

## CURRICULUM VITAE

### A. PERSONAL INFORMATION

1. **Full Name:** BALOGUN Oluwatimilehin Benjamin
2. **Sex:** Male
3. **Nationality:** Nigerian
4. **State of Origin:** Osun
5. **Local Government of Origin:** Boluwaduro
6. **Permanent Home Address** CED 1, Ilupeju Community, Power-Line Area, off Ijebu-jesa Road, Ilesa, Osun State, Nigeria.
7. **Current Postal/Contact Address** P.O. Box 348, Ijebu-jesa, Osun State, Nigeria.
8. **E-mail** [balogun.timilehin2015@gmail.com](mailto:balogun.timilehin2015@gmail.com)
9. **Phone Number(s):** 08060430056.
10. **Next of Kin** Mrs. O. C. Oladeji-Balogun  
Ereko Quarters, Ibafo, Ogun State.

### B. EDUCATIONAL BACKGROUND

#### 1. EDUCATIONAL INSTITUTIONS ATTENDED WITH DATES

- a) Adekunle Ajasin University, Akungba Akoko, Ondo State 2016 – 2020
- b) Obafemi Awolowo University, Ile-Ife, Osun State 2013 – 2015
- c) Federal University of Technology, Akure, Ondo State 2006 – 2011
- d) Banjolat Friendship Academy, Ipetu-Ijesa, Osun state 2004 – 2005
- e) Iwoye Ijesa Grammar School, Iwoye-Ijesa, Osun State 1998 – 2004

#### 2. ACADEMIC AND PROFESSIONAL QUALIFICATIONS OBTAINED WITH DATES:

- a) Ph.D (Applied Geophysics) 2020
- b) M.Sc (Applied Geophysics) B+ 2015
- c) Bachelor of Tech. (Applied Geophysics) Second Class (Hons.) 2011
- d) Senior Secondary Certificate 2004; 2005

#### 3. DISTINCTIONS AND AWARDS WITH DATES

- a) CGG Veritas Award for Best Postgraduate Research (M.Sc.) Category 14<sup>th</sup> Mar., 2015
- b) Nigerian Delegate, Global Meeting on Biodiversity (World Wide Views) 15<sup>th</sup> Sept., 2012
- c) CBN/NYSC Venture Prize Award (Osun State) Batch C, Nov., 2012
- d) Excellence and Productivity Award – FUTA Peace Prize Nov., 2008

## C WORKING EXPERIENCE

### Work Experience in the University

1. Mountain Top University, Prayer City, Ibafo, Ogun State. October, 2020 – Present  
**Position:** Lecturer I
2. Wesley University, Ondo, Nigeria. July, 2018 – June, 2020  
**Position:** Assistant Lecturer
3. Obafemi Awolowo University, Ile-Ife, Nigeria. October, 2012 – December, 2015  
**Position:** *Research Assistant*
4. Obafemi Awolowo University, Ile-Ife, Nigeria. February, 2012 – October, 2012  
**Position:** *Research Assistant (NYSC)*

### Work Experience outside the University

1. Brone Positioning and Survey, 4 Oye Balogun Street, off Freedom Way, Lekki Phase 1, Lagos State, Nigeria. June, 2016 – June, 2018  
**Position:** *Offshore Geophysicist*
2. Geosore Geophysical Services, Akanke House, 1, Baptist Bus-Stop, Akobo, Ibadan. May, 2010 – October, 2010.  
**Position:** Intern (Field Assistant)

## D Positions of Responsibility Held

1. **Coordinator, Department of Geosciences,** Mountain Top University, Prayer City, Ibafo, Ogun State. 15<sup>th</sup> December, 2020 – Present
2. **Examination Officer, Department of Physical Sciences,** Wesley University, Ondo, Nigeria. July, 2019 – June, 2020

## E(i). PROFESSIONAL QUALIFICATIONS AND MEMBERSHIPS

- a) Active Member, Society of Exploration Geophysicists (SEG) - January, 2018
- b) Corporate Member, Nigerian Mining and Geoscience Society (NMGS) - 2018

## E(ii). OTHER CERTIFICATION

- a) Computer Appreciation and Desktop Publishing Certificate - October, 2008

## E. PUBLICATIONS

### 1. THESES

- a) **Determination of Standard Geodetic Reference Datum for Nigeria (2020)** – A thesis Submitted to the Department of Earth Sciences, Faculty of Science, Adekunle Ajasin University, Akungba-Akoko, Ondo State, Nigeria, in Partial Fulfilment of the Requirements for the Award of Doctor of Philosophy Degree in Applied Geophysics.
- b) **A Study of the Tectonic Processes in the Niger Delta and Adjacent Regions as Derived from Mantle Density and Isostatic Analyses (2015)** – A thesis Submitted to the Department of Geology, Faculty of Science, Obafemi Awolowo University, Ile-Ife, Nigeria, in Partial Fulfillment of the Requirements for the Award of Master of Science Degree in Applied Geophysics.

