RILEY BRADY

Computational ocean biogeochemist interested in seasonal-to-decadal forecasting of the Earth's biosphere, high-performance computing, open-source software, and data visualization.

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bradyrx

Education

University of Colorado Boulder, PhD
Atmospheric and Oceanic Sciences
Expected April 2021

University of South Carolina, BS, 2016
Marine Science, *Magna Cum Laude*
Leadership Distinction in Research
South Carolina Honors College

Tools

Proficiency
python (dask, numpy, xarray) • MATLAB • git • bash • ParaView • NCO/CDO

Experience
C/C++ • OpenMP • MPI • javascript • NCL • R • Fortran • HTML/CSS

Coursework

Scientific Computing
High-Performance Scientific Computing
Modeling in Applied Mathematics
Chaotic Dynamics

Data Science
Ocean Data Analysis
Data Collection & Analysis
Data Visualization
Applied Linear Algebra
Introduction to Time Series
Probability

Awards

DOE Computational Science Graduate Fellowship
Goldwater Scholarship
NOAA Hollings Scholarship
Runner-up, Data Viz and Storytelling Competition
4x scientific conference presentation awards

Experience

University of Colorado Boulder Jun 2016–present
Computational Graduate Science Fellow Boulder, CO
Lead research studies related to decadal predictability of ocean carbon and internal climate variability of air-sea CO_2 fluxes. Supervised 6 undergraduate students through diversity programs. Wrote open-source python software for verifying weather and climate forecasts. Gave 20+ presentations and workshops at scientific conferences and academic institutions.

Oak Ridge National Laboratory May 2020–present
Visiting Researcher, Computational Earth Sciences Remote
Assessed subseasonal-to-decadal predictability of the terrestrial growing season in a coupled, global Earth system model.

Los Alamos National Laboratory May–Aug 2018
Visiting Researcher, Theoretical Division Los Alamos, NM
Ran parallel, global simulations of the DOE's ocean model on 10,000 CPU cores. Modified Fortran code base to add biogeochemical "sensors" to autonomous floats in a Lagrangian particle tracking system. Visualized unstructured Eulerian and Lagrangian model output in ParaView, resulting in a visualization award.

University of South Carolina Sep 2012–May 2016
Undergraduate Researcher, Marine Science Columbia, SC
Downloaded, post-processed, and stored petabytes of climate model output from the Coupled Model Intercomparison Project (CMIP5) using NCO, CDO, and MATLAB. Collaborated on studies projecting the long-term impacts of anthropogenic climate change on ocean circulation in the California Current.

NOAA Earth System Research Laboratory May–Aug 2015
NOAA Hollings Scholar, Physical Sciences Division Boulder, CO
Lead a peer-reviewed published study isolating the response of ocean circulation in the California Current to anthropogenic climate change and internal climate variability. Processed and analyzed output from the CESM Large Ensemble project.

University of North Carolina at Chapel Hill May–Aug 2013
NSF REU Scholar, Institute of Marine Sciences Morehead City, NC
Collaborated on a field campaign assessing the influence of hard clams on shallow-water primary production, seeking creative solutions for seagrass degradation. Worked with lab instruments for organic matter analysis. Assisted in long-term project tagging hammerhead sharks off coastal North Carolina.