CURRICULUM VITAE

PERSONAL INFORMATION

Name: Emmanuel Quansah
Nationality: Ghanaian
Marital Status: Married
Number of Children: Three (3)

Address: Department of Meteorology and Climate Science
KNUST
PMB, UPO
Kumasi, Ghana
Telephone: +233-24-8571016
Email Address: equansah.cos@knust.edu.gh // emm.quansah@gmail.com

ResearchGate:
https://www.researchgate.net/profile/Emmanuel-Quansah-4
Staff Profile:
https://webapps.knust.edu.gh/staff/dirsearch/profile/summary/4f4a0a62cf75.html
Google Scholar:
https://scholar.google.com/citations?hl=en&pli=1&user=dkcDtfsAAAAJ
ORCID ID:
http://orcid.org/0000-0002-3382-1775

ACADEMIC EDUCATION

2012 – 2015	PhD Meteorology and Climate Science, Federal University of Technology, Akure, Nigeria.
2005 – 2007	Diploma in Management of Information Systems, IMIS, UK.
2002 – 2004	MSc Environmental Physics, University of Bremen, Germany.
1994 – 1999	BSc Physics, University of Cape Coast, Ghana.

FELLOWSHIPS HELD (WITH DATE)

2012 – 2015	Doctoral Fellowship from the German Ministry of Education and Research (BMBF) under the West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL).
2003 – 2004	MSc Scholarship from Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany.

PROJECT EXPERIENCE

2025 – Present	Cloud Observation and Monitoring Equipment (COME) Project. Funded by KRef, KNUST, Ghana.
2024 – Present	Building a Climate Cohort to Monitor Health Impacts of Climate Change in Ghana (CLEAR Project).
2023 – 2025	School on Air Quality and Pollution Prevention in Ghana. Funded by Clean Air Fund (CAF).
2021 – 2024	WASCAL WRAP2.0 Project: Greenhouse gas emissions and mitigation options under climate and land use change in West Africa: A concerted regional modelling and observation assessment

(CONCERT-West Africa). Funded by the German Ministry of Education and Research (BMBF).

2012 – 2019 WASCAL WRAP1.0 Project: Estimation of Carbon and Energy Fluxes over Contrasting Ecosystems in the Sudanian Savanna Region of West Africa. Funded by BMBF.

GRANTSMANSHIP

2025 – 2026 KRef, KNUST, Kumasi

2023 – 2026 WELLCOME TRUST Climate Impact Award.

2021 – 2024 WASCAL II: CONCERT-West Africa Project.

MEMBERSHIP IN PROFESSIONAL BODIES /ASSOCIATIONS

2015 – Present **Hall Fellow**, Unity Hall of Residence, KNUST, Kumasi, Ghana.

2008 – Present **Member**, Ghana Science Association.

2007 – Present **Licentiate Member**, Institute for the Management of Information Systems (IMIS), England, United Kingdom.

TEACHING AND RESEARCH EXPERIENCE (WITH DATES)

i. **Associate Professor**, Meteorology and Climate Science, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana (2022).

ii. **Senior Lecturer**, Meteorology and Climate Science, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana (2018).

iii. **Part-Time Lecturer**, Africa Centre of Excellence in Coastal Resilience (ACECOR), University of Cape Coast, Ghana (2020).

iv. **Lecturer**, Physics/Meteorology and Climate Science, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana (2008).

v. **Research Scientist**, Institute of Meteorology and Climate Research KIT/IMK-IFU, Garmisch-Partenkirchen, Germany (2013).

vi. **Research Scientist**, Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany (2003).

vii. **Physics and Mathematics teacher**, Koforidua, Secondary Technical School, Koforidua Ghana (1999).

CURRICULUM VITAE

SUBJECTS TAUGHT/TEACHING AT THE UNIVERSITY BSC / MPHIL / PHD LEVELS

Experimental Physics, Introduction to Nuclear Physics, Classical Mechanics, Atmospheric and Ocean Dynamics, Introduction to Oceanography, Atmosphere and Ocean Climate Processes, Control of air pollution/Dispersion Meteorology, Environmental Pollution, Climate Change: Science, Policy and Management, Applied Meteorology, Atmospheric Dynamics, Advanced Boundary-Layer Meteorology, Scientific Writing, and Presentation Techniques, and Environmental Measurement Techniques.

