

K McMonigal

Contact information

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Education

Rosenstiel School of Marine and Atmospheric Science, University of Miami, Miami, FL

- Ph.D. candidate in Meteorology and Physical Oceanography August 2015-present
Advisor: Prof. Lisa M. Beal
Committee members: Igor Kamenkovich, Rana Fine, Shane Elipot, Josh Willis (JPL)
Dissertation title: *Estimating the heat transport of the South Indian Ocean*

Northwestern University, Evanston, IL

- Bachelor of Arts with majors in Mathematics, Integrated Science Program, and Earth and Planetary Science, graduated with departmental honors June 2015

Publications

- **McMonigal, K.**, L.M. Beal, S. Elipot, T. Morris, J. Hermes, Observed modes of Agulhas Current temperature variability, *in prep.*
- Gunn, K.L., L.M. Beal, S. Elipot, **K. McMonigal**, A. Houk, Indian Ocean salt transport variability at 34°S, *in prep.*
- **McMonigal, K.**, L.M. Beal, J.K. Willis (2018), The seasonal cycle of the south Indian Ocean subtropical gyre circulation as revealed by Argo and satellite data, *Geophysical Research Letters*, doi:10.1029/2018GL078420.

Research Presentations

- McMonigal, K., L.M. Beal, S.K. Elipot, J. Hermes, T. Morris, *The time varying temperature transport of the Agulhas Current*, IUGG Assembly, Montreal, Canada, July 2019.
- McMonigal, K., L.M. Beal, J.K. Willis, *The seasonal cycle of the South Indian Ocean subtropical gyre as revealed by Argo and satellite data*, National Oceanography Centre, UK, July 2018.
- McMonigal, K., L.M. Beal, J.K. Willis, *The seasonal cycle of the South Indian Ocean subtropical gyre as revealed by Argo and satellite data*, University of Cape Town, June 2018.
- McMonigal, K., L.M. Beal, J.K. Willis, *Seasonality of the South Indian Ocean subtropical gyre*, Conference of Florida Graduate Schools, Tallahassee, Florida, April 2018 (poster).
- McMonigal, K. and L.M. Beal, *Meridional heat transport of the Indian Ocean across 34°S based on high resolution Agulhas Current hydrography, satellite, and Argo data*, IAPSO-IAMAS-IAGA Joint Assembly, Cape Town, South Africa, August 2017.
- McMonigal, K. and P.A. Beddows, *Calcite Rafts – Rapid deposition of transgressive infill cave sequences as a new paleo sea level proxy*, GSA Annual Meeting, Vancouver, Canada, October 2014 (poster).

Research Experience

Meteorology and Physical Oceanography Program, University of Miami, Miami, FL

Graduate Research Assistant, advisor: Prof. Lisa Beal August 2015-present

- Taking core classes in ocean and atmospheric sciences
- Learning statistical and data analysis skills
- Investigating the meridional heat transport of the Indian Ocean basin using hydrographic, Argo float, and satellite data
- Experience working with data from CTD's, microCATs, CRIES, Argo floats, satellite sea surface height

Earth and Planetary Science Department, Northwestern University, Evanston, IL

Undergraduate Research Assistant, Dr. Patricia Beddows December 2012- June 2015

- Evaluated the feasibility of a new high resolution method of recreating past sea level
- Conducted six weeks of field work in Quintana Roo, Mexico, including caving, surveying, and diving

Sea Experience

- April - May 2019: CTD operations, water sampling, drifter and float deployment, *RV Thomas G. Thompson*, GO-SHIP I06S, Indian/Southern Ocean, 42 days, Chief Scientists: Prof. Alejandro Orsi, Dr. Isa Rosso.
- June 2018: Mooring recovery, CTD operations, salinity sampling and processing, drifter and float deployment, *SA Agulhas*, Agulhas System Climate Array cruise 2018, Indian Ocean, 14 days, Chief Scientists: Prof. Lisa Beal, Tamaryn Morris.
- April 2016: Mooring deployment, CTD operations, *RV Algoa*, Agulhas System Climate Array cruise 2016, Indian Ocean, 14 days, Chief Scientist: Prof. Lisa Beal

Teaching Experience

- University of Miami Teaching Academy, coursework and guest lecturer for undergraduate/graduate course: *Climate Change*, Prof. Amy Clement, lecture topic: Oceans and Climate Fall 2019
- Instructor for honours course: *Basic Dynamical Oceanography*, University of Cape Town, 10 students Fall 2019
- Teaching assistant for undergraduate course: *Environmental Oceanography*, Prof. R. Pamela Reid, University of Miami, lecture topics: *Intro to Atmosphere and Ocean Circulation*, 20 students Fall 2018
- Teaching assistant for undergraduate course: *Climate and Global Change*, Prof. Igor Kamenkovich, University of Miami, lecture topics: *Methods of measuring the climate system*, *The future of clean energy*, 80 students Fall 2016

Leadership

Early Career Researchers Working Group, International Association for the Physical Sciences of the Ocean (IAPSO)

Committee member

January 2019 - present

Student-Led Evaluations and Development, University of Miami

August 2017 - May 2019

Committee member

- Developed surveys on professional development and mentoring for graduate students
- Presented results to students, staff, faculty with aim of improving graduate student support and mentoring

oSTEM, University of Miami

2015-2016

Founding member, vice president, advisor: Dr. Ryan Woosley

- Assisted in founding of undergraduate student group for LGBTQ+ students in science, technology, engineering, and math

Awards, Honors, and Skills

- Mary Roche Fellowship (\$10000) April 2019
- UM Graduate Student Research Symposium awardee (Physical Sciences) April 2018
- Graduate Career Development fund awardee (\$2500) December 2017
- University of Miami Fellowship March 2015-present
- First place winner, best poster in Science and Engineering category, Northwestern University Undergraduate Research Exposition June 2015
- Seymour Schlanger Undergraduate Earth Science Award June 2015
- Departmental honors, Earth and Planetary Sciences June 2015
- Academic All Big Ten Student Athlete 2011-2012
- Programming experience in Matlab, Python, C++, Ruby