OLUWASEUN IDOWU FADUGBA

Geophysics/Seismology PhD

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EDUCATION

- **PhD Earth Science (Geophysics)** 2021
  University of Memphis, Memphis, TN, USA
  (Advisor: Dr. Charles Langston. Co-advisors: Dr. Eunseo Choi and Dr. Christine Powell)
  Thesis: *Waveform and geodynamic modeling of seismicity associated with the Charlevoix Seismic Zone*

- **MSc Geophysics** 2015
  Boston College, Chestnut Hill, MA, USA (Advisor: Dr. John Ebel)
  Thesis: *Detection of Induced Seismicity due to Oil and Gas Extraction in the Northern Gulf of Mexico, USA*
  Master's Comprehensive Exam: *Passed with Distinction.*

- **BSc Applied Geophysics** 2011
  Obafemi Awolowo University (OAU), Nigeria (Advisor: Dr. Martins Olorunfemi)
  Thesis: *Development of Empirical Equations Relating Formation Resistivity and Cone Tip Resistance using Sedimentary and Basement Terrains of Nigeria as Case Studies*

- **Non-degree Undergraduate Field Course** 2009
  Indiana University, Bloomington, IN, USA (Instructors: Dr. Lee Suttner and Dr. James Brophy)
  Project: *Structural, Tectonics and Reservoir Basin Analysis of Tobacco Root Mountains*
  Location: Indiana University Judson Mead Geologic Field Station, Tobacco Root Mountains, Cardwell, MT.
  Course Title: Field Techniques- Basin Analysis.

WORK AND TEACHING EXPERIENCES

- **Postdoctoral Scholar**, University of Oregon, Eugene, OR July 2021 – Date
  Participating in the "Three-dimensional kinematics and the crustal deformation of Tsunami Earthquakes" project. PI: Dr. Valerie Sahakian and Co-I: Dr. Diego Melgar.
- **Research Assistant,** University of Memphis, Memphis, TN Aug. 2015 – June 2021
  Participated in USGS NEHRP project under the award title "Seismotectonics and Seismic Potential of Three Intraplate Seismic Zone" with Grant #G19AP00052. PIs: Dr. Charles Langston and Dr. Christine Powell.
  I also participated in the National Science Foundation (NSF-ICER) project under the award title "EarthCube Building Blocks: Collaborative Proposal: GeoTrust: Improving Sharing and Reproducibility of Geoscience Applications" with Award #1639706.
- **Research Assistant,** Weston Observatory of Boston College, Weston, MA June 2015- Aug. 2015
  Participated in the project titled "*Establishing an Operational Earthquake Forecasting System at Weston Observatory of Boston College"* for the Massachusetts Emergency Management Agency.
- **Teaching Assistant,** Boston College, USA. Aug. 2013- May 2015
  Worked as Teaching assistant for undergraduate classes: Exploring the Earth (Fall, 2014), Environmental Hydrology (Fall, 2014), Astronomy (Spring, 2014), and Cosmos (Fall, 2013)
- **Tutoring Position,** The Connors Family Learning Centre, Boston College, MA. June 2014-May 2015
  Worked as tutor for undergraduate classes: Calculus II and Physics (Spring, 2015),
  Intro to Physics I and Our Mobile Earth (First Session, Summer 2014); and Physics II and Environmental Issues and Resources (Second Session, Summer 2014)
- **Trainee Geophysicist,** Verity Geosolutions Limited, Lekki, Lagos State, Nigeria. Feb. 2013 – Aug. 2013
  Participated in the Shell Nigeria Seis-Nav Merge Project. Experience with tape reformatting,

storage, transcription and quality data control of 3D seismic data using ProMAX.
Participated in the training of Industrial Training (IT) students from the universities.

- **High School Teacher,** Bens High School, Idomi, Cross River State, Nigeria Jan. – Oct. 2012
  Worked as a mathematics and physics teacher during the one year National Youth Service Corps (NYSC).