- c) **Geophysical and Geotechnical Investigation of Reoccurring Pavement Failure between the Federal University of Technology, Akure's North Gate and Road-Block Area of Akure, Ondo State, Nigeria (2011)** – A thesis Submitted to the Department of Applied Geophysics, School of Earth and Mineral Science, Federal University of Technology, Akure, Nigeria, in Partial Fulfillment of the Requirements for the Award of Bachelor of Technology Degree in Applied Geophysics.

### 1. BOOKS AND MONOGRAPHS

NONE

### 3(a). CONTRIBUTION TO BOOKS/JOURNAL ARTICLES

CONTRIBUTION TO BOOKS: NONE

### 3(b). JOURNAL ARTICLES

- i. **Balogun, O.B.**, Ojo, S.B. and Olorunfemi, M.O. (2016). Characterisation of Tectonic Lineaments in the Central Equatorial Atlantic Region of Africa from Bouguer Anomaly Gravity Data. *Ife Journal of Science*, 18 (4), 1041-1057. [www.ajol.info/index.php/ij/article/view/156137](http://www.ajol.info/index.php/ij/article/view/156137)
- ii. **Balogun O.B.** and Ojo S.B. (2016). Tectonic Processes in the Central Portion of the Equatorial Atlantic African Region Derived from Mantle Density Analysis. *Nigerian Journal of Mining and Geology*, 52(2), 201-215.
- iii. **Balogun O.B.** (2019). Preliminary Interpretation of Isostatic Residual Gravity Anomalies within the Central Portion of the Equatorial Atlantic African Region. *Springer Nature Applied Sciences*, 1:495. Springer Switzerland. <https://doi.org/10.1007/s42452-019-0440-5>
- iv. **Balogun O.B.** (2019). Tectonic and Structural Analyses of the Migmatite-Gneiss-Quartzite Complex of Ilorin Area from Aeromagnetic Data. *NRIAG Journal of Astronomy and Geophysics*, 8(1), 22-33. Taylor and Francis UK. <https://doi.org/10.1080/20909977.2019.1615795>
- v. **Balogun, O.B. and Akintokewa, O.C.** (2020): Analysis and Interpretation of Regional-Scaled Gravity Measurements in the Central Equatorial Atlantic Region of Africa. *Rudarsko-Geolosko-Naftni Zbornik*, 38(1), 81-99. DOI: 10.17794/rgn.2020.1.7

### 3(d). PUBLISHED REFEREED CONFERENCE PROCEEDING

- i. Tectonic Lineament Definition and their Depth Estimate in the Central Portion of the Equatorial Atlantic African Region from Bouguer Anomaly Gravity Data by Euler Deconvolution Technique – A paper presented at the 26<sup>th</sup> Colloquium of African Geology and 16<sup>th</sup> Congress of the Geological Society of Africa, Ibadan, Nigeria (23<sup>rd</sup> – 27<sup>th</sup> November, 2016)

### 3(f). WORKS IN PROGRESS

- i. **Balogun, O.B.** and Osazuwa, I.B. (2020): Comparison of Gravity Field Data Reduced to the WGS'84 datum and Geoid over the Continental Nigeria Landmass.

- ii. **Balogun, O.B.** and Osazuwa, I.B. (2020): Establishment of a Standard Height Datum for Nigeria from Gravimetric Geodesy.
- iii. **Balogun O.B.** and Ojo S.B.: The Identification and Wavelength Filtering Analysis of Part of a Continent-Breaking Mantle Plume within the Central Portion of the Equatorial Atlantic African Region
- iv. **Balogun O.B.:** Development of the Relationship between the wavelength of Upward Continuation of Potential Field Data and Height above Ground Level from Theoretical Simulation and Empirical Analysis.

