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Sarah M. Larson

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EDUCATION

2016	**Ph.D.**, University of Miami Rosenstiel School of Marine and Atmospheric Science (RSMAS) Meteorology & Physical Oceanography Dissertation: *ENSO Predictability*
2011	**B.S.**, University of South Alabama Meteorology

EMPLOYMENT

2018 – present	**Assistant Professor** Marine, Earth, and Atmospheric Sciences, North Carolina State University
2016 – 2018	**NOAA Climate & Global Change Postdoctoral Fellow** University of Wisconsin – Madison
2016	**Postdoctoral Researcher** University of Miami Cooperative Institute for Marine & Atmospheric Science (CIMAS)

PUBLICATIONS

Peer-Reviewed (graduate student or postdoc underlined)

[26] Bellomo, K., V. L. Meccia, R. D'Agostino, F. Fabiano, **S. M. Larson**, J. von Hardenberg, S. Corti (2023): Impacts of a weakened AMOC on precipitation over the Euro-Atlantic region in the EC-Earth3 climate model, *Climate Dynamics*, accepted.

[25] Shu, Q., Y. Zhang, D. J. Amaya, **S. M. Larson**, Y. Kosaka, J.-C. Yang, and X. Lin (2023): Role of Ocean Advections during the Equatorward Propagation of the Pacific Meridional Modes, *Journal of Climate*, accepted.

[24] McMonigal, K., **S. M. Larson**, S. Hu, and R. Kramer (2023): Historical changes in wind driven ocean circulation can accelerate global warming, *Geophysical Research Letters*, 50, e2023GL102846. [Science Editor's Highlight]

[23] Hasan, M., **S. M. Larson**, and K. McMonigal: Hadley cell edge modulates the role of Ekman heat flux in a future climate, *Geophysical Research Letters,* 49, e2022GL100401.

[22] Zhang, Y., S. Yu, S.-P. Xie, D. J. Amaya, Q. Peng, Y. Kosaka, X. Lin, J.-C. Yang, **S. M. Larson**, and A. J. Miller (2022): Role of ocean dynamics in equatorial Pacific decadal variability, *Climate Dynamics*, accepted.

[21] Lee, S.-K., H. Lopez, G. R. Foltz, D. Kim, **S. M. Larson**, E.-P. Lim, K. Pujiana, D. L. Volkov, S. Chakravorty, and F. A. Gomez. (2022): Java-Sumatra Niño/Niña and associated regional rainfall variability, *Journal of Climate*, accepted.

[20] **Larson, S. M**., Y. Okumura, K. Bellomo, and M. Breeden (2022): Destructive interference of ENSO on North Pacific SST and North American precipitation associated with Aleutian low variability. *Journal of Climate,* 35, 3567-3585.

[19] McMonigal, K, and **Larson, S. M.** (2022): ENSO explains the link between Indian Ocean Dipole and meridional ocean heat transport. *Geophysical Research Letters*, 49, e2021GL095796.

[18] Chakravorty, S., R. C. Perez, B. T. Anderson, **S. M. Larson**, B. S. Giese, and V. Pivotti (2021): Ocean dynamics are key to extratropical forcing of El Nino. *Journal of Climate*, 24, 8739-8753.

[17] Zhang, Y., S. Yu, D. J. Amaya, Y. Kosaka, **S. M. Larson**, X. Wang, J.-C. Yang, M. F. Stuecker, S.-P. Xie, A. J. Miller, and X. Lin (2021): Pacific Meridional Modes without Equatorial Pacific Influence. *Journal of Climate*, 34, 5285-5301.

[16] Chakravorty, S., R. C. Perez, B. T. Anderson, B. S. Giese, **S. M. Larson**, and V. Pivotti (2020): Testing the trade wind charging mechanism and its influence on ENSO variability. *Journal of Climate,* 33, 7391-7411.

