RILEY X. BRADY

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Institute of Arctic and Alpine Research, University of Colorado
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EDUCATION

University of Colorado Boulder — *Boulder, CO*
Ph.D. Candidate in Atmospheric & Oceanic Sciences — *Expected 2021*
M.S. in Atmospheric & Oceanic Sciences — *2018*

University of South Carolina — *Columbia, SC*
B.S. in Marine Science (Emphasis in Physical Oceanography) — *2016*
Magna Cum Laude, Honors College, Phi Beta Kappa
Leadership Distinction in Research

Otto-Friedrich Universität Bamberg — *Bamberg, Germany*
Minor in German Studies — *2014*

RESEARCH APPOINTMENTS

Oak Ridge National Laboratory — *Oak Ridge, TN*
Graduate Research Assistant, Computational Earth Sciences Group — *Summer 2020*

University of Colorado Boulder — *Boulder, CO*
Graduate Research Assistant, Institute of Arctic and Alpine Research — *2016–Present*

Los Alamos National Laboratory — *Los Alamos, NM*
Graduate Research Assistant, Theoretical Division — *Summer 2018*

University of South Carolina — *Columbia, SC*
Undergraduate Research Assistant, Ecosystem Oceanography & Climate Change Lab — *2012–2016*

NOAA Earth System Research Laboratory — *Boulder, CO*
NOAA Hollings Scholar, Physical Sciences Division — *Summer 2015*

UNC Institute of Marine Sciences — *Morehead City, NC*
NSF REU Scholar, Coastal Fisheries Ecology Lab — *Summer 2013*

FUNDED PROPOSALS

Lead Principal Investigator

Brady, RX, 2016-2020: *Department of Energy Computational Science Graduate Fellowship*, ∼$450,000 total award.

Brady, RX and Rykaczewski, RR, 2014-2015: Variability in large-scale forcing of the four major Eastern Boundary Upwelling Systems. *U. South Carolina Magellan Research Scholarship*, $3,000 total award.

Brady, RX and Rykaczewski, RR, 2013-2014: The influence of water vapor on upwelling. *SC Honors College Science Undergraduate Research Fellowship*, $2,900 total award.

Brady, RX and Rykaczewski, RR, 2012-2013: Ocean ecosystems in 2100. *SC Honors College Science Undergraduate Research Fellowship*, $2,700 total award.

PUBLICATIONS

Under Review:

1. **Brady, RX**, NS Lovenduski, SG Yeager, MC Long, and K Lindsay (2019), Skillful multiyear predictions of ocean acidification in the California Current System, *Nature Communications*. [Preprint]

Peer-Reviewed:

2. **Brady, RX**, NS Lovenduski, MA Alexander, M Jacox, and N Gruber (2019), On the role of climate modes in modulating the air-sea CO_2 fluxes in Eastern Boundary Upwelling Systems, *Biogeosciences*, 16, 329–346, DOI: 10.5194/bg-16-329-2019. [PDF] [Supplemental]
1. **Brady, RX**, MA Alexander, NS Lovenduski, and RR Rykaczewski (2017), Emergent anthropogenic trends in California Current upwelling, *Geophys. Res. Lett.*, 44, 5044–5052, DOI: 10.1002/2017GL072945. [PDF] [Supplemental] [Press Release]

Conference Proceedings:

1. Dutta, S, **RX Brady**, ME Maltrud, PJ Wolfram, and R Bujack (2019), Leveraging Lagrangian analysis for discriminating nutrient origins, *EnvirVis*. [PDF]

HONORS AND AWARDS

National

Computational Science Graduate Fellow, Department of Energy	*2016*
Barry M. Goldwater Scholar, United States Congress	*2015*
Ernest F. Hollings Scholar, NOAA	*2014*

Institutional

Algernon Sydney Sullivan Award, U. South Carolina (3 recipients)	*2016*
Outstanding Undergraduate in Marine Science, U. South Carolina (2 recipients)	*2016*
Outstanding Senior Award, U. South Carolina	*2016*
McNair Scholar, U. South Carolina (Valued at $130,800)	*2012*

