

Folarin Kolawole, Ph.D.

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Current Position:

Assistant Professor of Structural Geology, Columbia University, New York, U.S.

Areas of Expertise:

Structural Geology, Tectonics, Geophysics, Fault Mechanics

Professional Appointments:

Assistant Professor of Structural Geology , Columbia University	2022 - Present
Adjunct Associate Research Scientist , Lamont-Doherty Earth Observatory	2021 - 2022
Upstream Structural Geologist , BP America	2020 - 2022
Structural Geology Intern , BP America	2019 - 2019
Structural Geology Intern , Chesapeake Energy	2018 - 2018
Graduate Research & Teaching Assistant , University of Oklahoma	2017 - 2020
Graduate Teaching Assistant , Oklahoma State University	2015 - 2017
On-site QC seismologist , BGP-CNPC, Nigeria	2010 - 2014

Education:

Ph.D. in Geophysics August 2020
University of Oklahoma
Emphasis: Structural Geology, Fault Mechanics, Geophysics
Advisors: Brett M. Carpenter and Ze'ev Reches

M.S. in Geology August 2017
Oklahoma State University
Emphasis: Continental Rift Tectonics, Near-Surface Geophysics
Advisors: Estella A. Atekwana and Mohamed Abdel Salam

B.S. in Geology October 2008
Federal University of Technology, Akure (F.U.T.A.), Nigeria
Emphasis: Structural Geology, Remote Sensing
Advisor: Yekini B. Anifowose

My Research

- Continental rift initiation and evolution
- Crustal structure and evolution of plate boundary faults
- Fault structure and mechanical stability/instability in regions of induced seismicity
- Intraplate earthquake genesis

Teaching Experience

Instructor: <i>Death Valley Field Excursion</i> (Columbia University)	2024 – Present
Instructor: <i>Crustal Deformation</i> (Columbia University)	2022 – Present
Instructor: <i>Tutorial in Earth Science</i> (Columbia University)	Spring 2026
Instructor: <i>Tutorial in Earth Science</i> (Columbia University)	Spring 2025

Instructor: <i>Tutorial in Earth Science</i> (Columbia University)	Fall 2024
Instructor: <i>Tutorial in Earth Science</i> (Columbia University)	Summer 2023
Instructor: <i>Tutorial in Earth Science</i> (Columbia University)	Spring 2023
Co-Instructor: <i>Death Valley Field Excursion</i> (Columbia University)	Spring 2023
Instructor: <i>Tutorial in Earth Science</i> (Columbia University)	Fall 2022
Teaching Assistant: <i>Structural Geology</i> (Univ. of Oklahoma)	2019
Field Teaching Assistant: <i>3-Day Field Trip on the Geology of Oklahoma for New Graduate Students</i> (Univ. of Oklahoma)	2019
Teaching Assistant: <i>Structural Geology & Stratigraphy for Engineers</i> , (Univ. of Oklahoma)	2019
Teaching Assistant: <i>Structural Geology</i> (Univ. of Oklahoma)	2018
Teaching Assistant: <i>Geology & Human Affairs</i> (Oklahoma State Univ.)	2017
Teaching Assistant: <i>Introduction to Geophysics</i> (Oklahoma State Univ.)	2016
Teaching Assistant: <i>Geology & Human Affairs</i> (Oklahoma State Univ.)	2015

Professional Awards:

2026 Seth & Carol Stein Early Career Award, Geological Society of America
2026 National Geographic Wayfinder Award, National Geographic Society
2025 Jason Morgan Early Career Award, American Geophysical Union

Fellowships & Other Awards:

- Chris J. Cheatwood Geology & Geophysics Graduate Scholarship Award, University of Oklahoma (August 2018)
- Decker Dawson Graduate Fellowship in Geophysics, Oklahoma State University (August 2016)
- Skinner Geology Graduate Fellowship, Oklahoma State University (August 2015)
- 2nd Place Best Poster Presentation at the ConocoPhillips Research Symposium, University of Oklahoma (April 2019)
- 1st Place Best Poster Presentation at the 2019 AAPG Spring-Break Student Expo (March 2019)
- 2018 Ben Hare Excellence in Research Award, School of Geosciences, University of Oklahoma (May 2018)
- 3rd Place Best Poster Presentation, the 2018 AAPG Spring-Break Student Expo (March 2018)
- 1st Place Best Student Oral Presentation at Eastern Section Seismological Society of America Annual Meeting (October 2017)
- Best Poster Presentation, AAPG-ConocoPhillips TechFest 2017 Conference, Oklahoma State University (March 2017)

Grant Awards

Grant Awards (Funded) as PI/Co-PI (Total since 2022, external: \$1,136,613, internal: \$51,231)

- 2026 – National Geographic Society (\$50,000), PI. Wayfinder grant award.
- 2026 – Lenfest Junior Faculty Grant, Columbia University (\$10,000), PI. Trenching of paleoseismic scarps in New Jersey.
- 2025 – National Science Foundation (NSF-2501725) (\$213,213). PI. Tectonic Reactivation of Oceanic Fracture Zones, Davie Ridge (REFRAC) (Co-PI: Waldhauser)

- 2025 – National Science Foundation (NSF-2447284) (**\$703,638**) Co-PI. Understanding the geodynamic evolution of the Antarctic mantle and crust since ice sheet inception (PI: Jacky Austermann)
- 2025 – Southern California Earthquake Center (SCEC #25198) (**\$15,000**), PI. *Investigating Along-Fault Variation of Shallow Inelastic Damage of the San Andreas Fault.*
- 2024 – National Science Foundation RAPID Grant (NSF-2431983) (**\$24,641**) Co-PI. *Post-Seismic Survey of the April 5, 2024 Mw4.8 New Jersey Earthquake* (PI: Waldhauser).
- 2024 – Cascadia Region Earthquake Science Center (2017Y0SC) (**\$30,991**) PI. *Multi-resolution and -scale synthesis of Cascadia Earth Models* (Co-PI: Ajala).
- 2024 – Southern California Earthquake Center (SCEC #24021) (**\$38,111**), PI. *Slip Rates and the Deformation Field of the Northern Black Mountain Fault.*
- 2024 – Southern California Earthquake Center (SCEC #24043) (**\$31,464**), PI. *3D full waveform inversion of the Salton Seismic Imaging Project active source dataset* (Co-PI: Ajala).
- 2023 – Southern California Earthquake Center (SCEC #23178) (**\$29,555**), PI. *Active-Source Adjoint Tomographic Update of CVM-H 15.1 in Salton Trough* (Co-PI: Ajala).
- 2023 – Provost's Junior Faculty Grant, Columbia University (**\$29,715**), PI.
- 2023 – Lenfest Junior Faculty Grant, Columbia University (**\$11,516**), PI.
- 2018 – Geological Society of America (GSA) Student Research Grant (**\$2,000**), PI.