[15] Capotondi, A., C. Deser, A. S. Phillips, Y. Okumura, and **S. M. Larson** (2020): ENSO and Pacific Decadal Variability in the Community Earth System Model Version 2. *Journal of Advances in Modeling Earth Systems*, e2019MS002022.

[14] Pegion, K., C. M. Selman, **S. M. Larson**, J. C. Furtado, and E. J. Becker (2020): The Impact of the Extratropics on ENSO Diversity and Predictability. *Climate Dynamics,* 54, 4469-4484.

[13] **Larson, S. M.**, M. Buckley, and A. Clement (2020): Extracting the Buoyancy-Driven Atlantic Meridional Overturning Circulation. *Journal of Climate*, 33, 4697-4714.

[12] **Larson, S. M.**, and K. V. Pegion (2020): Do asymmetries in ENSO predictability arise from different recharged states? *Climate Dynamics*, 54, 1507-1522.

[11] Small, R. J., F. O. Bryan, S. P. Bishop, **S. M. Larson,** and R. A. Tomas (2020): What Drives Upper-Ocean Temperature Variability in Coupled Climate Models and Observations? *Journal of Climate*, 33, 577-596.

[10] **Larson, S. M.**, and B. P. Kirtman (2019): Linking Preconditioning to Extreme ENSO events and reduced ensemble spread. *Climate Dynamics: Special Collection on ENSO Diversity,* 52, 7417-7433.

[9] **Larson, S. M.**, K. V. Pegion, and B. P. Kirtman (2018): The South Pacific Meridional Mode as a thermally-driven source of ENSO amplitude modulation and uncertainty. *Journal of Climate*, 31, 5127-5145.

[8] **Larson, S. M.**, D. J. Vimont, A. Clement, and B. P. Kirtman (2018): How momentum coupling affects SST variance and large-scale Pacific climate variability in CESM. *Journal of Climate*, 31, 2927-2944.

[7] **Larson, S. M.**, B. P. Kirtman, and D. J. Vimont (2017): A Framework to Decompose Wind-driven Biases in Climate Models Applied to CCSM/CESM in the Eastern Pacific, *Journal of Climate*, 30, 8763-8782.

[6] **Larson, S. M.**, and B. P. Kirtman (2017): Drivers of coupled model ENSO error growth dynamics and the spring predictability barrier. *Climate Dynamics*, 48, 3631-3644.

[5] **Larson, S. M.**, and B. P. Kirtman (2015): An alternate approach to ensemble ENSO forecast spread: Application to the 2014 forecast. *Geophys. Res. Lett*., 42, 9411–9415.

[4] **Larson, S. M**., and B. P. Kirtman (2015): Revisiting ENSO Coupled Instability Theory and SST Error growth in a fully coupled model. *Journal of Climate*, 28, 4724–4742.

[3] **Larson, S. M**, and B. P. Kirtman (2014): The Pacific Meridional Mode as an ENSO Precursor and Predictor in the North American Multi-Model Ensemble. *Journal of Climate*, 27, 7018-7032.

[2] **Larson, S. M.**, and B. Kirtman (2013): The Pacific Meridional Mode as a trigger for ENSO in a high-resolution coupled model. *Geophys. Res. Lett*., 40, 3189–3194.

[1] **Larson, S. M.**, S.-K. Lee, C. Wang, E.-S. Chung, and D. Enfield (2012): Impacts of non-canonical El Niño patterns on Atlantic hurricane activity. *Geophys. Res. Lett*., 39, L14706.

In Progress (graduate student or postdoc underlined)

[6] Karaffa, K., **S. Larson**, and K. Dello: Flash and Seasonal Drought Occurrence in North Carolina and Their Associated Mariculture Impacts, in prep.