**4. CREATIVE WORKS**

- i. Writing of Program “TORIN”, 2011 (A *Matlab* program for correcting magnetic field data for diurnal variations and for calculating the Total/Residual Magnetic field).

**F PROFESSIONAL ACCOMPLISHMENT/TEACHING REPORT**

- a) Development of Computer Programming Codes in Matlab (Program “TORIN) for correcting magnetic field data for diurnal variations and for calculating the Total/Residual Magnetic field).
- b) Development of the Correction Algorithm and Program from Piezo-electric Cone Penetrometer Testing Cones that have been out of calibration

**TEACHING REPORT**

Lectures Handled (2017/2018 Session)

**Part III Courses**

AGP 312	Gravity Prospecting Method	Credit Units (3)
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**Part IV Courses**

AGP 422	Geophysical Time Series Analysis	Credit Units (3)
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AGP 410	Geophysics and Geothermal Energy	Credit Units (2)
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AGP 416	Radiometric Prospecting Method	Credit Units (2)
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**Undergraduate Project Supervision: One (1) Student**

Lectures Handled (2018/2019 Session)

**Part III Courses**

AGP 311	Principles of Geophysics (For Engineering and Geology Students)	Credit Units (3)
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**Part IV Courses**

AGP 405	Engineering Geophysics	Credit Units (3)
AGP 413	Applied Geophysics (For Engineering and Geology Students)	Credit Units (3)
AGP 422	Geophysical Time Series Analysis	Credit Units (3)
AGP 416	Radiometric Prospecting Method	Credit Units (2)

## **G WORKSHOPS/CONFERENCES ATTENDED**

1. 2<sup>nd</sup> International Workshop on Current Advances in Geophysical Studies and Research – Consolidating the State-of-the-Art Techniques in the Classification of the Earth for the Sustainability of National Economy (3<sup>rd</sup> – 10<sup>th</sup> June, 2018)
2. Participant, Electrical Resistivity Imaging Workshop I by Advanced Geosciences Incorporated, Europe (3<sup>rd</sup> – 5<sup>th</sup> July, 2017)
3. Participant, Electrical Resistivity Imaging Workshop II by Advanced Geosciences Incorporated, Europe (10<sup>th</sup> – 12<sup>th</sup> Oct., 2018)
4. 26<sup>th</sup> Colloquium of African Geology and 16<sup>th</sup> Congress of the Geological Society of Africa, Ibadan, Nigeria (23<sup>rd</sup> – 27<sup>th</sup> November, 2016)
5. Global Meeting on Biodiversity (World Wide Views) – 15<sup>th</sup> September, 2012
6. Participant, *National Universities Commission (NUC)'s Youth Development and Leadership Conference* (13<sup>th</sup> – 14<sup>th</sup> Jan., 2009)

## **H. CURRENT RESEARCH ACTIVITIES**

- a) Potential Field Methods
- b) Geodynamics (Plate Tectonics, Crustal and Mantle studies)
- c) Marine Geophysics
- d) Numerical Modelling and Simulation
- e) Earthquake Seismology/ Seismic Wavelet Analysis
- f) Digital Signal Processing and Signal Interpretation

## **I. EXTRACURRICULAR ACTIVITIES**

Traffic Control, Footballing and Chess playing

## **J. SERVICE OUTSIDE THE UNIVERSITY**

Cadet-in-Chief, Special Marshall Volunteering Service, FRSC/RSC, RS 11.11 Hq, Ife-Unit Command, Ile-Ife, Osun State. (March, 2012 till date)

## **K. OTHER RELEVANT INFORMATION**

### **Special Software Proficiency**

#### **Marine Geophysical Data Processing Software**

- a) *RadexPro Seismic Software* for Onboard Quality Control and Processing of 2D and 3D Seismic Data
- b) Chesapeake Technologies *SonarWiz Processing Suite* for Processing Sub-bottom Profiler and Side Scan Sonar Image

- c) *Neptune 3000 CPT Software* for Processing Cone Penetrometer Data

#### **Other Software**

- a) Geosoft's Oasis Montaj Software for Potential Field Data Processing
- b) MATHWORKS' MATLAB Programming Software
- c) Petrel E&P Software
- d) WinResist
- e) Karous Hjelt and Fraser Filtering (KHFFILT)

### **L. RESEARCH FOCUS AND CONTRIBUTION TO KNOWLEDGE**

The understanding of the earth, its history and the processes it had undergone in its over 4.5 billion year history is what I have sought to know since I was a kid. I have always reasoned that there should be rational and consistent explanations (i.e. scientific explanations) for these processes. I had become aware that earth can be modelled as a half-space early enough. I had also known about the force of gravity and the magnetic and electrical properties of the earth too and was just bent on knowing more about these forces – their origin, their influences and how they can be harnessed if they could be harnessed.

