# 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** — August 15 2020 - Present
Advisor: Prof. Laure Resplandy — *Princeton University*
I use observations and models to understand how both human-induced and natural processes can increase the risk of coastal hypoxia (harmfully low oxygen levels) in the northern Indian ocean.

**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

**Instructor for Summer @ Brown** — Summer 2020
*Studying the Ocean from the Classroom to the Bay* — *Brown University*
Developed and sole-taught a two-week summer course introducing pre-college students to oceanography

**Course Designer and Co-instructor for Summer @ Brown** — Summer 2018 - 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 oceanography

**Graduate Teaching Assistant** — Spring 2019
*Intro. to Oceanography* under Prof. Steve Clemens — *Brown University*

**Graduate Teaching Assistant** — Fall 2017
*Global Climate & Weather* under Prof. Amanda Lynch — *Brown University*

**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 *AGU Advances.*
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

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|---|---|
| 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

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| 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 |

*For meritorious achievement, outstanding performance, personal sacrifice, and service as the primary instructor during the battalions Combat Lifesaver Course.*

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| Command Sergeant Major's Award, ILARNG | 2009 |

*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.*

## 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, stereonets, and reports on geomorphological and glacial features of the Baraboo syncline area *Baraboo, WI*

## Service & Outreach

### Contributions

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| 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

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| 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

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| 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.**, T., Sane, A., Ben-Horin, Fox-Kemper, B., 2019: Pathogen Dispersal in Narragansett Bay. Fluids and Health. **Oral**.

2. **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.

3. **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**.

4. **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**.

5. **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.

6. **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.

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. Waters Edge. 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. OSM, abstract PS33A-01. Poster.

9. **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**.

10. **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.

11. **Pearson, J.**, Fox-Kemper, B., Bodner, A., 2016: Preparing for Model-Data Comparison: Structure Functions and Frontogenesis. CARTHE II All Hands Meeting. **Oral**.

12. **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.

13. **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

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