CONTRIBUTION TO CAPACITY BUILDING

2008 – Present: **Supervised and mentored** 12 PhD and 9 MPhil Students at KNUST.
I have also supervised over fifty (50) BSc Project Works.

PHD THESIS SUPERVISION

i. **Patrick Davies** (2025). Estimation of Soil Moisture Using Cosmic Ray Neutron Sensing Technology over the Savanna Ecosystem. KNUST, Kumasi, Ghana

ii. **Afi Amen Christèle ATTIOGBE** (2025). Drought Resilience of Cocoa Agroforest Systems in the Togo-Ghana Transboundary Cocoa Belts. WASCAL CCLU Centre, KNUST, Kumasi, Ghana. KNUST, Kumasi, Ghana

iii. **Cosmos Womegah** (2025). Heatwaves and Urban Heat Islands at Climate Crossroads: Evidence from Ghana's Urban Environments. KNUST, Kumasi, Ghana.

iv. **Martin Add**i (2025). Hydrological Drought Characteristics and Projected Changes over the Pra River Basin. KNUST, Kumasi, Ghana.

v. **Samuel Kyei-Manuh** (2025). Water Resources Modelling in the Pra Basin from a Multi-Objective Optimisation Perspective. KNUST, Kumasi, Ghana.

vi. **Samuel Guug** (2025). Measurement of CO_2, CH_4, and H_2O Fluxes from the Sudanian Savanna Ecosystem of West Africa. KNUST, Kumasi, Ghana.

vii. **Jacob Agyekum** (2023). The Changing Climate: Assessment of present-day and future changes of Extreme Climate Events over the Volta Basin using CMIP6 models. KNUST, Kumasi, Ghana.

viii. **Kwabena Fosu-Amankwah** (2023). Assessment of Aerosol Burden and Dynamics over Ghana. KNUST, Kumasi, Ghana.

ix. **Osei Marian Amoakowaah (**2021**)**. Influence of Atmospheric Dynamics on Wet and Dry Spells over the Pra Catchment, Ghana.

x. **Francis Kudjoe** (Ongoing). Satellite and Ground-Based Remote Sensing of Aerosol Loading in West Africa: Causes, Effect, and Assessment of Environmental and Climatic Impacts. KNUST, Kumasi, Ghana.

xi. **Mubarick Raj Salifu** (Ongoing). Dynamic Modelling of Storm and Coastal Flooding along the Coast of Ghana, UCC, Cape Coast, Ghana.

xii. **Lamin Barrow** (Ongoing). Prediction and Scenario Simulation of Soil Organic Carbon under Millet, Maize, and Groundnut Systems in the North Bank Region of the Gambia. WASCAL CCLU Centre, KNUST, Kumasi, Ghana

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MPHIL THESIS SUPERVISION

i. **Richard Boateng Bonsu** (2025). Development of an Enhanced Reference Evapotranspiration Dataset for Ghana. KNUST, Kumasi, Ghana.

ii. **Felicia Dogbey** (2025). Mapping High-resolution Actual Evapotranspiration in the Vea Wetland Agroecosystem. KNUST, Kumasi, Ghana.

iii. **Abigail Kafui Adu** (2024). Assessment of West African Rainfall Predictability from QBO Pattern and Dynamics. KNUST, Kumasi, Ghana.

iv. **Odoom Ebenezer** (2022). Estimation of Surface Energy and Carbon Dioxide Fluxes over a Grassland Savanna Ecosystem in Ghana using a Land Surface Model. KNUST, Kumasi, Ghana.

v. **Patrick Davies** (2021). Variability of Surface Radiation Fluxes over West Africa. KNUST, Kumasi, Ghana.

