Rasheed Ajala

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Education

Columbia University 📍 *New York, NY, U.S.*
Postdoc in Geophysics(Seismology ⌁)
Lamont-Doherty Earth Observatory (LDEO) postdoctoral fellow 📅 *Sep. 2022 - Present*
Advisor: Dr. Folarin Kolawole

Louisiana State University 📍 *Baton Rouge, Louisiana, U.S.*
Ph.D. in Geophysics(Seismology ⌁) 📅 *Aug. 2017 - May 2022*
Advisor: Dr. Patricia Persaud

University of Houston 📍 *Houston, Texas, U.S.*
Honors B.Sc. in Geophysics and Seismology ⌁ [Banner Bearer] 📅 *May 2017*
Advisor: Dr. Paul Mann

Employment

U.S. Geological Survey 📍 *Baton Rouge, Louisiana, U.S.*
Contract Research Geophysicist 📅 *Jun. 2021 - Jul. 2021*
Advisor: Dr. Rufus Catchings
⌁ Earthquake tomography and analysis of aftershock sequences of the 2019 Ridgecrest earthquake in the vicinity of the Garlock fault step-over, Southern California

BP 📍 *Houston, Texas, U.S.*
Geophysicist Intern 📅 *Jun. 2020 - Aug. 2020*
Advisor: Dr. Frederic Billette
⌁ State-of-the-art Full Waveform Inversion (FWI) and Reverse Time Migration (RTM) subsurface image reconstructions in the Gulf of Mexico

FM Global 📍 *Norwood, Massachusetts, U.S.*
Seismology Research Intern 📅 *May 2018 - Aug. 2018*
Advisor: Dr. Harold Magistrale
⌁ Developed an improved earthquake risk model for Bangladesh

Publications (First-Authored)

⌁ Ajala, R., Persaud, P., & Juarez, A. (2022). Earth Model Space Exploration in Southern California: Influence of Topography, Geotechnical Layer, and Attenuation on Wavefield Accuracy, *Frontiers in Earth Science,* 1-19. https://doi.org/10.3389/feart.2022.964806

⌁ Ajala, R. & Persaud, P. (2022). Ground-Motion Evaluation of Hybrid Seismic Velocity Models, *The Seismic Record, 2(3),* 186-196. https://doi.org/10.1785/0320220022

⌁ Ajala, R., & Persaud, P. (2021). Effect of Merging Multiscale Models on Seismic Wavefield Predictions Near the Southern San Andreas Fault, *Journal of Geophysical Research: Solid Earth, 126,* 1-23. https://doi.org/10.1029/2021JB021915

⌁ Ajala, R., Persaud, P., Stock, J. M., Fuis, G. S., Hole, J. A., Goldman, M. R., & Scheirer, D. S. (2019). Three-dimensional Basin and Fault Structure From a Detailed Seismic Velocity Model of Coachella Valley, Southern California. *Journal of Geophysical Research: Solid Earth, 124,* 4728-4750. https://doi.org/10.1029/2018JB016260

Funded Proposals

SCEC Award 21059 for 28,847.00 USD: *Updating CVM-S 4.26 in Salton Trough Using Explosion Waveforms* 📅 *Feb. 2021 - Feb. 2022*
PI: Patricia Persaud; I wrote the scientific justification of the proposal

NSF Supplemental Award for 55,000.00 USD: *Seismic Signal Detection, Identification, and Location: An Integrated Machine Learning Approach* 📅 *Jun. 2021 - Nov. 2021*
PI: Patricia Persaud; I wrote the scientific justification of the proposal

SCEC Awards 19014 and 20023 for 60,060.00 USD: *Assimilating SSIP data into a Full 3D Tomography (F3DT) model of the Salton Trough* 📅 *Feb. 2019 - Feb. 2021*
PI: Patricia Persaud; I wrote the scientific justification of the proposal

Selected Honors & Awards

Society of Exploration Geophysicists (SEG) Scholarships	📅 *2016 - 2022 (6)*
Houston Energy, L.P. Graduate Student Scholarship	📅 *2019 - 2022 (3)*
Chevron Energy Leaders Scholarship	📅 *2018 - 2019*
New Orleans Geological Society Lee H. Meltzer Graduate Scholarship	📅 *2018 - 2019*
Incorporated Research Institutions for Seismology (IRIS) Workshop Scholarship	📅 *Summer 2018*
Laura Cordell and John P "Jay" Moffitt Scholarship	📅 *2017 - 2018*
HGS-PESGB Africa Conference Outstanding Poster Award	📅 *Fall 2016*
American Geophysical Union (AGU) Tectonophysics Student Travel Grant	📅 *Fall 2016*
Provost Undergraduate Research Scholarship	📅 *Fall 2016*
National Association of Black Geoscientists (NABG) Mack Gipson Scholarship	📅 *Fall 2016*
Leslie and Alan Wong Geophysics Field Camp Scholarship	📅 *Summer 2016*
Mathematics Olympiad (Top 1% in Nigeria)	📅 *June 2012*

Invited Talks/Media

- Ajala, R. (2022). Multiscale Earth models: Wavefield verification and space exploration, UMD Department of Geology Colloquium.

