Meritxell Colet

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Education

Exp. 2028 — **Ph.D. in Geophysics**
Columbia University, NY, USA
Emphases: Structural & Field Geology, Seismology

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

Undergrad Research Assistant
2019 *Summer* — 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 *Summer* — 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:

2026 — **Colet, M.**, Kolawole, F., Ajala, R., Wang, K., Lemna, O. S., Mulibo, G. D., Waldhauser, F., & Buck, W. R. Modes of active early-stage rifting in cratonic versus non-cratonic lithosphere, East Africa. Submitted.

2026 — Kolawole, F., Ohenhen, 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 *Seismological Research Letters.*

2026 — 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 revision at *JGR-Solid Earth.* 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)*

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 U. ($900)
2025 **ASGC Travel Grant**, Columbia University ($445)
2023 **Dean's Fellowship**, Columbia University ($15,000)
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

2025, 2026 *Spring* **Teaching Assistant,** Dept. of Earth and Env. Sciences, Columbia University
EESC1010: Geological Excursion to Death Valley, California
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 Yiannias
Project: How do faults activate during the initiation of a 'baby' plate boundary?

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 **Metropolitan Detention Center Spanish Science Lecture**, Brooklyn, USA
2026 **Lamont Summer Interns Lecture**, Lamont-Doherty Earth Observatory
2026 **Earth2Class on 'How does a failed rift wake up'**, Lamont-Doherty Earth Observatory
2023 **Open House**, Lamont-Doherty Earth Observatory

Invited Talks

2026/08 (Upcoming) Structural Geology and Tectonics Forum, MN, USA
2026/05 Rift and Rifted Margins Online Seminar, GFZ Postdam
2024/07 University of Dar es Salaam, Tanzania

Conference Presentations

– 2026 –

[14] 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)*

[13] 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, talk)*

[12] Zhang, M., Wilcock, S. W., Waldhauser, W., Wang, K., **Colet, M.**, Tolstoy, M., & Tan, Y. J. (2026). New Focal Mechanism Constraints on the Caldera Ring Fault System at Axial Seamount from an Expanded OBS Network. *(2026 SSA, talk)*

[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. *(2024 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 Kahoʻolawe, Hawaiʻi** (1 week)
Geodetic mapping survey and dredging aboard the R/V Kilo Moana

San Andreas Fault, California, US (1 week)
Structural mapping survey