres**, 124. <https://doi.org/10.1029/2018JD029992>; Impact Factor: **5.22**.

- [29] Lee, T.R.* , De Wekker, S.F.J., and **Pal, S.**, 2018: The Impact of the Afternoon Planetary Boundary-Layer Height on the Diurnal Cycle of CO and CO₂ Mixing Ratios at a Low-Altitude Mountaintop, **Boundary-Layer Meteorology**, 168(1), 81-102. doi: 10.1007/s10546-018-0343-9; Impact Factor: 3.48
- [28] **Pal, S.**, Lee, T.R., and de Wekker, S.F.J., 2017: Combined impact of boundary layer height and near-surface meteorological conditions on the CO diurnal cycle at a low mountaintop site: Case studies using simultaneous lidar and in situ observations, **Atmospheric Environment**, 164, 165-179, <https://doi.org/10.1016/j.atmosenv.2017.05.041>; Impact Factor: 5.78
- [27] Lee, T.R.* , and **Pal, S.**, 2017: On the potential of 25 years (1991-2015) of rawinsonde measurements for elucidating key climatological and spatiotemporal patterns of afternoon boundary layer depths over the contiguous US, **Advances in Meteorology**, 19, <https://doi.org/10.1155/2017/6841239>; Impact Factor: 2.23
- [26] **Pal, S.**, De Wekker, S.F.J., Emmitt, G.D., 2016: Spatial variability of the atmospheric boundary layer heights over a low mountain region: Cases from MATERHORN-2012 field experiment, **Journal of Applied Meteorology and Climatology**, DOI: <http://dx.doi.org/10.1175/JAMC-D-15-0277.1>; Impact Factor: 3.56
- [25] **Pal, S.**, 2016: On the factors governing water vapor turbulence profiles in the convective boundary layer over land: Concept and data analyses methodology using ground-based lidar measurements, **Science of the Total Environment**, 554-555, 17–25, doi: <http://dx.doi.org/10.1016/j.scitotenv.2016.02.147>; Impact Factor: 10.75
- [24] Koffi, E. N., Bergamaschi, P., Karstens, U., Krol, M., Segers, A., Schmidt, M., Levin, I., Vermeulen, A. T., Fisher, R. E., Kazan, V., Klein Baltink, H., Lowry, D., Manca, G., Meijer, H. A. J., Moncrieff, J., **Pal, S.**, Ramonet, M., and Scheeren, H. A., 2016: Evaluation of the boundary layer dynamics of the TM5 model over Europe, **Geoscientific Model Development**, 9, 3137-3160, doi:10.5194/gmd-9-3137-2016; Impact Factor: 4.67 [Major number of co-authors were listed in **alphabetical order**]
- [23] **Pal, S.**, and Haefelin, M., 2015. Dynamics and forcing mechanisms governing diurnal and seasonal variability in the atmospheric boundary layer depths over a suburban site near Paris: A five-year long lidar-based study, **Journal of Geophysical Research-Atmospheres**, 120, doi:10.1002/2015JD023268; Impact Factor: 5.22
- [22] **Pal, S.**, Lopez, M., Schmidt, M., Ramonet, M., Xueref-Remy, I., Ciais, P., 2015. Investigation of the atmospheric boundary layer height variability and its impact on the ²²²Rn concentration over a rural background site in France, **Journal of Geophysical Research-Atmospheres**. doi: 10.1002/2014JD022322; Impact Factor: 5.22
- [21] Lee, T.R.* , De Wekker, S.F.J., **Pal, S.**, Andrews, A., Kofler, J., 2015. Meteorological controls on the diurnal variability of carbon monoxide mixing ratio at a mountaintop monitoring site in the Appalachian Mountains, **Tellus B: Chemical and Physical Meteorology**; 2015, 67, 25659; Impact Factor: 3.49
- [20] Behrendt, A., Wulfmeyer, V., Hammann, E., Muppa, S., **Pal, S.** 2015. Profiles of second- to fourth-order moments of turbulent temperature fluctuations in the convective boundary layer: First measurements with rotational Raman lidar. **Atmospheric Chemistry and Physics**, 15, 5485-5500; Impact Factor: 5.41

- [19] Fernando, H. J. S., and co-authors (including **Pal, S.** in alphabetical order), **2015**. The MATERHORN—Unraveling the intricacies of mountain weather, **Bulletin of American Meteorological Society**, 96, 1945-1967; Impact Factor: 9.12 [Major number of co-authors were listed in **alphabetical order**]
- [18] **Pal, S.**, Lee, T.R., Phelps, S., De Wekker, S.F.J., **2014**. Impact of atmospheric boundary layer depth variability and wind reversal on the diurnal variability of aerosol concentration at a valley site. **Science of the Total Environment**, 496, 424–434; Impact Factor: 10.75.
- [17] **Pal, S.**, **2014**. Monitoring depth of shallow atmospheric boundary layer to complement lidar measurements affected by partial overlap, **Remote Sensing**, 6(9), 8468-8493; Impact Factor: 5.35.
- [16] **Pal, S.**, Haeffelin, M., and Batchvarova, E., **2013**. Exploring a geophysical process-based attribution technique for the determination of the atmospheric boundary layer depth using aerosol lidar and near surface meteorological measurements, **Journal of Geophysical Research-Atmospheres**, 118, 1–19; Impact Factor: 5.22
- [15] Lac C., Donnelly, R.P., Masson, V., **Pal, S.**, Riette, S., Donier, S., Queguiner, S., Tanguy, G., Ammoura, L., Xueref-Remy, I., **2013**. CO₂ Dispersion modelling over Paris region within the CO₂-MEGAPARIS project, **Atmospheric Chemistry and Physics**, 13, 4941-4961; Impact Factor: 5.41.
- [14] Cimini, N., Angelini, F., Dupont, J.-C., **Pal, S.**, Haeffelin, M. **2013**. Microwave radiometer measurements of mixing layer height, **Atmospheric Measurement Techniques**, 6, 2941–2951; Impact Factor: 4.18
- [13] **Pal, S.**, Xueref-Remy, I., Ammoura, L., Chazette, P., Gibert, F., Royer, P., Dieudonné, E., Dupont, J.C., Haeffelin, M., Lac, C., Lopez, M., Morille, Y., Ravetta, F., **2012**. Spatiotemporal variability of the atmospheric boundary layer depth over the Paris agglomeration: An assessment of the impact of the urban heat island intensity, **Atmospheric Environment**, 63, 261-275; Impact Factor: 5.78
- [12] **Pal, S.**, Devara P.C.S., **2012**. A wavelet-based spectral analysis of long-term time series of optical properties of aerosols obtained by lidar and radiometer measurements over an urban station in Western India, **Journal of Atmospheric and Solar Terrestrial Physics**, 84, 75-87; Impact Factor: 2.12
- [11] Behrendt, A., **Pal, S.**, Aoshima, F., Bender, M., Blyth, A., Corsmeier, U., Cuesta, J., Dick, G., Di Girolamo, P., Dorninger, M., Flamant, C., Huang, Y., Gorgas, T., Kalthoff, N., Khodayar, S., Wulfmeyer, V., **2011**: Observation of Convection Initiation Processes with a Suite of State-of-the-Art Research Instruments during COPS IOP8b, **Quarterly Journal of Royal Meteorological Society**, 137, 81-100; Impact Factor: 7.23
- [10] Behrendt, A., **Pal, S.**, Wulfmeyer, V., Valdebenito, A. M., Lammel, G., **2011**: A novel approach for the characterisation of transport and optical properties of aerosol particles near sources Part I: Measurement of particle backscatter coefficient maps with a scanning UV lidar, **Atmospheric Environment**, 45, 2795-2802; Impact Factor: 4.04
- [09] Valdebenito, A. M., **Pal, S.**, Behrendt, A., Wulfmeyer, V., Lammel, G., **2011**: A novel approach for the characterisation of transport and optical properties of aerosol