vi. **Kwakye Samuel Kwabena** (2019). Overview of the Atmospheric Environment using Radiosonde Measurements over Coastal and Inland Stations: A Case Study of Accra and Kumasi. KNUST, Kumasi, Ghana.

vii. **Nii Ayi Christian** (2019). Estimation of Carbon Dioxide Sequestrations and Effluxes over a Mixture of Fallow and Cropland Savanna Ecosystems in Ghana. KNUST, Kumasi, Ghana.

viii. **Prince Asilevi Junior** (2016). Estimating the Spatial Distribution of Monthly Mean Global Solar Radiation over Ghana using the Angstrom-Prescott Model. KNUST, Kumasi, Ghana.

ix. **David Aboagye** (Ongoing). Validation of MODIS GPP Across Contrasting Ecosystems in the Sudanian Savanna. KNUST, Kumasi, Ghana.

SELECTED INTERNAL AND EXTERNAL ASSESSOR / EXAMINER FOR PHD, MPHIL AND MSC THESES

PHD THESES

i. **Reuben Acheampong Asamoah** (2026): The Stratosphere as a Coupling Layer: Linking Tropical Rainfall Variability and Mesosphere-Lower Thermosphere Dynamics. ***PhD Thesis***, Department of Physics, College of Natural and Computational Sciences, Addis Ababa University, Ethiopia.

ii. Aboubakar Ouattara (2025): Assessment of Climate Change Impacts on Internal Migration in Burkina Faso. ***PhD Thesis***, WASCAL CCLU Centre, KNUST, Kumasi, Ghana.

iii. **Barrett Samuel Teye Wussah** (2025): Calibration of Sunshine Duration and Air Temperature Empirical Models for Estimation of Global Solar Radiation in Ghana. ***PhD Thesis***, Department of Physics, University of Cape Coast, Ghana.

iv. **Godfred Abbey Torsah** (2024) Drivers of Extreme Rainfall and Intensity-Duration-Frequency (IDF) Curves for Ashanti Region, Ghana. ***PhD Thesis***, Department of Meteorology and Climate Science, KNUST, Kumasi, Ghana.

v. **Felix Kpenekuu** (2024): Climate-Smart Agricultural Adaptation in Vulnerable Agro-ecological Zones of Ghana. ***PhD Thesis***, Department of Environmental Science, KNUST, Ghana.

vi. **Frank Baffour-Atta** (2022): Addressing the Effects of Climate Variability in Food Systems using Climate Information Services in Northern Ghana, ***PhD Thesis***, Department of Environmental Science, KNUST, Kumasi, Ghana.

MPHIL THESES

i. **Louisa Boakye** (2025): Gender-Just Climate Solutions used by Men and Women Smallholder Farmers in Rural Ghana: Perspectives from Ejura Sekyedumase Municipality. ***MPhil Thesis***, Department of Environmental Science, KNUST, Kumasi, Ghana.

ii. **Anyigire Achagiwe Killian** (2025): Perceived Effects of Climate Variability on Ecosystem Service Dependence in Riparian Communities in Ghana's Upper East Region. ***MPhil Thesis***, Department of Environmental Science, KNUST, Kumasi, Ghana.

iii. Owusu Abebrese (2025): Evaluating the Effectiveness of Conservation Agriculture as A Climate Change Adaptation Strategy for Smallholder Farmers in the Atwima Mponua District, Ghana. ***MPhil Thesis***, Department of Environmental Science, KNUST, Kumasi, Ghana.

iv. **Danso Owusua Charity Jnr** (2024): Utilizing Machine Learning to Assess Climate-Crop Yield Nexus in the Akyemansa District of Ghana, ***MPhil Thesis***, Department of Meteorology and Climate Science, KNUST, Kumasi, Ghana.

v. **Rebecca Naa Merley Larbi** (2024): Smallholder Cashew Farmers' Perceptions and Adaptation Practices to Climate Variability in the Bono Region, Ghana, ***MPhil Thesis***, Department of Environmental Science, KNUST, Kumasi, Ghana.