[5] Hasan, M., **S. Larson**, K. McMonigal, and A. Aiyyer: The coupling between the internal variability of Hadley circulation strength and wind-driven ocean circulation, In prep for *Journal of Climate.*

[4] McMonigal, K., **S. Larson**, M. Buckley, and M. Gervais: Wind driven ocean circulation changes alter the future evolution of the North Atlantic warming hole. In prep for *Journal of Climate.*

[3] **Larson, S. M.**, K. McMonigal, Y. Okumura, D. Amaya, A. Capotondi, K. Bellomo, I. R. Simpson, and A. C. Clement: Ocean realism shapes sea surface temperature variability in a CESM2 coupled model hierarchy, submitted to *Journal of Climate*.

[2] Fu, Shuo, S. Hu, X.-T. Zheng, K. McMonigal, **S. Larson**, and Y. Tian: Wind driven ocean circulation changes induce historical eastern equatorial Pacific warming, submitted.

[1] Sutton, M., **S. M. Larson**, and E. J. Becker: New insights on ENSO teleconnection asymmetry and ENSO forced atmospheric circulation variability over North America, *Climate Dynamics*, in revision.

Other Publications

Larson, S. M. and K. Pegion, (2021): Do asymmetries in ENSO predictability arise from different recharged states? Extended Summary, Climate Prediction S&T Digest, 45th NOAA Climate Diagnostics and Prediction Workshop, Virtual Online, DOC/NOAA, 11. DOI: 10.25923/tpfe-4n87.

Kirtman, B., J. Infanti, and **S. Larson** (2013): The diversity of El Niño in the North American multi-model prediction system. *US CLIVAR Variations,* 11, 18-23.

SCIENTIFIC PRESENTATIONS

2020-present (group members underlined)

Forthcoming

2024 Goff, H., **S. Larson**, and A. Aiyyer: The Impact of wind-driven ocean circulation variability on the Madden-Julian Oscillation and Kelvin Waves, AMS Annual Meeting, Baltimore, MD.

2024 Brown, M., **S. Larson**, and E. Becker: The Asymmetric Impacts of El Niño-Southern Oscillation Modulation on Daily Temperature Variability over North America, AMS Annual Meeting, Baltimore, MD.

2024 Hasan, M., **S. Larson**, K. McMonigal, W. Robinson, and A. Aiyyer: Coupling between Hadley Circulation Strength Variability and Wind-stress-driven Ocean Circulation is Hemisphere Dependent, AMS Annual Meeting, Baltimore, MD.

2024 Karaffa, K., **S. Larson**, and K. Dello: Flash Drought Occurrence in the Coastal Carolinas Could Increase in the Future. What Does That Mean for Carolina Oyster Farmers? AMS Annual Meeting, Baltimore, MD.

2024 **Larson, S.**, Y. Okumura, K. Bellomo, and M. Breeden: Interference of ENSO on North American Precipitation Associated with Aleutian Low/PNA Variability, AMS Annual Meeting, Baltimore, MD.

2023 Buckley, M., K. McMonigal, **S. Larson**, Y.-O. Kwon, and G. Liu: The Role of Ocean Dynamics in Variability and Predictability of Atlantic Sea Surface Temperatures, AGU Fall Meeting, San Francisco, CA.

2023 McMonigal, K., **S. Larson**, M. Buckley, and M. Gervais: Future evolution of the North Atlantic warming hole is impacted by wind driven ocean circulation changes, AGU Fall Meeting, San Francisco, CA.

2023 **Larson, S**., K. McMonigal, Y. Okumura, D. Amaya, A. Capotondi, K. Bellomo, I. Simpson, and A. Clement: Ocean realism shapes SST variability in a CESM2 Model Hierarchy, AGU Fall Meeting, San Francisco, CA.

2023 **Larson, S.,** E. Becker, and M. Sutton: Surprisingly large sample sized needed to estimate ENSO-neutral atmospheric circulation variability, AGU Fall Meeting, San Francisco, CA (invited).

2023 Fu, S., S. Hu, X.-T. Zheng, K. McMonigal, **S. Larson**, and Y. Tian: Unfolding the role of wind-driven ocean circulation in the historical Pacific warming pattern, AGU Fall Meeting, San Francisco, CA.

