NATHANIEL CRESSWELL-CLAY

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EDUCATION

Tufts University, Medford, MA *September 2015 - May 2019*
Bachelor of Science in Mathematics, Cum Laude

Woods Hole Oceanographic Institution, Woods Hole, MA *September 2017 - December 2017*
Semester at WHOI Student

WORK EXPERIENCE

June 2019 - Present: **Guest Investigator**, Woods Hole Oceanographic Institution, Woods Hole, MA

June 2018 - August 2018: **Guest Student**, Woods Hole Oceanographic Institution, Woods Hole, MA

RESEARCH EXPERIENCE AND TRAINING

June 2019 - Present: **Variability and evolution of the Azores High in the last millennium**
Using Last Millennium Ensemble simulations from CESM and proxy reconstructions to understand variability of the Azores High and hydroclimate on the Iberian Peninsula
(Advisor: Caroline Ummenhofer)

July 2019: **ICTP-CLIVAR Summer School on Eastern Boundary Upwelling**
Attended week long summer school on eastern boundary upwelling systems hosted by the International Centre for Theoretical Physics in collaboration with CLIVAR

June 2018 - Present: **Eastern boundary upwelling and its relationship with Hadley Cells**
Using POP2 ocean model output and NOAA atmospheric reanalysis data to explore the relationship between the Hadley Circulation and eastern boundary upwelling systems
(Advisors: Caroline Ummenhofer, Ivan Lima)

September 2018 - May 2019: **Assessing the role of first order circulation in tropical expansion**
Recreated the Held-Hou formulation for Hadley Circulation and explored its sensitivity to changes in climate projected under CMIP5 emissions pathways
(Senior Honors Thesis; Committee: James Adler, Anne Gardulski)

September 2017 - December 2017: **Australian rainfall and its relationship with the ocean**
Used precipitation reanalysis to explore the connection between rainfall in southwestern Australia and upper ocean properties in the Indian Ocean
(Advisors: Caroline Ummenhofer, Rhys Parfitt)

AWARDS

May 2019: **High Honors in Thesis** awarded upon completion of thesis defense.

July 2019: **ICTP-CLIVAR Summer School on Eastern Boundary Upwelling,** awarded competitive travel support to attend summer school held at International Centre for Theoretical Physics, Trieste, Italy.

PRESENTATIONS

May 2019: **First Order Atmospheric Approximations and Tropical Expansion**
Oral presentation at Tufts University Undergraduate Research and Scholarship Symposium; Tufts University, Medford, MA

July 2019: **Hadley Circulation and its Relevance to Eastern Boundary Upwelling**
Poster presentation at ICTP-CLIVAR Summer School on Easter Boundary Upwelling Systems; International Centre for Theoretical Physics, Trieste, Italy

TECHNICAL SKILLS AND COURSEWORK

Languages	Python, MATLAB, C, Wolfram Language, html, Maple
Software & Tools	LaTeX, xarray, numpy, netcdf, Pandas, Jupyter Notebook, matplotlib
Relevant Coursework	Climate Variability and Diagnostics (MIT-WHOI Joint Program course), Mathematical Aspects of Data Analysis, Mathematical Modeling and Computation, Numerical Analysis, Introduction to Oceanography, Complex Analysis, Data Structures, Linear Algebra, Real Analysis, Multivariable Calculus, Physics