vi. **Yusif Owusu** (2024): Wave Conditions in West Africa: Comparison of ERA5 Reanalysis and CMENS Reanalysis to Estimate Wave Climate. ***MPhil Thesis***, University of Cape Coast, Ghana.

vii. **George Raymond Eshun** (2023): An Assessment of the Contribution of Traditional Fish Smoking to Greenhouse Gas Emissions in Selected Communities of Coastal Ghana. ***MPhil Thesis***, University of Cape Coast, Ghana.

viii. **Vincent Antwi Asante** (2023): Impact of EL-Nino Southern Oscillation on Meteorological Drought in Ghana. ***MPhil Thesis***, Department of Atmospheric and Climate Sciences, University of Energy and Natural Resources, Sunyani, Ghana.

ix. **Enock Yeleliere** (2023): The Effects of Climate Variability on the Yields of Cowpea, Groundnut and Soybeans in the Wa East District of the Upper West Region, Ghana. ***MPhil Thesis***, Department of Environmental Science, KNUST, Kumasi, Ghana.

x. **Leonard Addae** (2023): Estimating the Inter-Annual Gross Primary Productivity of Tropical Moist Forest Over South-Western Ghana Using Joint UK Land Environment Simulator (JULES)" ***MPhil Thesis***, Department of Atmospheric and Climate Sciences, University of Energy and Natural Resources, Sunyani, Ghana.

MSC THESIS

Kuzipa Nampemba (2025): Estimation of Global Horizontal Irradiance in Zambia using Machine Learning Models from Meteorological Variables and Solar Geometry. ***MSc Thesis***, Department of Sustainable Natural Resources, Botswana International University of Science and Technology, Palapye, Botswana (2025).

SELECTED MANAGERIAL AND OTHER PROFESSIONALLY RELATED EXPERIENCE

i. **External Assessor** for Academic Promotions, Department of Physics, University of Cape Coast, Cape Coast, Ghana (2025).

ii. **External Assessor** for Promotions, CSIR–Science and Technology Policy Research Institute, Accra, Ghana (2024).

iii. **External Assessor** for Academic Promotions, Department of Atmospheric and Climate Science, University of Energy and Natural Resources, Sunyani, Ghana (2024).

iv. **Interview Panellist,** WASCAL International Research Programme in Informatics for Climate Change and Climate Change and Marine Science in Burkina Faso and Cabo Verde, respectively (2024).

v. **Facilitator**, Network of Clusters Training Workshop on Transdisciplinary and Capacity Building for Early Career Researchers in Africa, June 26 – 28, 2024, IDL Conference Centre, KNUST, Kumasi, Ghana.

vi. **Member**, College of Science Strategic Plan Review Committee, KNUST, Kumasi, Ghana (2024).

vii. **External Moderator**, Department of Atmospheric and Climate Science, University of Energy and Natural Resources, Sunyani, Ghana (2024 – Present).

viii. **Chairman**, Organising Committee, CS4RRA Webinar on Climate-Smart Agriculture and Sustainable Landscapes, Amonoo-Neizet (IDL Conference Centre), May 15, 2024, KNUST, Kumasi, Ghana.

CURRICULUM VITAE

ix. **Head**, Department of Meteorology and Climate Science, KNUST, Kumasi, Ghana (2023 – Present).

x. **Board Member**, Training of Trainers Curriculum Development, RUFORUM and WASCAL, 19 - 21 September 2023, FM HOTELS, Rue L155 Abidjan, Cote d'Ivoire.

xi. **Postgraduate Coordinator**, Department of Meteorology and Climate Science, KNUST, Kumasi, Ghana (2022 – 2023).

xii. **Examinations Officer**, Meteorology and Climate Science Programme, Department of Physics, KNUST, Kumasi, Ghana (2020 – 2023).

xiii. **Member**, AICCRA Training Workshop Planning Committee on Mainstreaming CSA and CIS into Universities' Curricula: 13 – 15 September 2023, KNUST, Kumasi, Ghana.

xiv. **Member**, Seminar and Conference Committee, College of Science, KNUST, Kumasi, Ghana (2023).

