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📍 Texas Tech University (TTU)
College of Arts and Sciences
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Professional Summary

Motivated and passionate meteorologist with a proven track record of academic excellence and over ten years of data-driven research, employing advanced techniques to achieve accurate and reliable results. My experience spans teaching, numerical modeling and prediction, machine learning, and data analysis using Python, ArcGIS, and Google Earth Engine. My research interests include climate change, climate modeling, Flooding, and Duststorms. My research has contributed to advancing predictive models for climate variability and extreme events, providing valuable insights for scientific understanding and practical applications in environmental management.

Education

<i>Texas Tech University, US</i>	2023 - 2028
PhD in Land-Use Planning, Management & Design	
<i>Federal University of Technology Akure, Nigeria</i>	2012 - 2015
Master of Technology in Meteorology	
<i>Federal University of Technology Akure, Nigeria</i>	2006 - 2010
Bachelor of Technology in Meteorology	

Research and Professional Experience

Research Assistant, Department of Geoscience, Texas Tech University, Lubbock, Texas, USA 2023

- Modeling flood-related housing damage in the US using tract-level geospatial analysis and interpretable machine learning, with a focus on compound vulnerability—part of a broader, ongoing PhD project expanding to additional cities and flood events.
- Researched dust event distribution in the U.S., analyzing meteorological drivers and public health impacts.
- Authored a manual for Python codes developed for cleaning and processing US climate data, including dust and PM data, facilitating efficient data management and analysis.
- Conducted geospatial analysis on establishing Buffalo Commons in the Great Plains, evaluating population density, farmland value, and federal land using ArcGIS Pro.
- Developed a proposal to evaluate regional models for predicting PM2.5 in West Texas, selected for publication support with a partial fee waiver by the Laura Bassi Scholarship Advisory Board

Head Research Unit, WMO Regional Training Centre, Lagos, Nigeria, 2022

- Monthly research workshop planning (RTC Workshop)
- Workshop paper review and publication
- Taught Data Analysis with Python (Forecasters' & Graduate Class)

Research Scientist (Second), Meteorology and Climate Science Unit, Department of Physics, Kwame Nkrumah University of Science and Technology, Kumasi, Ghana 2021

- Conducted research on forcing functions driving West African weather and climate
- Conducted research on how to adapt research to training and operational use.

Early Career Researcher, *GCRF African SWIFT Project, stationed at the Regional Training Centre, NiMet Lagos, Nigeria. Work packages: WP-C1 (Training) & WP-R3-R4 (Satellite Remote Sensing and Nowcasting)* 2019 – 2022

- Contributed to the development of the Standard of Operation (SOP) used during the high-impact weather forecasting testbed3 workshop held in Nairobi, Kenya
- Coordinated the tailoring of SWIFT research outputs to training at RTC and operational use at our aeronautical offices, particularly in Abuja and Lagos Forecast offices

Aeronautical Meteorological Forecaster (Shift Leader), *Mallam Aminu Kano International Airport, Directorate of Weather Forecasting Services, Nigerian Meteorological Agency, Kano, Nigeria* 2005 - 2014

- Coordinated all-inclusive daily weather chart analysis
- Evaluated and validated daily weather forecast
- Taught junior aeronautical meteorological forecasters how to use and interpret tephigrams, satellite imageries, and model outputs (such as ECMWF, WRF, GFS, etc.)

Teaching and Training

Instructor: 2015 - 2023
Climatology, fundamentals in Python, and Numerical Weather Prediction.
Meteorological Research and Training Institute, World Meteorological Organization Regional Training Centre (WMO-RTC), Lagos, Nigeria.

Visiting Lecturer: 2020-2021
Urban climatology, Current weather analysis, and Dynamic Meteorology
Department of Meteorology, Meteorological Institute of Science and Technology, Katsina, Nigeria

Visiting Instructor: May 2019
Atmospheric Thermodynamics and Synoptic Meteorology
Meteorological Training Institute, Yundum, Gambia/United Nations Environmental Project (UNEP).