Completed

2023 McMonigal, K., and **S. M. Larson**: Effect of Indian Ocean Dipole on Meridional Heat Transport Depends on ENSO, European Geophysical Union (EGU), Vienna, Austria.

2023 Bellomo, K., V. Meccia, R. D'Agostino, F. Fabiano, **S. Larson**, J. von Hardenberg, S. Corti: Impacts of a Weakened AMOC on Precipitation over the Euro-Atlantic Region in theEC-Earth3 Climate Model, AMS Annual Meeting, Denver, CO.

2023 **Larson, S. M.,** K. McMonigal, S. Hu, and R. Kramer: Historical changes in wind driven ocean circulation can accelerate global warming, AMS Annual Meeting, Denver, CO.

2023 Shu, Q., Y. Zhang, D. Amaya, **S. Larson**, Y. Kosaka, J.-C. Yang, X. Lin: Role of Ocean Advections during the Equatorward Propogation of the Pacific Meridional Mode, AMS Annual Meeting, Denver, CO.

2022 McMonigal, K., **S. M. Larson**, and S. Hu: Wind Driven Ocean Redistribution of Heat Leads to Increased Anthropogenic Surface Warming over 1979-2014 in CESM2, AGU Fall Meeting, Chicago, IL.

2022 Hasan, M., **S. M. Larson**, and K. McMonigal: Future Changes in the Role of Ekman Heat Flux on SST Variability, AGU Fall Meeting, Chicago, IL.

2022 **Larson, S. M.,** Y. Okumura, K. Bellomo, and M. Breeden: Destructive Interference of ENSO on North American Precipitation Associated with Aleutian Low/PNA Variability, AGU Fall Meeting, Chicago, IL.

2022 Bellomo, K., V. L. Meccia, R. D'Agostino, F. Fabiano, **S. M. Larson**, O. Mehling, J. von Hardenberg, S. Corti: Precipitation impacts of a weaker AMOC over the Euro-Atlantic region in the EC-Earth3 climate model, AGU Fall Meeting, Chicago, IL.

2022 McMonigal, K., M. Buckley, O. Gozdz, and **S. M. Larson**: *Drivers of Atlantic SST variability in a coupled model hierarchy*, AMS Atmospheric and Oceanic Fluid Dynamics conference, Breckenridge, CO, 2022.

2022 McMonigal, K., and **S. M. Larson**: *Anthropogenically forced wind driven ocean redistribution of heat leads to increased warming over the historical period*, US CLIVAR Pattern Effect Workshop, Boulder, CO, 2022.

2022 Hasan, M., **S. M. Larson,** and K. McMonigal: *Future Changes in the Role of Ekman Heat Flux on Pacific SST Variability*, NCAR Climate Variability and Change Working Group, CESM Annual workshop, virtual.

2022 Hasan, M., **S. M. Larson,** and K. McMonigal: *Future Changes in the Role of Ekman Heat Flux on Pacific SST Variability*, George Mason University Graduate Student Symposium, Fairfax, VA.

2022 **Larson, S. M.**: *Using coupled models to better understand the ocean's role in extra-tropical climate variability,* George Mason University, Atmosphere, Ocean, and Earth Sciences Department Seminar, virtual (invited).

2022 **Larson, S. M.**: *Using coupled models to better understand the ocean's role in extra-tropical climate variability,* NASA Global Modeling and Assimilation Office, Seminar Series on Earth System Science, virtual (invited).

2022 McMonigal, K., and **S. M. Larson:** *ENSO explains the link between Indian Ocean Dipole and meridional ocean heat transport,* NCAR Climate Variability and Change Working Group winter meeting, virtual.

2022 McMonigal, K., and **S. M. Larson:** *ENSO explains the link between Indian Ocean Dipole and meridional ocean heat transport,* AGU Ocean Sciences, virtual.