particles near sources - Part II: High-resolution chemistry transport model and its assessment using lidar measurements, **Atmospheric Environment**, 45, 2981-2990; Impact Factor: 5.78

- [08] Bhawar, R., Di Girolamo, P., Summa, D., Flamant, C., Althausen, D., Behrendt, A., Kiemle, C., Bosser, P., Cacciani, M., Champollion, C., Di Iorio, T., Herold, C., Mueller, D., **Pal, S.**, Riede, A., Wirth, M., Wulfmeyer, V., **2011**: Water Vapour Intercomparison Effort in the Frame of the Convective and Orographically-Induced Precipitation Study: Airborne-to-Ground-based and airborne-to-airborne Lidar Systems. **Quarterly Journal of Royal Meteorological Society**, 137 325-348; Impact Factor: 7.23 [Major number of co-authors were listed in **alphabetical order**]
- [07] Wulfmeyer, V., and co-authors (including **Pal, S.** in alphabetical order) **2011**: The Convective and Orographically Induced Precipitation Study (COPS): An overview of the field phase and first highlights. **Quarterly Journal of Royal Meteorological Society**, 137, 3-30; Impact Factor: 7.23 [Major number of co-authors were listed in **alphabetical order**]
- [06] **Pal, S.**, Behrendt, A., Wulfmeyer, V., **2010**: Elastic-backscatter-lidar-based characterization of the convective boundary layer and investigation of related statistics, **Annales Geophysicae**, 28, 825-847; Impact Factor: 2.20
- [05] Wulfmeyer, V., **Pal, S.**, Turner, D. D., Wagner, E., **2010**: Can the water vapor Raman lidar resolve profiles of turbulent variables in the convective boundary layer? **Boundary Layer Meteorology**, **136**, 253-284; Impact Factor: 3.48
- [04] **Pal, S.**, Behrendt, A., Bauer, H., Radlach, M., Riede, A., Schiller, M., Wagner, G., Wulfmeyer, V., **2008**: 3 -dimensional observations of atmospheric variables during the field campaign COPS, **IOP: Earth and Environmental Sciences**, **1** 012031, ISSN 1755-1307 (Print), ISSN 1755-1315 (Online). Impact Factor: NA
- [03] Groenemeijer, P., Barthlott, C., Behrendt, A., Corsmeier, U., Handwerker, J., Kohler, M., Kottmeier, C., Mahlke, H., **Pal, S.**, Radlach, M., Trentmann, J., Wieser, A., Wulfmeyer, V., **2008**: Observations of kinematics and thermodynamic structure surrounding a convective storm cluster over a low mountain range. **Monthly Weather Review** **137** 585-602; Impact Factor: 3.72 [Major numbers of co-authors were listed in **alphabetical order**]
- [02] Behrendt, A., Wulfmeyer, V., Riede, A., Wagner, G., **Pal, S.**, Bauer, H., Radlach, M., Späth, F., **2009**: 3-Dimensional observations of atmospheric humidity with a scanning differential absorption lidar **Proc. SPIE** **7475**, 74750L (2009); doi:10.1117/12.835143, **ISBN: 9780819477804**; Impact Factor: NA
- [01] Behrendt, A., Wagner, G., Petrova, A., Shiler, M., **Pal, S.**, Schaberl, T., Wulfmeyer, V., **2005**: Modular lidar systems for high-resolution 4-dimensional measurements of water vapor, temperature, and aerosols, **Proc. SPIE** 5653, Lidar Remote Sensing for Industry and Environmental Monitoring V, 220; doi:10.1117/12.579139. **ISSN 0277-786X**, **eISSN 1996-756X**; Impact Factor: NA.

Conference Proceedings

List is exhaustive here. Please see the [link](#)

Non Peer-Reviewed Publications, including Technical Reports

- Jensen, M., Fan, J., Collis, S., Bruning, E., Giangrande, S., Miltenberg, A., **Pal, S.**, Rosenfeld, D., Stier, P., Heever, S., and Wang, D., **2021**. Aerosol, Cloud, Precipitation and Climate (ACPC) Initiative Deep Convection Cloud Roadmap: TRACER and follow-on Activities. A roadmap for ACPC deep convective research focused on TRACER and related campaigns in the Houston, TX. Available at: http://acpcinitiative.org/Docs/ACPC_DCC_Roadmap_2021.pdf
- Lin, B., J.F. Campbell, J. Dobler, E.V. Browell, S.A. Kooi, **S. Pal**, T. Fan, W. Erxleben, D. McGregor, M.D. Obland, and C. O'Dell. **2022**. ACT-America: L2 Weighting Functions for Airborne Lidar Column-avg CO₂, Eastern USA. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1891>
- Lin, B., J.F. Campbell, J. Dobler, E.V. Browell, S.A. Kooi, **S. Pal**, T. Fan, W. Erxleben, D. McGregor, M.D. Obland, and C. O'Dell. **2022**. ACT-America: L2 Remotely Sensed Column-avg CO₂ by Airborne Lidar, Lite, Eastern USA. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1892>
- **Pal, S.**, K.J. Davis, R.M. Pauly, M.J. McGill, L.J. Campbell, K. Hoffman, A.M. Alejandro, M. Rench, and H. Haas. **2021**. ACT-America: CPL-derived Atmospheric Boundary Layer Top Height, Eastern US, 2016-2018. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1825>
- **Pal, S.**, and K.J. Davis. **2021**. ACT-America Campaign Catalog. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1862>
- Samaddar, A., Feng, S., Lauvaux, T., Barkley, Z.R., **Pal, S.**, Davis, K.J., **2020**. One-way nested (27km, 9km and 3km) model output of North American atmospheric CO₂ simulation (full WRF-chem output), Datat Commons, **2020**, <http://doi.org/10.26208/49kd-b637>
- Lin, B., J.F. Campbell, J. Dobler, E.V. Browell, S.A. Kooi, **S. Pal**, T. Fan, W. Erxleben, D. McGregor, M.D. Obland, and C. O'Dell. **2020**. ACT-America: L1 DAOD Measurements by Airborne CO₂ Lidar, Eastern USA. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1817>
- **Pal, S.** **2019**. ACT-America: Profile-based Planetary Boundary Layer Heights, Eastern USA. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1706>
- Davis, K.J., M.D. Obland, B. Lin, T. Lauvaux, C. O'Dell, B. Meadows, E.V. Browell, J.P. DiGangi, C. Sweeney, M.J. McGill, J.D. Barrick, A.R. Nehrir, M.M. Yang, J.R. Bennett, B.C. Baier, A. Roiger, **S. Pal**, T. Gerken, A. Fried, S. Feng, R. Shrestha, M.A. Shook, G. Chen, L.J. Campbell, Z.R. Barkley, and R.M. Pauly. **2018**. ACT-America: L3 Merged In Situ Atmospheric Trace Gases and Flask Data, Eastern USA. ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1593>
- Lin, B., J.F. Campbell, J. Dobler, E.V. Browell, S.A. Kooi, **S. Pal**, T. Fan, W.

