Noah D. Brenowitz

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Education

May 2017	**Ph.D.**, *Mathematics and Atmosphere-Ocean Science.* Center for Atmosphere-Ocean Science (CAOS), Courant Institute of Mathematical Sciences, New York University Adviser: Andrew J. Majda
May 2011	**B.S.**, *Statistics and Mathematics.* Stern School of Business

Appointments

2017–Present	**Moore/Sloan & WRF Innovation in Data Science Postdoctoral Fellow**, *Dept. of Atmospheric Science, University of Washington.* Mentors: Christopher S. Bretherton and J. Nathan Kutz
2013–2017	**Research Assistant**, *New York University.*
2011–2012	**Post-baccalaureate IRTA**, *National Institutes of Health.* Section on Functional Imaging Laboratory of Brain and Cognition, National Institute of Mental Health Supervisors: Peter Bandettini and Souheil Inati

Honors, Awards, and Fellowships

2017	Moore/Sloan & WRF Innovation in Data Science Postdoctoral Fellowship, University of Washington
2012–2017	Henry M. MacCracken Fellowship, New York University
2011–2012	Intramural Research Training Award (IRTA), National Institutes of Health
2011	Graduated *Summa cum Laude* with highest honors in Mathematics, New York University
2010	*Beta Gamma Sigma* undergraduate business honors society
2008–2011	Dean's List, Stern School of Business, New York University

Refereed Articles

2018	Brenowitz, N. D. and C. S. Bretherton. "Prognostic Validation of a Neural Network Unified Physics Parameterization". In: *Geophysical Research Letters*

45.12, pp. 6289–6298. DOI: `10.1029/2018gl078510`.

Brenowitz, N. D., A. J. Majda, and Q. Yang. "The Multiscale Impacts of Organized Convection in Global 2D cloud-resolving Models". In: *Journal of Advances in Modeling Earth Systems*. DOI: `10.1029/2018ms001335`.

2016   Brenowitz, N. D., Y. Frenkel, and A. Majda. "Non-local convergence coupling in a simple stochastic convection model". In: *Dynamics of Atmospheres and Oceans* 74, pp. 30–49.

Brenowitz, N. D., D. Giannakis, and A. Majda. "Nonlinear Laplacian spectral analysis of Rayleigh–Bénard convection". In: *Journal of Computational Physics* 315, pp. 536–553.

2015   Brenowitz, N. D., Y. Frenkel, and A. J. Majda. "Enhanced persistence of equatorial waves via convergence coupling in the stochastic multicloud model". In: *Journal of the Atmospheric Sciences* 72.12, pp. 4701–4720.

2013   Kundu, P., N. D. Brenowitz, V. Voon, Y. Worbe, P. E. Vértes, S. J. Inati, Z. S. Saad, P. A. Bandettini, and E. T. Bullmore. "Integrated strategy for improving functional connectivity mapping using multiecho fMRI". In: *Proceedings of the National Academy of Sciences* 110.40, pp. 16187–16192.

2012   Gonzalez-Castillo, J., Z. S. Saad, D. A. Handwerker, S. J. Inati, N. Brenowitz, and P. A. Bandettini. "Whole-brain, time-locked activation with simple tasks revealed using massive averaging and model-free analysis". In: *Proceedings of the National Academy of Sciences* 109.14, pp. 5487–5492.

Invited Talks

Oct. 3, 2018   *Improving Physical Parametrizations in Climate Models using Machine Learning*, Climate Dynamics Seminar, George Mason University

June 25, 2018   *Improving sub-grid-scale parametrizations using neural networks*, Los Alamos National Laboratory

Apr. 16, 2018   *Improving the representation of moist convection in climate models using data-driven techinques*, SIAM Conference on Uncertainty Quantification, Garden Grove, CA

Other Talks

Feb. 8, 2018   *Machine learning based cumulus (and radiation) parametrizations*, Program in Climate Change Workshop, University of Washington

Feb. 6, 2018   *Can machine learning improve weather and climate models?*, eScience Institute Community Seminar, University of Washington

Jan. 8, 2018   *The Multiscale Impacts of Organized Convection in Global 2D Cloud Resolving Models*, American Meteorological Society 98th Annual Meeting, Austin, TX

Oct. 18, 2017	*Parameterizing non-local processes in moist atmospheric convection using stochastic closures*, Atmosphere and Climate Dynamics Seminar, University of Washington
Jan. 29, 2016	*NLSA of Rayleigh-Bénard Convection II*, MURI Workshop, New York University
Apr. 29, 2015	*Enhanced Persistence of equatorial waves via convergence coupling in the stochastic multicloud model*, Stochasticity and Organization of Tropical Convection, Banff International Research Station, Canada
Jan. 21, 2014	*NLSA of Rayleigh-Bénard Convection I*, MURI Workshop, New York University

Posters

June 26, 2017	*A Framework for Assessing Multiscale Interactions in Cloud-Resolving Simulations of Tropical Convection*, AMS 21st Conference on Atmospheric and Oceanic Fluid Dynamics, Portland, OR
Sept. 17, 2015	*Non-local convergence coupling in stochastic models for tropical convection*, Monsoons and the ITCZ Workshop, Columbia University, New York

Teaching Experience

Aug. 21, 2018	Officially certified as a Software Carpentry Instructor
Oct. 2-5, 2017	Helper for Software Carpentry Workshop at the University of Washington
Spring 2016	Recitation Leader (TA) for *Fundamental Dynamics of the Earth's Atmosphere and Climate* (undergraduate)
Spring 2015	Grader for *Basic Probability* (graduate)
2013–2016	Private tutor for approximately 10 students enrolled in high school, undergraduate, and graduate courses in Calculus, Statistics, and Probability

Leadership Experience

2016	Organized CAOS Student Seminar
2012–2015	Organized CAOS Student Monday Lunch

Technical Skills

Programming Languages	Proficient: Python, Fortran 90, MATLAB, Mathematica, julia, shell scripting (sh/bash)
	Some Experience: R, C/C++, Clojure, OpenMP, MPI
Operating Systems	Linux, Macintosh, Windows
Software	LaTeX, Emacs, Vim, Git, Word, Excel, Powerpoint

Languages

English (native) and Spanish (proficient)