This was when my interest became well defined – I wanted to study and understand the earth from the physical phenomena associated with it. I wanted to be a geophysicist. I started off with near-surface geophysical investigations, getting involved in groundwater exploration (in both basement complex and sedimentary terrains), mineral exploration, engineering site investigation and environmental impact assessment and auditing projects. This culminated in the presentation of a research thesis on the integration of geophysical and geotechnical methods for the investigation of a reoccurring pavement failure on a section of road that had cost the Nigerian government a lot of money for rehabilitation.

Having thereafter been influenced by the works of notable geodynamists and seismologists like Tuzo Wilson, Manik Talwani, P.A. Ziegler, Anthony B. Watts and Andrija Mohorovicic, I became more interested in researches in the fields of **Geodynamics (lithospheric and mantle dynamics), Geophysical Fluid Dynamics, and Earthquake Seismology** and this has enabled me to study the Potential Fields geophysical method (i.e. gravity, magnetic and electrical methods) and Seismology. This also culminated in the presentation of a research thesis on the “Tectonic Processes in the Niger Delta and Adjacent Regions as Derived from Mantle Density and Isostatic Analyses”

My current research endeavours encompasses near-surface geophysical prospecting, geodynamics, plate tectonics and earthquake seismology. In the course of my research activities I have found out the following:

#### **A. On the problem of reoccurring pavement failure, the major causes of road failure in the Nigerian rainforest belt are:**

- i. abundance of clayey substratum which are characterised by low resistivity (electrical resistivity) values ( $< 100 \Omega\text{-m}$ )
- ii. presence of near surface linear features such as fractures and faults which can be properly imaged by a 2-D pseudo-section or resistivity tomogram.
- iii. poor drainage of run-off water from the highway which causes water retention in vicinity of the pavement.

#### **B. From the Study of Tectonic Processes in the Central Portion of the Equatorial Atlantic African Region Derived from Mantle Density Analysis, I found out that:**

- i. The western part of the study area may have grown by the process of plate accretion.

- ii. The Benue Trough (in Nigeria) is the northeastern extension of the Niger delta (in Nigeria).
- iii. The sedimentary basins within the region must have developed from the inland extension of rifts from which the Equatorial Atlantic Ocean opened.
- iv. Mantle convection may actually be a layered and not a whole process

**C. From the Tectonic Lineaments Definition and their Approximate Depth Estimate in the Central Portion of the Equatorial Atlantic African Region from Bouguer Anomaly Gravity Data by Euler Deconvolution Technique, I found out that:**

- i. The area is highly sheared and severely traversed by the extension of the Equatorial Atlantic rift system whose development was precursor to the opening of the Equatorial Atlantic Ocean.
- ii. Observable vertical displacements in the vicinity of the asthenosphere suggest that isostatic adjustment (subsidence) had taken place over time in the region.
- iii. Major lineaments found in the study area define exactly or approximately the major tectonic, geological and physical features in the study area
- iv. The flow of the Niger and Benue rivers are highly structurally controlled by the lineaments present in the region.
- v. The close association of some lineaments with volcanoes and volcanic islands suggests that the volcanoes exploited the crustal weakness for their emplacement.

My future research activities will still be directed towards near-surface geophysics (Engineering, Environmental, Mining/Exploration Geophysics), geodynamics, earthquake seismology and regional tectonism. My focus will be on data enhancement and processing for better interpretation and optimal subsurface information derivation. This will include seismic wavelet analysis, simulation and modelling of dipping effects and frequency/wavenumber filters design and comparison.

My educational goal is to obtain the highest form of knowledge available in geosciences and be imparted all through my study years by the best people in my field (Academic/Professionals), in the best environment and be instructed with quality materials and equipment. My career goal is to be a problem-solver and a solution to various intellectual problems especially in the geosciences' world while learning also, new and state-of-the-art practices for better performance and more "problem-solving" capability.



Signature

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Date