xv. **Reviewer**, *Scientific Africa* Journal (2023).

xvi. **Reviewer**, *Heliyon* (2023 – 2025).

xvii. **Member**, SDG (13) – Climate Action Committee, KNUST, Kumasi, Ghana (2022 – Present).

xviii. **Coordinator**, Meteorology and Climate Science Programme, Department of Physics, KNUST, Kumasi, Ghana (2019 – 2022).

xix. **Reviewer**, Office of Grant and Research, KNUST, Kumasi, Ghana (2015 – Present).

xx. **Member**, Committee to Draft Development of Sustainability Strategy and Policy for KNUST, Ghana (2021).

xxi. **Assistant Examinations Officer**, Meteorology and Climate Science Programme, Department of Physics, KNUST, Kumasi, Ghana (2016 – 2020).

xxii. **Mentor**, WASCAL CCLU PhD Programme, KNUST, Kumasi, Ghana (2020 – 2023).

xxiii. **Coordinator**, School Science Laboratory Apparatus Production Unit (SSLAPU) of the Physics Department, KNUST, KNUST, Kumasi, Ghana (2019 – 2023).

xxiv. **Member**, College of Science Seminar and Conference Committee, KNUST, Kumasi, Ghana (2019 – 2023).

CURRICULUM VITAE

SELECTED TRAINING WORKSHOPS / POSTERS / CONFERENCES / SEMINARS / SYMPOSIUM ATTENDED (WITH DATES)

i. Kick-off meeting of the Advancing Knowledge for Long-Term Benefits and Climate Adaptation through Holistic Climate Services and Nature-Based Solutions (ALBATROSS) Project at the Impact Building, August 29, 2024, KNUST, Ghana.

ii. Afi A. C. Attiogbe; **E. Quansah**; U. Nehren; S. Salack; E. Bessah; JM Sogbedji; Sampson Agodzo Navigating the drought's grip: Cocoa yield dynamics in Agroforestry Systems in Ghana and Togo. The Annual Interdisciplinary Conference on research in tropical and subtropical agriculture, natural resource management and rural development (Tropentag), September 11 - 13, 2024, Vienna (BOKU), Austria.

iii. Cocoa Farmers Perceptions of Drought and Adaptive Models in the Ghana-Togo Transboundary Cocoa Belt, Network of Clusters Training Workshop on Transdisciplinary and Capacity Building for Early Career Researchers in Africa, June 26 – 28, 2024, IDL Conference Centre, KNUST, Kumasi, Ghana.

iv. Workshop on Carbon Zero Transport Plan for Lumasi, June 19, 2024, Golden Bean Hotel, Kumasi, Ghana.

v. Stakeholders Workshop on Current and Future Risks of Urban and Rural Flooding in West Africa, June 18, 2024, IDL Conference Centre, KNUST, Kumasi, Ghana.

vi. Inception and Stakeholder Consultation Workshop of the AI4PEP Project, Monday, May 20, 2024, at the Impact Building, KNUST, Kumasi, Ghana.

vii. Regional Technical Workshop on Greenhouse Gas Emission and Mitigation Options under Climate and Land Use Change in West Africa: A Concerted Regional Modelling and Observation Assessment (Concert-West Africa Project. 6 – 7th May 2024, True Vine Hotel, Kumasi, Ghana.

viii. Davies, P., Baatz, R., Bogena, H., **Quansah**, **E**., and Amekudzi, L.: Revisiting the barometric effect on cosmic-ray neutron soil moisture sensing, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-16814, https://doi.org/10.5194/egusphere-egu24-16814, 2024.

ix. Bliefernicht, J., Guug, S., Steinbrecher, R., Neidl, F., Spangenberg, I., Amekudzi, L. K., **Quansah**, **E**., et al: Developments and Challenges in Operating a Hydrometeorological Research Observatory in the Western Sudanian Savanna - Ten Years of WASCAL Observatory Experience, EGU General Assembly 2024, Vienna, Austria, 14–19 Apr 2024, EGU24-6712. https://doi.org/10.5194/egusphere-egu24-6712, 2024.