Grant Awards to students & postdocs (Total: \$141,700):

- 2025 – AAPG Foundation Grants-in-Aid Award to student Meritxell Colet (\$2,500)
- 2025 – GSA Student Grant Award to student Meritxell Colet (\$1,000)
- 2025 – Lewis & Clark Fund (American Phil. Soc.) Award to student Meritxell Colet (\$5,000)
- 2024 – AAPG Foundation Grants-in-Aid Award to student Sydney Maguire (\$3,000)
- 2024 – NSF Postdoctoral Fellowship Award to postdoc Rasheed Ajala (\$130,000)

Professional Feature:

- **Science Magazine (AAAS) (Nov. 7, 2024): Africa's Breaking Heart:** A Science feature article that was dedicated to my research on continental rift initiation, detailing my journey as a geoscientist and my vision as an emerging leader in the field. Article by Paul Voosen.
- **Illustreret Videnskab (Danish magazine 'Science Illustrated') (July. 27, 2025): Geologist draws a whole new world map: Africa is being torn into small pieces:** A scientific article tailored towards a Danish speaking audience, that was dedicated to my research on continental rift initiation and my journey as a geoscientist. Article by Jens E. Matthiesen.
- **GeologyBites feature (June 3, 2025): Folarin Kolawole on Continental Rifting:** A podcast interview by Oliver Strimpel. GeologyBites is arguably the best and most subscribed geoscience podcast in the world.

Media Coverage/Mentions:

Trvst feature by Selva Ozelli (August 7, 2026): Interview: Dr. Folarin Kolawole; National Geographic Society Wayfinder Award Winner.

GeologyBites podcast feature interview by Oliver Strimpel (June 3, 2025): 'Folarin Kolawole on Continental Rifting'

NewsDay article by Lorena Mongelli (April 4, 2025): Year after 4.8 magnitude earthquake rattled Long Island, a recent microquake recorded near epicenter

Science Magazine (AAAS) Logbook Feature (Nov. 7, 2024): Hunting for rifts. And grants. And family time

News12 TV Interview with Edric Robinson (12 Oct 2024): New study sheds light on April earthquake felt in NYC

Bergen Record newspaper profile (April 19, 2024): Geologists from Columbia University gather data after NJ earthquake

Bergen Record newspaper profile (April 19, 2024): How NJ earthquake shook local geologists into fervent action

NBC4 New York TV interview with Gus Rosendale (April 6, 2024): Magnitude 4.8 earthquake shakes tri-state

The New York Times newspaper mention (April 5, 2024): Friday's earthquake brings attention to the region's fault lines

LiveNOW from FOX TV interview with Josh Breslow (April 6, 2024): NJ earthquake: More aftershocks possible

News Nation TV interview with Hena Doba (April 5, 2024): How Rare are Earthquakes in the Northeast?

The Daily Beast newspaper mention (April 5, 2024): Does the East Coast Earthquake Mean the Big One Is Coming?

Parsing Science Podcast interview (December 12, 2017): Fault Reactivation and Earthquakes.

Seequent News & Update feature (November 15, 2018): Finding Faults: Improving Human Safety in Earthquake-Prone Areas.

Seequent News & Update feature (June 19, 2018): Aeromagnetic data helps to assess earthquake potential.

OSU College of Arts & Sciences News feature (June 8, 2017): OSU researcher authors paper exploring Pawnee quake damage.

Postdocs and Students

Columbia University:

Postdoc(s):

- Rasheed Ajala: NSF Postdoc Fellow (Fall 2024 - present), Lamont Postdoc Fellow (2022 - 2024)

PhD Students:

- Andry Ramarolahy (Fall 2024 - present)
 - Meritxell Colet (Fall 2023 - present)

Undergraduate Students:

- Maya Madajewicz (Fall 2025 - present)
 - Sim Lenner (Spring – Summer 2026)

Alumni:

- Alexa Mitchel (Fall 2024 – Spring 2026); Now with Acadia National Park Service.
 - Lela Kornfeld (Spring 2023 – Spring 2026); Now with US National Park Service.
 - Salvatore Ferrera (Summer 2025 – Spring 2026)
 - Leonard Ohenhen: Lamont Postdoc Fellow (Fall 2024 – Summer 2025); Now Assistant professor at UC Irvine, California.
 - Cameron Grant (Undergrad., Fall 2022 – Spring 2024): Completed BSc. Thesis; now MS student at Colorado School of Mines.
 - Mia Caitlyn Yiannias (Fall 2024 – Summer 2025)
 - Christian Rowan (Grad., Fall 2022 – Spring 2025)
 - Zachary Foster-Baril (Spring 2024 – Spring 2025)
 - Sydney Maguire (Grad., Fall 2023 – Spring 2024)
 - Eva Sherman (Undergrad., Fall 2023 research intern)

- Macy Matthews (Undergrad., 2023 summer intern)
- Farhan Tanvir (Undergrad., 2023 summer intern)
- Sarah Hisham Alsharif (Undergrad., 2023 summer intern)
- Lawson Goodloe (Undergrad., Fall 2022 research intern)

Non-Columbia Univ. Students (last engagement/degree of pursuit at the time/institution):