- Erxleben, D. Mcgregor, M.D. Obland, and C. O'dell., 2018. ACT-America: L2 Remotely Sensed Column-average CO2 by Airborne Lidar (**2018**), ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1649>
- M. Obland and **S. Pal**, **2017**. ACT-America, NASA Airborne Science Newsletter Link:airbornescience.nasa.gov/sites/default/files/documents/ASP_Spring2017_nsltr.pdf
 - **S. Pal (PI)**, S.F.J. De Wekker, T.R. Lee, S. Phelps, M. Sghiatti, M. van den Bossche, and D. Chestnut, 2014. **Fall-2013 Outreach Activities Final Report**: Understanding the impact of meteorological features on aerosol concentrations, by Submitted to Director of Science Education and Public Outreach, Dean's Office, College and Graduate School of Arts & Sciences, University of Virginia.
 - **Final Report: COST0702 EG-CLIMET** (European Ground-based Observations of Essential Variables for Climate and Operational Meteorology), **2012**. Editors: A.J. Illingworth, D. Ruffieux, D. Cimini, U. Löhnert, M. Haffelin, V. Lehmann., **Contributors** (in alphabetical order): F. Angelini, E. Batchvarova, C. Brandau, D. Cimini, O. Cox, H. Czekala, A. Dabas, D. Donovan, J.C. Dupont, K. Ebell, J. Fernández-Gálvez, M. E. Ferrario, C. Gaffard, G.P. Gobbi, U. Görndorf, J. Güldner, A. Haeffelin, M. Haffelin, F. Hurter, A.J. Illingworth, S. Kauczok, H. Klein Baltink, V. Lehmann, R. Lehtinen, D. Leuenberger, U. Löhnert, S. Lolli, F. Madonna, O. Maier, G. Martucci, G. Maschwitz, I. Mattis, D. Nicolae, E. O'Connor, G. Pace, **S. Pal**, M. Piringer, B. Pospichal, D. Ruffieux, L. Sauvage, B. Thies, L. Thobois, W. Thomas, M. Wiegner.
 - **Pal, S., 2012**. Objective determination of the atmospheric boundary layer depth from routine lidar and ceilometer measurements, Progress report of the research and development project performed by **S. Pal** in collaboration with M. Haeffelin at Ecole Polytechnique, submitted to LSCE, France.
 - **Pal, S., 2009**. A mobile, scanning eye-safe lidar for the study of atmospheric aerosol particles and transport processes in the lower troposphere, Ph.D. Thesis Faculty of Natural Sciences, University of Hohenheim, Stuttgart, Germany, Published by: Kommunikations-, Informations- und Medienzentrum (KIM). Veröffentlichungsvertrag mit der Universitätsbibliothek Hohenheim ohne Print-on-Demand, <http://opus.ub.uni-hohenheim.de/volltexte/2009/340/>
 - Wulfmeyer V, Behrendt A, Kottmeier Ch, Corsmeier U, Barthlott C, Craig G, Hagen M, Adrian G, Althausen D, Aoshima F, Bauer HS, Baelen J, Blyth A, Brandau C, Crewell S, Dick G, Dorninger M, Dufournet Y, Ehret G, Engelmann R, Flamant C, Foken T, Hauck C, Girolamo P, Graßl H, Groenemeijer P, Grzeschik M, Handwerker J, Hardesty RM, Hauck C, Junkermann W, Kalthoff N, Kiemle C, Krauss L, Long C, Madonna F, Miller F, Mobbs S, Neininger B, **Pal S**, Peters G, Radlach M, Richard E, Rotach M, Russchenberg H, Schlüssel P, Schumann U, Simmer C, Steinacker R, Turner DD, Vogt S, Volkert H, Weckwerth T, Wernli H, Wieser A, Wunram, (2008). **COPS Field Report** (2008) in Eds: (Wulfmeyer V and Behrendt A) available at <https://www.uni-hohenheim.de/spp-iop/>
 - Behrendt A, Radlach M, **Pal, S.**, and Wulfmeyer V, **2008**. Profiles of temperature and particle backscatter coefficient at 355 nm measured with the Rotational Raman Lidar of University of Hohenheim (UHOH RRL) during COPS 2007, World Data

Center for Climate. doi:10.1594/WDCC/cops_suph_rlidar.

- Behrendt A, Wulfmeyer V, **Pal, S.**, and Bauer H, **2008**. Technical description of Water-vapor Differential Absorption Lidar of University of Hohenheim, online at World Data Center for Climate (WDCC). doi:10.1594/WDCC/cops_suph_wvdial.
- **Pal, S., 2004**. LIRAD [Lidar+RADiometer] Sounding of Atmospheric Aerosols and Pre-cursor Gases Over Pune, India, Master Thesis, University of Pune, India. DOI: 10.13140/2.1.3274.3206
- **Pal, S., 2003**. Active and Passive Remote Sensing of the Atmospheric Aerosols (2003) Internship training report, University of Pune, India conducted at Physical Meteorology and Aerology Division, Indian Institute of Tropical Meteorology (IITM), India.