Additional Qualifications

Distance training course, Numerical Weather Prediction, China Meteorological Administration Training Centre (CMATC), Beijing, China 2022

Distance training school and workshop, Dust Aerosol Detection and Monitoring, jointly organized by EUMETSAT, AEMET, and WMO SDS-WAS Regional Center, Barcelona, Spain 2021

Distance training course, Nowcasting Techniques on Severe Convection Weather, China Meteorological Administration Training Centre (CMATC), Beijing, China 2020

Other Skills and Interests

Computer skills: Machine learning, Python, Climate Data Operator, ArcGIS, and Google Earth Engine

Language: English (mother tongue) and Yoruba (mother tongue)

Grants/Awards/Membership

Bill Anderson Fund (BAF) Fellow, "Hazards and Disaster Research" 2025

Laura Bassi Scholarship, “How well do regional models predict Particulate Matter (PM_{2.5}) in West Texas?” Partial fee waivers for Editorial Assistance 2024

Ed and Linda Whitacre Graduate Endowment, “Assessing Historical and Future Hotspots of Extreme Natural Hazards using Statistical and Machine Learning Models” (HUD-Funded Research) 2023

Secondment Grant, “From Research to Training: Improving Hands-on Approach to Learning” 3,304 GBP (GCRF African SWIFT Project) 2021

Member, American Meteorological Society 2023

Conferences Attended / Presentations

44th Annual Technical Conference of the National Association of Black Geoscientists, CO, US Sept 2025

“Participated in the Researchers Meeting featuring paper sessions, discussions, and collaborative networking.”

Natural Hazards Research and Applications Workshop, Broomfield, CO, US Jul 2025

“Participated in the Researchers Meeting featuring paper sessions, discussions, and collaborative networking.”

2nd Miami Workshop on Aerosol Science and Technology, Miami, US Jan 2024

“Spatial and temporal distribution of dust events across the US over 20 years and insight into their meteorological causes and conditions.”

GCRF African SWIFT Science Meeting, Kumasi, Ghana Aug 2019

“Curriculum review, gaps, weaknesses, and strengths”

GCRF African SWIFT Weather Forecast Testbed 1B, Nairobi, Kenya May 2019

“Nowcasting operation procedures”

WMO Regional Subtropic Workshop on Severe Weather Forecasting, Lome, Togo Nov 2018

“Severe Weather Forecasting and Delivery of Warning Services in West Africa”

National Conference of the Nigerian Meteorological Society, Ilorin, Nigeria Nov 2010

“Heating and Cooling Degree-Days over the Southern States of Nigeria”

Publications

Roberts A.J., Fletcher J.K., Groves J., Marsham J.H., Parker D.J., Blyth A.M., Adefisan E.A., Ajayi V.O., Barrette R., de Coning E., Dione C., Diop A., Foamouhoue A.K., Gijben M., Hill P.G., Lawal K.A., Mutemi J., Padi M., **Popoola T.I.**, Ripodas P., Stein T.H.M. and Woodhams B.J. (2021): Nowcasting for Africa: advances, potential and value, *Weather* (99) 99. doi.org/10.1002/wea.3936

Fletcher, J.K., Diop, C.A., Adefisan, E., Ahiataku, M., Ansah, S.O., Birch, C.E., Burns, H.L., Clarke, S.J., Gacheru, J., James, T.D., Ngetich Tuikong, C.K., Koros, D., Indasi, V.S., Lamptey, B.L., Lawal, K.A., Parker, D.J., Roberts, A.J., Stein, T., Visman, E., Warner, J., Woodhams, B.J., Youds, L.H., Ajayi, V.O., Bosire, E.N., Cafaro, C., Camara, C., Chanzu, B., Dione, C., Gitau, W., Groves, D., Groves, J., Hill, P.G., Ishiyaku, I., Klein, C.M., Marsham, J.H., Mutai, B.K., Ndiaye, P.N., Osei, M., **Popoola, T.I.**, Talib, J., Taylor, C.M., & Walker, D. (2022). Tropical Africa’s first testbed for high-impact weather forecasting and nowcasting. *Bulletin of the American Meteorological Society*, 1(aop). <https://doi.org/10.1175/BAMS-D-21-0156.1>

Popoola, T.I., & Nwafor, E.C. (2022, September 22). The Role of Numerical Prediction in Weather Forecasting: A Case of Sandstorm in North-Eastern Nigeria. [PowerPoint slides]. Research Gate.
https://www.researchgate.net/publication/364351029_The_Role_of_Numerical_Prediction_in_Weather_Forecasting_A_Case_Of_Sandstorm_in_North-Eastern_Nigeria?channel=doi&linkId=634e4a3712cbac6a3ed5accc&showFulltext=true. DOI: 10.13140/RG.2.2.34232.21766

Popoola, T.I. (2022, August 18). Climate Change Assessment over Nigeria using HighResMIP Model: Past, Present & Future Projection. [pdf]. Research Gate.
https://www.researchgate.net/publication/363520403_CLIMATE_CHANGE_ASSESSMENT_OVER_NIGERIA_USING_HighResMIP_Model_Past_Present_Future_Projection. DOI: 10.13140/RG.2.2.17896.75526