- Jean-Joel Legre (current – PhD/Rochester University, NY)
- Boniface Kgosidintsi (current – PhD student at Oklahoma State Univ.) (2020- 2025, MS/BIUST, Botswana)
- Debbie Mfa (2022 – 2024; MS/BIUST, Botswana); now PhD student at Univ. of Adelaide
- Krista Watson (Summer 2023, REU - Undergrad/Gateway Community College, CT)
- Patrick Boston (Summer 2023, Undergrad/Midwestern State University, TX)
- Leonard Ohenhen (2022 – MS/University of Delaware, DE)
- Oyewande Ojo (2022 – PhD/Oklahoma State University, OK)
- Hardy Nkodia (2022- PhD/Marien Ngouabi University, DR. Congo); Now Lecturer at Marien Ngouabi University, DR. Congo
- Roberto Clairmont (2020 – MS/University of Oklahoma, OK)
- Brandon Chase (2020 – MS/Oklahoma State University, OK)
- Max Firkins (2020 – MS/University of Oklahoma, OK)
- Oladoyin Kolawole (2020 – PhD/Texas Tech., TX)
- Thuwaiba Al Wahaibi (2019 – Undergrad/University of Oklahoma, OK)
- Erin Heilman (2018 – Undergrad/Oklahoma State University, OK)

Journal Publications

Published (Peer-Reviewed): [‡]Undergraduate student, [†]PhD student, ^{*}Postdoc in my lab group

60. **Kolawole, F.**, Beaucé, E., Foster-Baril, Z.^{*}, Colet, M.[†], Seeber, L., Tielke, J., Prakash, A., Kim, W.Y., Ajala, R.^{*}, McCarthy, C., Waldhauser, F. (2026). The 2024 Mw4.8 New Jersey Intraplate Earthquake: Preferential Rupture of an Immature Fault in Frictionally Unstable Basement Rocks. *JGR-Solid Earth*, 131, e2025JB033723. doi.org/10.1029/2025JB033723.
59. Ajala, R.^{*}, **Kolawole, F.**, Legre, J-J., Olugboji, T., van Herwaarden, D-P., Fichtner, A. (2026). Crustal and lithospheric mantle thinning variations beneath the East African Rift System. *Geoscience Frontiers*, 17(6). doi.org/10.1016/j.gsf.2026.102396.
58. Matende, K. N., Evans, R., Zhu, J., Mickus, K., Ranganai, R., Laletsang, K., Atekwana, E., **Kolawole, F.**, & Brovko, O. (2026). Magnetotelluric investigation of the southwestern terminus of the East African Rift reveals spatial transition from deep melt-assisted to melt-deficient rift initiation mechanisms. *Tectonophysics*, 935 (231297). doi.org/10.1016/j.tecto.2026.231297.
57. Le, H., **Kolawole, F.**, Key, K., Mayle, M., Atekwana, E.A., Evans, R.L., Walter, J. (2026). Magnetotelluric Imaging Suggests Minimal Downward Saline Fluid Migration in the Region of the Largest-Known Injection-Induced Earthquake, Oklahoma. *JGR-Solid Earth*, 131(6), e2025JB033516. doi.org/10.1029/2025JB033516.
56. **Kolawole, F.**, Reches, Z., Carpenter, B. M. (2026). Early evolution of faults in crystalline basement by organized fracturing and damage zonation. *Journal of Structural Geology*, 208, 105702. doi.org/10.1016/j.jsg.2026.105702.
55. Rowan, C.M.[‡], **Kolawole, F.**, Becel, A., Betka, P., Rowan, J. (2026). Necking of Active Rifts and the Priming of Eastern Africa for Continental Break-Up. *Nature Communications*, 17, 3585. doi.org/10.1038/s41467-026-71663-x.
54. Ohenhen, L.^{*}, Shirzaei, M., Kumar, P., Aditiya, A., Tiwari, A., Davis, J., **Kolawole, F.**, Chaussard, E., Sadhasivam, N., Dasho, O., Zhong, W., James, R., Daramola, S., Nicholls, R.,

