Kennedy Okioghene Doro, PhD

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Research and Teaching Interest

Research: I am interested in advancing the use of geophysical methods in combination with in-situ technologies and hydrogeological methods for addressing hydrological, biogeochemical, engineering and other environmental challenges. This includes improved characterization and monitoring of the state and processes within the shallow subsurface with applications for: [1] effective management of soil, contaminated sites and water resources, [2] characterizing and monitoring engineering sites and structures [3] archaeological and forensic investigation and [4] understanding the dynamics and impacts of climate change.

Teaching: I embrace a holistic and balanced approach to teaching general and applied geoscience related subjects particularly Applied Geophysics, Hydrogeophysics, Hydrogeology, Environmental Modelling, and Contaminated Site Management. As a geoscience teacher, I will continue to improve on a balanced use of experimental, qualitative and quantitative approaches to understanding geological processes, occurrences and applications integrating current research and industry related examples.

Work Experience – Research, Teaching & Industry

08/2019 – present ***Assistant Professor | Near Surface Geophysics***
Dept. of Environmental Sciences, The University of Toledo, OH, USA

- → *Leading research on advancing the use of geophysics in combination with in-situ and hydrogeological methods for characterizing, monitoring and imaging the state and processes within the shallow subsurface*
- → *Teaching related courses at undergraduate and graduate levels including but not limited to geophysics, hydrogeology, engineering geology and general geology*
- → *Student supervision, advisory and mentoring at graduate and undergraduate levels*
- → *Departmental, university, professional and community service leveraging on skills and experiences*

09/2018 – present ***Visiting Research Fellow-Diaspora Experts Initiative, Center for International Migration and Development (CIM), Germany***
Department of Geology, University of Ibadan

- → *Leading seminars and workshops on Modern field hydrogeophysical techniques for soil and hydrological process characterization*
- → *Knowledge exchange and development of local competence on soil and water resources management in Nigeria*
- → *Exploring possible research collaboration initiatives and developing a research collaboration framework*
- → *Mentoring early career academics in Nigeria*
- → *Lectures for advanced undergraduate and graduate students on experimental techniques for soil and water resources management*

04/2018 – 12/2018 ***Sessional Lecturer & Research Visitor***
University of Toronto, Earth Science Department

- → *Teaching Special Topics in Earth Sciences (In Situ Geotechnologies for Environmental Applications)-an undergraduate course for 2nd and 3rd year students in Fall 2018*
- → *Seminar presentation in April and November 2018 on Modern hydrogeophysical methods for environmental and mining applications*
- → *Geophysical measurement (multi-frequencies GPR, ERT and magnetics) at the Deep River research and teaching site of the University of Toronto, ON, Canada*

02/2016 – 04/2019 **Project Engineer – Direct -Push and Direct-Sensing**
In situ Geotechnologies, Fugro Germany Land GmbH, Mössingen, Germany

- → *On site Project Manager (Efficient resource utilization, documentation & reporting)*
- → *Soil and Aquifer Characterization and Monitoring using Direct Push and Direct Sensing methods*
- → *Vertical profiling of Geological, hydraulic, hydrogeochemical and geophysical parameters using:*
  - ➢ *Hydraulic Profiling Tool (HPT), Injection Logging, Slug Testing*
  - ➢ *Cone Penetration Testing (CPT) und Electrical Conductivity logging*
  - ➢ *Membrane Interface Probing (MIP)*
  - ➢ *X-Ray Fluorescence (XRF), Laser Induced Fluorescence (LIF)*
  - ➢ *Cone Penetration Testing (CPT)*
- → *Depth-resolved soil, soil gas and groundwater sampling*
- → *In-situ Remediation of contaminated sites*

08/2015 – 01/2016 **Postdoctoral Research Fellow**
Volkswagen Foundation, Germany / Covenant University, Ota, Nigeria

- → *Development of Low-Cost hydrogeological and geophysical methods for soil and aquifer characterization and monitoring in Nigeria*
- → *Review of soil and groundwater contamination in Nigeria with field visits*
- → *Seminar presentation on engineering and environmental application of hydrogeological methods*
- → *Teaching short courses on engineering geology and groundwater management for graduate civil engineering students*

06/2015 – 07/2015 **Research Associate, Center for Applied Geosciences**
Hydrogeology research group, University of Tübingen, Germany

- → *Data analysis and inversion of hydrogeological and geophysical data sets*
- → *Preparation of manuscripts for publication*

03/2015 – 06/2015 **Project Hydrogeologist**
Büro für Umwelt und Geowissenschaften – BUG Graml, Bad Füssing, Germany

- → *Geological and hydrogeological site assessment and preparation of expert reports for exploration and geothermal projects*
- → *Delineation of groundwater protection zone using geological and hydrogeological data sets and numerical simulation*
- → *Groundwater flow, contaminant and heat transport modeling*
- → *Characterization and monitoring of contaminated sites*

