

Meritxell Colet

Ph.D. Candidate | Dept. Earth & Environmental Sciences | Columbia University
E-mail: mcolet@ldeo.columbia.edu | Website: www.meritxellcolet.com

Education

Exp. 2028	Ph.D. in Geophysics Columbia University, NY, USA Emphases: Seismology, Structural & Field Geology
2025	M.A. in Geophysics Columbia University, NY, USA Emphases: Structural Geology, Active Tectonics
2020	B.A. in Physics , minor in Art History Carleton College, MN, USA

Research Experience

2023 –	Graduate Researcher Columbia University, NY, USA Advisor: Dr. Folarin Kolawole
2020 – 2023	Field Systems Engineer and Analyst Infrasound Laboratory, Hawai‘i Institute of Geophysics and Planetology, HI, USA
2019 <i>Summer</i>	Undergrad Research Assistant University of Hawai‘i, HI, USA National Science Foundation - Research Experience for Undergraduates (NSF-REU) Project: Infrasound, geodetic, and seismic data from Kīlauea 2018 caldera collapse Advisor: Dr. Rhett Butler
2017, 2018 <i>Summer</i>	Carleton College, MN, USA and IFISC, IB, Spain Project: Complex dynamics of semiconductor lasers with state-dependent delay Advisors: Drs. Andrés Aragoneses, Ingo Fischer, Miguel Soriano

Publications

In review:

2025	Kolawole, F., Ohnenhen, L., Colet, M. , Yiannias, M., Le, H. d., Ajala, R., Ramarolahy, A., Kornfeld, L., Mitchell, A. S., Tobe, J. T. Geomorphic and Geophysical Evidence for Late Quaternary Surface-Rupturing Earthquakes in Northeastern United States. In review at <i>Seismological Research Letters</i> .
2025	Kolawole, F., Foster-Baril, Z., Seeber, L., Tielke, J. A., Prakash, A., Colet, M. , Beaucé, E., Kim, W., Ajala, R., McCarthy, C. & Waldhauser, F. The 2024 Mw4.8 New Jersey Intraplate Earthquake: Preferential Rupture of an Immature Rough Fault in Frictionally Unstable Basement Rocks. In review at <i>Geophysical Research Letters</i> . EES Open Archive Preprint DOI: 10.22541/au.173204170.01301789/v1

Published (Peer-Reviewed):

- [3] 2025 **Colet, M.**, Kolawole, F., Ajala, R., Delvaux, D., & Nkodia, H. M. D-V. (2025) Active Crustal Deformation across a Nucleating Extensional Microplate, D. R. Congo, East Africa. *Tectonics*, 44, e2025TC008815. <https://doi.org/10.1029/2025TC008815>

- [2] 2022 Garcés, M. A., Bowman, D., Zeiler, C., Christe, A., Yoshiyama, T., Williams, B., **Colet, M.**, Takazawa, S., & Popenhagen, S. (2022). Skyfall: Signal Fusion of a Smartphone Falling from the Stratosphere. *Signals*, 3(2), 209-234. <https://doi.org/10.3390/signals3020014>
- [1] 2018 **Colet, M. & Aragoneses, A.** (2018). Forecasting Extreme Events in the Complex Dynamics of a Semiconductor Laser with Feedback. *Scientific Reports*, 8, 1074. [https://doi.org/10.1038/s41598-018-29110-5 \(Undergraduate research\)](https://doi.org/10.1038/s41598-018-29110-5)

Fellowships & Scholarships

- 2025 **Lewis and Clark Fund for Exploration and Field Research**, Columbia University (\$5200)
2025 **GSA Graduate Student Research Grant**, Columbia University (\$2450)
2025 **AAPG Foundation Grants-in-Aid**, Columbia University (\$1000)
2025 **CRESCENT Geoscience Professional Development Fellowship**, Columbia Uni. (\$900)
2018 **NASA's MN Space Grant Consortium**, Carleton College (\$1000)
2017, 2018 **Townsley Endowment for the Sciences**, Carleton College (\$5000 each year)

Honors & Awards

- 2025 **NSF-GRFP Honorable Mention**, Columbia University
2020 **Sigma Xi**, Carleton College
2017 – 2020 **FOCUS Cohort Class of 2020**, Carleton College

Teaching & Mentoring

- 2026 **Spring** **Teaching Assistant**, Dept. of Earth and Env. Sciences, Columbia University
EESC2200: Earth's Environmental Systems: The Solid Earth (including laboratory section)
- 2025 **Summer** **Co-mentor**, Earth Intern Program, Columbia University
PI: Folarin Kolawole, student: Mia Yiannis
Project: How do faults activate during the initiation of a ‘baby’ plate boundary?
- 2025 **Spring** **Teaching Assistant**, Dept. of Earth and Env. Sciences, Columbia University
EESC1010: Geological Excursion to Death Valley, California
- 2022 **Summer** **Co-mentor**, Earth Science on Volcanic Islands NSF-REU, University of Hawai‘i
PI: Milton Garcés, student: Nicholas Forcone
Project: Secondary Lamb Waves from the 2022 Tonga Eruption
- 2017 – 2020 **Teaching Assistant**, Spanish Department, Carleton College

Service

Professional

- 2025 – **Tectonophysics Executive Committee Student Representative**, AGU
2025 – **Tectonophysics Early Career and OSPA Committee**, AGU
2025 **Session co-convener (T51B)**, AGU Fall Meeting