- Minderhoud, P. (2026). Land Subsidence on Java Island and its Contributions to Relative Sea Level Change. *Science Advances*. doi.org/10.1126/sciadv.aec0172.
53. Tielke, J., Verdecchia, A., Pederson, C., Prakash, A., McCarthy, C., **Kolawole, F.**, Harrington, R.M. (2025). Hybrid frictional behavior of hydrothermally-altered fault zones in long-lived polyphase geothermal reservoirs. *Geophysical Research Letters*, 52 (23), e2025GL117709.
 52. Cochran, E.S., Zakharova, N., Carpenter, B.M., **Kolawole, F.**, Hayman, N.W., Sone, H., Schmitt, D.R., Eichhubl, P., Ellsworth, W., Guglielmi, Y., Hickman, S., Tobin, H.J. (2025). Potential for Continental Scientific Drilling to Inform Fault Mechanics and Earthquake Science. *Seismica* 4(2).
 51. Kwagalakwe, A., Stamps, D.S., **Kolawole, F.**, Atekwana, E.A., Taylor, M., Atekwana, E.A., Katumwehe, A.B., Barry, P.H., Njinju, E.A., Nyago, J., Tugume, F., Kiberu, J.M., Nakajigo, J., Kabanda, A. (2025). Constraining the Kinematics of the Victoria Microplate and the Northern Western Branch of the East African Rift System. *Geophysical Research Letters*, 52, e2025GL116301.
 50. Njinju, E.A., **Kolawole, F.**, Atekwana, E.A., Atekwana, E.A., Stamps, D.S., van der Lee, S., Evans, R.L., Taylor, M.H., Katumwehe, A.B., Ajala, R.* (2025). Low-Density Perturbations in the Crust Indicate Potential for Blind Magmatism beneath Magma-Poor Rifts. *Tectonophysics*. doi.org/10.1016/j.tecto.2025.230881.
 49. Katumwehe, A., Atekwana, E., Mickus, K., Ngalamo, J.F.G., **Kolawole, F.** (2025). How do Propagating Rifts Breach Cratons? Insights from the Northwestern Branch of the East African Rift, Uganda. *Geophysical Journal International*, 242, 1–18. doi.org/10.1093/gji/ggaf214.
 48. Colet, M.[†], **Kolawole, F.**, Ajala, R.*, Delvaux, D., Nkodia, H.M.D. (2025). Active Crustal Deformation across a Nucleating Extensional Microplate, D. R. Congo, East Africa. *Tectonics*, 44(7), e2025TC008815. doi.org/10.1029/2025TC008815.
 47. Beaucé, E., Waldhauser, F., Schaff, D., Kim, W.Y., **Kolawole, F.** (2025). The 2024 Tewksbury, New Jersey seismic sequence revealed by local seismic networks and machine-learning-enhanced detection techniques. *Geophysical Research Letters*, v. 52 (12). DOI: 10.22541/au.173956793.37866560/v1.
 46. **Kolawole, F.**, Xue, L., Dulanya, Z. (2024). Rapid Versus Delayed Linkage and Coalescence of Propagating Rift Tips. *AGU Books: Extensional Tectonics: Continental Breakup to Formation of Oceanic Basins*. Doi: 10.1002/9781119773757.ch9.
 45. Njinju, E.A., **Kolawole, F.**, Stamps, S.D., Atekwana, E.A., Ghomsi, F.E.K., Atekwana, E.A. (2024). Intrarift fault interactions: Insights from coseismic stress redistribution from large seismogenic segment ruptures, Northern Malawi Rift. *Journal of Structural Geology*, v.191, 105326.
 44. Mfa, D., **Kolawole, F.**, Kgosidintsi, B., Ajala, R.*, Shemang, E. (2024). Long-Lived Seismic Instability of a Large Intraplate Brittle Shear Zone Revealed by Distributed Slip Zones and Paleoseismic Frictional Melt, Eastern Botswana. *Journal of Structural Geology*, v.191, 105324.
 43. Dulanya, Z., **Kolawole, F.**, Gallen, S.F., Williams, J.N. (2024). On the Timescales of Border Fault Growth: Pleistocene Slip Acceleration and Lateral Border Fault Propagation in the Lower Shire Graben, East Africa. *Tectonics*, 43(9), p.e2023TC008232.
 42. Grant, C.[‡], **Kolawole, F.**, Williams, J. (2024). Evolution of Incipient Rift Faulting in Magma-Poor Divergent Plate Boundaries: New Insights from the Incipient Okavango-Makgadikgadi Rift Zone, Botswana. *Earth and Planetary Science Letters*, 646, 118957.

41. Xue, L., Moucha, R., **Kolawole, F.**, Muirhead, J. D., Scholz, C. A. (2024). The influence of the strength of pre-existing crustal-scale weak zones on rift geometry and strain localization. *Tectonophysics*, 890, 230472.
40. **Kolawole, F.**, Ajala, R.* (2024). Propagating rifts: the roles of crustal damage and ascending mantle fluids, *EGU-Solid Earth*, 15, 747–762. Doi: 10.5194/se-15-747-2024.
39. Legre, J-J., Olugboji, T., Qin, Y., **Kolawole, F.** (2024). The Intraplate Stress Field of West Africa. *Geophysical Research Letters*, 51, e2023GL107614. Doi: 10.1029/2023GL107614.
38. Ajala, R.*, **Kolawole, F.**, Menke, B. (2024). Blind magmatism abets nonvolcanic continental rifting. *Nature Communications Earth & Environment*, 5(80). Doi: 10.1038/s43247-024-01244-7.
37. Li, P., Nakata, N., **Kolawole, F.**, Carpenter, B.M. (2023). Towards the Usage of Quarry Blasts as an Active Seismic Source for Subsurface Characterization and Imaging. *Geophysical Journal International*, 235(3), pp.2916-2926.
36. **Kolawole, F.**, Evenick, C. (2023). Global Distribution of Geothermal Gradients in Sedimentary Basins. *Geoscience Frontiers*, 14. Doi: 10.1016/j.gsf.2023.101685.
35. Shaban, S., **Kolawole, F.**, Scholz, C.A., (2023). The Deep Basin and Underlying Basement Structure of the Tanganyika Rift. *Tectonics*, 42, e2022TC007726. Doi: 10.1029/2022TC007726.
34. Ohenhen, L.O., Mayle, M., **Kolawole, F.**, Ismail, A., Atekwana, E.A. (2023). Exploring for Groundwater in Sub-Saharan Africa: Insights from Integrated Geophysical Characterization of Weathered Basement Aquifer System, Central Malawi. *Journal of Hydrology: Regional Studies*, 47 (101433).
33. Brune, S., **Kolawole, F.**, Olive, J-A., Stamps, D.S., Buck, R.W., Buiter, S.J.H., Furman, T., Shillington, D.J. (2023). Geodynamics of continental rift initiation and evolution. *Nature Reviews Earth & Environment*, 4(4), pp.235-253. Doi: 10.1038/s43017-023-00391-3.
32. Chisenga, S., **Kolawole, F.**, Atekwana, E.A., Yan, J., Rajaonarison, T., Shemang, E.M. (2023). Localization of Large Intraplate Earthquakes along Faulted Density-Contrast Boundaries: Insights from the 2017 Mw6.5 Botswana Earthquake. *Journal of African Earth Sciences*, 197, 104752. Doi: 10.1016/j.jafrearsci.2022.104752.
31. Williams, J.N., Wedmore, L.N.J., Fagereng, A., Werner, M.J., Mdala, H., Shillington, D., Scholz, C.A., **Kolawole, F.**, Wright, L.J.M., Biggs, J., Dulanya, Z., Mphepo, F., Chindandali, P.R.N. (2022). Geologic and geodetic constraints on the seismic hazard of Malawi's active faults: The Malawi Seismogenic Source Database (MSSD). *Natural Hazards and Earth System Sciences*, 22, 3607–3639.
30. Nkodia, H.M.D., Miyouna, T., **Kolawole, F.**, Boudzoumou, F., Loemba, A.P.R., Bazebizonza, N.C.T., Delvaux D. (2022). Seismogenic Fault Reactivation in Western Central Africa: Insights from Regional Stress Analyses. *Geochemistry, Geophysics, Geosystems*, 23 (11), e2022GC010377.
29. **Kolawole, F.**, Vick, T., Atekwana, E.A., Laó-Dávila, D.A., Costa, A.G., and Carpenter, B.M. (2022). Strain Localization and Migration During the Pulsed Lateral Propagation of the Shire Rift Zone, East Africa. *Tectonophysics*, 839, 229499. doi: 10.1016/j.tecto.2022.229499.
28. Dulanya, Z., Gallen, S.F., **Kolawole, F.**, Williams, J.N., Wedmore, L.N.J., Biggs, J., Fagereng, Å (2022). Knickpoint Morphotectonics of the Middle Shire River Basin: Implications for the Evolution of Rift Interaction Zones. *Basin Research*. doi: 10.1111/bre.12687.
27. Chase, B.F., **Kolawole, F.**, Atekwana, E.A., Carpenter, B.M., Turko, M., Abdelsalam, M.G., and Finn, C. (2022). The 180 km-Long Meers-Willow Fault System in the Southern