x. Training Workshop on Enhancing Publication Impact and Research Visibility by the Office of Grants and Research in Collaboration with the Library, at the Impact Building, KNUST, Kumasi, Ghana, March 14, 2024.

xi. Workshop on Understanding the Factors Driving Land Use, Land Use Change and Forestry Impacts in Sub-Saharan Africa, September 25 – 26, 2023, University of Energy and Natural Resources, Sunyani, Ghana.

xii. Bliefernicht J., Guug S., Steinbrecher, R., Neidl, F., Spangenberg, I., Amekudzi, L. K., **Quansah, E**., Davies P. et al… Current Developments and Challenges in Operating an Environmental Research Observatory in the Sudan Savanna in West Africa -Ten Years of WASCAL Observatory Experience. September 28, 2023, 2nd TERENO-OZCAR Conference, Bonn, Germany.

xiii. Davies, P., Baatz, R. Bogena, H. R., **Quansah, E** and L. K Amekudzi. Optimal Temporal Filtering of the Cosmic-Ray Neutron Signal to Reduce Soil Moisture Uncertainty. September 28, 2023, 2nd TERENO-OZCAR Conference, Bonn, Germany.

xiv. Davies, P., Baatz, R. Bogena, H. R., **Quansah, E** and L. K Amekudzi. Improving Soil Moisture Monitoring from Cosmic Ray Neutron Sensors under Various Climate Conditions. Galileo conference A European vision for hydrological observations and experimentation: GC8-Hydro-130, June 12 – 15, 2023.

xv. Guug, S., **Quansah**, **E**., Davies, P., et al…. Greenhouse Gas (GHG) Observation Network in the Sudanian Savanna Zone: General Overview of Equipment, Data, and Results. WASCAL 2022 Science Symposium, December 6 – 9, 2022, Ouagadougou, Burkina Faso.

xvi. Davies, P., Baatz, R., Bogena, H. R., **Quansah**, **E**., and L. K. Amekudzi. Optimal Temporal Filtering of the Cosmic-Ray Neutron Signal to Reduce Soil Moisture Uncertainty. WASCAL 2022 Science Symposium December 6 – 9 2022, Ouagadougou, Burkina Faso.

xvii. WASCAL@10 Alumni Homecoming Conference on Climate Change Education and Research for Ghana's Development, November 29 – 30, 2022, KNUST, Kumasi, Ghana.

xviii. Davies P., Mamadou O., **Quansah E**., Aryee J. N. A, Atiah W. A., Amekudzi L. K, Sam F., Galle S., and J. Demarty, Variability of Surface Radiative fluxes over West Africa using Wavelet and Principal Component Analysis, BSUIII, October 4 – 5, 2022, IDL Conference Centre-KNUST, Kumasi, Ghana.

xix. Davies P., Mamadou O., **Quansah E**., et al…., Variability of Surface Radiative fluxes over West Africa using Wavelet and Principal Component Analysis, Eleventh Ghana Science Association Research Seminar and Poster Presentation on "The role of Basic Science for Sustainable Development", June 7 – 8, 2022, Aboagye Menyeh Complex KNUST, Kumasi, Ghana.

xx. Agyekum J., Annor T., **Quansah E**., and L. K. Amekudzi: Future Changes in Extreme Precipitation Indices over the Volta Basin Using CMIP6 Models, BSUIII, 4 – 5th October 2022, KNUST, Kumasi, Ghana.

xxi. Consolidating Climate Change Research and Enhancing Collaborative Actions for a Sustainable Future, BSUIII, October 4 – 5, 2022, KNUST, Kumasi, Ghana.

xxii. Training and Stakeholders Consultation Event for the "Accelerating Impacts of CGIAR Climate Research for Africa" (AICCRA) Project Cluster in Ghana, 24 May – 02 June 2022, Airport View Hotel, Accra, Ghana.

xxiii. Seminar Series for Senior Members on Education Assessment Measurements and Curriculum Development, organised by the Faculty of Biological Sciences, KNUST on 2nd and 9th February 2022.