2021 Hasan, M., **S. M. Larson,** and K. McMonigal**:** *Air-Sea Interaction Plays a Different Role in North Pacific Turbulent Heat Flux Exchange in Summer Versus Winter*, AGU Fall Meeting, New Orleans, LA.

2021 **Larson, S. M.**: *Subtropical Pacific SST variability: insights on forcings and links to the tropics*, University of Hawaii, Department of Oceanography (invited).

2021 **Larson, S. M.**: *A coupled model hierarchy approach to studying climate variations in the midlatitudes*, WCRP-CLIVAR International Workshop for Mid-latitude Air-Sea Interaction, virtual (invited).

2021 Hasan, M., and **S. M. Larson:** *The seasonally varying relationship between air-sea fluxes and large-scale SST in a coupled model hierarchy*, WCRP-CLIVAR International Workshop for Mid-latitude Air-Sea Interaction, virtual.

2021 McMonigal, K., and **S. M. Larson:** *The role of ENSO on Pacific and Indian Ocean Heat Transport Variability in CESM1*, WCRP-CLIVAR International Workshop for Mid-latitude Air-Sea Interaction, virtual.

2021 Sutton, M. and **S. M. Larson**: *ENSO-Driven Suppression of Interannual Atmospheric Variability Over the United States*, NCAR Climate Variability & Change working group winter meeting.

2021 Zhang, Y., S. Yu, D. Amaya, Y. Kosaka, **S. M. Larson**, X. Wang, J.-C. Yang, M. Stuecker, S.-P. Xie, A. Miller, and X. Lin: *Pacific Meridional Modes without Equatorial Pacific Influence*, Asian Oceania Geosciences Society.

2021 **Larson, S. M.**, S.-K. Lee, and N. Johnson: *Untangling the Mechanisms of Indian Ocean Dipole Variability*, WCRP-CLIVAR Workshop on Climate Interactions among the Tropical Basins, virtual (invited).

2021 **Larson, S. M.**: *Collaborative insight from graduates with varied career paths,* AMS Student Conference, AMS Annual Meeting, virtual (invited).

2021 Sutton, M. and **S. M. Larson**: *ENSO-Driven Suppression of Interannual Atmospheric Variability Over the United States*, AMS Annual Meeting, virtual.

2020 Zhang, Y., S. Yu, D. Amaya, Y. Kosaka, **S. M. Larson**, X. Wang, J.-C. Yang, M. Stuecker, S.-P. Xie, A. Miller, and X. Lin: *Pacific Meridional Modes without Equatorial Pacific Influence*, AGU Fall Meeting, San Francisco, CA

2020 Chakravorty, S., R. Perez, B. Anderson, **S. M. Larson**, B. Giese, and V. Pivotti: *Extratropical Atmospheric Variability on El Nino: Contrasting Thermodynamic versus Dynamic Coupling*, AGU Fall Meeting, San Francisco, CA

2020 **Larson, S. M.**, M. Buckley, and A. Clement: *Momentum and Buoyancy Contributions to Atlantic Ocean Circulation Variability,* AGU Fall Meeting, San Francisco, CA (invited)

2020 **Larson, S. M.**, and K. Pegion: *The Southern Hemisphere as a Thermodynamic Modulator of ENSO Amplitude*, AGU Fall Meeting, San Francisco, CA

2020 **Larson, S. M.**, and K. Pegion: Do asymmetries in ENSO predictability arise from different recharged states? 45th NOAA Annual Climate Diagnostics and Prediction Workshop, virtual, 2020.