Research Awards

- Selected for TTU President's STEM Mentoring Academy (PSMA, FY 23-24).
- Recognized for publishing a top-cited paper in the AGU journal Earth and Space Sciences, AGU Hallmark Certificate. 2023
- Nominated for the **2022** College of Arts & Sciences Excellence in Diversity Award by the Chair of the Department (Dr. Callum Hetherington). Not awarded.
- TTU Open Access Publication Initiative award by the TTU Office of Research and Innovation (ORI) and Office of the Vice President of Research (VPR) to defray the cost for open access article published in the Springer journal *Boundary Layer Meteorology*, **2022**.
- Nominated for the **2022** College of Arts & Sciences Excellence in Research Award by the Chair of the Department (Dr. Callum Hetherington). Not awarded.
- Recognized for publishing a top-cited paper as the lead author in the AGU Journal of Geophysical Research: Atmospheres. Cited more than 24 times in one year. AGU Hallmark Certificate. **2022**. Link
- Spring Faculty Conference Travel Grant by the Office of Research & Innovation of TTU to attend an International Conference (102nd AMS Annual Meeting) in Houston, Texas, USA. **2021**.
- Nominated for the 2021 College of Arts & Sciences Excellence in Research Award by the Chair of the Department (Dr. Callum Hetherington). **Not selected for an award.**
- TTU Open Access Publication Initiative award by the TTU Office of Research and Innovation (ORI) and Office of the Vice President of Research (VPR) to defray the cost for open access article published in the *AMS Journal of Atmospheric and Oceanic Technology*, **2021**.
- Nominated for Nancy J. Bell Faculty Excellence in Mentoring Award to recognize those mentors who have gone above and beyond in mentoring graduate students. Not selected for an award.
- Recipients of the NASA Group Achievement Award 2020 (Certificate of

Recognition being potential member of the team), Citation: “*For Exceptional Scientific Achievements of the ACT-America Earth Venture Suborbital Mission*”. NASA Langley Honor Awards Ceremony, **2020**.

- Recognized reviewer for Optical Society of America Journals for providing quality scientific peer review and completing more than 2 manuscripts in **2020**; Awarded by Dr. Joseph N. Mait (Chair, Board of Editors)
- Spring Faculty Conference Travel Grant by the Office of Research & Innovation of TTU to attend an International Conference in Houston (*Aerosol, Cloud, Precipitation, and Climate, ACPC* - a joint initiative of the International Geosphere–Biosphere Program and the World Climate Research Program, **2020**).
- Recognized reviewer of Royal Meteorological Society Journal Meteorological Applications awarded by the Editor in Chief. **2020**.
- Open Access Award for Publications (currently known as, Open Access Week Award) by the Faculty Research Committee at the TTU Libraries for showing commitment to open access via publishing in high-impact open access journals and serving as reviewer and editor for high-impact open access journals, **2019**.
- Recognized reviewer of Royal Meteorological Society Journal Meteorological Applications, **2018**.
- Travel Grant Award: Selected Presenter for Lightning Talk: Travel Grant awarded by the Director, Office of Postdoctoral Affairs, The Pennsylvania State University, PA, USA, **2017**.
- Recognized reviewer of the Elsevier journal Urban Climate, Science of the Total Environment, Elsevier, Amsterdam, **2014**
- Recognized for publishing a New Hot Paper in the Field of Geosciences: Co-authored a paper published a high-impact journal (Quarterly Journal of the Royal Meteorological Society) recognized by Thompson Reuters (now, Clarivate). **2011**
- Visiting Scientist Medal, Certificate of Recognition awarded by the Director of the Indian Institute of Tropical Meteorology, Pune, India, **2010**.
- Young Scientist Award at the 7th Workshop of Convective and Orographically-Induced Precipitation Study (COPS) in Strasbourg, France, awarded by COPS International Scientific Steering Committee, **2008**.
- Best Poster Award in DACH Conference (Joint Conference on Meteorology and Climatology), Hamburg, Germany, organized by German Meteorological Society (DMG), **2007**.
- International Laser Radar Conference (ILRC) Travel Grant, Nara, Japan; Awarded by the International Coordination-group for Laser Atmospheric Studies (ICLAS) of the International Radiation Commission, International Association of Meteorology and Atmospheric Physics, **2006**.
- Fellowship for Doctoral Thesis in Atmospheric Sciences at the University of Hohenheim, Stuttgart, Germany, funded by the Ministry of Environment and Transportation, State of Baden Wuettemberg, Germany, **2004**
- Award for Best Presentation in Physical Research Laboratory, Ahmedabad, India:

Received from the organizing committee of the 4th Planex workshop, India, **2003**.

- National Scholarship awarded by the Ministry of Education, Government of India, **1995**.

Awards/Honors received by my group members at TTU

- Graduate student **Nicholas Clark** became an invited member of TTU's chapter of The Honor Society of Phi Kappa Phi, the nation's oldest, most selective, and most prestigious all-discipline honor society. Awarded for continuing extremely high academic standards in TTU.
- Graduate student **Nicholas Clark** received **Three Minute Thesis (3MT)** Competition 3rd Place Award, TTU Graduate School.
- Graduate Student **Michael Anand** received the Best Poster Award during the 6th Texas Weather Conference, Lubbock, 1-2 April 2022.
- Undergraduate student **Nicholas Clark** received 2021 Outstanding Undergraduate Researcher Award from the TTU Center for Transformative Undergraduate Experiences.
- Undergraduate student **Nicholas Clark** received Center for Transformative Undergraduate Experiences Research Travel Funding for 2020
- Undergraduate student **Nicholas Clark** received Center for Transformative Undergraduate Experiences Research Travel Funding for 2019

PROFESSIONAL PRESENTATIONS

- **University of Calcutta**, St. Paul's Cathedral Mission College, Calcutta, India (Invited by Prof. Pintu Mondol) on Jan 6, 2023. Topic: Beyond the Horizon: Atmospheric Science Research Opportunities
- **National Weather Service Office of Lubbock**, invited by Invited by Dr. Mark Conder. Title: Lubbock's changing urban heat regimes. **Sept 2022**.
- **Chacaltaya Science Steering Committee Meeting**, invited by Dr. Marcos F. Andrade. Title: On the complexities of atmospheric boundary layer dynamics over mountainous regions: Implications for better understanding of tracer mixing processes, La Paz, Bolivia, **Dec 2020**.
- **Aerosol, Clouds, Precipitation and Climate Workshop** (ACPC) and TRACER PI Meeting. Title: Impact of boundary layer kinematics and aerosol physicochemical properties on convection initiation downwind of an urban hotspot (Houston) within the TRACER project. Invited by Dr. Mike Jensen. **April 2020**
- **SOOConWest El Paso Meeting**, Title: Update on Urban Boundary Layer Research. Invited by Dr. Mark Conder. **Feb 2020**
- **CSRL Ag Sciences Seminar Series**. Title: Land-Atmosphere Feedback Processes over an Arid Region during Four Seasons, Invited Presentation at USDA, Lubbock, Texas, Organized by Wind Erosion & Water Conservation Unit, CSRL. Invited by Dr. John E. Stout. **November 2019**.

