Laura K. Gruenburg

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https://lagruenburg.github.io

EDUCATION

Columbia University, New York, NY
M.A. May 2017
M.Phil February 2019
Ph.D. February 2021

Vassar College, Poughkeepsie, NY
B.A. in Earth Science, May 2012

FELLOWSHIPS AND HONORS

NASA Earth and Space Science Fellowship	2017
Deans Fellow Columbia University	2015
Associate member Sigma Xi	2012

RESEARCH EXPERIENCE

School of Marine and Atmospheric Sciences, Stony Brook University, Stony Brook, NY 2021-Present
Postdoctoral Research Scientist

- Developing ocean indicators to understand how changes in physical properties such as temperature/salinity stratification affect biological systems in the New York Bight.

Department of Earth and Environmental Science, Columbia University, NY, NY 2015-2020
Research Advisor: Dr. Arnold Gordon
Committee Members: Dr. Ryan Abernathey, Dr. Andreas Thurnherr

- Analysis of contribution of Indonesian Throughflow variability to heat/freshwater in Eastern Indian Ocean with implications for regional climate

Research Cruise Aboard the Baruna Jaya VIII, Jakarta, Indonesia August 2017
PI Dr. Arnold Gordon and Dr. Anna Kuswardani

- Recovery of Makassar Strait Mooring, with analysis of ADCP and CTD data.

Department of Earth and Atmospheric Sciences, City College, NY, NY Spring 2015
Research Advisor: Dr. Steven Kidder

- Developed titanium-in-quartz thermobarometry for determining pressure-temperature environment of deformation using recrystallized quartz in New Zealand Mylonites.

Department of Earth Science and Geography, Vassar College, Poughkeepsie, NY 2011-2012
Research Advisor: Dr. Brain McAdoo

- Established methodologies for flood risk assessment in rural and urban watersheds in upstate New York.

Norwegian Geotechnical Institute, Oslo, Norway Summer 2010
Research Advisor: Dr. Carl Harbitz

- Verified methods for tsunami risk assessment using the 2009 tsunami in the Pacific that hit American Samoa.

PUBLICATIONS

Gruenburg, L.K., and A.L. Gordon. 2018. Variability in Makassar Strait heat flux and its effect on the eastern tropical Indian Ocean. *Oceanography* 31(2), https://doi.org/10.5670/oceanog.2018.220

Li, M., A.L. Gordon, **L.K. Gruenburg**, J. Wei, and S. Yang. 2020. Interannual to decadal response of the Indonesian Throughflow vertical profile to Indo-Pacific forcing. *Geophysical Research Letters,* https://doi.org/10.1029/2020GL087679

Gordon, A.L., A. Napitu, B.A. Huber, **L.K. Gruenburg**, K. Pujiana, T. Agustiadi, A. Kuswardani, N. Mbay, and A. Setiawan. 2019. Makassar Strait Throughflow Seasonal and Interannual Variability, an Overview. *Journal of Geophysical Research Oceans,* https://doi.org/10.1029/2018JC014502

Li, M., A.L. Gordon, J. Wei, **L.K. Gruenburg**, and G. Jiang. 2018. Multi-decadal timeseries of the Indonesian Throughflow. *Dynamics of Atmospheres and Oceans* 81(2018) 84-95, https://doi.org/10.1016/j.dynatmoce.2018.02.001

SKILLS

Python, Matlab, Github

INVITED TALK

Indonesian Throughflow in the Indian Ocean: Pathways of Heat. Presented at Gateways to the Ocean Symposium February 13, 2020. Scripps Institution of Oceanography, La Jolla, California.

PRESENTATIONS

Gruenburg, L.K., S.A. Murty, C.C. Ummenhofer, P. Wagner, M. Scheinert, J. Durgadoo, A.Biastoch, C.W. Böning (2020) Makassar transport variability over the past century - a synthesis of observations, coral $\delta^{18}O$ and high-resolution ocean models. Presented at 2020 American Geophysical Union Fall Meeting.

Gruenburg, L.K., A.L. Gordon (2020) Seasonal and Interannual Variability in Cross-Indian ITF Plume Propagation. Presented at Ocean Sciences Meeting, San Diego, California.

Gruenburg, L.K., A.L. Gordon (2019) Variability in Indonesian Throughflow Partitioning Between Leeuwin and South Equatorial Current Pathways. Presented at American Geophysical Union Fall Meeting 2019.

