

Kay McMonigal

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EDUCATION

- 2020 **Ph.D.**, University of Miami (UM) Rosenstiel School of Marine and Atmospheric Sciences (RSMAS)
Meteorology and Physical Oceanography
Dissertation: *Estimating a time-series of South Indian Ocean heat transport*
Advisor: Lisa Beal
- 2015 B.A., Northwestern University
Earth and Planetary Sciences, Math, Integrated Sciences

EMPLOYMENT

- 2020 - Postdoctoral Researcher
MEAS, North Carolina State University
- 2015 - 2020 Graduate Research Assistant
University of Miami RSMAS
- 2014 - 2015 Undergraduate Research Assistant
Northwestern University Earth and Planetary Sciences (EPS)

AWARDS & SCHOLARSHIPS

- 2019 Mary Roche Scholarship, University of Miami
- 2018 Best physical sciences presentation, Graduate Student Research Symposium, UM
- 2017 RSMAS Career Development Award, University of Miami
- 2015 - 2020 University of Miami Graduate School Fellowship
- 2015 Scymour Schlanger Undergraduate Earth Science Award, EPS

PUBLICATIONS - PEER REVIEWED

[3] **McMonigal, K.**, L.M. Beal, S. Elipot, K. Gunn, T. Morris, J. Hermes, A. Houk (2020): The impact of meanders, deepening and broadening, and seasonality on Agulhas Current temperature variability, *Journal of Physical Oceanography*, **50** (12).

[2] Gunn, K.L., L.M. Beal, S. Elipot, **K. McMonigal**, A. Houk (2020): Mixing of subtropical, central and intermediate waters driven by shifting and pulsing of the Agulhas Current, *Journal of Physical Oceanography*, **50** (12).

[1] **McMonigal, K.**, L.M. Beal, and 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*, **45** (17).

PUBLICATIONS - IN PREPARATION

Gunn, K.L., **K. McMonigal**, L.M. Beal, S. Elipot, Eddy heat fluxes within the Agulhas Current

Gunn, K.L., **K. McMonigal**, L.M. Beal, S. Elipot, E. McDonagh, Continuous estimates of South Indian Ocean freshwater convergence

McMonigal, K., K. Gunn, L.M. Beal, S. Elipot, J.K. Willis, Convergent Indian Ocean heat transport drives recent warming

INVITED TALKS

2021 *Convergent Indian Ocean heat transport drives recent warming*
CASPO seminar, Scripps Institute of Oceanography, San Diego, CA

SCIENTIFIC PRESENTATIONS

2021 *Estimating a time series of South Indian Ocean heat transport*
Physical Oceanography Dissertation Symposium

2020 *Estimating a time series of meridional heat transport of the Indian Ocean at 34°S*
Ocean Sciences Meeting, San Diego, CA

2020 *Variability in Agulhas Current temperature and freshwater transports, with implications for Agulhas Leakage fluxes*
Gateways to the Ocean Symposium, San Diego, CA

2019 *The time varying temperature transport of the Agulhas Current*
IUGG Assembly, Montreal, Canada

2018 *The seasonal cycle of the South Indian Ocean subtropical gyre as revealed by Argo and satellite data*
National Oceanography Centre, Southampton, UK

2018 *The seasonal cycle of the South Indian Ocean subtropical gyre as revealed by Argo and satellite data*
University of Cape Town, South Africa

- 2018 *The seasonal cycle of the South Indian Ocean subtropical gyre (poster)*
Statewide Graduate Research Symposium, Florida State University
- 2018 *The seasonal cycle of the South Indian Ocean subtropical gyre*
University of Miami, Graduate Research Symposium
- 2017 *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
- 2014 *Calcite rafts-rapid deposition of transgressive infill cave sequences as a new
paleo sea level proxy (poster)*
Geological Society of America, Vancouver, CA

FUNDED GRANTS

- 2019 **K. McMonigal:** Mary Roche Scholarship. University of Miami. \$10,000
- 2018 **K. McMonigal:** *Elevating diversity and inclusion at RSMAS*. University of Miami
Career Development Fund. \$2,500.

SEAGOING EXPERIENCE

- 2020 FLOTSAM undergraduate cruises, RV Walton Smith, Florida Straits, Chief
Scientist: Jim Happell. Two one day cruises. CTD operations and plankton tows.
- 2019 GO-SHIP I06S, RV Thomas G Thompson, Indian/Southern Ocean, Chief
Scientist: Alex Orsi. 42 days. CTD operations, drifter and float deployment.
- 2018 Agulhas System Climate Array (ASCA), SA Agulhas, Indian Ocean, Chief
Scientist: Lisa Beal. 14 days. Mooring recovery, CTD operations.
- 2016 ASCA, RV Algoa, Indian Ocean, Chief Scientist: Lisa Beal. 14 days. Mooring
deployment, CTD operations.

TEACHING EXPERIENCE

- 2021 Guest lecture, North Carolina State University
Introduction to Coastal Environments Lab, Instructor: Christopher Osborne
- 2020 In person instructor (hybrid course), University of Miami
Introduction to Physical Oceanography, lead lecturer: Lisa Beal
- 2019 University of Miami Teaching Academy
- 2019 Guest lecture, University of Miami
Climate Change, Instructor: Amy Clement

2019	Instructor, University of Cape Town <i>Basic Dynamical Oceanography</i>
2018	Teaching Assistant, University of Miami <i>Environmental Oceanography</i> , Instructor: Pamela Reid
2016 - 2018	Tutor, Tutorial Resources Math, physics, earth sciences
2016	Teaching Assistant, University of Miami <i>Climate and Global Change</i> , Instructor: Igor Kamenkovich

SERVICE AND OUTREACH

International Association for the Physical Sciences of the Ocean, Early Career Scientist working group, committee member

University of Miami RSMAS Student-Led Evaluations and Development, committee member

Reviewer for *Geophysical Research Letters*, *Scientific Reports*, *Journal of Geophysical Research: Oceans*, *Atmosphere*, *Ocean Sciences*, IPCC AR6 report

American Meteorological Society, member

The Oceanography Society, member

American Geophysical Union, member

Ocean Sciences Bowl 2020 volunteer

URGE Pod member, 2021