August 2025

NGOC B. NGUYEN

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EDUCATION

Ph.D. (M.S. awarded) in Ecosystem Modeling, University of California at Berkeley 2021- 2026 (Expected)
Department of Environmental Science, Policy, and Management Berkeley, California
Advised by Prof. Trevor F. Keenan

Honors B.S., University of Denver 2017-2021
Major: Environmental Science (GPA 3.87/4.0); Minors: Mathematics, Leadership Denver, Colorado

RESEARCH INTERESTS

Summary: I study climate-ecosystem carbon flux interactions by synthesizing large ecological datasets and applying novel machine learning approaches. My research focuses on modeling and predicting global ecosystem CO_2 fluxes and pools under high climate variability and elevated CO_2, using in-situ eddy-covariance observations, Dynamic Global Vegetation Models (DGVMs), and remote sensing data.
Key words: *Ecosystem Carbon Flux Modeling, Ecosystem Respiration, Vegetation Productivity, Machine Learning, Deep Learning, Large Language Models, Time Series Classification/Forecasting, DGVMs*

RESEARCH EXPERIENCE

Visiting Researcher, University of Oslo, Norway & University Center in Svalbard (UNIS) 12/24-02/25
Studying the contribution of planktons on Arctic marine carbon budget under climate extremes through data synthesis and modeling (Mentored by Dr. Dinh Khuong).

Visiting Researcher, European Commission Joint Research Centre, Italy 09-11/23
Globally upscaling ecosystem respiration using FLUXNET Eddy-covariance and remote sensing data (Mentored by Dr. Mirco Migliavacca).

Graduate Student Researcher, University of California, Berkeley 08/21-05/26
Incorporating mechanistic ecological processes into site to global scaled carbon flux models, funded by the LEMONTREE project.

Undergraduate Researcher, University of Denver 09/18-05/20
Evaluated the past and future hydrological responses in Nicaragua's coastal area and the Czech Republic's central mountain area (Mentored by Dr. Michael Daniels).

NSF-REU awardee, Oregon State University 06-09/18
Collected field data for the Detrital Input and Removal (DIRT) international project (Mentored by Dr. Kate Lajtha).

Third Place, International Science and Engineering Fair (ISEF) in Arizona 05/16

AWARDS & GRANTS

UC Berkeley Peder Sather Grant Award (PIs: Trevor Keenan, Dinh Khuong; Ph.D. student: Ngoc Nguyen)	$20,000	06/23
FLUXNET Secondment Program Research Exchange Fellowship	~$10,000	04/22
UC Berkeley Conference Travel Grant Award	$1500	09/22
University of Denver (DU) Department Award for Outstanding Undergraduate Research	$150	05/21
DU Grand Challenge Research Assistant Fellowship	$1000	02-05/21

DU Grand Challenge Student Scholar Grant	$5000	02-09/20
DU Summer Internship Award	$2500	05/20
Undergraduate Summer Research Grant	$3500	05/19
University Honors Program Research Grant	$1000	05/20
American Water Resources Association (AWRA) Undergraduate Scholarship	$2000	08/19
Undergraduate Spring Research Grant	$1500	03/19
STEM Outreach Leadership Development Grant (x2)	$2000	05/20

PUBLICATIONS

N Nguyen**, M Migliavacca, M Bassiouni, D Baldocchi, L Gherardi, J Green, D Papale, M Reichstein, KH Cohrs, C Alessandro, TD Nguyen, H Nguyen, Q Nguyen, TF Keenan (2025).* Widespread underestimation of rain-induced soil carbon emissions from global drylands. ***Nature Geoscience. https://doi.org/10.1038/s41561-025-01754-9

*H Zhang, H Wang, IJ Wright, I Prentice, S Harrison, N Smith, A Westerband, L Rowland, L Plavcová, H Morris, P Reich, S Jansen, TF Keenan, **N Nguyen** (2025).* Thermal acclimation of stem respiration implies a weaker carbon-climate feedback. ***Science.*** https://www.science.org/doi/10.1126/science.adr9978

*X Luo, R Zhao, H Chu, A Collalti, S Fatichi, TF Keenan, X Lu, **N Nguyen**, I Prentice, W Sun, L Yu (2025).* Global variation in vegetation carbon use efficiency inferred from eddy covariance observations. ***Nature Ecology & Evolution.*** https://doi.org/10.1038/s41559-025-02753-0

CONFERENCES

*KH Cohrs, **N Nguyen**, …. (2025).* A Protocol to Evaluate Carbon Dioxide Flux Partitioning Methods for Eddy Covariance Data. *EGU Annual Meeting 2025.*