University

- 2025 – **Student Talk Series Organizer**, Columbia University
2024 **First-Year Colloquium Organizer**, Columbia University
2017 – 2020 **Physicists from Underrepresented Genders**, Carleton College

Community

- 2026 **Earth2Class**, Lamont-Doherty Earth Observatory
2023 **Open House**, Lamont-Doherty Earth Observatory

Conference Presentations

– 2026 –

- [13] Wang, K., **Colet, M.**, Waldhauser, F., Schaff, D., Tolstoy, M., Wilcock, W., & Tan, Y. J. (2026). Machine-Learning-Enhanced Seismic Monitoring with Cabled and Temporary OBS Array Reveals Caldera-Ridge Interactions at Axial Seamount. (*2026 CGU Annual Meeting*)
- [12] Waldhauser, F., Wang, K., **Colet, M.**, Wilcock, W. S. D., Zhang, M., Tan, Y. J., & Wang, P. (2026). Detection and monitoring of volcano-seismic processes during an eruption cycle at Axial Seamount (*2026 SSA poster*)
- [11] Chang, H., Lloyd, A., Mitchell, L., Waldhauser, F., Kolawole, F., Jin, G., & **Colet, M.** (2026). Using telecom cable with ambient-noise interferometry for urban seismic hazard assessment: A case study in NYC. (*2026 SSA poster*)

– 2025 –

- [10] **Colet, M.**, Kolawole, F., Ajala, R., Waldhauser, F., & Wang, K. (2025). Spatiotemporal Seismicity Patterns and Strain Release in Active Magma-Poor Rifts, Resolved with a Machine-Learning-Enhanced Earthquake Catalog. (*2025 SCEC Annual Meeting poster #30, GSA25 poster #179, AGU25 poster #S43D-0284*)
- [9] **Colet, M.**, Wang, K., Waldhauser, F., Wilcock, W. SD., Tolstoy, M., Tan, Y. J., & Schaff, D. P. (2025). Insights into caldera-ridge interactions and eruption preparation at Axial Seamount from machine-learning analysis of cable and temporary OBS data (*AGU25 poster #T31C-0176*)
- [8] Yiannias, M., Kolawole, F., & **Colet, M.** (2025). Investigation of Active Crustal Deformation Across the Incipient Mweru-Wantipa Rift, NM Zambia, East Africa (*GSA25 poster #181*)

– 2024 –

- [7] **Colet, M.** & Kolawole, F. (2024). Incipient Reactivation of ‘Failed’ Rifts in East Africa: Insights from Surface-Breaking Brittle Faulting. (*Gordon’s Rock Deformation Conference poster # 30, AGU24 poster #V51E-3116*).
- [6] Kolawole, F., Foster-Baril, Z., Seeber, L., Tielke, J.A., Prakash, A., **Colet, M.**, Beaucé, E., Kim, W.Y., Ajala, R., McCarthy, C., & Waldhauser, F. (2024). The 2024 M4.8 New Jersey Earthquake: Reactivation of a Rough Immature Fault in Frictionally Unstable Basement Rocks. (*AGU24 poster #T53B-3216*).
- [5] Beaucé, E., Waldhauser, F., Schaff, D., Kim, W.Y., Wang, K., Kolawole, F., **Colet, M.**, Ajala, R., Bacon, C. A., Lloyd, A., & Powell, E. M. (2024). The 2024 Tewksbury, New Jersey seismic sequence revealed by machine-learning and cross-correlation detection techniques. (*AGU24 poster #T43A-3289*).

– Before 2023 –

- [4] Eckel, F., Garcés, M., & **Colet, M.** (2022). The 15 January 2022 Hunga Tonga event: using Open Source to observe a volcanic eruption on a global scale in near real time. (*EGU poster #EGU22-13582*).
- [3] **Colet, M.** & Butler, R. (2019). Analysing infrasound, geodetic, and seismic data from Kīlauea 2018 caldera collapse. (*AGU19 poster #V43C-0202*) (*Undergraduate research*).

- [2] **Colet, M.**, Fischer, I., & Soriano, M. C. (2018). Analysing the complex dynamics of semiconductor lasers with state-dependent delay. *Summer Research Symposium, Carleton College (poster) (Undergraduate research)*.
- [1] **Colet, M.** & Aragoneses, A. (2017). Forecasting Extreme Events in the Complex Dynamics of a Semiconductor Laser with Feedback. *Summer Research Symposium, Carleton College (poster) (Undergraduate research)*.

Fieldwork

2026	Southern San Andreas Fault, California, US (4 days) Structural mapping and rock sampling
2025	125th Fault, New York, US (1 day) Testing Distributed Acoustic Sensing (DAS) around the Columbia University campus Electrical Resistivity Tomography, New Jersey, US (2 days) Deployment of ERT on paleoseismic fault scarps
2024	Axial submarine volcano, offshore Oregon, US (1 week) Recovery of ocean-bottom seismometers aboard the R/V Sally Ride Mtaka Rift, Tanzania (2 weeks) Structural mapping and rock sampling Lamont Seismometers Maintenance, New Jersey, US Seismometers deployed to record aftershocks of the 2024 Mw4.8 Tewksbury Earthquake
2019	Submarine volcanic rift zone west of Kaho'olawe, Hawai'i (1 week) Geodetic mapping survey and dredging aboard the R/V Kilo Moana San Andreas Fault, California, US (1 week) Structural mapping survey