Oklahoma Aulacogen: A Potential US Mid-Continent Seismic Hazard. *GSA Bulletin*, 135(3-4), pp.663-677.

26. Williams, J.N., Wedmore, L.N.J., Scholz, C.A., **Kolawole, F.**, Wright, L.J.M., Shillington, D., Fagereng, A., Biggs, J., Mdala, H., Dulanya, Z., Mphepo, F., Chindandali, P.R.N., Werner, M.J. (2022). The Malawi Active Fault Database: an onshore-offshore database for regional assessment of seismic hazard and tectonic evolution. *Geochemistry, Geophysics, Geosystems*, 23, e2022GC010425. doi: 10.1029/2022GC010425 (Open access).
25. Ojo, O.O., Ohenhen, L., **Kolawole, F.**, Johnson, S.G., Chindandali, P.R., Atekwana, E.A., Laó-Dávila, D.A. (2022). Under-Displaced Normal Faults: Strain Accommodation along an Early-Stage Rift-Bounding Fault in the Southern Malawi Rift. *Frontiers in Earth Science*. v. 10. doi: 10.3389/feart.2022.846389 (Open access).
24. Olugboji, T.M., Shirzaei, M., Lu, Y., Adepelumi, A.A., and **Kolawole, F.** (2021) On the Origin of Orphan Tremors & Intraplate Seismicity in Western Africa. *Frontiers in Earth Science*. doi: 10.3389/feart.2021.716630
23. **Kolawole F.**, Firkins, M.C., Al Wahaibi, T.S., Atekwana, E.A., Soreghan, M.J. (2021). Rift interaction zones and the stages of rift linkage in active segmented continental rift systems. *Basin Research*. doi: 10.1111/bre.12592.
22. **Kolawole F.**, Phillips, T.B., Atekwana, E.A., Jackson, C.A-L. (2021). Structural Inheritance Controls Strain Distribution During Early Continental Rifting, Rukwa Rift. *Frontiers in Earth Science*. doi:10.3389/feart.2021.707869.
21. Hamilton, M., Carpenter, B.M., Johnston, C.S., **Kolawole, F.**, Evans, S.C. and Elmore, R.D. (2021). Fractured, altered, and faulted basement in northeastern Oklahoma: Implications for induced seismicity. *Journal of Structural Geology*, p.104330. doi:10.1016/j.jsg.2021.104330.
20. Kolawole O., Ispas I., **Kolawole F.**, Germay C., McLennan J.D. (2021). Mechanical zonation of rock properties and the development of fluid migration pathways: implications for enhanced geothermal systems in sedimentary-hosted geothermal reservoirs. *Geothermal Energy*, doi:10.1186/s40517-021-00195-y.
19. Patel, S., **Kolawole, F.**, Walter, J.I., Chen, X., and Marfurt, K.J. (2020). Seismic illumination of small-throw seismogenic faults, Anadarko Basin, Oklahoma. *Interpretation*, vol. 9, no. 2; p. SE35–SE51, doi:10.1190/INT-2020-0135.1.
18. Firkins, M., **Kolawole, F.**, Marfurt, K.J., and Carpenter, B.M. (2020). Attribute-assisted characterization of basement faulting and the associated sedimentary sequence deformation in north-central Oklahoma. *Interpretation*, 8(4), SP175-SP189, doi:10.1190/INT-2020-0053.1.
17. Clairmont, R., **Kolawole, F.**, Omale, A.P., and Bedle, H. (2020). Controls of pre-existing structures on clinoform architecture and the associated progradational system elements. *Basin Research*, 00, 1– 28, doi:10.1111/bre.12487.
16. **Kolawole, F.**, Carpenter, B.M., and Simpson-Turko, M. (2020) Basement-controlled deformation of sedimentary sequences, Anadarko Shelf, Oklahoma. *Basin Research*, 32, 1365– 1387, doi:10.1111/bre.12433.
15. Qin, Y., Chen, X., Walter, J.I., Haffener, J., Trugman, D.T., Carpenter, B.M., Weingarten, M., and **Kolawole, F.** (2019) Deciphering the stress state of seismogenic faults in Oklahoma and southern Kansas based on an improved stress map. *Journal of Geophysical Research: Solid Earth*, 124, 12920– 12934, doi:10.1029/2019JB018377.
14. Njinju, E. A., Atekwana, E. A., Stamps, D. S., Abdelsalam, M. G., Atekwana, E. A., Mickus, K. L., Fishwick, S., **Kolawole, F.**, Rajaonarison, T. A., and Nyalugwe, V. N. (2019).

Lithospheric structure of the Malawi Rift: Implications for magma-poor rifting processes. *Tectonics*, 38, doi: 10.1029/2019TC005549.