- **SOOConWest Amarillo Meeting**, Amarillo-Texas, Title: On the Impact of Horizontal Advection on Atmospheric Boundary Layer Dynamics. Invited by Dr. Mark Conder. **Aug 2019.**
- **Argonne National Laboratory**, Lemont, IL, Title: Greenhouse Gas Content of Frontal Structures: Results from the Atmospheric Carbon and Transport - America (ACT-A) Field Campaigns, **Aug 2017.**
- **Earth System Science Center (ESSC) Brown Bag/Climate Dynamics Series**: Nov 2017 at the Pennsylvania State University. Invited by Michael Mann, Title: Greenhouse Gas Variability across Frontal Structures in Winter, **September 2017**
- **10th Annual Postdoc Research Exhibition** organized by the Office of Postdoctoral Affairs, The Penn State University. Title: "Warm" vs. "Cold" Greenhouse Gases during Stormy Weather: Unmasking their Horizontal and Vertical Behaviors. **April 2017.**
- **Department of Physics**, St. Paul's Cathedral Mission College, University of Calcutta, India, Title: Ground-based and airborne lidar remote sensing techniques for meteorological state variables. **Jan 2017.**
- **Meteorology and Atmospheric Science Colloquia** for Fall 2016, Penn State University, Invited by Steven Greybush, Title: Greenhouse Gas Content of Frontal Structures: Results from the Summer 2016 ACT-America Field Campaign. **Nov 2016**
- **University of Wyoming**, Laramie, Wyoming. Investigation of convective boundary layer mixing and turbulence from a lidar perspective. **Feb 2014**
- **Undergraduate Seminar Series**, Department of Environmental Sciences, Title: What is the composition of the lower troposphere and why do we care? **Sept 2014**
- **Albemarle High School**, Charlottesville, VA. Title: Understanding our Atmosphere. **Sept 2013.**
- **2013 Atmospheric Science Seminar**, Department of Environmental Sciences, Title: Investigation of the atmospheric boundary layer depth variability and its impact on the ^{222}Rn concentration at a rural site in France: Evaluation of a year-long measurement., **May 2013.**
- **UGC-Sponsored National Conference** on Non-conventional Energy Resources and Sustainable Development: Current Perspective, St. Paul's C. M. College, University of Calcutta, India. Title: Application of scanning lidar systems for 3-d measurements of, wind, aerosol, and moisture distributions in the lower troposphere, **Aug 2010.**
- **Indian Institute of Tropical Meteorology (IITM)**, Pune, India. Title: Application of ground-based, mobile scanning lidar systems for 3-d measurements of aerosol, temperature and moisture distributions in the atmospheric boundary layer and lower free troposphere, **July 2010.**
- **National Atmospheric Research Laboratory (NARL)**, Gadanki, India. Development and application of ground-based, mobile scanning lidar systems for 3-d measurements of aerosol, temperature and moisture distributions in the atmospheric boundary layer and lower free troposphere. **June 2010**
- **Department of Atmospheric and Space Sciences**, University of Pune, India. Title: Application of scanning lidar systems for the high-resolution description of the thermodynamic variables in the lower troposphere, **June 2010**
- **Centre for Oceans, Rivers, Atmosphere and Land Sciences (CORAL)**, Indian Institute of Technology, Kharagpur (IIT-KGP), India. Title: Lidar application

towards high resolution description of the thermodynamic variables in the lower troposphere. **May 2010.**

- **Department of Applied Mathematics**, Birla Institute of Technology, Ranchi, India. Title: Lidar probing of atmospheric variables, **May 2010**
- **Risø National Laboratory, DTU, Roskilde, Denmark** during the 14th International Symposium for the Advancement of Boundary Layer Remote Sensing (ISARS-2008), Title: 3-dimensional observations of atmospheric variables during the field campaign COPS. **July 2008.**

CONFERENCE WORKSHOPS ORGANIZED/CONDUCTED

- Virtual workshop on the theme ABL-ROAD (Atmospheric Boundary Layer Research Over Arid Domains). **December 2020. Team Coordinator**, ABL-ROAD. [Link](#)

FUNDING

External Applications

- Agency/Sponsor/Program: NASA. Title: Synergetic Surface-based and Satellite-borne Measurements of Arid-region Aerosol and Precipitation (S³-MAAP). **PI: Pal**; Co-PIs in TTU: E. Bruning, J. Schroeder, C. Weiss, K. Ardon-Dryer and B. Hirth.
- Agency/Sponsor/Program: NOAA Title: Employing a combined observation and simulation-based framework to investigate spatiotemporal variability in urban heat and associated heat advection; **PI: Pal**; Co-PIs: M. Conder (NWS-Lubbock), T. Lee (The Atmospheric Turbulence and Diffusion Division (ATDD), Air Resources Laboratory)
- Agency/Sponsor/Program: NASA SBIR-**Phase I**. Title: Applying Machine Learning Techniques to Airborne Science Planning and Real-Time Column Mole Fraction Estimates for Integrated Path Differential Absorption Lidar. **TTU PI: Pal** in collaboration with Lead PI Dr. J. Dobbler in S3 LLC.
- Agency/Sponsor/Program: NASA, Title: Multi-instrument observations of greenhouse gases across frontal boundary and comparison with WRF-Chem simulations; **PI: Pal**
- Agency/Sponsor/Program: Qi2 Research Program for Air Quality in Ile de France around Paris; Title: Variations in ozone concentrations over the Île-de-France region associated with spatiotemporal characteristics of atmospheric boundary layer dynamics; Co-Investigator/International. Co-PI: Pal in collaboration with PIs Marital Haeffelin (Ecole Polytechnique, Paris, France) and Simone Kotthaus (University of Reading, UK)

Internal Applications

- Agency/Sponsor/Program: TTU Office of the Vice President of Research, STEM Research Assistance Program, FY24 (Fall 2023); Title: Atmospheric Boundary Layer Research Over Arid Domain (ABL-ROAD): A Pilot Study. **PI: Pal**;

- Agency/Sponsor/Program: TTU Office of the Vice President of Research (Proposal Assistance Program (Fall 2022 Funding); Title: Land-Atmosphere Interactions during Morning and Evening Transitions (LAI-MET). **PI: Pal**;
Agency/Sponsor/Program: TTU Office of International Affairs; 2022 International Research and Development Seed Grant, Title: Impact of land-atmosphere feedback processes on the atmospheric boundary layer dynamics over an arid region under synoptically active and benign weather conditions. **PI: Pal**
- Agency/Sponsor/Program: TTU Office of Research and Innovation Proposal Assistant Program 2020. Title: Impact of reduced anthropogenic activities caused by the COVID-19 lockdown on urban heat island intensities in the US. **PI: Pal**;
- Agency/Sponsor/Program: TTU Office of International Affairs; 2020 International Research and Development Seed Grant, Title: Exploring the complexities in atmospheric boundary layer dynamics over mountainous regions using lidar and in-situ observations. **PI: Pal**
- Agency/Sponsor/Program: TTU Office of International Affairs; 2019 International Research and Development Seed Grant, Title: Impact of Advected Urban Boundary Layer on the Atmospheric Dynamics and Convection Initiations over the Adjacent Sub-urban and Rural areas; **PI: Pal**
- Agency/Sponsor/Program: National Research Council, Project: On the factors governing vertical variability of water vapor turbulence features in the quasi-stationary convective boundary layer over land surface; **PI: Pal**
- Agency/Sponsor/Program: Director of Science Education and Public Outreach for Science Outreach at University of Virginia, Title: Understanding the influence of meteorological processes on the near-surface air pollution; **PI: Pal**; Co-PI: Temple Lee, Stephan DeWekker, Stephanie Phelps.