2020 **Larson, S. M.**, M. Buckley, and A. Clement: *Extracting the Buoyancy-Driven Atlantic Meridional Overturning Circulation*, AMS Annual Meeting, Boston, MA

Prior to 2020 (Larson as 1st author only)

2019 *Can Oceanic Heat Content Predict ENSO in a Realistic Forecast Setting?* (invited)
AGU Fall Meeting, San Francisco, CA

2019 *Extracting the Buoyancy-Driven Atlantic Meridional Overturning Circulation*
AGU Fall Meeting, San Francisco, CA

2019 *The South Pacific Meridional Mode as a Source of ENSO Amplitude Modulation and Uncertainty* (invited)
Meridional Modes Workshop, Ohio State University

2019 *Air-sea interaction and Large-scale Sea Surface Temperature Variability* (invited)
Pennsylvania State University, State College, PA

2019 *A Process-Based Model Hierarchy to Decompose Climate Drivers* (invited)
NOAA Climate & Global Change Summer Institute, Steamboat Springs, CO

2019 *Why are long lead-time El Nino predictions challenging?* (keynote)

Southeastern Coastal & Atmospheric Sciences Symposium, University of South Alabama, Mobile, AL

2019 *The South Pacific Meridional Mode as a Thermally-Driven Source of ENSO Amplitude Modulation & Uncertainty*
AMS Annual Meeting, Phoenix, AZ

2018 *Impact of Momentum Coupling on Large-Scale Pacific and Atlantic Climate*
AGU Fall Meeting, Washington D. C.

2018 *Does the equatorial recharge/discharge increase ENSO predictability?* (invited)
International ENSO Conference, Guayaquil, Ecuador

2018 *How Momentum Coupling Affects SST Variance and Large-Scale Pacific Climate in CESM*
AGU Ocean Sciences Meeting, Portland, OR

2018 *The Impact of Internal Variability on ENSO Predictability* (invited)
University of Victoria, Victoria, BC, Canada

2018 *The Impact of Internal Variability on ENSO Predictability* (invited)
Indiana University Bloomington, Bloomington, IN

2018 *The Impact of Internal Variability on ENSO Predictability* (invited)
University of Massachusetts Lowell, Lowell, MA

2017 *A framework to decompose wind-driven biases in climate models applied to CCSM/CESM in the eastern Pacific* (poster)
AGU Fall Meeting, New Orleans, LA

2017 *Using a Mechanically Decoupled CESM to Study Climate* (invited)
National Center for Atmospheric Research (NCAR), Climate & Global Dynamics

2017 *The Impact of Internal Variability on ENSO Predictability* (invited)
North Carolina State University, Raleigh, NC

2017 *Linking Preconditioning to Extreme El Niño and ENSO Predictability*
AMS Annual Meeting, Seattle, WA

2016 *Linking Preconditioning to Extreme El Niño and ENSO Predictability*
AGU Fall Meeting, San Francisco, CA

2016 *ENSO Predictability in a Fully Coupled Model* (invited)
Yale University, New Haven, CT

2016 *The Pacific Meridional Mode as an ENSO Precursor & Predictor in the NMME*
AMS Annual Meeting, New Orleans, LA

2015 *Revisiting coupled instability and SST error growth in a fully coupled model* (invited)
AGU Fall Meeting, San Francisco, CA

2015 *ENSO Predictability: Precursors versus perturbation growth* (invited)
University of Wisconsin – Madison, WI

2015 *Revisiting coupled instability and SST error growth in a fully coupled model*
Graduate Climate Conference, Woods Hole, MA

2015 *ENSO Predictability: Precursors versus perturbation growth* (invited)
University of California – Irvine, Irvine, CA

2015 *Revisiting coupled instability and SST error growth in a fully coupled model*
CLIVAR Workshop – Evaluation of ENSO in Climate Models: ENSO in a Changing Climate, Paris, France

2014 *Revisiting coupled instability and SST error growth in a fully coupled model*

AGU Fall Meeting, San Francisco, CA

2012 *Impacts of non-canonical El Niño patterns on Atlantic hurricane activity*
AGU Fall Meeting, San Francisco, CA

2011 *Impacts of non-canonical El Niño patterns on Atlantic hurricane activity*
NOAA Headquarters Student Science and Education Symposium, Silver Spring, MD

