

JENNA L. PEARSON

HARRY HESS POSTDOCTORAL FELLOW

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Education

PhD in Earth, Environmental and Planetary Sciences

Sept 2015 - May 2020

Advisor: Prof. Baylor Fox-Kemper

Brown University

B.A. in Mathematics

Aug 2008 - Dec 2014

Advisor: Prof. Lidia Filus

Northeastern Illinois University

Magna cum laude

B.A. in Earth Science

Aug 2008 - Dec 2014

Advisor: Prof. Ken Voglesonger

Northeastern Illinois University

Magna cum laude

Professional & Teaching Experience

Harry Hess Postdoctoral Fellow

Aug 2020 - Present

Advisor: Prof. Laure Resplandy

Princeton University

I use observations and models to understand how both human-induced and natural processes regulate coastal hypoxia (harmfully low oxygen levels) in the northern Indian ocean.

Junior Colloquium Seminar Instructor

Oct 5, 19 2020

Introduction to Python

Princeton University

Taught introductory level python via jupyter notebooks on a High Performance Computing cluster to undergraduate juniors over two online synchronous seminar sessions.

Graduate Research Assistant

Fall 2015-Spring 2020

Advisor: Prof. Baylor Fox-Kemper

Brown University

Statistical methods paired with models, observations, and theory to isolate biases in Lagrangian observation platforms as well as characterize reactive-tracer fields in the presence of turbulence.

Course Designer and Instructor for Summer @ Brown (online & asynchronous)

Summer 2020

Studying the Ocean: Past, Present and Future

Brown University

Modified my 2-week in-person Summer@Brown course (see below) for remote delivery over 4 weeks. Developed asynchronous canvas modules with lectures, discussions, at-home experiments, and a final group research project and presentation.

Co-Course Designer and instructor for Summer @ Brown

Summer 2019

Studying the Ocean from the Classroom to the Bay taught with Abigail Bodner.

Brown University

Developed and co-taught a two-week summer course introducing pre-college students to college-level oceanography through observations, theory and models. Included a day-long cruise in Narragansett Bay collecting observations and applying learned knowledge, rotating tank fluids experiments, MATLAB coding assignments, and a final research project and poster session.

Co-Course Designer and instructor for Summer @ Brown

Summer 2018

Studying the Ocean from the Classroom to the Bay taught with Abigail Bodner.

Brown University

Developed and co-taught a two-week summer course introducing pre-college students to college-level oceanography through observations, theory and models. Included a day-long cruise in Narragansett Bay collecting observations and applying learned knowledge, Python jupyter notebook coding assignments, and a final research project and poster session.

Graduate Teaching Assistant

Spring 2019

Introduction to Oceanography
for Prof. Steve Clemens.

Brown University

Responsibilities included holding regular office hours and grading homework assignments.

Graduate Teaching Assistant

Fall 2017

Global Climate & Weather
for Prof. Amanda Lynch

Brown University

Responsibilities included holding regular office hours, grading and developing homework assignments, assisting with advising and grading final research projects. Lectured on general ocean/atmospheric circulation and thunderstorms.

Undergraduate Researcher

Summer 2014

Advisor: Prof. Björn Sandstede, Division of Applied Mathematics

Brown University

Analysis of data assimilation and parameter estimation schemes applied to traffic models.

Undergraduate Researcher

Summer 2013

Advisor: Prof. Alkes Price, Department of Epidemiology

Harvard University

Statistical methods to infer consistency across populations of genetic variants associated with type-II diabetes.

U.S. Army National Guard

2005-2013

Served in Iraq as an E-4 Specialist during 2011, honorably discharged in 2013.

Health care specialist, as well as medical trainer for the State of IL and in Balad, Iraq.

