Cullen Molitor

Burlingame, CA 94010
(269) 277-1463
cullen.molitor@gmail.com

Education

2022 **Master of Environmental Data Science**, *Bren School of Environmental Science & Management*, University of California Santa Barbara

2014 **B.A. in History**, *Humboldt State University*
Mathematics and Scientific Diving Minors

2018 **Certificate of Marine Diving Technology**, *Santa Barbara City College*

Recent Work Experience

2024–Present **Data Scientist**, *University of California*, Berkeley
Investigating the impacts of climate change on human well-being and the environment with remote sensing and machine learning at the Center for Effective Global Action.

2023–2024 **Data Scientist**, *University of California*, Santa Barbara
Mapping the footprint of artisanal scale mining in Africa using remote sensing and machine learning at the Environmental Markets Lab.

2022 **Data Science Fellow**, *University of California*, Santa Barbara
Preparing, processing, and synthesizing of the data used to calculate the Ocean Health Index scores at the National Center for Ecological Analysis and Synthesis.

2021 **Teaching Assistant**, *University of California*, Santa Barbara
Twentieth-Century United States Economic History at the Department of Economics

2017–2021 **Biological Science Technician**, *Channel Islands National Park*, Ventura, CA
Scientific diver for the Kelp Forest Monitoring Program for five seasons.

Awards

2022 MEDS Academic Achievement Award

2021 MEDS Recruitment Fellowship

2021 Advanced Technology Grant

2021 National Park Service STAR award

2021 PADI Elite Instructor award

Publications and Creative Works

Refereed

2026 Carlson, C.J., Carleton, T., Odoulami, R.C., **Molitor, C.**, Trisos, C.H. "The past and future impact of climate change on childhood malaria in Africa." *Nature*, 657(8131), 487–494. doi.org/10.1038/s41586-026-10840-w

2026 Betti, L., Sanni, F., Sogoyou, G. Z., Agbagla, T., **Molitor, C.**, Carleton, T., Rolf, E. "Mapping on a Budget: Optimizing Spatial Data Collection for ML" *Proceedings of the AAAI Conference on Artificial Intelligence*, 40(45), 38233-38241. doi.org/10.1609/aaai.v40i45.41162

2026 Frazier, A.E., Nelson, T., Kedron, P., et al. (31 authors, incl. **Molitor, C.**) "Advancing Conservation Science and Practice through a Geographic Approach: Platforms, Personnel, and Partnerships" *Conservation Science and Practice*, e70410. doi.org/10.1111/csp2.70410

2025 **Molitor, C.**, Cohen, J., Lewin, G., Cognac, S., Hadunka, P., Proctor, J., Carleton, T. "Monitoring Maize Yield Variability over Space and Time with Unsupervised Satellite Imagery Features" *Remote Sensing*, 17(21). doi.org/10.3390/rs17213641

2024 Ogunniyi, O.E., Carleton, T., Carlson, C., Odoulami, R., Trisos, C., Agboka, K.M., Donat, M., Delgado, C., **Molitor, C.**. "Decadal Prediction of Climate Change Impacts on Childhood Malaria in Africa." *AGU*. agu.confex.com/agu/agu24/meetingapp.cgi/Paper/1674891

In review

In review Christensen, D., Carleton, T., **Molitor, C.**, Rolf, E., Yan, K., Biswas, S., Blair, G. "Estimating the Footprint of Artisanal Mining in Africa." *NBER*. doi.org/10.3386/w33646

Datasets

2026 Carlson, C., Carleton, T., Odoulami, R., **Molitor, C.**, Trisos, C. "Dataset: The past and future impact of climate change on childhood malaria in Africa" (Version v1.0). *Zenodo*. doi.org/10.5281/zenodo.20399793

2022 Clawson, S., Frazier, M., Halpern, B., Cohen, J., Menzies, P., **Molitor, C.**. "Global Ocean Health Index 2022 assessment." *Knowledge Network for Biocomplexity*. doi.org/10.5063/F1GT5KNH

Books

2025 **Molitor, C.**, Carleton, T., Rolf, E. "MOSAIKS Training Manual." center-for-effective-global-action-cega.github.io/MOSAIKS-Training-Manual/en/index.html

Other (reports, conference proceedings, patents)

2024 Carleton, T., Mangin, T., Ludwig, M., **Molitor, C.**, O'Reilly, E. "A framework for integrating wildfire into the Climate Vulnerability Metric." *Environmental Markets Lab*.

2022 Sprague, J., Moore, K., McClain, J., **Molitor, C.**, Kushner, D. "Channel Islands National Park Kelp Forest Monitoring Program: Annual Report 2015." *National Park Service*. doi.org/10.36967/nrr-2288646.

2022 Sprague, J., Kushner, D., Grunden, J., McClain, J., Grime, B., **Molitor, C.** "Channel Islands National Park Kelp Forest Monitoring Program: Annual Report 2014." *National Park Service*. doi.org/10.36967/2293855.

In prep. **Molitor, C.**, McClure, T., et al. "Channel Islands National Park Kelp Forest Monitoring Program Kelp Forest Community Trend Report for 2005–2019." *Natural Resource Report Series.* National Park Service.

In prep. **Molitor, C.**, Sprague, J., et al. "Channel Islands National Park Kelp Forest Monitoring Program Annual Report 2019." *Natural Resource Data Series.* National Park Service.