01/2012 – 02/2015 **Research Associate, Center for Applied Geoscience, Hydrogeology research group University of Tübingen, Germany**

- → *Development and implementation of high-resolution hydrogeological and geophysical methods for soil and aquifer characterization*
- → *Numerical modeling for inversion of hydrogeological and geophysical data*
- → *Aquifer characterization using standard hydraulic methods e.g. pumping, slug, tracer, injection logging and hydraulic profiling tests.*
- → *Groundwater sampling and long-term monitoring of groundwater flow*
- → *Development of environmental sensors*
- → *Use of Direct Push methods for piezometer installation, soil and water sampling, as well as hydraulic and geophysical testing*
- → *Supervision of BSc- und MSc-Students*
- → *Tutor in Applied Geophysics, Hydrogeology, Geotechnical Engineering and Environmental Modeling courses*

09/2011 – 12/2011 **Research Assistant**, **Dept. Monitoring- and Exploration Technologies Helmholtz-Centre for Environmental Research-UFZ, Leipzig, Germany**

- → *Development of a framework for the application of seismic methods for shallow subsurface characterization at the Lauswiessen test site in Tuebingen, Germany*

04/2010 – 08/2011	**Student Research Assistant, Geophysics and Hydrogeology research groups** **University of Tuebingen, Germany** → *Support field Geophysical and hydrogeological measurements* → *Laboratory measurement of porosity and permeability* → *Core description and sample preparation for analysis*
10/2007 – 09/2009	**Geologist, Rock Geophysical Nigeria Limited, Abuja, Nigeria** → *Acquisition and inversion of geophysical data for groundwater exploration* → *Regional and local geological review of project sites* → *Well formation analysis and support of drilling team*
09/2004 – 09/2007	**Commercial Banking Officer, Ecobank Plc, Lagos, Nigeria** → *Business acquisition and customer relationship management* → *First level credit request processing and risk analysis*

Education

01/2012 – 07/2015	**Ph. D. Applied Geosciences** **Faculty of Science, University of Tuebingen, Germany** *Dissertation*: *Developing tracer tomography as a field method for aquifer characterization* *Supervisor: Dr. Carsten Leven*
10/2009 – 09/2011	**M.Sc. Applied & Environmental Geoscience** **Faculty of Science, University of Tuebingen, Germany** *M.Sc-Thesis: A first geophysical and hydrogeological characterization of the Steinlach River loop in Tübingen, Germany* *Supervisor: Dr. Carsten Leven*
02/1999 – 03/2003	**B.Sc. Geology** **Delta State University, Abraka, Nigeria** *BSc-Thesis: The geology of Telema and its environs in Riyom Local Government Area of Plateau State: A geologic field mapping of part of Naraguta – Sheet 168 NE* *Supervisor: Dr. Ugbe F. C.*
09/1991 – 06/1999	**West Africa Senior School Certificate** **Ibru College, Agbarha – Otor, Nigeria**

Other Training

2017 - 2019	**Project Management Training & PMP® Certification preparation** DexNova Consulting
04/2014	**EAGE – Geophysics Boot Camp, Emlichheim, Germany** *Content: Field course on exploration geophysics methods*
04/2013	**SEG – ExxonMobil Student Education Program, Berlin, Germany** *Content: Integration of geological and geophysical datasets for oil and gas exploration*
11/2012	**Research Visit – University of Wisconsin – Madison, USA** *Research group of* Dr. Michael Cardiff - *worked on Hydraulic Tomography*
12/2012	**Research Visit – Stanford University, USA** *Research group of* Prof. Peter Kitanidis – *worked on Stochastic Inverse Modelling*
04/2011 – 10/2012	**M.Sc. Module on Exploration Geology, University of Tuebingen** *Content: Petroleum Geology, Well Log Interpretation, Seismic Interpretation and Stratigraphy, Basin & Petroleum Modelling, GoCAD & Geological Structure Modeling)*

National Service

08/2003 – 08/2004	**National Youth Service Corps** (NYSC). Bayelsa State, Nigeria

Languages

Englisch	Fluent
Urhobo	Fluent – Mother tongue
Deutsch	Advanced level C1

Awards and Grants

06/2019	AGU Centennial Celebration Grant – Project "Save My Water" - **$9,750**
04/2019	Society of Exploration Geophysics (SEG) Geophysics Field Camp Grant – **$7,250**
10/2018	DAAD Conference Travel Grant to attend the 2018 Annual Fall Meeting of the American Geophysical Union, Washington D.C. – ***2,500 Euros***
09/2018	Diaspora Expert / Visiting Research Fellowship – ***5,500 Euros*** Center for International Migration and Development, Germany
09/2015	Junior Postdoctoral Research Fellowship – ***130,000 Euros*** Volkswagen Foundation, Hannover, Germany
02/2015	Research Proposal Preparatory Visit Grant – ***5, 000 Euros*** Volkswagen Foundation, Hannover, Germany
2013	SEG / ExxonMobil Student Education Program Travel Grant
2012	Best Poster Award: 2012 Geo-symposium, University of Tübingen, Germany
2009 – 2010	Stipendium der Landesstiftung Baden-Württemberg für M.Sc.-Studiengang
2000 – 2002	Elf Petroleum Nigeria: Undergraduate National Merit Scholarship Award

