Elizabeth Yankovsky

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EDUCATION

Princeton University, Princeton, NJ
Ph.D., Atmospheric and Oceanic Sciences, *2015 – 2020.*
Thesis: Modeling and parameterizing submesoscale turbulence in dense Arctic flows
Advisor: Dr. Sonya Legg

University of South Carolina Honors College, Columbia, SC
Thesis: Methane hydrates and cellular convection in the Central Aleutian Basin
B.S., Physics and Geophysics, *2011-2015*
Advisors: Drs. Camelia Knapp and Darrell Terry

RESEARCH EXPERIENCE

Courant Institute, New York University, New York, NY
Postdoctoral Associate, Center for Atmosphere Ocean Science, *2020-present*.
Mentors: Drs. Laure Zanna and Shafer Smith

NOAA Geophysical Fluid Dynamics Laboratory, Princeton University
Graduate Research Assistant, Ocean & Ice Processes Group, *2015-present*
Mentors: Drs. Sonya Legg, Robert Hallberg, Rong Zhang

Geophysical Exploration Laboratory, University of South Carolina
Undergraduate Research Assistant, *2012-2015*
Title: "Methane Hydrates and Cellular Convection in the Central Aleutian Basin", Mentors: Drs. Camelia Knapp, Darrell Terry

Oregon State University, College of Earth, Ocean, & Atmospheric Sciences, NSF-REU program intern, *June-August 2014*
Title: "Response of the Length and Stratification of the North River Estuary to Changes in Forcing", Mentor: Dr. James Lerczak

Rutgers University, Department of Marine and Coastal Sciences, NSF-REU program intern, *June-August 2013*
Title: "Quantifying Turbulent Dissipation in a Shallow Estuarine Environment", Mentor: Dr. Robert Chant

PUBLICATIONS

[submitted] **Yankovsky, E.**, L. Zanna, K. S. Smith, 2022: Influences of mesoscale ocean eddies on flow vertical structure in a resolution-based model hierarchy. *Journal of Advances in Modeling Earth Systems.*

Marques, G., N. Loose, **E. Yankovsky**, J. Steinberg, C. Chang, N. Bhamidipati, A. Adcroft, B. Fox-Kemper, S. Griffies, R. Hallberg, M. Jansen, H. Khatri, L. Zanna, 2022: NeverWorld2: An idealized model hierarchy to investigate ocean mesoscale eddies across resolutions. *Geoscientific Model Development.*

N. Loose, R. Abernathey, I. Grooms, J. Busecke, A. Guillaumin, **E. Yankovsky**, G. Marques, J. Steinberg, A. S. Ross, H. Khatri, S. Bachman, L. Zanna, P. Martin, 2022: GCM-Filters: A Python package for diffusion-based spatial filtering of gridded data. *Journal of Open Source Software.*

I. Grooms, N. Loose, R. Abernathey, J. Steinberg, S. Bachman, G. Marques, A. Guillaumin, **E. Yankovsky**, 2021: Diffusion-based smoothers for spatial filtering of gridded geophysical data. *Journal of Advances in Modeling Earth Systems.*

Yankovsky, E., S. Legg, R. Hallberg, 2021: Parameterizing submesoscale symmetric instability and frontal mixing in dense flows along topography. *Journal of Advances in Modeling Earth Systems.*

Yankovsky, E., S. Legg, 2019: Symmetric and baroclinic instability in dense shelf overflows. *Journal of Physical Oceanography*.

Yankovsky, E. A., D. A. Terry, C. C. Knapp, 2015: Seismic and gravity evidence for methane-hydrate systems in the central Aleutian Basin. *International Journal of Earth Science and Geophysics.*

SELECTED SEMINARS AND TALKS

INVITED SEMINARS

Parameterizing mesoscale eddy energetics and vertical structure at eddy-permitting resolutions. *NCAR Oceanography Seminar*, Boulder, CO, 2022.

Influences of mesoscale ocean eddies on flow vertical structure. *Oceans Research Group Seminar*, University of Oxford, 2022.

