Laura Kathryn Clark Sunberg

Assistant Professor
Civil, Environmental and Architectural Engineering
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EDUCATION

Ph.D., Civil and Environmental Engineering 2023
Thesis: Settling and Dispersion of Inertial, Non-Spherical Particles in Wavy Flow
M.S., Civil and Environmental Engineering 2019
Stanford University

B.S., Civil and Environmental Engineering 2017
B.A., English 2017
University of California, Berkeley

EXPERIENCE

Assistant Professor, *University of Colorado Boulder* 2025 – Present
Civil, Environmental and Architectural Engineering
Institute of Arctic and Alpine Research

Postdoctoral Scholar, *University of Colorado Boulder* 2023 – 2025
Institute of Arctic and Alpine Research

FELLOWSHIPS AND GRANTS

National Science Foundation (NSF) Ocean Sciences Research Fellowship 2023 – 2026
Postdoctoral Fellowship: OCE-PRF: Influence of Environmentally-Induced Changes on the Transport and Fate of Microplastics at a Regional Scale (Award 2308148)
$346,823

Achievement Rewards for College Scientists (ARCS) 2021 – 2022
One-year graduate student fellowship

PUBLICATIONS

Refereed Journal Articles:

Sunberg, L. K. C., Chung, H., MacDonald, E. S., Ouellette, N. T., & Koseff, J. R. (2025) Transport of rod-shaped particles in a canopy flow with a buoyant plume. *International Journal of Multiphase Flow*, 105331.

MacDonald, E. S., Chung, H., **Sunberg, L. K. C.**, Ouellette, N. T., & Koseff, J. R (2025). Non-ballistic transport of particles in a canopy-plume system. *Physical Review Fluids.* 10(5), 053801.

Chung, H., **Sunberg, L. K. C.**, MacDonald, E., Ouellette, N. T., & Koseff, J. R. (2024) Dispersion of inertial particles in turbulent canopy flows with buoyant and non-buoyant plumes. *Physical Review Fluids*, 9(9), 093801. *Chosen as an Editors' Suggestion.*

Sunberg, L. K. C., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. (2024). Parametric study of the dispersion of inertial non-spherical particles in a wave-current flow. *Physical Review Fluids*, 9(3), 034302.

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. (2023). Dispersion of finite-size, non-spherical particles by waves and currents. *Journal of Fluid Mechanics, 954*, A3.

DiBenedetto, M. H., **Clark, L. K.**, & Pujara, N. (2022). Enhanced settling and dispersion of inertial particles in surface waves. *Journal of Fluid Mechanics*, *936*, A38.

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. (2020). Settling of inertial nonspherical particles in wavy flow. *Physical Review Fluids*, *5*(12), 124301.

Bordoloi, A. D., Lai, C. C., **Clark, L.**, Carrillo, G. V., & Variano, E. (2020). Turbulence statistics in a negatively buoyant multiphase plume. *Journal of Fluid Mechanics*, *896*, A19.

INVITED PRESENTATIONS

2025, May	Earth Surface Processes Institute (ESPIn), University of Colorado Boulder
2025, Apr.	HydroSciences Student Symposium, University of Colorado Boulder
2025, Apr.	Department of Mechanical Engineering Seminar, San Jose State University
2025, Mar.	Department of Mechanical Engineering Seminar, University of Nevada Reno
2024, Dec.	Jeff Koseff Retirement Symposium, Stanford University
2022, Feb.	Workshop on Predicting Pathways for Microplastic Transport in the Ocean, Banff International Research Station (Virtual)

SELECTED CONFERENCE ABSTRACTS

*Undergraduate advisee

Sunberg, L., Chung, H., MacDonald, E., Ouellette, N., Koseff, J. "Transport of rod-shaped particles in a canopy flow with a buoyant plume and gaps." 78th Annual Meeting of the American Physical Society Division of Fluid Dynamics, 2025, Houston, Texas.

Sunberg, L., Chung, H., MacDonald, E., Ouellette, N., Koseff, J. "Transport of rod-shaped particles in a canopy flow with a buoyant plume." 77th Annual Meeting of the American Physical Society Division of Fluid Dynamics, 2024, Salt Lake City, Utah.