IV. SERVICE

Departmental Service

- 01/2020- present: Academic Advisor, Atmospheric Science Minor, TTU-Department of Geosciences
- 08/2022-12/2022: Teaching Assistant Coordinator, Atmospheric Science Laboratory in Fall 2022.
- 08/2020-12/2020: Teaching Assistant Coordinator, Atmospheric Science Laboratory in Fall 2020.
- 05/2021- present: Overseeing the Transfer Equivalency Requests for Atmospheric Science courses to examine the Transfer Equivalency, working with the TTU Transfer Evaluation Office.
- 11/10/2022: Teaching evaluation of Ms. Hannah Webb for her GEOG-2351 class
- 04/08/2022: Executed a VIP visit (Mr. Tony Wright, Member, Advisory board of the TTU College of Media & Communication for future studies of Atmospheric Sciences in the Dept of Geosciences.

- 11/2021-5/2022: Faculty Search Committee member, TTU Department of Geosciences, 2021-2022 Cluster hire position (26129BR)
- 02-27-2021: Guest Speaker in the Department of Geosciences (Geography Division) Virtual MAP-A-THON Event on the topic Assisting USAID with a Humanitarian Mission to improve education for girls in India. Invited by Drs. Lee and Jones at TTU
- 2019-Present (4 times) Active participations in Career Resource and Graduate School Fair for TTU Atmospheric Science program during AMS Annual Meetings

College Service

- 10/23/2023: Dean's representative in dissertation defense at the TTU College of Engineering, Department of Chemical Engineering, Candidate: Mr. Ashwin Ramanujam
- 09/2023- Present Member of the College Awards Committee, TTU College of Arts and Sciences
- 05/02/2023: Dean's representative in dissertation defense at the TTU College of Arts and Sciences, Department of Biological Sciences, Candidate: Ms. Amin Jannatul Ferdous
- 10/2022-12/2022: Member for internal search committee for a permanent chair (Department of Geosciences), TTU College of Arts and Science.
- 06/13/2022: Dean's representative in dissertation defense at the TTU College of Arts and Sciences, Department of Chemistry, Candidate: Ms. Bhumika Jayee
- 08-27-2021: Judge at the Chemistry and Biochemistry Graduate Student Poster Session, invited by Dr. Anthony Cozzolino, TTU Chemistry & Biochemistry.
- 03/09/2022: Dean's representative in dissertation defense at the TTU College of Engineering, Department of Industrial, Manufacturing & Systems Engineering (IMSE); Candidate: Mr. Abhishake Kundu.

University Service

- 09/2022-Present Member, Curriculum Committee of the Wind Science and Engineering Ph.D. Program, TTU-National Wind Institute.
- 10/2018-present Academic Advisor, Center for Transformative Undergraduate Experiences of TTU (TrUE at TTU)
- 04/2020-present Member of TTU & TTUHSC Directory and collaborative team
- 07/2019-present Faculty Mentor, Indian Student Association through Tech Connect
- 07/2020-present Mentor for The Lauro Cavazos & Ophelia Powell-Malone Mentoring Program (Mentor Tech) at TTU. Mentored 4 students
- 10/2019- present Mentor, TTU-Pi2 (Program in Inquiry and Investigation, Texas Tech University, now called TrUE Scholars). Mentored 4 students

- 10/2019- present Mentor, Undergraduate Research Scholars, TTU Honors College. Mentored 2 students
- 02/2023: Reviewer for applications for the scholarships/fellowships submitted to TTU Graduate School.
- 10-30-2022 Representing TTU Division of Graduate and Postdoctoral Affairs and Dean's office for their sponsorship for The Magnificent 4: A Music Concert by Indian Idol Season 12 winners at the Buddy Holly Hall.
- 03-30-2022: Reviewer/Judge for both oral and poster sessions at 14th TTU Undergraduate Research Conference (TTU URC 2022) organized by Center for transformative Undergraduate Experiences. TTU-SUB.
- 07-19-2021: Volunteer during the 2021 Back to School Fiesta (BTSF-TTU) Event. Texas Tech's College Connect department and the Office of the President. Preparation of free school supplies for all K-12 school students in the community organized by the TTU-DEI (Doak Hall).
- 02/2022: Reviewer for applications for the scholarships/fellowships submitted to TTU Graduate School.
- 03-30-2021: Reviewer/Judge for both oral and poster sessions at 13th TTU Undergraduate Research Conference (TTU URC 2021- Virtual)
- 10-29-2020: Judge, TTU 2020 Virtual Three Minute Thesis Competition organized by the TTU Graduate School
- 09-22-2020: Volunteer. COVID-19 Quarantine Hydration Kit Packaging for students quarantined with in TTU; Organized by Carla Lovelace, Senior Event Coordinator
- 04-02-2019: Reviewer/Judge for both oral and poster sessions at Texas Tech University Undergraduate Research Conference organized by Center for Transformative Undergraduate Experiences. TTU-SUB.

Service to the Profession

Reviewer

Published book reviews

- 09-2020: Cambridge University Press, The Atmospheric General Circulation by John M. Wallace (University of Washington), Invited by Ms. Cecilia Rydberg, Editorial Consultant for Cambridge University Press.
- 10-2021: Cambridge University Press, Introductory Meteorology: Weather: A Concise Introduction (Second Edition) by Gregory Hakim and Jérôme Patoux, University of Washington, Invited by Ms. Cecilia Rydberg, Editorial Consultant for Cambridge University Press

Academic articles and books

[Reviewed manuscripts submitted to more than 50 different international journals of repute; see [related news article here](#)]. A list of only selected journals is given below]

COMPLETE LIST OF JOURNALS (MORE THAN 55. [Please see here](#))

Journal of Atmospheric Science, Journal of Advances in Modeling Earth Systems; Science Advances (Nature Publishing Group), Journal of Geophysical Research-Atmospheres, Tellus-A: Dynamic Meteorology, Journal of Applied Meteorology and Climatology, Journal of Atmospheric and Oceanic Technology, Meteorology and Atmospheric Physics, Optics Express, Quarterly Journal of Royal Meteorological Society, Environmental Science and Technology, Atmospheric Chemistry and Physics, Atmospheric Measurement Techniques, Atmospheric Environment, Atmospheric Research, Boundary Layer Meteorology.

