

# Rasheed Ajala

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## Education

### Columbia University

POSTDOC IN GEOPHYSICS(SEISMOLOGY 🌊)  
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 🌊)  
ADVISOR: DR. PATRICIA PERSAUD

📍 Baton Rouge, Louisiana, U.S.

📅 Aug. 2017 - May 2022

### University of Houston

HONORS B.SC. IN GEOPHYSICS AND SEISMOLOGY 🌊 [BANNER BEARER]

📍 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

🌊 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

🌊 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

🌊 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*

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

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- 🔊 Ajala, R. (2023). Multiscale Earth models: Wavefield verification and space exploration, UMD Department of Geology Colloquium.
- 🔊 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