13. **Kolawole, F.**, Johnston, C.S., Morgan, C.B., Chang, J.C., Marfurt, K.J., Lockner, D.A., Reches, Z., and Carpenter, B.M. (2019) The susceptibility of Oklahoma's basement to seismic reactivation. *Nature Geoscience*, 12(10), 839-844, doi: 10.1038/s41561-019-0440-5.
12. Njinju, E. A., **Kolawole, F.**, Atekwana, E.A., Stamps, D.S., Atekwana, E.A., Abdelsalam, M.G., Mickus, K.L. (2019). Terrestrial heat flow in the Malawi Rifted Zone, East Africa: Implications for tectono-thermal inheritance in continental rift basins. *Journal of Volcanology and Geothermal Research*, 387, 106656, doi:10.1016/j.jvolgeores.2019.07.023.
11. Heilman, E., **Kolawole, F.**, Atekwana, E.A. and Mayle, M. (2019). Controls of basement fabric on the linkage of rift segments. *Tectonics*, 38(4), 1337-1366, doi:10.1029/2018TC005362.
10. Qin, Y., Chen, X., Carpenter, B.M., and **Kolawole, F.** (2018). Coulomb stress transfer influences fault reactivation in areas of wastewater injection. *Geophysical Research Letters*, doi:10.1029/2018GL079713.
9. **Kolawole, F.**, Atekwana, E.A., Laó-Dávila, D.A., Abdel Salam, M.G., Chindandali, P.R., Salima, J., and Kalindekafe, L. (2018). Active deformation of Malawi rift's north basin Hinge zone modulated by reactivation of pre-existing Precambrian Shear zone fabric. *Tectonics*, 37(3), 683-704, doi:10.1002/2017TC004628.
8. **Kolawole, F.**, Atekwana, E.A., Laó-Dávila, D.A., Abdel Salam, M.G., Chindandali, P.R., Salima, J., and Kalindekafe, L. (2018). High-resolution electrical resistivity and aeromagnetic imaging reveal the causative fault of the 2009 M w 6.0 Karonga, Malawi earthquake. *Geophysical Journal International*, 213(2), 1412-1425, doi:10.1093/gji/ggy066.
7. **Kolawole, F.**, Atekwana, E.A., Malloy, S., Stamps, D.S., Grandin, R., Abdel Salam, M.G., Leseane, K. and Shemang, E.M. (2017). Aeromagnetic, gravity, and Differential Interferometric Synthetic Aperture Radar analyses reveal the causative fault of the 3 April 2017 Mw 6.5 Moiyabana, Botswana, earthquake. *Geophysical Research Letters*, 44(17), pp.8837-8846, doi:10.1002/2017GL074620.
6. **Kolawole, F.**, Atekwana, E.A., and Ismail, A. (2017). Near-surface electrical resistivity investigation of coseismic liquefaction-induced ground deformation associated with the 2016 Mw 5.8 Pawnee, Oklahoma, earthquake. *Seismological Research Letters*, 88(4), 1017-1023, doi:10.1785/0220170004.
5. Anifowose, A.Y.B., and **Kolawole, F.** (2014). Appraisal of the geotourism potentials of the Idanre Hills, Nigeria. *Geoheritage*, 6(3), 193-203, doi:10.1007/s12371-014-0100-5.
4. Anifowose, A.Y.B., and **Kolawole, F.** (2012). Emplacement Tectonics of Idanre Batholith, West Africa. *Comunicação Geológicas*, 99(2).
3. Anifowose, A.Y.B., and **Kolawole, F.** (2012). Tectono-hydrological study of Akure metropolis, Southwestern Nigeria. *Special Publication of the Nigerian Association of Hydrological Sciences*, 106-120.
2. **Kolawole, F.**, and Anifowose, A.Y.B. (2011). Talus caves: Geotourist attractions formed by spheroidal and exfoliation weathering on Akure-Ado Inselbergs, Southwestern Nigeria. *Ethiopian Journal of Environmental Studies and Management*, 4(3), 1-6, doi:10.4314/ejesm.v4i3.1.
1. **Kolawole, F.**, and Anifowose, A.Y.B. (2011). Remote sensing analysis of a dextral discontinuity along Ifewara-Zungeru area, Nigeria, West Africa. *Indian Journal of Science and Technology*, 4(1), 46-51.

Others: Thesis, Conference Extended Abstracts, Data Publications, and Magazine Articles

11. **Kolawole, F.**, & Ajala, R. (2025). Final report for 'Multi-Resolution and -Scale Synthesis of Cascadia Earth Models'. Zenodo. <https://doi.org/10.5281/zenodo.17048720>.
10. **Kolawole, F.**, Kiberu, J. M., & Atekwana, E. (2025). Geological Paleoslip Fault Data for the Albertine Rift, Uganda [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.15079001>
9. **Kolawole, F.**, Nthaba, B., & Kgosidintsi, B. (2025). Data Supporting Incipient Rifting of the Kalahari Craton: Reactivation of Mesozoic Failed Rifts in Southern Africa's Cratonic Interior' [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.14631315>
8. **Kolawole, F.**, & Foster-Baril, Z. (2024). Fracture Data Supporting: 'The 2024 Mw4.8 New Jersey Intraplate Earthquake: Preferential Rupture of an Immature Fault in Frictionally Unstable Basement Rocks' [Data set]. Zenodo. <https://doi.org/10.5281/zenodo.14104727>
7. **Kolawole, F.**, Evenick, J.C. (2024). Data Supporting Global Distribution of Geothermal Gradients in Sedimentary Basins. Zenodo. url: <https://zenodo.org/records/11258453>
6. **Kolawole, F.** (2020). The Roles of Structural Inheritance in Regions of Induced Seismicity and Active Tectonics. *PhD Dissertation, University of Oklahoma*.
5. **Kolawole, F.**, Carpenter, B.M., and Turko Simpson, M. (2019) The Intra-Basement Reflectors in the STACK Area of Oklahoma: What are they really? *AAPG Explorer, April 2019*.
4. Chopra, S., Marfurt, K.J., **Kolawole, F.**, and Carpenter B.M. (2018). Nemaha strike-slip fault expressions on 3D seismic data in the SCOOP trend of Oklahoma. *AAPG Explorer, June 2018*.
3. Atekwana, E.A., **Kolawole, F.**, Ismail, A., and Harding, J.K. (2017). Assessing earthquake rupture zones: An integrated Electrical and Aeromagnetic Approach. In International Conference on Engineering Geophysics, Al Ain, United Arab Emirates, 9-12 October 2017, *Society of Exploration Geophysicists (SEG)*.
2. **Kolawole, F.** (2017). Mw 6.0 Karonga, Malawi Earthquake Occurred on Cenozoic Faults That Reactivated Precambrian Shear Zone: Evidence from Aeromagnetic and Electrical Resistivity Imaging. *MSc Thesis, Oklahoma State University*.
1. **Kolawole, F.** (2008). Brittle Deformation of a Basement Massif in southwest Nigeria, Idanre Batholith. *BSc Thesis, Federal University of Technology, Akure, Nigeria*.