Grant proposals

- 04/22-05/22: Reviewer for 2 research proposals submitted to Gordon and Betty Moore Foundation within their new Experimental Physics Investigator Program initiative to explore exciting new science.
- 11/21-03/22: Reviewer for CIWRO Peter Lamb Postdoctoral Fellowship 2021-2022 established within the initiatives of The Cooperative Institute for Severe and High Impact Weather Research and Operations (CIWRO).
- National Science Foundation – NSF-PDM (3 times, 2015, 2018, 2021)
- National Science Foundation - Graduate Research Fellowship Program, GRFP (3 times 2019, 2020, 2021)
- FWF Austrian Science Fund. 2020 Project Proposals, Natural Sciences and Engineering
- NASA Postdoctoral Program, Universities Space Research Association (6 times since 2018)
- Research Grant Council of Hong Kong (6 times since 2018)
- EU-COST Action proposal, Federal Department of EAER (Switzerland) (2 times, 2015, 2017)
- Special Issue Proposals for different journals (5 times)

Conference paper competitions

- 01/2019: Judge, 99th American Meteorological Society Annual Student Conference, Jan 2019, Phoenix, AZ, USA.
- 04/2014: Judge: The 14th Annual Huskey Research Exhibition, University of Virginia.
- 11/2014: Judge for the Outstanding Student Paper Awards (OSPA) program for AGU Fall Meeting
- 10/2013: Reviewer & Judge: Enviro-Day: Annual Research Symposium, Department of Environmental Sciences at the University of Virginia

Editorial Services:

- Associate Editor, Atmospheric Science Letters (2018-Present), [Link](#)
- Associate Editor, Frontiers in Remote Sensing. Lidar Section (2020 Present). [Link](#)
- Guest Editor / Special Collection Organizer: Special Section within six potential high-impact journals of AGU/Wiley: (2020-2021). [Link](#)
- Review Editor, Frontiers in Atmospheric Science (2015- Present)
- Associate Editor, Advances in Meteorology (2015-2017)

Other Synergistic Activities

- 10/2021- Present: Working group member, Citizens' Climate Lobby, Lubbock, TX, USA
- 10-2022: Forecaster (2 times, Oct and Nov), Weather Forecasting and Advising during Football Game at Jones AT&T Stadium invited by Mr. Justin Weaver, NWS-Lubbock and Ms. Sandy Collins, Associate Athletics Director, TTU.
- 04-22-2022: Booth Organizer and Volunteer for Citizens' Climate Lobby at The City of Lubbock 'Earth Day on Broadway' Festival. Invited by: Prof. Edward George (Citizens' Climate Lobby, Lubbock Chapter). [Link](#). Event got cancelled on spot after arrangement and kick off due to weather.
- 03/10/2022: Representing TTU Indian Students' Association at the TTU 7th Annual Ambassador's Forum – "The Future of Global Diplomacy: Actors and Factors" at TTU International Cultural Center.
- 05-01-2022: Invited, Chief Guest at the Annual Prize Distribution Ceremony of TTU Indian Student Association at 3120 4th Street, Lubbock, Texas.
- 04/03/2022: Guest. Inaugurated the Annual Holi Celebration (Festival of Color) of the TTU Indian Students Association at Urbanovsky University Park as the Faculty Mentor of TTU-Indian Student Association, gathering of more than 400 students in the first big event of ISA in post-pandemic era. [Link](#)
- 02-21-2022: (Invited) Guest appearance as TTU Faculty in the 2022 International Mother Language Day organized by the Bangladesh Student Association (invited), TTU ICC.
- 05-13-2021: Guest at the TTU Honors College Medallion Ceremony to celebrate Spring 2021 Graduates, Lubbock, Texas.
- 05-01-2021: Chief Guest at the Annual Prize Distribution Ceremony of TTU Indian Student Association at 3120 4th Street, Lubbock, Texas.
- 09-2021: Forecaster (2 times in a month), Weather Forecasting and Advising during Football Game at Jones AT&T Stadium invited by Mr. Justin Weaver, NWS-Lubbock and Ms. Sandy Collins, Associate Athletics Director, TTU.
- 10/30/2021: Invited: Inaugurated the Diwali Celebration of the TTU Indian Students Association at Satsang Mandal of West Texas in Lubbock as the Faculty Mentor of TTU-Indian Students Association.
- 08-15-2021: Invited Guest at the Indian Independence Day Flag Hoisting Event at the TTU International Cultural Center organized by the TTU Indian Students Association.

- 12-16-2019: Forecaster, Weather Forecasting and Advising during Football Game (TTU vs. TCU) at Jones AT&T Stadium invited by Ms. Sandy Collins, Texas Tech Athletics.
- 11-15-2019: Chief Guest appearance as Faculty Mentor of Indian Students Association Cultural Program (invited), Cultural Program, Diwali Night.
- 12/10/2018: (Invited) Guest appearance as TTU Faculty in Bangladesh Student Night, International Language Day.

Community Guest Lectures

- Invited within the **TTU College Connect** event promoting higher education to our students and speak about the different the opportunities college offers. McCool Academy Presentation: Title: Beyond the Horizon: Academic life and opportunities in Geosciences at Tech. McCool Academy, May 11, 2023
- **Invited** as a Guest Speaker at Frenship High School, Lubbock. Topic: Exploring Urban Heat Island of Smaller-Sized Cities: The Lubbock Testbed. Invited by Mr. Robert Gentry, Frenship High School
- **Invited** as a Guest Speaker at Ralls Elementary within their Family ACE Night Program (Ralls, TX 79357, April 21st, 2023). Topic: We and the Storms. Invited by: Anna Stasia Torres (ACE Site Supervisor)
- **Invited Panelist:** The Heat is On: Understanding the Effect of Heat Islands on Small Cities, Rural Communities and Agriculture. In partnership with PocketLab, HMM and the Science Teachers Association of Texas, ScIC11 was broadcast live from The Perot Museum of Nature and Science in Dallas, Texas.
- **Invited Talk** within the Weather Unit in Commander William C. McCool Academy for Middle School Students. Title: We and the Weather
- **Popular Talk for Citizen Climate Lobby**, Title: “Hot town, summer in the city”: What we know and don't know about Lubbock's urban heat island under a rapidly changing climate? Covenant Presbyterian Church, Lubbock, Texas, Invited by: Prof. Edward George and Ms. Susan Gillette (Citizens' Climate Lobby, Lubbock Chapter). **Mar 2022**
- **December “Science By The Glass (SBTG)”** event at the TTU Climate Center. Invited by Dr. Katharine Hayhoe, Co-Director of the TTU Climate Center. Title: Greenhouse gas transport ahead and behind a storm: Two sides of the same coin. **Dec 2020.**

Media Presentations

[Media appearance/contribution and press coverage/relevant recognitions]

- **Texas Tech Today** – Mailbag article on Aug 18, 2023 featuring our group’s research on urban heat and precipitations distributions. [Link](#)
- **Texas Tech Today** – News article on May 23, 2023, featuring Dr. Pal’s group’s research on the impact of storms on greenhouse gas distributions. [Link](#)
- **Texas Tech Today** – News article on Feb 7, 2023, featuring Dr. Pal’s NASA Grant. [Link](#).