SELECTED FIELD PROGRAMS

- IRIS Wavefields Demonstration Experiment at Enid, Oklahoma, USA involving 3-C nodes, broadband seismometers, and infrasound sensors. June 2016
- Geological and geophysical mapping of Igarra, Edo State, Nigeria. June 2010
- Geological and geophysical mapping of Ibodi, Osun State, Nigeria. Jan. 2011
- NAPE/AAPG Immersive Field Exercise; "Structural, Tectonics and Reservoir Basin Analysis," at Tobacco Root Mountains, Indiana University Judson Mead Geological Field Station, MT, USA. Sept. 2009

PUBLICATIONS

- **Fadugba, O.I.,** Langston, C.A. and Powell, C.A. (2021). Focal Mechanisms of Relocated Earthquakes and Stress Orientation in the Charlevoix Seismic Zone (in prep., preprint available upon request).
- **Fadugba, O. I**., Choi, E., & Powell, C. A. (2019). Effects of preexisting structures on the seismicity of the Charlevoix Seismic Zone. *Journal of Geophysical Research: Solid Earth*, 124, 7370– 7386.
- **Fadugba, O.I**. and Olorunfemi M.O. (2012). WINGEOTECH_FAD Software for Estimating Cone Tip Resistance from Formation Resistivity in Sedimentary and Basement Terrains of Nigeria. *Pacific Journal of Science and Technology*, 13(1):544-555.
- **Fadugba, O.I.,** Olorunfemi M.O., & Odeyemi D. (2011). Development of Empirical Equations Relating Formation Resistivity and Cone Tip Resistance using Sedimentary and Basement Terrains of Nigeria as Case Studies. *Pacific Journal of Science and Technology*, 12(2), 548-557.

NOT PEER REVEIWED

- John E. Ebel, Nawa Dahal, **Oluwaseun Fadugba**, Anastasia Moulis and Alan Kafka (2017). Project Title: "*Establishing an Operational Earthquake Forecasting System at Weston Observatory of Boston College" for the* Massachusetts Emergency Management Agency. *ftp://eclogite.geo.umass.edu/pub/stategeologist/MEMA_1994_10_UMSISA/MEMAOEFSFinalReport6_19.pdf*

PRESENTATIONS

- **Oluwaseun Fadugba**, Charles Langston and Christine Powell (2020). Focal mechanisms of relocated earthquakes and stress orientation in the Charlevoix Seismic Zone. *AGU Fall Meeting (Virtual).*
- **INVITED TALK. Oluwaseun Fadugba**, Charles Langston and Christine Powell (2020). Focal mechanisms of relocated earthquakes and stress orientation in the Charlevoix Seismic Zone. ***Bertolet Seminar Series*****,** *Department of Geology and Geological Engineering, University of Mississippi, MS.*
- **Oluwaseun Fadugba**, Charles Langston and Christine Powell (2019). Better constraining the geometry of faults in the Charlevoix Seismic Zone. *AGU Fall Meeting, San Francisco, CA.*
- **Oluwaseun Fadugba**, Charles Langston, Christine Powell and Eunseo Choi (2019). Better constraining the geometry of faults in the Charlevoix Seismic Zone. *Big Data Workshop and Tech Fest, Boone Pickens School of Geology, Oklahoma State University, Stillwater, OK*.
- **Oluwaseun Fadugba**, Charles Langston and Christine Powell (2019). Wave propagation analysis of the SP headwave observed in the CSZ and its application for constraining source depth. *SSA Conf., Seattle, WC.*
- **Oluwaseun Fadugba**, Charles Langston and Christine Powell (2018). Wave propagation and focal mechanisms of local earthquakes in the Charlevoix Seismic Zone. *Fall Meeting of American Geophysical Union (AGU); Washington DC.*

