

# Meritxell Colet

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## Education

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

## Research Experience

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2023 –	<b>Graduate Researcher</b> Columbia University, NY, USA Advisor: Dr. Folarin Kolawole
2020 – 2023	<b>Field Systems Engineer and Analyst</b> Infrasound Laboratory, Hawai‘i Institute of Geophysics and Planetology, HI, USA
2019	<b>Undergrad Research Assistant</b> University of Hawai‘i, HI, USA
Summer	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	Carleton College, MN, USA and IFISC, IB, Spain
Summer	Project: Complex dynamics of semiconductor lasers with state-dependent delay Advisors: Drs. Andrés Aragoneses, Ingo Fischer, Miguel Soriano

## Publications

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### In review:

2025	Kolawole, F., Ohnenhen, L., <b>Colet, M.</b> , 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., <b>Colet, M.</b> , 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	<b>Colet, M.</b> , 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. <i>Tectonics</i> , 44, e2025TC008815. <a href="https://doi.org/10.1029/2025TC008815">https://doi.org/10.1029/2025TC008815</a>
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- [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*)

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## Fellowships and 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)

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## Honors and Awards

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

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## Teaching & Mentoring

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

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## 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

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– 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

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- 2026            **Southern San Andreas Fault, California, US** (4 days)  
                  Structural mapping and rock sampling
- 2025            **125<sup>th</sup> 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