***N Nguyen**, TD Nguyen, H Nguyen, Q Nguyen, YH Kang, TF Keenan (2024).* FLUXPULSE: Detecting rain-induced carbon emissions across biomes. *AGU Annual Meeting 2024.*

*HQ Wang, YH Kang, **N Nguyen**, TF Keenan (2024).* Assessing Land Carbon Storage Capacity and Its Environmental Limitations. *AGU Annual Meeting 2024.*

N Nguyen**, M Migliavacca, M Bassiouni, D Baldocchi, L Gherardi, J Green, D Papale, M Reichstein, KH Cohrs, C Alessandro, TD Nguyen, H Nguyen, Q Nguyen, TF Keenan (2024).* Unaccounted carbon losses across global drylands. *AmeriFlux Annual Meeting 2024.* ***Oral Presentation

*S Paulus, R Orth, S Lee, JA Nelson, A Hildebrandt, **N Nguyen**, M Reichstein, M Migliavacca (2024).* Mapping soil moisture uptake by dry soils across Eddy covariance measurement sites. *EGU Annual Meeting 2024.*

*X Luo, R Zhao, H Chu, S Fatichi, X Lu, **N Nguyen**, W Sun, TF Keenan (2023).* Using eddy covariance data to derive carbon use efficiency and partition ecosystem respiration. *AGU Annual Meeting 2023.*

N Nguyen**, M Migliavacca, J Green, M Bassiouni, C Alessandro, L Gherardi, D Papale, D Baldocchi, Keenan TF* (2023). Detection and Attribution of Dryland Respiration Pulses in Eddy Covariance Measurements. *AGU Annual Meeting 2023.* ***Oral Presentation

***N Nguyen**, X Yu, TF Keenan, J Liu* (2023). Examining Ecosystem Respiration Sensitivity to Temperature and Water Availability during Droughts. *AGU Annual Meeting 2023*.

***N Nguyen**, TF Keenan, M Migliavacca, JK Green, M Bassiouni* (2022). Using Water Availability to Develop Respiration Models for Eddy-covariance Observations. *AGU Annual Meeting 2022.*

N Nguyen**, TF Keenan, M Migliavacca, JK Green, M Bassiouni* (2022). Incorporating Water Availability into Ecosystem Flux Partitioning". *ICOS Conference 2022.* ***Oral Presentation

***N Nguyen**, H Duong, M Daniels, B Majestic* (2021). Sediment Heavy Metal Pollution of an Urban River in Vietnam. *AAG Annual Conference 2021.*

TALKS

Science talk series, Max Planck Institute of Biogeochemistry, Germany	10/23
Monthly meeting, Bio-Economy (Unit D1), European Commission Joint Research Centre, Italy	10/23
Guest Lecture, Fulbright University, Vietnam	04/23

REVIEWER EXPERIENCE

Global Change Biology	2024
Journal of Global Ecology and Biogeography	2022

OUTREACH

Department Faculty Search Committee, UC Berkeley	2025-2026
Manager, Terrestrial Ecosystems Journal Club, UC Berkeley	2022-2025
Guest Lecture, Fulbright University, Vietnam x2	04/23, 04/24
Organizer, Department International Student Lunch, UC Berkeley	04/23
Project Mentor, Data Science Discovery Program, UC Berkeley	01-05/23
Conference Organizer, Vietnam Education Fellow 2.0 Annual Conference x2	08/22, 08/24
Interpreter, Consulate General of Vietnam in San Francisco	2022-2024
Grant Award Judge, Colorado Science and Engineering Fair x2	04/20, 04/21
Organizer, Science for the Future Fair 2020	08/19-08/20
After-school Program Organizer, STRIVE Prep Middle School	09/18-06/19

COURSES & WORKSHOPS

Fluxcourse, Colorado	06/23
A Crash Course in Causality, Coursera	10/23
New Advances in Land Carbon Cycle Modeling, Northern Arizona University	06/22
DeepLearning.AI Machine Learning Specialization Certification (3 courses)	09/22

SKILLS

Programming Languages: R (Advanced), Python (Advanced).
Machine Learning & Deep Learning Libraries: PyTorch, TensorFlow
Software & Tools: Google Colab, OpenAI API, RStudio, Jupyter Notebook, Google Earth Engine, ArcGIS, LaTeX
Languages: Vietnamese (Native), English (Fluent), Chinese (Intermediate – HSK4 level), Spanish (Beginner)

REFERENCES

Ph.D. Advisor: Trevor F. Keenan
Ph.D. committee members: Dennis Baldocchi, Lau Gherardi
Mentors at visiting institutions: Mirco Migliavacca, Dinh Khuong
Undergraduate mentors: Michael Daniels, Kate Lajtha