Modeling and parameterizing submesoscale turbulence in dense Arctic overflows. *Atmosphere, Ocean and Climate Sack Lunch Seminar Series,* EAPS at MIT, 2021.

Constraining water mass transformation and overflow dynamics on the Arctic shelves. *Polar Oceans Seminar Series at the British Antarctic Survey*, 2021.

Symmetric instability in Arctic dense gravity currents. Seminar in *Applied and Computational Mathematics*, University of Edinburgh, Scotland, 2019.

Modeling baroclinic and submesoscale instabilities in the Arctic Ocean. *AOCD Fall Seminar Series*, Yale University, CT, 2018.

CONFERENCE PRESENTATIONS

Influences of mesoscale ocean eddies on flow vertical structure. *Ocean Sciences Meeting,* 2022*; Climate Process Team Annual Meeting: Ocean Transport and Eddy Energy,* Boulder, CO, 2022.

Effects of eddy representation on vertical structure and energetics. *CESM Ocean Model Working Group Meeting,* 2021.

Constraining Arctic Water Mass Transformation and Ventilation Pathways in the GFDL-OM4.0. *AGU Fall Meeting,* 2020.

Modeling vertical transport and submesoscale frontal mixing in dense flows along topography. *Ocean Sciences Meeting*, San Diego, CA, 2020.

Symmetric and baroclinic instability in dense shelf overflows. *EGU General Assembly*, Vienna, Austria, 2019.

Symmetric instability in dense shelf overflows. *Ocean Sciences Meeting*, Portland, OR, 2018.

Dense water formation and transport on the Arctic continental shelves. *Forum for Arctic Ocean Modeling and Observational Synthesis (FAMOS)*, Woods Hole Oceanographic Institution, MA, 2017.

Response of the Length and Stratification of the North River Estuary to Changes in Forcing. *AGU Fall Meeting*, San Francisco, CA, 2014.

WORKSHOPS

Machine Learning and Climate Modeling: Princeton AOS, July 2019.

Convection in Nature: Princeton Center for Theoretical Science, Feb. 2018.

Forum for Arctic Modeling and Observational Synthesis (FAMOS): Woods Hole Oceanographic Institution, Oct. 2017.

Les Houches Summer School on Fundamental Aspects of Turbulent Flows in Climate Dynamics: Les Houches Physics School, Aug. 2017.

AWARDS

2017 National Science Foundation Graduate Research Fellowship

National Merit Scholarship, 2011

COMPUTER EXPERIENCE

MIT General Circulation Model (MITgcm): idealized non-hydrostatic simulations of dense gravity currents, coastal buoyant plume dynamics, LES.

GFDL Modular Ocean Model (MOM6): idealized and regional simulations; analysis of global models including CM2.6 and OM4, model development.

Other: Python, MATLAB, GitHub, Jupyter, LaTeX, Fortran, shell scripting.

TEACHING EXPERIENCE

Instructor Assistant: Introduction to Ocean Physics for Climate (GEO-MAE 425). Taught by Gabriel Vecchi, Fall 2018.

Teaching Transcript Program, Princeton McGraw Center, completed 2020.

SERVICE

Convener and chair for the session "Mesoscale Eddy Energy and Ocean Transport" at Ocean Sciences Meeting, 2022.

Reviewer for: Journal of Physical Oceanography, Ocean Modelling, Journal of Advances in Modeling Earth Systems, Geophysical Research Letters, Environmental Fluid Mechanics, NASA NSPIRES program.

Planning Committee for the yearly Princeton **AOS Program Orientation and Retreat** (2018), AOS Program **Student-Faculty Representative** (2017-18).

OUTREACH

STEM Professionals Day at PS154 in Brooklyn – volunteer, 2022.

NJ Ocean Fun Days, Estuary Day, Environment Day – volunteer, 2017-19.

Young Women's Conference in Science, Technology, Engineering & Mathematics (Princeton Plasma Physics Laboratory) – volunteer, 2018-19.

Plainsboro Library – developed youth program "Motion in the Ocean", 2017.

Future City – member of local nonprofit organization aimed at educating communities about environmental issues, working with policy-makers, and developing environmental initiatives, 2016-18.