AWARDS & HONORS

2016 – 2018	NOAA Climate & Global Change Postdoctoral Fellowship
2016	F. G. Walton Smith Prize, University of Miami, award for most outstanding PhD dissertation
2016	Outstanding Oral Presentation, 96th AMS Annual Meeting, Climate Variability & Change
2015	RSMAS Career Development Award, University of Miami
2013	Best Student Seminar in Meteorology & Physical Oceanography, University of Miami
2011 – 2016	University of Miami Graduate School Fellowship
2011	Outstanding Senior in Meteorology, University of South Alabama
2010	Dr. Bill Williams Scholarship in Meteorology, University of South Alabama
2010	Outstanding Presentation, NOAA Headquarters Student Science & Ed. Symposium
2009 – 2011	NOAA Ernest F. Hollings Scholarship

FUNDED PROPOSALS

At NCSU **Total NCSU portion:** $1,698,358

2023 – 2027 *Collaborative Research: ENSO Predictability: Initial Condition Signal vs. Uncoupled Atmospheric Noise*
Role: PI
Agency: NSF Climate and Large-Scale Dynamics, NCSU: $480,580

2022 – 2025 *Collaborative Research: Untangling the changing nature of ENSO-driven terrestrial impacts*
Role: PI
Agency: NSF Climate and Large-Scale Dynamics, NCSU: $341,117

2022 – 2025 *Collaborative Research: Determining the Role of Ocean Dynamics in Atlantic Sea Surface Temperature Variations Using a Hierarchy of Coupled Models*
Role: PI
Agency: NSF Physical Oceanography, NCSU: $207,801

2022 – 2023 *Impact of Future Climate Events on NC Animal Agriculture Systems*
Role: Co-PI; Lead PI: S. Shashaani (NCSU Industrial and Systems Eng.)
Agency: NCSU Research and Innovation Seed Funding Program (RISF), $25,000.

2020 – 2023 *Mechanisms of Intrinsic and Anthropogenically Forced Climate Variations*
Role: PI
Agency: NSF Climate & Large-Scale Dynamics, NCSU: $643,860

Prior to NCSU

2016 – 2018 *Disentangling ENSO's Influence on Climate*
Role: PI

Agency: NOAA Climate & Global Change Postdoctoral Fellowship, UCAR, $150,000.

2016 *To conduct regional workshop on writing successful scientific grant proposals.*
Role: Co-PI (with Adeyemi Adeyibi)
Agency: University of Miami Career Development Fund, $2000.

2015 – 2017 *Revisiting Coupled Instability Theory and the Initiation of ENSO*.
Role: Proposal writer; Lead PI: B. Kirtman
Agency: NSF Climate & Large-Scale Dynamics, U. of Miami: $177,632.

PROFESSIONAL COMMITTEES AND SERVICE

2023 – present Committee member, UCAR Membership Committee
2023 – 2024 Co-Convener, El Nino Southern Oscillation: Dynamics, Prediction, and Projection, AMS Annual Meeting
2023 – present Associate Editor, *Journal of Climate* (as of July 2023)
2023 – present Scientific Organizing Committee, El Nino – Southern Oscillation Winter School, University of Hawaii (planned for March 2025)
2023 – present Co-Convener, North Atlantic Climate Variability and Change: Mechanisms, Predictability, and Influence on Other Basins session, Ocean Sciences, AGU Fall Meeting
2023 – present Invited panelist, Predictability, Predictions, and Applications Interface (PPAI) panel, US Climate Variability and Predictability (CLIVAR) program
2023 – present Committee member, AMS Committee on Air-Sea Interaction
2022 – present Invited panelist, NCAR Computational and Informational Systems Laboratory (CISL) HPC Allocation Panel (CHAP): panel that accepts and reviews requests for large allocations of NCAR resources
2021 – present Co-Chair, NCAR Climate Variability and Change working group
2021 Advisory member, National Center for Atmospheric Research (NCAR) HPC User Group (NHUG)
2020 NOAA Climate Program Office outreach interview
2020 – 2021 Co-Convener, Seasonal-to-Decadal Predictions Sessions I-IV, AMS Annual Meeting
2019 – 2022 Scientific Organizing Committee: "Prospects for Multi-year Climate Predictability and Societally-relevant Climate Predictions" Workshop, CLIVAR
2019 Session Chair, El Nino-Southern Oscillation Dynamics, Diversity, Prediction and Impacts III, AGU Fall Meeting
2017 – present Outstanding Student Paper Judge, AGU and AMS