Karnow, K.*, Howard, L., Moulton, M., Moriarty, J. M., **Sunberg, L.** "Effects of seasonality and biofouling on microplastic transport." American Beach and Shoreline Preservation Association (ASBPA) National Coastal Conference, 2024, Galveston, Texas.

Sunberg, L. K. C., Moriarty, J., Moulton, M. "Impact of Transport on Microplastics' Exposure to Biofouling-Favorable Conditions." Rocky Mountain Fluid Mechanics Research Symposium, 2024, Boulder, Colorado.

Sunberg, L. K. C., Moriarty, J., Moulton, M., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Impacts of microplastic properties on transport by coastal flows." European Mechanics Society Colloquium 639: Microplastic Dispersion Pathways, 2024, Lerici, Italy.

Sunberg, L. K. C., Moriarty, J., Moulton, M. "Modeling the impact of biofouling, photooxidation, and sediment abrasion on microplastic transport." Ocean Sciences Meeting, 2024, New Orleans, Louisiana.

Sunberg, L. K. C., Moriarty, J., Moulton, M. "Impact of microplastic transport pathways on microplastic transformation at a regional scale." Coastal and Estuarine Research Federation (CERF) 2023 Biennial Conference, 2023, Portland, Oregon.

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Numerical modeling of dispersion of non-spherical particles by waves and currents." 75th Meeting of the American Physical Society Division of Fluid Dynamics, 2022, Indianapolis, Indiana.

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Dispersion of non-spherical particles by waves and currents." Rocky Mountain Fluid Mechanics Research Symposium, 2022, Boulder, Colorado.

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Transport of non-spherical particles by waves and currents." Ocean Sciences Meeting, 2022, Hawai'i (Virtual).

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Transport of Non-Spherical Particles by Waves and Currents." 74th Meeting of the American Physical Society Division of Fluid Dynamics, 2021, Phoenix, Arizona.

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Settling of inertial nonspherical particles in wavy flow." 73rd Meeting of the American Physical Society Division of Fluid Dynamics, 2020, Chicago, Illinois (Virtual).

Clark, L. K., DiBenedetto, M. H., Ouellette, N. T., & Koseff, J. R. "Shape dependence of settling velocities for particles in wavy flows." 72nd Meeting of the American Physical Society Division of Fluid Dynamics, 2019, Seattle, Washington.

TEACHING

Lead Instructor
Flow Visualization (CU Boulder, CVEN 4833-5833/MCEN 4151-5151/ATLS 4151/5151)
Fall 2025

Teaching Assistant
Introduction to Mechanics of Fluids (Stanford, CEE 101E)
Summer 2021
Environmental Science and Technology (Stanford, CEE 70)
Summer 2021
Rivers, Streams, and Canals (Stanford, CEE 162E/262E)
Spring 2020, Spring 2021
Floods and Droughts, Dams and Aqueducts (Stanford, CEE 166B/266B)
Winter 2019, Winter 2020
Hydrodynamics (Stanford, CEE 262A)
Fall 2018

SERVICE AND ACTIVITIES

Outreach Volunteer, *Atmospheric and Oceanic Department (ATOC) Scientific Engagement through Educational Development for Students (SEEDS)* 2023 – 2025
Taught geoscience lessons with interactive demonstrations at local elementary schools.

Postdoc Representative, *Institute of Arctic and Alpine Research Directorate* 2024 – 2025
Shared postdoctoral perspective at directorate meetings; organized weekly writing club to build community among postdocs and graduate students in INSTAAR.

Research Mentor, Atmospheric and Oceanic Sciences Department Research Experiences for Undergraduates 2024
Advised undergraduate student in her first independent research project.

Founding Co-Coordinator, *Western Coastal Collaboratorium* 2021 –2022
Launched student seminar series for coastal/fluid mechanics programs along the West Coast.

Community Associate, *Stanford Graduate Life Office* 2019 – 2022
Organized graduate student neighborhood community-building events and provided non-academic support to graduate students.

Program Representative, *Graduate Leadership Committee* 2019 – 2021
Liaised between students and department leadership.