Publications

1. **Pearson, J.**, Resplandy, R., Poupon, M., *In Prep*: Coastlines at Risk of Hypoxia in the Northern Indian Ocean *Submitting to PNAS*.
2. Pearson, B., **Pearson, J.**, Fox-Kemper, B., Accepted 2021: Advective Structure Functions in Anisotropic Two-Dimensional Turbulence. *Journal of Fluid Mechanics*. [DOI](#)
3. **Pearson, J.**, Fox-Kemper, B., Pearson, B., Chang, H., Huntley, H., Haus, B., Horstmann, J., Huntley, H., Kirwan, D. A., Jr., Poje, A., 2020: Biases in structure functions from observations of submesoscale flows. *Journal of Geophysical Research: Oceans*. 125, e2019JC015769 [DOI](#)
4. Chang, H., Huntley, H., Kirwan, D., Jr., Carlson, D., Mensa, J., Mehta, S., Novelli, G., Ozgokomen, T., Fox-Kemper, B., Pearson, B., **Pearson, J.**, Harcourt, R., 2019: Small-scale dispersion observations in the presence of Langmuir circulation. *Journal of Physical Oceanography*. 49, 3069-3085 [DOI](#)
5. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., & McWilliams, J., 2019: Impacts of convergence on structure functions from surface drifters in the Gulf of Mexico. *Journal of Physical Oceanography*, 49, 675-690. [DOI](#)
6. Xia, C., Cochrane, C., DeGuire, J., Fan, G., Holmes, E., McGuirl, M., Murphy, P., **Palmer, J.**, Carter, P., Slivinski, L., & Sandstede, B., 2017: Assimilating Eulerian and Lagrangian data in traffic-flow models. *Physica D: Nonlinear Phenomena*, 346, 59-72. [DOI](#)

Awards & Honors

FUNDING

Harry Hess Postdoctoral Research Fellowship	2020
Brown University Graduate School Conference Travel Grant	2019
Fluids and Health 2019 Junior Researcher Fellowship	2019
Brown University Graduate School Conference Travel Grant	2019

Brown University Graduate School International Travel Grant	2019
First Year Graduate Fellowship, Brown University	2015-2016
National Science Foundation MaPs Scholar, Northeastern Illinois University	2012-2014
National Institute for Mathematical and Biological Synthesis Travel Grant	2013
Society for Advancement of Chicanos and Native Americans in Science Travel Grant	2012

HONORS

Tse Cheuk Ng Tai Innovations in Fluids and Health 2019 Award, Tse Cheuk Ng Tai Innovation Fund	2019
GoMRI Scholar, Gulf of Mexico Research Initiative	2018
Dean's List, Northeastern Illinois University	2008-2014
Army Achievement Medal, ILARNG	2011
<i>For meritorious achievement, outstanding performance, personal sacrifice, and service as the primary instructor during the battalions Combat Lifesaver Course.</i>	
Command Sergeant Major's Award, ILARNG	2009
<i>For outstanding service in successfully training soldiers in Combat Lifesaver skills, and performance of the highest standards befitting of soldiers who lead from the front.</i>	

Skills & Training

Computer Languages & Software: MATLAB, Python, R, and \LaTeX	
Community Earth System Model (CESM) Tutorial 2019	08/05-08/09 2019
1 week of lecture and hands on activities to learn to operate CESM.	NCAR, CO
Cornell Satellite Remote Sensing Training Program	06/03-06/14 2019
2 week summer course on remote sensing with a focus on ocean color.	Ithaca, NY
American Institute of Biological Sciences & RI NSF EPSCoR/RI C-AIM	Feb 2019
Enabling Interdisciplinary and Team Science Workshop: A Professional Development Program from AIBS	Kingston, RI
The Harriet W. Sheridan Center for Teaching and Learning	Fall 2018
Certificate I: Reflective Teaching	Providence, RI
GODAE Oceanview International School	Fall 2017
New frontiers in operational oceanography	Mallorca, Spain
Consortium for Advanced Research on Transport of Hydrocarbon in the Environment III	Summer 2017
2 weeks launching driftcards in the Gulf of Mexico shelf area of LA	Grande Isle, LA
Northeastern Illinois University Field School	Summer 2014
2 weeks producing detailed geologic maps, stereonet, and reports on geomorphological and glacial features of the Baraboo syncline area	Baraboo, WI

Service & Outreach

CONTRIBUTIONS

Virtual Research Presentation for the Gifted 5th Graders Program at Bensonhurst in Brooklyn, NY	Jan 2020
Big Bang Science Fair Demonstrator, Waterfire in Providence, RI	Sept 2019
Career Day Geosciences Speaker, Lincoln Middle School	Apr 2019
GradCon Coordinator, Brown University	2018-2019
Elementary School Science Instructor, Vartan Gregorian Elementary	2015 - 2016
GRE Math Preparation Course Instructor, Northeastern Illinois University	Aug 2015

EMERGE Peer Leader, Northeastern Illinois University	Jul-Aug 2015
Mathematics Enrichment Workshop Program Peer Leader, Northeastern Illinois University	2010-2012
Combat Lifesaver Course Coordinator and Instructor, ILARNG	2009-2011