- **Oluwaseun Fadugba**, Eunseo Choi and Christine Powell (2017). Effects of pre-existing structures on the seismicity of the Charlevoix Seismic Zone. *AGU Fall Meeting AGU, New Orleans, LA.*
- Malik, T., D. G. Tarboton, J. L. Goodall, E. Choi, A. Bhatt, S. D. Peckham, I. Foster, D. Hai Ton That, B. Essawy, Z. Yuan, P. K. Dash, G. Fils, T. Gan, **O. I. Fadugba**, A. Saxena and T. A. Valentic, (2017). GeoTrust Hub: A Platform for Sharing and Reproducing Geoscience Applications. *AGU Fall Mtg., New Orleans, LA.*
- John Ebel and **Oluwaseun Fadugba** (2015). Operational Earthquake Forecasting of Aftershocks for New England. *AGU Fall Meeting, San Francisco, CA.*
- Constantin Andronache, Maren Kizershot, Regan McLaughlin, Claire Jasper, Rudolph Hon and **Oluwaseun Fadugba** (2015). Environmental impact of anthropogenic reactive nitrogen compounds. *ESRI User Conference, San Diego, CA.*
- **Oluwaseun Fadugba** (2014)**.** Detection of Induced Seismicity due to Oil and Gas Extraction in the Northern Gulf of Mexico, USA. *Eastern Section SSA conference, Charleston, SC.*
- **Oluwaseun Fadugba** (2014). Propagation of P- and S- Waves and the Variation of Peak Amplitude from Earthquake's Epicenter Using the Mississippi 2012 Earthquake as a Case Study. *Boston College Libraries.*

DIGITAL TECHNOLOGY

- Proficient in HPC cluster, PyLith, Cubit/Trelis for mesh generation, MATLAB, C++, SAC, ProMAX, ArcGIS, GMT, Awk, Python, Mathematica, FORTRAN, Latex, Shell and Bash scripts.

SCHOLARSHIPS AND AWARDS

- Honorable Mention, Big Data Workshop and Tech Fest, 2019, Oklahoma State University OK.
- SEG student travel grant and Student Education Program (SEP), SEG annual meeting, 2016, TX, USA.
- SSA student travel grant, SSA Conference, 2015, CA.
- Summer Research Scholarship, June 2014 & 2015, Boston College, MA, USA.
- Governing Board Chairman's Honors Award, 2012, NYSC Cross River State, Nigeria.
- SEG student grant and Student Leadership Symposium, SEG annual meeting, 2010, CO, USA.
- SEG Foundation Undergraduate Scholarship, 2008/2009 & 2009/2010
- First Prize Winner, Nigerian Mining Geoscientists Society Inter-College Quiz Competition, 2009, OAU.
- Faculty of Science Undergraduate Scholarship, 2008, OAU, Nigeria.

PROFESSIONAL DEVELOPMENT AND SERVICE

- **Journal Reviewer** for the Journal of Geophysical Research: Solid Earth. (2020)
- **Leadership Positions**
  - President, Young Adult and Singles' Ministries (YASM), RCCG, Memphis, TN. (2016-2021)
  - Vice president, SEG Students' Chapter, University of Memphis, TN. (2016/2017)
  - President, SEG Students' Chapter, OAU, Nigeria. (2009/2010)
  - Financial Secretary, SEG Students' Chapter, OAU, Nigeria. (2008/2009)
- **Community Development Service (CDS)**
  - Youth Villages, 7410 Memphis Arlington Rd, Memphis, TN 38135. (2015-2021)
  - Boston Rescue Mission, 39 Kingston St, Boston, MA 02111. (2013- 2015)
  - Idomi Village, Yakurr Local Government, Cross River State. Worked as Development Knowledge Facilitator (DKF) of the Millennium Development Goals (MDGs) during the NYSC. (Oct. 2011 – 2012)
- **SEG Student Chapter Tutorial Program, OAU, Nigeria.**
  - Tutored undergraduate classes in mathematics, physics and structural geology. (2007-2011)
- **Professional organizations (Student member):** SEG, AGU, AAPG, SSA, NABG, NAPE and NMGS.