Meetings

1st Place, Oceanography, Earth System and Space Science Poster Conference	*2016*
Best Student Talk, Eastern Pacific Ocean Conference	*2015*
Outstanding Student Presentation Award, Ocean Sciences Meeting	*2014*
1st Place, Morning Oral STEM Session, South Carolina Discovery Day	*2013*

Visualization

Runner-up, Data Visualization and Storytelling Competition, AGU	*2019*

SKILLS & INTERESTS

Computer Languages	python, MATLAB, shell scripting, C/C++ (familiar), OpenMP/MPI (familiar)
Core Developer	climpred, esmtools
Software Contributions	esmlab, mpas-analysis, LIGHT, pop-tools, xskillscore
Data & Databases	Running ESM simulations, CMIP5/6, NetCDF, NCO, CDO, GNU parallel
Design	ParaView, HTML, CSS, LaTeX, Vector Graphics
Foreign Language	English (native), German (comfortable)
Music	acoustic guitar, blues harmonica, vocals

SHORT COURSES

* *denotes application-based programs*

CMIP6 Hackathon*, National Center for Atmospheric Research, Boulder, CO	*2019*
Swiss Climate Summer School*, C_2SM, Ascona, Switzerland	*2019*
CMIP6 Hackathon, Oak Ridge National Lab, Oak Ridge, TN	*2019*
ParaView Tutorial, Los Alamos National Lab, Los Alamos, NM	*2018*

Introduction to Parallel Programming, CU Boulder, Boulder CO *2017*
NMFS Marine Resources Population Dynamics Workshop*, Layton, FL *2014*

SERVICE & OUTREACH

Mentorship
- ∗ *denotes undergraduate mentees*
- Gabriela Cazares* (SOARS; MIT) *2019*
- David Feagins* (SMART; St. Mary's College) *2019*
- Brianna Green* (RESESS; New Mexico Tech) *2019*
- Holly Olivarez* (SOARS; University of New Mexico) *2019*
- Gabriela Negrete-Garcia* (SOARS; University of Wisconsin) *2017*

Science Fair Judging
- Boulder Valley School District Science Fair *2019*
- SOARS Poster Conference *2017*

Miscellaneous
- Referee, *JGR: Oceans*, *Earth System Science Data* [Publons]
- Member, Climate Gamers [Ice Ages Video] [Climate Models Video] *2018–2019*
- Skype a Scientist (video calls with high school science classes) *2018–present*
- Committee Lead, oceanography faculty search; prospective students; mentorship *2017–2019*
- Ambassador, Office of Fellowships; Office of Undergraduate Research; Sustainable Carolina *2013–2016*

TEACHING

University of Colorado Boulder
- Guest Lecturer, *Physical Oceanography and Climate* (Eastern Boundary Upwelling Systems) *Fall 2019*
- Grader, *Biogeochemical Oceanography* (20 students) *Spring 2019*
- Guest Lecturer, *Our Changing Climate* (Latent and Sensible Heat) *Fall 2018*

University of South Carolina
- Grader, *Ordinary Differential Equations* (39 students) *Spring 2016*
- Lecturer, *University 101* (20 students) *Fall 2015*

University of Texas Rio Grande Valley
- Guest Lecturer, *Intro to Scientific Computing for Earth Sciences* (From Raw Climate Data to Beautiful Plots) [Github Repo] *Fall 2019*
- Guest Lecturer, *Intro to Scientific Computing for Earth Sciences* (Color Theory and Matplotlib) *Spring 2019*

SELECTED PRESENTATIONS

Invited Talks:

6. Brady, RX, ME Maltrud, PJ Wolfram, and NS Lovenduski. High resolution simulation of biogeochemical pathways in E3SM. Computational Earth Sciences Group: Oak Ridge, TN. July 2019.
5. Brady, RX, NS Lovenduski, MA Alexander, MG Jacox, and N Gruber. On the role of climate modes in modulating the air-sea CO_2 fluxes in Eastern Boundary Upwelling Systems. EBUS Webinar Series. March 2019.
4. Brady, RX. Effective Use of Color in Scientific Visualization. Scientific Programming and Data Visualization (ATOC Course: Sci Programming, Data Analysis, and Vis Lab). Boulder, CO. November 2018. [Slides]

3. Brady, RX. Effective Use of Color in Scientific Visualization. ATOC Graduate Student Forum: Boulder, CO. October 2018.