- Our group work centered around Graduate Student's research papers got recognized within the TTU College of Arts and Sciences Newsletter- Summer 2022. [Link here.](#)
- Dr. Pal's recognition in the North American Carbon Program was highlighted in 2022 June edition of **We Are Arts & Sciences**, the official faculty & staff newsletter of the College of Arts & Sciences.
- Dr. Pal's recognition as the top cited researcher in AGU Journal of Geophysical Research-Atmospheres was featured in 2022 April edition of **We Are Arts & Sciences**, the official faculty & staff newsletter of the College of Arts & Sciences.
- North American Carbon Program (NACP, A Core Element of the US Global Change Research Program) Newsletter featuring **Dr. Pal in Member Spotlight**; Nominated/edited by Dr. Elisabeth K. Larson, NASA/GSFC, Greenbelt, MD 20771. [Link here.](#) Or [click Here](#)
- Dr. Pal's interview (The Philadelphia Inquirer) on research about urban heat islands of US Cities was featured in 2022 Feb edition of **We Are Arts & Sciences**, the official faculty & staff newsletter of the College of Arts & Sciences.
- An Interview with MentorTech in recognition and celebration of mentorship throughout Texas Tech highlighting mentors in a video campaign "**Mentor Monday with Sandip Pal**". [Link.](#)
- A science article in daily newspaper **The Philadelphia Inquirer** by Anthony R. Wood entitled "The heat from Center City's buildings and streets might be giving the rains a little extra juice" News article on Aug 22, 2021, featuring Dr. Pal's research on urban heat and precipitation. [Link to the article.](#)
- Editorial role for the journal Frontiers in Remote Sensing was featured in 2021 August Edition of **We Are Arts & Sciences**, the official faculty & staff newsletter of the College of Arts & Sciences. [Link here](#)
- Special to Lubbock Avalanche-Journal USA TODAY NETWORK. Texas Tech researcher studying urban heat's effects on weather in smaller cities – News article on July 6, 2021, featuring Dr. Pal's NOAA Grant. [Link to the article.](#)
- NASA and NOAA funding news were featured in **2021 June Edition of We Are Arts & Sciences**, the official faculty & staff newsletter of the College of Arts & Sciences. [Link here.](#)
- **Texas Tech Today** – News article on June 30, 2021, featuring Dr. Pal's NOAA Grant. Link: [Sandip Pal Studying Urban Heat's Effects on Weather in Smaller Cities.](#)
- A co-authored article by Dr. Pal was featured in **Penn State News**. News article: Horizontal winds become major movers of CO₂ during cold fronts. [Link here.](#) Citation of the Paper. Contact: Patricia L. Craig
- TTU College of Arts and Science – Nov 2020 Monthly Newsletter featuring the service as a reviewer for 50 international journals as [Innovative Service: A Peer Review Accomplishment.](#)
- Nominated as the member of the AMS Committee on Measurements.
- North American Carbon Program (NACP) Newsletter featuring research article Pal et al. (2020a, Journal of Geophysical Research- Atmospheres): Section: What We

Are Reading, a special section of the NACP Newsletter where they showcase a recently published paper. [Link here](#)

- TTU Climate Center October 2020 Monthly Newsletter featuring research paper Pal et al. (2020b, Geophysical Research Letter). [Link here](#)
- TTU College of Arts and Science–Oct 2019 Monthly Newsletter featuring the research project associated with the NASA-funded grant: [Link here](#)
- An interview broadcasted on NASA channel. ACT America: The Story So Far. [Link here](#), (Streaming starts at 1:08 minute).
- Research work highlighted within the NASA’s Earth System Science Pathfinder (ESSP) online documentation. [Link here](#).
- Acknowledged for contributions within several NASA Airborne Science Newsletters from 2015-2020. [Link here](#) (see, bottom of page 3 in the Newsletter).
- Research work was reported in NASA Earth Expeditions blog “ACT-America: Waiting for the Great Big Teaspoon in the Sky” [Link here](#)

Professionally Relevant Community Service

Local

- 04/04/2022: Judge at TAME Region 17 STEM Competition (Texas Alliance of Minority Engineers) Event at TTU organized by the TTU-TrUE
- An interview associated with the Science By The Glass (SBTG) within the TTU Climate Science Center Spotlight featuring Research work. [Link here](#)
- An interview for Student driven research at Tech: A discussion of air quality in Lubbock; [Link](#)
- 2017: Popular Talk at Park Forest Elementary School: What is weather?
- 2013-2015: Science Fair mentor-ship program by University of Virginia Faculty initiated by Vice President for Research (2013-2015)
- 2013-2015: American Geophysical Union’s Expert Outreach Network
- 2013-14: Demonstration of radiosounding system to school students. Western Albemarle High School students
- 2014: Popular Talk at Albemarle High School: Earth’s Atmosphere
- 2014-15: Science Fair mentorship program initiated by the University of Virginia VPR Office for Research within the university outreach activities
- 2011-12: Eiffel Tower: CO2 mixing ratio measurements were carried out on the top of the Eiffel Tower (310 m). Demonstration of the CO2 monitoring system to the tourists during calibration once a month.
- 2008: Kinder-Uni: Demonstration of meteorological instruments to school students at the University of Hohenheim, Stuttgart, Germany
- 2007: Demonstration of radiosonde launch; Middle and high-school students, COPS, Germany

- 2004: Highlights of Physics 2004: Science fair at Stuttgart downtown for school students and public: Demonstration of lidar systems for meteorological research.

National

- 11/2020-2024: Member, Measurements Committee of AMS (American Meteorological Society) within the AMS initiatives of Scientific and Technological Activities Commission (STAC). [Link](#)
- 04/2022- Member, UCAR Commons, Online community for UCAR university members (UCAR, the University Corporation for Atmospheric Research). [Link](#)
- 10-04-2021: MSI-NCAR-PWI Research Engagement Workshop: Advocated for strong collaboration and engagement between Minority Serving institutions (MSIs) and Predominantly White Institutions (PWIs) to plan, organize, encourage research partnerships both within and outside of UCAR membership.
- 11/2020- Team Coordinator, ABL-ROAD (Atmospheric Boundary Layer Research Over Arid Region). [Link](#)
- 04/2020 Session Chair, ACT-America Community Workshop Creating the next generation of GHG flux inversions, 27 - 30 April, Online conference. Multiple Sessions. [Link](#)
- 04/2017 Judge: 14th Annual College of Engineering Research Symposium (CERS 2017), April 4, 2017. Penn State.
- 06/2013 Reviewer & Judge: The 13th Annual Huskey Research Exhibition-2013, University of Virginia.

International

- 05/2023: External/International Reviewer for Thesis submitted to the University of Pune, for partial fulfillment of Ph.D. degree in Atmospheric Sciences, University of Pune, India.
- 01/2022: Session Chair, Session 10 - Remote Sensing of the Atmosphere: Lidar and Ceilometer Observations and Measurements. Part II, AMS's 102nd Annual Meeting, 23-27 January 2022
- 01/2022: Session Chair, Session 15- 22nd Symposium on Meteorological Observation and Instrumentation - Integrating Unmanned Aerial Systems (UASs) into Meteorology, AMS's 102nd Annual Meeting, 23-27 January 2022.
- 01/2021: Session Chair, 21st Symposium on Meteorological Observation and Instrumentation, AMS's 101st Annual Meeting, 10-15 January 2021.
- 2020-Present: Atmospheric Science Letters Editorial Board Meetings (4 times), Royal Meteorological Society, UK. Virtual.