

Cosmos Senyo Wemegah, PhD.

RESEARCH FELLOW & LECTURER ·

Earth Observation Research and Innovation Centre (EORIC), Sunyani, Ghana

☎ +233501373780 / +233248957535 | ✉ cosmos.wemegah@uenr.edu.gh / cosmossenyo@gmail.com | 🏠 uenr.edu.gh/staff/mr-wemegah-cosmos/ | 🌐

cosmos-wemegah/ | 🎓 Cosmos Senyo Wemegah, PhD.

About

Nationality

Ghanaian

DATE OF BIRTH

16 July, 1994

Atmospheric scientist and lecturer specializing in climate variability, urban heat dynamics, and air quality with strong expertise in climate modeling, satellite remote sensing, and data analytics. Proven record of producing policy-relevant research addressing climate risks, urban sustainability, and public health impacts

Education

Kwame Nkrumah University of Science and Technology (KNUST)

Kumasi, Ghana

PHD. METEOROLOGY AND CLIMATE SCIENCE

2019 - 2025

Heatwaves and Urban Heat Islands at Climate Crossroads: Evidence from Ghana's Urban Environments

Kwame Nkrumah University of Science and Technology (KNUST)

Kumasi, Ghana

MPHIL. METEOROLOGY AND CLIMATE SCIENCE

2017 - 2019

A systematic Assessment of Urban Heat Island Warming in Greater Accra

Kwame Nkrumah University of Science and Technology (KNUST)

Kumasi, Ghana

BSC. METEOROLOGY AND CLIMATE SCIENCE

2012 - 2016

Reanalysis, Gridded Observation and Station Data Comparison For Rainfall Validation of Climate Models

Work Experience

EORIC - University of Energy and Natural Resources.

UENR - Ghana

RESEARCH FELLOW

2021 - Present

- Lead research on climate variability, urban heat island, and air quality
- Coordinate Weather and Climate Forecasting Unit supporting early warning systems
- Teach climate science, hydrology, and programming
- Supervise student research and mentor early-career scientists
- Coordinates big data gathering, structuring and processing
- Support bids for major research and consultancy projects.

UENR, Ghana

LECTURER - DEPARTMENT OF ATMOSPHERIC AND CLIMATE SCIENCE

2022 - Present

- Weather and Climate related Courses: Perspective of Climate Change, Introductory Weather and Climate, Introductory Hydrometeorology
- Early Warning Systems
- Energy Markets and Policy
- Scientific Programming Courses: Introduction to programming, Statistical Applications in Meteorology and Climatology, Advanced Programming for Climate Science.

WASCAL - Atlas of Green Hydrogen Generation Potential in Africa (H2ATLAS) PROJECT

KNUST, Ghana

RESEARCH ASSISTANT, REMOTE SENSING APPLICATION

August, 2020 - February, 2021

- * Collected and analyzed remote sensing and observed climate data.
- * Conducted literature reviews, prepare manuscripts and presentations.
- * Provided ready access to all data and review documents for project researchers and supervisor.

Department of Physics, KNUST

KNUST, Ghana

GRADUATE ASSISTANT

March, 2020 - February, 2021

- * Assisted in tracking records on assignment completion and act as mediator between the students and the lecturer.
- * Supported project supervision of undergraduate students.

Ghana Meteorological Agency


East-Legon, Ghana

NATIONAL SERVICE PERSONNEL

August, 2016 - August, 2017

- * Collect and analyzed climate data for flood and drought monthly bulletin.
- * Summarized project results and contributed to the preparation of reports and presentation.

Research Interest

Heatwaves, Urban heat island, micrometeorology and ecological thermal discomfort; A Land-atmosphere coupling interactions 

Impact of climate extremes on human health and energy production and consumption 

Air quality assessment and impact on health 

Skills

Data Analysis, Modelling and Satellite data processing (QGIS, ArcGIS, ENVI, SNAP) 

Linux-Ubuntu, Microsoft OS and Office Packages 

Coordination, communication and writing 

Programming (BASH and SHELL Scripting, Python, R and CDO) 

Consultancy and Funding

Global Designing Cities Initiative (GDCI) Removing Pollution from Play

AIR QUALITY INSTRUMENTATION AND DATA ANALYST

Osu Presby basic School, Accra

2024 - 2025

Peoples dialogue on human settlement project on exposure of urban poor to air pollution

AIR QUALITY IMPACT ASSESSMENT AND ANALYST

Old Fadama, Tema Netown,

Sokoban

2023 - 2025

Publications (Selected)

Evidence of heatwaves: characteristics and trends in selected Ghanaian cities.
(<https://doi.org/10.1002/joc.8889>)

AUTHOR

*International Journal of
Climatology*

2025

Assessment of urban heat island warming in the greater accra region.
(<https://doi.org/10.1016/j.sciaf.2020.e00426>)

AUTHOR

Scientific African, 8, e00426

2020

Revisiting the agro-climatic zones of Ghana: Are-classification in conformity with climatechange and variability. (<https://doi.org/10.1371/journal.pclm.0000023>)

CO-AUTHOR

PLOS Climate 2(1): e0000023

2023

Projections and impact assessment of the local climate change conditions of the BlackVolta Basin of Ghana based on the Statistical DownScaling Model. (doi: [10.2166/wcc.2023.352](https://doi.org/10.2166/wcc.2023.352))

CO-AUTHOR

*Journal of Water and Climate
Change Vol 14 No 2*

2023

Referees

 **Prof. Leonard. K. Amekudzi**, Formal Provost-College of Science, KNUST.

 **Dr. Martin Kyereh Domfeh**, Head of EORIC, UENR.

 **Dr. Edmund I. Yamba**, Senior Lecturer-Meteorology and Climate Sci, KNUST.

 leonard.amekudzi@gmail.com

 martin.domfeh1@uenr.edu.gh

 eyil-imoan48@gmail.com