In prep. **Molitor, C.**, Sprague, J., et al. "Channel Islands National Park Kelp Forest Monitoring Program Annual Report 2018." *Natural Resource Data Series.* National Park Service.

In prep. Sprague, J., **Molitor, C.**, et al. "Channel Islands National Park Kelp Forest Monitoring Program Annual Report 2017." *Natural Resource Report Series.* National Park Service.

In prep. Sprague, J., **Molitor, C.**, et al. "Channel Islands National Park Kelp Forest Monitoring Program Annual Report 2016." *Natural Resource Report Series.* National Park Service.

Conferences and Talks

2026 Invited workshop member. "Environmental Data Science Summit: Turning Data into Action" UCSB, National Center for Ecological Analysis and Synthesis (NCEAS).

2025 Summit leadership and facilitation team. "Innovation Summit: Environmental Tipping Points & Transformations." Colorado University, Boulder, Environmental Data Science Innovation & Impact Lab (ESIIL).

2025 Instructor. "Multi-task Observation using Satellite Imagery & Kitchen Sinks (MOSAIKS) Togo Data Lab Training." UCSB, Environmental Markets Lab (emLab).

2024 Invited workshop member. "Specialist Meetings to Advance a Geographic Approach to Conservation Science." UCSB, Center for Spatial Studies and Data Science.

2024 Instructor for Indaba X Autour De L'IA: Le Grand Atelier du Digital 2024. "Multi-task Observation using Satellite Imagery & Kitchen Sinks (MOSAIKS) Workshop: Combining Satellite Imagery with Machine Learning to Address Global Challenges." Lomé, Togo.

2024 Presenter at New Horizons in Conservation Conference 2022.. "An open-source pipeline for remote sensing of crop yields under environmental change in sub-Saharan Africa." Yale School of the Environment, Justice, Equity, Diversity, and Sustainability Initiative (JEDSI).

Other Work Experience

2019 **Second Captain**, *Truth Aquatics*, Santa Barbara, CA
Driving and maneuvering 75' vessel and accompanying skiff.

2019 **Diver/Tender**, *Underwater Construction Corporation*, Stevensville, MI
Commercial diver and tender at Donald C. Cook Nuclear Power Plant.

2017–2019 **Deckhand/Divemaster**, *Spectre Dive Boat*, Ventura, CA
Deckhand for a recreational dive boat operating in Channel Islands National Park.

2015–2017 **Head of Water Department**, *Pacific Outfitters*, Eureka, CA
Managing scuba, fishing, and kayak departments for a locally owned outdoor store.

2014–2015 **Director of Scuba**, *Malibu Divers*, Malibu, CA
Managing dive staff and scuba classes for Camp Emerald Bay on Catalina Island.

Volunteer Experience

2019–2021 **Education Program**, *Channel Islands National Park*, Ventura, CA
Developing an R Shiny web application to engage students in learning about kelp forest ecology.

2014–2017 **Scuba Instructor**, *Humboldt State University*, Arcata, CA
Volunteer dive instructor for the Scientific Diving Program.

2013–2015 **Diver**, *Reef Check California*, Mendocino, CA
Volunteer diver for near-shore rocky reef citizen-science monitoring efforts.

Computer Skills

Languages

Fluent: Python, R, Bash, LaTeX, SLURM

Proficient: SQL, PowerShell, MATLAB

Software

IDEs: VS Code, Positron, RStudio, JupyterLab, MATLAB, JMP, Overleaf

Version Control: Git, GitHub, Docker, Apptainer

Virtualization: Kubernetes, Virtual Box, Hyper-V, VMware Workstation

Database: pgAdmin, SQLite, Microsoft Access

Cloud Computing

Google: Earth Engine, Kubernetes Engine, Compute Engine, Cloud Build, Container Registry, Cloud Run, Vertex AI, Kaggle Notebook, Colab

Microsoft: Planetary Computer, Azure Machine Learning Studio

High Performance Computing

UC Berkeley: Savio Condo Cluster

UCSB: Braid-2 Condo Cluster, Pod Cluster

Other Skills

Boating

2019 USCG Merchant Mariner Credential, Master Near Coastal license for vessels not greater than 100 tons

2019 USCG Assistance Towing Endorsement

2012 California Waterways Boating Safety Certificate

2003 Michigan DNR Boating Safety Certificate

Diving

2020 National Park Service Dive Examiner
2020 National Emergency Response Dive Team
2012 AAUS scientific diver
2015 PADI Master Scuba Diver Trainer
2014 NAUI Instructor
2018 ADCI and ACDE commercial diver
2018 Hyperbaric chamber operator
2015 rEvo III Closed Circuit Rebreather diver (200')
2018 AP Inspiration Closed Circuit Rebreather diver (150')
2018 ANDI occupational nitrox diver
2011 STI Ice diver
2014 Regulator repair technician (Atomic & Aqualung)
2014 Cylinder visual inspector

Links

CEGA	cega.berkeley.edu/person/cullen-molitor
emLab	emlab.ucsb.edu/about/our-team/cullen-molitor
Bren School	bren.ucsb.edu/people/cullen-molitor
Personal Website	cullen-molitor.github.io
Personal GitHub	github.com/cullen-molitor
Capstone GitHub	github.com/cropmosaiks