Gruenburg, L.K., A.L. Gordon (2018) The Pathways and Impacts of Indonesian Throughflow Heat Flux on the Eastern Tropical Indian Ocean. Presented at American Geophysical Union Fall Meeting 2018.

Gruenburg, L.K., A.L. Gordon (2017) Indian Ocean Response to Indonesian Throughflow Variability. Presented at 2018 Ocean Sciences Meeting, Portland, Oregon.

Gruenburg, L.K., A.L. Gordon., M. Li (2017) Interannual Variability in ITF Plume Spreading Across the Indian Ocean. Presented at the European Geophysical Union General Assembly 2017.

Gruenburg, L.K. (2015) Titanium-in-Quartz Thermobarometry in New Zealand Mylonites. Presented at the Jeffrey Steiner Memorial Symposium, City College, NY, NY.

Harbitz, C.B., R. Frauenfelder, G. Kaiser, S. Glimsdal, K. Sverdrup-thygeson, F. Lovholt, **L. Gruenburg,** B. McAdoo (2015) Application and Validation of a GIS Model for Local Tsunami Vulnerability and Mortality Risk Analysis. Presented at the 2015 American Geophysical Union Fall Meeting.

PROFESSIONAL DEVELOPMENT

Oceanhackweek 2019 Developed isopy python package
https://github.com/oceanhackweek/DataAccess/tree/master/isopy

Columbia Inclusive Teaching multi-day workshop Spring 2019
Blindspots in Inclusive Teaching: Implicit Bias
Managing our Blindspots: Strategies for Inclusive Teaching

2018 Columbia Science of Learning Symposium *Metacognition: From Research to Classroom*

SERVICE

Reviewer for Nature Reviews Earth & Environment
Reviewer for Journal of Geophysical Research - Oceans
Reviewer for Geophysical Research Letters
Reviewer for Climate Research
Reviewer for Marine Geodesy
Co-organizer of LDEO Ocean Climate Physics division weekly seminar series Fall 2018 and Spring 2019
Mentor to incoming graduate student as part of LDEO first year peer-mentoring program Fall 2016-Spring 2017
Mentor to High School student as part of Lamont Summer Intern Program Summer 2017

TEACHING EXPERIENCE

Adjunct Assistant Professor: ENV.150.G1(31241), Great Challenges in Environmental Science, Spring 2021 Drew University, Madison, NJ.

Teaching Assistant: EESC GU4930y, Earth's Oceans and Atmosphere, Spring 2019, Columbia University, NY, NY**.**

Teaching Assistant: EESC GR5400, Dynamics of Climate Variability and Change, Fall 2018, Columbia University, NY, NY**.**

Teaching Assistant: EESC GU4925, Intro to Physical Oceanography, Fall 2017, Columbia University, NY, NY.

Teaching Assistant: EESCW1030, Oceanography, Fall 2016, Columbia University, NY, NY.

Instructor: EAS 106 Earth System Science (laboratory section) Spring 2015, City College NY, NY.

SCIENCE OUTREACH EXPERIENCE

Cofounder of afterschool oceanography/computer science program (Pyclub-cu) for high school students(https://pyclub-cu.github.io)	09/01/20
Science Educator: Girls Science Day at Columbia University, Energy Budget, N.Y., N.Y.	11/16/19
Science Educator: Girls Science Day at Columbia University, Earthquake Hazard, N.Y., N.Y.	04/06/19
Science Educator: Intrepid Kids Week, N.Y., N.Y.	02/19/19
Science Educator: Lamont Doherty Earth Observatory Open House, Palisades, N.Y.	10/13/18
Science Educator: Sun-Earth Day at the American Museum of Natural History, N.Y., N.Y.	03/24/18
Science Educator: Intrepid for Girls in Science and Engineering Day, N.Y., N.Y.	03/10/18
Science Educator: Girls Science Day at Columbia University, Ocean Acidification, N.Y., N.Y.	11/11/17
Science Educator: Lamont Doherty Earth Observatory Open House, Palisades NY	10/07/17
Science Educator: Sun-Earth Day at the American Museum of Natural History, N.Y., N.Y.	04/22/17
Science Educator: Girls Science Day at Columbia University, The Nitrogen Cycle. NY, NY.	11/12/16
Science Educator: Lamont Doherty Earth Observatory Open House, Palisades, NY.	10/11/16
Science Educator: Sun-Earth Day at the American Museum of Natural History, NY, NY.	03/19/16
Science Educator: Girls Science Day at Columbia University, Smog City. NY, NY.	11/14/15
Science Educator: A Day in the Life of the Hudson River. Piermont, N.Y.	10/20/15