xxiv. Davies, P., O. Mamadou, **E. Quansah**, J.N.A. Aryee, W. Atiah, L.K. Amekudzi, F. Sam, S. Galle, and J. Demarty Variability in Surface Radiative Fluxes over West Africa using Wavelet and Principal Component Analyses, GSA Research Seminar and Poster Presentations, 7 – 8th June 2022.

xxv. Osei, M. A., Amekudzi, L. K., Ferguson, C.R., Padi, M., Aryee, J. N. A., Agyekum, J., and **E. Quansah**. The environment of West African MCSs from a recent case study analysis. SWIFT Seminar, February 7 – 11, 2022.

xxvi. **Quansah E**., Mauder M., Annor T., Balogun A. A., Amekudzi L. K., Bliefernicht J., Heinzeller D., Berger S., Guug S., and H. Kunstmann. Effects of land use on the net ecosystem carbon dioxide (CO_2) exchange and its components in the West African Sudanian Savanna. June 19 – 21, 2018, Accra, Ghana.

DETAILS OF RESEARCH WORK UNDERTAKEN (WITH DATES)

2025 – Present	Use of Ground-Based Cloud Observation Equipment to Enhance Aviation Weather Nowcasting in Ghana.
2024 – Present	Establishing a Climate Cohort for Monitoring the Health Impacts of Climate Change in Ghana: A Longitudinal Approach to Assess Vulnerability and Adaptation Strategies (CLEAR Project).
2024 – 2025	Development of a High-Resolution Reference Evapotranspiration Dataset for Improved Climate and Water Resource Assessment in Ghana.
2023 – 2025	Integrated Satellite and Rainwater-Based Assessment of Nitrogen Dioxide Hotspots, Meteorological Controls, and Atmospheric Pollution in Southern Ghana (Accra and Kumasi).
2020 – 2024	Integrated assessment of soil fertility, drought vulnerability, and farmer adaptation for sustainable cocoa production in the Ghana-Togo transboundary region
2019 – 2025	Characterisation and Impacts of Lightning and Thunderstorms as Drivers of Severe Weather in Ghana, West Africa.
2019 – 2025	Assessment of Heatwave Characteristics and Long-Term Trends in Selected Ghanaian Cities.

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2021 – 2025	Impact of Climate Change on Cocoa Production at the Ghana-Togo Transboundary Belt.
2021 – 2025	Impact of Climate Change on Cocoa Yield Dynamics in Agroforestry Systems in Ghana and Togo.
2021 – 2024	Estimation of Greenhouse Gas (CO_2, CH_4, N_2O) Concentrations over the Sudanian Savanna Zone in West Africa using the Eddy Covariance Method.
2021 – 2024	Impact of Soil Moisture on Land-Atmosphere-Vegetation Dynamics within the West African Sudanian-Sahelian Zone.
2017 – 2021	Impact of Land Use Change on the Rainfall Pattern over the Pra Catchment of Ghana.
2012 – 2020	Impact of Meteorological Variables on CO_2 Emissions and Surface Energy Fluxes over the Sudanian Savanna Region of West Africa.
2018 – 2019	Estimation of the Spatial Distribution of Rainfall over Ghana.
2018 – 2019	Modelling the Spatial Distribution of Global Solar Radiation over Ghana.
2018 – 2019	Impact of the Variability of Meteorological Variables on Maize in Ghana.
2015 – 2023	Air pollution, Aerosol-Particle Transports and their Effects on Climate over Ghana.

COMPUTATIONAL SKILLS

Windows and Linux (Ubuntu) Operating Systems; MATLAB; database and information systems management; research data handling and curation; data processing and analysis workflows.

EXPERTISE

Climatology and climate variability; micrometeorology; environmental monitoring; eddy covariance measurements of greenhouse gases and flux analysis; land–atmosphere interactions; land surface modelling; gas chromatography and trace gas analysis; cosmic-ray neutron soil moisture sensing; climate-health interactions and environmental health impacts.

REFERENCES

Available on Request