

# Rasheed Ajala

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## Education

### Columbia University

POSTDOC IN GEOPHYSICS(SEISMOLOGY ~~~W~~~)  
LAMONT-DOHERTY EARTH OBSERVATORY (LDEO) POSTDOCTORAL FELLOW  
ADVISOR: DR. FOLARIN KOLAWOLE

📍 New York, NY, U.S.

📅 Sep. 2022 - Present

### Louisiana State University

PH.D. IN GEOPHYSICS(SEISMOLOGY ~~~W~~~)  
ADVISOR: DR. PATRICIA PERSAUD

📍 Baton Rouge, Louisiana, U.S.

📅 Aug. 2017 - May 2022

### University of Houston

HONORS B.SC. IN GEOPHYSICS AND SEISMOLOGY ~~~W~~~ [BANNER BEARER]  
ADVISOR: DR. PAUL MANN

📍 Houston, Texas, U.S.

📅 May 2017

## Employment

### U.S. Geological Survey

CONTRACT RESEARCH GEOPHYSICIST  
ADVISOR: DR. RUFUS CATCHINGS

📍 Baton Rouge, Louisiana, U.S.

📅 Jun. 2021 - Jul. 2021

~~~W~~~ Earthquake tomography and analysis of aftershock sequences of the 2019 Ridgecrest earthquake in the vicinity of the Garlock fault step-over, Southern California

### BP

GEOPHYSICIST INTERN

ADVISOR: DR. FREDERIC BILLETTE

📍 Houston, Texas, U.S.

📅 Jun. 2020 - Aug. 2020

~~~W~~~ State-of-the-art Full Waveform Inversion (FWI) and Reverse Time Migration (RTM) subsurface image reconstructions in the Gulf of Mexico

### FM Global

SEISMOLOGY RESEARCH INTERN

ADVISOR: DR. HAROLD MAGISTRALE

📍 Norwood, Massachusetts, U.S.

📅 May 2018 - Aug. 2018

~~~W~~~ Developed an improved earthquake risk model for Bangladesh

## Publications (First-Authored)

~~~W~~~ 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>

~~~W~~~ 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>

~~~W~~~ 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>

~~~W~~~ 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*

PI: Patricia Persaud; I wrote the scientific justification of the proposal

📅 Feb. 2021 - Feb. 2022

NSF Supplemental Award for 55,000.00 USD: *Seismic Signal Detection, Identification, and Location: An Integrated Machine Learning Approach*

PI: Patricia Persaud; I wrote the scientific justification of the proposal

📅 Jun. 2021 - Nov. 2021

SCEC Awards 19014 and 20023 for 60,060.00 USD: *Assimilating SSIP data into a Full 3D Tomography (F3DT) model of the Salton Trough*

PI: Patricia Persaud; I wrote the scientific justification of the proposal

📅 Feb. 2019 - Feb. 2021

## Selected Honors & Awards

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|-------------------------------------------------------------------------------|-------------------|
| 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

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- 🎧 Ajala, R. (2023). Multiscale Earth models: Wavefield verification and space exploration, UMD Department of Geology Colloquium.
- 🎧 Ajala, R. (2023). Seismic Soundoff, SEG podcast, Online.
- 🎧 Ajala, R. (2023). 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

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- 🎧 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

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- 🎧 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

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| 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

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|------------------------------------------------|------------------|
| 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    |