REVIEWS

Reviewer, Environmental Research Letters	2020-Present
Reviewer, Ocean Science	2019-Present
Reviewer, Journal of Physical Oceanography	2019-Present
Reviewer, Journal of Fluid Mechanics	2018-Present
Expert Reviewer, Intergovernmental Panel on Climate Change	2018

DEPARTMENTAL SERVICE

Princeton Women in Geosciences Mentor, Princeton University	2020-2021
International Graduate Student Mentor, Brown University	Fall 2017-2019
First Year Graduate Student Mentor, Brown University	Fall 2017 - Spring 2018
Geoclub Treasurer, Brown University	Fall 2016 - Spring 2017

Select Presentations

1. **Pearson, J.**, Resplandy, L., Poupon, M., 2020: Coastlines at Risk of Hypoxia in the Northern Indian Ocean. OCB 2020. Online poster.
2. **Pearson, J.**, Resplandy, L., Poupon, M., 2020: Observed Seasonal and Interannual Controls on Hypoxia in the Northern Indian Ocean. EGU 2020. Online poster. <https://doi.org/10.5194/egusphere-egu21-1421>
3. **Pearson, J.**, T., Sane, A., Ben-Horin, Fox-Kemper, B., 2019: Pathogen Dispersal in Narragansett Bay. Fluids and Health. **Oral.**
4. **Pearson, J.**, Fox-Kemper, B., Huntley, H., Chang, H., Kirwan, D., Jr., Pearson, B., 2019: Systematic Differences Between Eulerian and Surface Drifter Statistics in the Gulf of Mexico. AOFD, abstract 358490. Poster.
5. **Pearson, J.**, Fox-Kemper, B., Huntley, H., Chang, H., Kirwan, D., Jr., Pearson, B., 2019: Do surface drifters accurately represent Eulerian turbulence statistics? LAPCOD. **Oral.**
6. **Pearson, J.**, Fox-Kemper, B., Huntley, H., Chang, H., Kirwan, D., Jr., Pearson, B., 2019: Observed biases in surface drifter statistics in the Gulf of Mexico. CLIVAR. **Oral.**
7. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2018: Impacts of convergence zones on Lagrangian structure function statistics in the Gulf of Mexico. GRS. Poster.
8. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2018: Impacts of Convergence Zones on Lagrangian Structure Function Statistics in the Gulf of Mexico. KITP. Poster.
9. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2018: Impacts of convergence zones on Lagrangian structure function statistics in the Gulf of Mexico. Waters Edge. Poster.
10. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2018: Impacts of Convergence Zones on Lagrangian Structure Function Statistics in the Gulf of Mexico. OSM, abstract PS33A-01. Poster.

11. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2017: Evaluation of Lagrangian Structure Function Statistics in the Gulf of Mexico. AOFD. **Oral**.
12. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2017: Impacts of Convergence Zones on Lagrangian Structure Function Statistics in the Gulf of Mexico. GODAE International School. Poster.
13. **Pearson, J.**, Fox-Kemper, B., Bodner, A., 2016: Preparing for Model-Data Comparison: Structure Functions and Frontogenesis. CARTHE II All Hands Meeting. **Oral**.
14. **Pearson, J.**, Fox-Kemper, B., Barkan, R., Choi, J., Bracco, A., McWilliams, J., 2016: Structure Function Statistics to Detect Submesoscale Cascades. OSM, abstract PO34C-3066. Poster.
15. **Pearson, J.**, Xia, C., Cochrane, C., DeGuire, J., Fan, G., Holmes, E., McGuirl, M., Murphy, P., Carter, P., Slivinski, L., Sandstede, B., 2015: Microscopic and macroscopic traffic modeling utilizing data assimilation. The 5th Workshop in Statistical Mathematical Modeling. **Invited Oral**.

Affiliations and Memberships

Affiliate Graduate Student in the Institute at Brown for Environment Society (IBES)
Consortium for Advanced Research on Transport of Hydrocarbon in the Environment (CARTHE)
Graduate Fellow of the Rhode Island Consortium for Coastal Ecology Assessment Innovation & Modeling (RI C-AIM)
American Meteorological Society
American Geophysical Union
European Geophysical Union
Graduate Women in Science & Engineering
Association for the Sciences of Limnology and Oceanography