2. Brady, RX, M Maltrud, P Wolfram, and NS Lovenduski. Southern Ocean Carbon Hotspots in E3SM. Climate, Ocean, and Sea Ice Modeling (COSIM) Team: Los Alamos, NM. August 2018.

1. Brady, RX, RR Rykaczewski, and MA Alexander. Emergence of Anthropogenic Trends in California Current Upwelling in the Presence of Natural Climate Variability. NCAR Oceanography Section: Boulder, CO. March 2016.

Conference Talks:

7. Brady, RX, NS Lovenduski, SG Yeager, MC Long, and K Lindsay. Skillful multiyear predictions of ocean acidification in the California Current System. Eastern Pacific Ocean Conference: South Lake Tahoe, CA. September 2019.

6. Brady, RX, NS Lovenduski, SG Yeager, and MC Long. Skillful multiyear predictions of pH variability in the California Current System. CESM Workshop: Boulder, CO. June 2019.

5. Brady, RX, NS Lovenduski, MA Alexander, MG Jacox, and N Gruber. On the role of climate modes in modulating the air-sea CO_2 fluxes in Eastern Boundary Upwelling Systems. 12th Graduate Climate Conference: Pack Forest, WA. November 2018.

4. Brady, RX, NS Lovenduski, MA Alexander, MG Jacox, and N Gruber. What controls the variability of CO_2 fluxes in Eastern Boundary Upwelling Systems? Ocean Sciences Meeting: Portland, OR. February 2018. [Slides] [PDF]

3. Brady, RX, RR Rykaczewski, and MA Alexander. Emergence of anthropogenic trends in California Current upwelling in the presence of internal climate variability. CESM Workshop: Breckenridge, CO. June 2016. [Slides] [PDF]

2. Brady, RX, RR Rykaczewski, and MA Alexander. The influence of natural variability on future California Current upwelling. AGU Fall Meeting: San Francisco, CA. December 2015. [Slides]

1. Brady, RX, MA Alexander, and RR Rykaczewski. Quantifying natural and anthropogenic variation in California Current upwelling. Eastern Pacific Ocean Conference: South Lake Tahoe, CA. September 2015. [Slides]

Conference Posters:

4. Brady, RX, NS Lovenduski, SG Yeager, and MC Long. Skillful multiyear predictions of pH variability in the California Current System. AGU Chapman Conference on Understanding Carbon Climate Feedbacks: San Diego, CA. August 2019.

3. Brady, RX and NS. Lovenduski. CO_2 flux variability in Eastern Boundary Upwelling Systems. 10^{th} International Carbon Dioxide Conference: Interlaken, Switzerland. August 2017.

2. Brady, RX, RR Rykaczewski, and MA Alexander. Emergence of anthropogenic trends in California Current upwelling in the presence of internal climate variability. Ocean Sciences Meeting: New Orleans, LA. February 2016.

1. Brady, RX, and RR Rykaczewski. Consequences of changing high-pressure zones on future coastal upwelling. Ocean Sciences Meeting: Honolulu, HI. February 2014 [PDF]

Workshops:

2. Brady, RX and LB Davis. Effective Use of Color in Climate Science Visualizations. ATOC Graduate Student Forum: Boulder, CO. October 2019. [Github Repo]

1. Brady, RX. Introduction to Git Version Control. ATOC Graduate Student Forum: Boulder, CO. March 2019.