Invited Lectures

----- 2026-----

12/03/2026 – Stony Brook University, New York

08/03/2026 – 2026 Structural Geology and Tectonics Forum, Northfield, Minnesota

04/08/2026 – Massachusetts Institute of Technology (MIT)

01/23/2026 – Int. Conference on Advances in Earthquake Science 2026, Gujarat, India

----- 2025-----

12/03/2025 - Lamont-Doherty Public Lecture, Columbia University

11/07/2025 – Center for Earthquake Research and Information (CERI), Univ. of Memphis

10/08/2025 – University of Bristol, UK

10/06/2025 – Oxford University, UK

10/02/2025 – Imperial College London, UK
10/01/2025 – University of Southampton, UK
08/06/2025 – Keynote speaker at New York Earth Science Teachers Association (NYESTA) Conference
04/14/2025 – Panelist for keynote session at 2025 SSA Annual meeting, Baltimore
04/17/2025 – 2025 SSA Annual Meeting, Baltimore, session “Earthquakes, Lithospheric Structure, and Dynamics in Stable Continental Region”
02/20/2025 – University of Pittsburg, Pennsylvania

---- 2024----

09/23/2024 – GSA Annual Conference, Anaheim, CA
09/13/2024 – Science Research Fellows Meeting, Columbia University, NY
09/10/2024 – Statewide California Earthquake Center (SCEC)
08/06/2024 – Gordon Research Conference on Rock Deformation, Maine
07/8/2024 – University of Dar es Salaam, Tanzania
06/26/2024 – 2024 Structural Geology and Tectonics Forum, Bellingham, Washington
05/14/2024 – Botswana International University of Science & Technology, Botswana
04/26/2024 – Binghamton University, New York

---- 2023----

12/12/2023 - AGU Fall Meeting 2023, San Francisco
11/09/2023 - University of Washington, Seattle
07/25/2023 - Southern East Africa Rift System Workshop, Blantyre, Malawi
04/12/2023 - CU R&D: Research and Diversity at Columbia University
03/31/2023 - McGill University, Canada

---- 2022----

10/06/2022 - New Mexico Tech.
09/29/2022 - Syracuse University
09/23/2022 - University of Massachusetts at Amherst
08/07/2022 - Gordon Research Seminar (GRS): Invited panelist
05/26/2022 - PEMEX Mexico
05/11/2022 - AAPG Petroleum Structure and Geomechanics Division
04/08/2022 - Geological Survey of Brazil
02/25/2022 - Georgia Tech.
02/08/2022 - Dallas Geological Society (DGS)

---- 2021----

12/13/2021 - AGU Fall Meeting, Session T001 “Advances in our understanding of magma-poor and magma-rich rifting processes”
11/19/2021 - Tulane University
10/11/2021 - GSA Annual Meeting (Connects 2021)
09/16/2021 - University of Alaska Anchorage
06/30/2021 - United States Geological Survey, California
06/09/2021 - NSF/GeoPRISMS Rift2Ridge Margins Workshop
05/11/2021 - Ruhr-Universität Bochum, Germany
04/02/2021 - Virginia Tech.

03/11/2021 - University of Texas at Austin
03/09/2021 - University of St. Andrews, U.K.
03/09/2021 - Arizona State University
03/03/2021 - University of Oklahoma
03/01/2021 - Columbia University
02/24/2021 - University of Cambridge, U.K.
02/10/2021 - University of California, Davis (UC Davis)
01/25/2021 - Utah State University (USU)
 -----2020-----
12/17/2020 - AGU Fall Meeting, PPEM Session MR028
11/02/2020 - Rifted Margin Webinars, GFZ Potsdam

Academic Service and Leadership

NSF Grant Review Panelist

Fall 2024

Journal Editing:

- **Associate Editor** 2021 - Current
Geochemistry, Geophysics, Geosystems (AGU journal)
- **Associate Editor** 2024 - 2025
The Journal of Geology
- **Associate Editor** 2022 - 2024
Frontiers in Earth Science - *Structural Geology & Tectonics*
- **Editorial Board Member** 2020 - 2023
ES³ (The Geological Society of London Journal)

Journal Reviewing:

- Science
- Nature
- Tectonics
- Earth and Planetary Physics
- EGU Solid Earth
- Journal of African Earth Sciences
- Tectonophysics
- Basin Research
- Italian Journal of Geosciences

Community Leadership Roles via Scientific Meeting Convening:

- *Convener*, AGU 2022 session T010: From Rift to Ridge: The Roles of Faulting, Fluids, Surface Processes, and Tectonic Inheritance
- *Co-Convener*, AGU 2021 session T023: Recent Advances and Future Directions in Studying the Geology and Tectonics of Africa
- *Co-Convener*, AGU 2020 session T028: Recent Advances and Future Directions in Studying the Tectonics and Geodynamics of Africa
- *Co-Convener*, GSA 2020 session T21: The Geology of Induced Seismicity
- *Organizing Committee*, GFZ Rifts and Rifted Margins Seminar 2021 - Present
- *Coordinating committee*, EGU TS-Must Read Papers 2020 - 2020
- *Outdoor Trip Coordinator*, AAPG OSU Student Chapter 2016 - 2017

Scientific Community Memberships

Member, American Geophysical Union (AGU)

Member, Geological Society of America (GSA)

Conference Abstracts & Presentations (last 3 yrs): *Postdoc, [†]PhD student, [‡]Undergraduate student in my lab group.

-----2024-----

[†]Colet, M., **Kolawole, F.** (2024). Incipient Reactivation of Failed Rifts and Initiation of a Microplate in Eastern DRC: A Widening East African Rift System? AGU24 abstract #V51E-3116.