Student Research Supervision & Journal Review

2015 – 2016	Co-Supervision of M.Sc. Thesis 1. Christianah Adelakun: A framework for delineating groundwater protection zones in Nigeria. University of Ibadan, Nigeria (In Progress) 2. Kaseem Obakhume: Characterising the dynamics of saltwater intrusion in coastal aquifers of South-Western Nigeria. University of Ibadan, Nigeria (In Progress) 3. Benedete Kwaye: Salt Tracer Imaged by Surface Electrical Resistivity Tomography – the Value of Prior Geological Information. University of Tübingen, Germany. (*Completed*)
2013 till date	Reviewer for Journal - *Earth and Environmental Science* Reviewer for Journal of Applied Geophysics

Professional Membership & Service

→ Society of Exploration Geophysicists (SEG) – Current serving as the Global Chair of the Near Surface Technical Session

→ International Association of Hydrogeologist (IAH)

→ American Geophysical Union (AGU) – Currently serving as the African Representative of the Near Surface Focus Group

References

→ Dr. Carsten Leven (Ph.D Dissertation Supervisor)
University of Tuebingen, FB Geowissenschaften, Sigwartstr. 10, 72076 Tuebingen
carsten.leven-pfister@uni-tuebingen.de, Tel. +4970712973168

→ Prof. Charly Bank
Department of Earth Sciences, University of Toronto, 22 Russell Street, ON, Canada
Charly.Bank@utoronto.ca, Tel. +1 416 978-4381

→ Prof. Anthony Akpoborie, Professor of Hydrogeology
Delta State University, Abraka, Nigeria
tony.akpoborie@gmail.com, Tel. +234 8035878629

Selected scientific publications, conference and other Invited presentations

Peer Reviewed Journal Publications

- **K.O. Doro**, O.A. Cirpka, C. Leven (2015): Tracer tomography: Design concepts and field experiments using heat as tracer. Groundwater, 53:139 – 148. doi: 10.1111/gwat.12299
- **K.O. Doro**, C. Leven, O.A. Cirpka (2013): Delineating subsurface heterogeneity at a River Loop using geophysical and hydrogeological methods. Environ. Earth Sci., 69 (2) 335 – 348 doi: 10.1007/s12665-013-2316-0

Book Chapter

- O. A. Cirpka, C. Leven, R. Schwede, **K. O. Doro**, P. Bastian, O. Ippisch, O. Klein, and A. Patzelt (2014): "Tomographic Methods in Hydrogeology." Chap. 9 In *Tomography of the Earth's Crust: From Geophysical Sounding to Real-Time Monitoring*, edited by Michael Weber and Ute Münch. Advanced Technologies in Earth Sciences, 157-76: Springer International Publishing

Selected Conference Presentations and Invited Talks

- **K.O. Doro** (2018): Static and transient targets imaging using geophysical methods: the "knowledge-transfer" challenge (***Invited Author***). AGU 2018 Annual Fall Meeting, Washington DC, USA
- **K.O. Doro** (2018): Modern Field Investigation Techniques for Environmental and Mining Applications (**An Invited Talk**). Departmental weekly seminar, Department of Earth Sciences, University of Toronto, Canada
- **K.O. Doro** (2018): Data Driven Policies: A Challenge for Academics and Case for Soil and Water Resources in Nigeria (**Invited Author**). A Lecture delivered at the 11th Annual Lecture of the School of Sciences, Federal University of Technology, Akure, Nigeria
- **K.O. Doro**, O.A. Cirpka, A. Patzelt, C. Leven (2014): Salt tracer and 3-D time lapse electrical resistivity tomography. AGU 2014 Annual Fall Meeting, San Francisco, USA
- **K.O. Doro**, C. Leven, O.A. Cirpka (2014): Tracer tomography: Conceptual design and field experiments using heat and uranine as tracers. 2014 Bi-annual conference of the German Association of Hydrogeologists – FH-DGG, Bayreuth
- **K.O. Doro**, C. Leven, O.A. Cirpka (2013): Aquifer characterization – from conventional to tomographic approach. Nigerian Mining and Geoscience Society (NMGS) Conference, Ibadan
- **K.O. Doro**, C. Leven, O.A. Cirpka (2012): Heat tracer tomography – a new approach to aquifer characterization. AGU 2012 Annual Fall Meeting, San Francisco, USA
- **K.O. Doro**, C. Leven, O.A. Cirpka (2012): Tracer tomography for hydrogeological characterization. 2012 Bi-annual conference of the German Association of Hydrogeologists – FH-DGG, Dresden

Tübingen, 31. August 2019