- Ajala, R. (2022). Seismic Soundoff, SEG podcast, Online.

- Ajala, R. (2022). Multiscale Earth models: Full wavefield verification and space exploration, USC Earthquake Science Seminar, Online.

- Ajala, R. (2020). Active source tomography in Salton Trough: Geologic insights and application to ground motion prediction, USGS-ESC Seminar, Online.

- Ajala, R. (2020). UCVM development and low-frequency validation of hybrid Earth models near the southern San Andreas fault, SCEC CVM Workshop, Online.

Selected Presentations

- Ajala, R., Kolawole, F., & Menke, W. (2022). Crustal Shear Wave Splitting Patterns in the southern Tanganyika-Rukwa Rift Zone, East Africa, American Geophysical Union, Fall Meeting, Chicago, IL. (Poster)

- Ajala, R., Persaud, P., & Juarez, A. (2021). Beyond 1 Hz: Double-difference active source adjoint tomography of Salton Trough, SCEC Annual Meeting, Online. (Poster)

- Ajala, R., Persaud, P., Juarez, A., & Ayeni, G. (2019). Evaluating seismic velocity models in the Salton Trough using spectral-element wave simulation of validation events, SCEC Annual Meeting, Palm Springs, CA. (Poster)

- Ajala, R., Persaud, P., Steckler, M., Sandvol, E., Akhter, S., Gaherty, J., Carchedi, C., Grall, C., & Seeber, L. (2018). Teleseismic Receiver Functions Constraint on the Structure of the Indo-Burma Subduction System, American Geophysical Union, Fall Meeting, Washington, D.C. (Poster)

- Ajala, R., Persaud, P., Stock, J. M., Fuis, G. S., Hole, J. A., Goldman, M. R., & Scheirer, D. S. (2017). 3-D Velocity Model of the Coachella Valley Determined Using P-Wave First Arrival Times from the Salton Seismic Imaging Project and Local Earthquakes, SCEC Annual Meeting, Palm Springs, CA. (Poster)

- Ajala, R., & Mann, P. (2016). Gravity-Based Model for Regional Flexure Induced by Crustal Loading by the 14-km-thick Mississippi Delta, American Geophysical Union, Fall Meeting, San Francisco, CA. (Poster)

Reproducible Data and Software

- Ajala, R. (2022). Reproducibility material for ground motion validation of hybrid models: Zenodo.
  Retrieved from https://doi.org/10.5281/zenodo.6615708

- Ajala, R. (2022). Code and data repository for the role of topography, geotechnical layering, and attenuation on ground motion prediction: Zenodo.
  Retrieved from https://doi.org/10.5281/zenodo.6615706

- Ajala, R. (2021). Algorithm for merging gridded multiscale and multidimensional datasets using window functions: Zenodo.
  Retrieved from https://doi.org/10.5281/zenodo.4552676

- Ajala, R. (2021). Modified UCVM software with blending functionality: Zenodo.
  Retrieved from https://doi.org/10.5281/zenodo.4533337

- Ajala, R. (2021). Data and scripts to reproduce research on seismological application of multiscale hybrid Earth models: Zenodo.
  Retrieved from https://doi.org/10.5281/zenodo.4548149

Professional & Extracurricular Activities

COVID-19 relief volunteer in Baton Rouge, LA   *Apr. 2020 - Jul. 2022*

Geaux Science for Girls: Our Earth, Our Laboratory Event Volunteer   *Mar. 2019, Apr. 2022*

LSU High Performance Computing Training   *Jan. 2019 - May 2019*

Incorporated Research Institutions for Seismology Workshop   *Jun. 2018*

Lamont-Doherty Earth Observatory (LDEO) Seismology Student Workshop   *Mar. 2018*

Cougars and Houston Area Math Program Volunteer   *Jun. 2017*

Memberships

Seismological Society of America   *2018 - Present*

Society for Industrial and Applied Mathematics   *2017 - Present*

Southern California Earthquake Center   *2017 - Present*

Society of Exploration Geophysicists   *2016 - Present*

American Geophysical Union   *2016 - Present*

Volunteers of America Southeast Louisiana   *2020 - 2022*