Kolawole, F., *Foster-Baril, Z., Seeber, L., Tielke, J.A., Prakash, A., [†]Colet, M., Beaucé, E., Kim, W.Y., *Ajala, R., McCarthy, C. and Waldhauser, F. (2024). The 2024 M4.8 New Jersey Earthquake: Reactivation of a Rough Immature Fault in Frictionally Unstable Basement Rocks. AGU24 abstract #T53B-3216.

Beaucé, E., Waldhauser, F., Schaff, D., Kim, W.Y., **Kolawole, F.** (2024). The 2024 Tewksbury, New Jersey seismic sequence revealed by machine-learning and cross-correlation detection techniques. AGU24 abstract #T43A-3289.

*Ajala, R., **Kolawole, F.**, and Lekic, V. (2024). Gradient-Based Transdimensional Inversion of Plane Wave Records. AGU24 abstract #S41E-3350.

*Ajala, R., **Kolawole, F.**, Legre, J.J., Olugboji, T.M., van Herwaarden, D.P. and Fichtner, A. (2024). Lithosphere-Asthenosphere Boundary Variability in the Magma-Poor Branch of the East African Rift. AGU24 abstract #T22A-07.

*Foster-Baril, Z., Stockli, D.F., **Kolawole, F.**, Olsen, P.E. and Fildani, A. (2024). Post-necking phase reactivation of the proximal domain, Fundy Basin, Canada. AGU24 abstract #T24B-04.

Sharman, E., Henke, Z., *Ajala, R., **Kolawole, F.**, and van der Lee, S. (2024). Replicability of SKS-wave Splitting in Three Decades of High-quality Broadband Seismic Data. AGU24 abstract #D123B-3184.

Legre, J.J., Qin, Y., **Kolawole, F.**, and Olugboji, T. (2024). The intraplate stress field of West Africa. AGU24 abstract #T43A-3294.

Okoko, G., Terry, O., **Kolawole, F.**, Kelly, S., Schmitt, D.R. and Goldberg, D. (2024). Integrating Fracture Networks, NMR Porosity, and Ultrasonic Phase Velocity Measurements for Enhanced Carbon Storage in Preakness Basalts. AGU24 abstract #GC51A-05.

Kruger, I., Tielke, J.A., **Kolawole, F.**, Prakash, A., McCarthy, C., and Jansen, R. (2024). Frictional Properties of Simulated Fault Gouge from the Ramapo Seismic Zone, NY/NJ. AGU24 abstract #MR33B-3032.

Kabanda, A., van der Lee, S., Stamps, D.S., Atekwana, E.A., Nyago, J., Tugume, F., Kabenge, L., Babirye, G.P., Fishwick, S., **Kolawole, F.**, and Evans, R.L. (2024). Crustal Structure Around the Northern Western Branch of the East African Rift System from Receiver Function Analysis. AGU24 abstract #T22A-05.

Njinju, E.A., Atekwana, E.A., Atekwana, E.A., Stamps, D.S., van der Lee, S., Evans, R.L., Taylor, M.H., Katumwehe, A.B., **Kolawole, F.**, and Ajala, R.* (2024). Low-Density Perturbations in the Crust Indicate Potential for Blind Magmatism Beneath Magma-poor Rifts. AGU24 abstract #T33C-3225.

Abbey, O., Katumwehe, A.B., Atekwana, E.A., Stamps, D.S., Scholz, C.A., **Kolawole, F.**, van der Lee, S., Evans, R.L., Taylor, M.H., Atekwana, E.A. and Mwongyera, H., Temporal Evolution of

Rift Faulting in the Non-Volcanic Southern Albertine Graben, Uganda. *AGU24 abstract # V54A-03*.

Kornfeld, L., Kolawole, F. (2024). Fault geometry and kinematic controls on fault rock evolution in extensional basins. GSA Connects, Geological Society of America Annual meeting, Anaheim, California. *Poster # 268-8*.

-----2023-----

Kolawole, F., *Ajala, R., Van Wijk, J. (2023). Lateral Rift Propagation: A Top-Down or Bottom-Up Process? *AGU Fall Meeting abstract #T11A-01*.

‡Watson, K., **Kolawole, F.** (2023). Incipient Tectonic Reactivation of a 'Failed' Rift, Luama Basin, DRC. *AGU Fall Meeting abstract #T13C-0231*.

*Ajala, R., **Kolawole, F.**, van Herwaarden, D., Fichtner, A. (2023). Upper Mantle Heterogeneity Along-Axis of the Amagmatic East African Rift's Western Branch. *AGU Fall Meeting abstract #T13C-0235*.

‡Grant, C., **Kolawole, F.**, Williams, J. (2023). Evolution of Continental Rift Faulting: New Insights from the Incipient Okavango-Makgadikgadi Rift Zone, Botswana. *AGU Fall Meeting abstract #T13C-0230*.

†Rowan, C.M., Becel, A., **Kolawole, F.** (2023). Strain Migration and Localization in an Active Continental Rift: A Case Study from the Magma-rich Turkana Rift Zone, Kenya. *AGU Fall Meeting abstract #T13C-0239*.

†Le, H., **Kolawole, F.**, Key, K., Mayle, M., Atekwana, E.A., Evans, R.L. (2023). Minimal Downward Saline Fluid Migration Near the Largest Injection-Induced Earthquake, Oklahoma. *AGU Fall Meeting abstract #H51Q-1319*.

Tielke, J.A., Verdecchia, A., Pederson, C., McCarthy, C., **Kolawole, F.** (2023). Frictional behavior of hydrothermally-altered gouges: implications for fault stability of geothermal carbonate reservoirs. *AGU Fall Meeting abstract #MR53B-0046*.

Mwongyera, H., Taylor, M.H., Mongovin, D., Stamps, S.D., Atekwana, E.A., Atekwana, E.A., **Kolawole, F.** et al. (2023). Magnitude and Rate of Rift Flank Uplift Along the Nkusi River, Albertine Rift, Uganda. *AGU Fall Meeting abstract #T13C-0232*.