Journal Referee *Climate Dynamics, Geophysical Research Letters, Journal of Climate, Journal of Geophysical Research – Atmospheres, Journal of Geophysical Research – Oceans, Nature, Nature Climatic Change, Weather and Forecasting, Progress in Oceanography, Nature Communications, Nature Communications Earth and Environment*

Proposal Referee *NSF Climate & Large-Scale Dynamics, NSF Physical Oceanography, NOAA CPO*

PROFESSIONAL DEVELOPMENT

Invited Workshops

CLIVAR International workshop for mid-latitude air-sea interaction: advancing predictive understanding of regional climate variability and change across timescales (2021)
WCRP-CLIVAR Workshop on Climate Interactions among the Tropical Basins (2021)
SERC Early Career Geoscience Faculty Workshop (2020)
45th NOAA Annual Climate Diagnostics and Prediction Workshop (2020)
2nd Meridional Modes Workshop, Ohio State University (2019)

Professional Membership

American Geophysical Union, Member

American Meteorological Society, Member
NCAR Climate Variability and Change working group

STUDENTS AND POSTDOCTORAL SCHOLARS SUPERVISED

Postdoctoral Scholars

2020 – 2023 Dr. Kay McMonigal (current: Assistant Prof, Univ. of Alaska Fairbanks)

Graduate Students

Current

2023 – present Alyssa Griffin (Ph.D.) – co-advised with Kathie Dello
NCSU Graduate School Fellow

2023 – present Robert Payne (Ph.D.)

2022 – present Kaitlin Karaffa (M.S.) – co-advised with Kathie Dello
NCSU KIETS Climate Leaders Program

2022 – present Henry Goff (Ph.D.) – co-advised with Anantha Aiyyer
NCSU Provost Fellow, NCSU Graduate School Fellow, AMS Graduate Fellow

2020 – present Mahdi Hasan (Ph.D.)

Completed

2023 Samantha Michlowitz (M.S.)
NCSU SECASC Global Change Fellow
Thesis*: The Role of Ocean Circulation on Externally Forced Trends in the Tropical North Atlantic*

2021 Margaret Sutton (M.S.)
Thesis*: ENSO-Driven Impacts on Wintertime Climate Anomalies over North America*

Undergraduate Researchers

2023 – present Michael Brown (NCSU Meteorology)
2022 – 2023 Ashton Stepter (NC A&T Computer Science)
2021 – 2022 Henry Goff (NCSU Meteorology)
2020 – 2021 Lauren Pressley (NCSU Meteorology)

NCSU SERVICE

2023 – 2025 Research Advisory Committee, College of Sciences
2022 – 2023 Faculty co-organizer of inaugural NCSU alumni reception at AMS, MEAS
2022 – 2023 Community Climate Committee, MEAS
2022 Co-organizer of Inaugural Symposium Organizing Committee, MEAS
2021 – 2022 Pack Promise student mentor, MEAS
2021 Cluster Hire Planning Committee, MEAS
2020 – 2021 Boundary Layer Meteorology Search Committee, MEAS
2020 – 2022 NCSU liaison for the Central NC Chapter of the American Meteorological Society: implemented graduate student lightning talks into monthly chapter meetings
2019 – present Faculty Advisor, NCSU American Meteorological Society Student Chapter, MEAS
2019 – 2020 Volcanology/Petrology Search Committee, MEAS

2018 – present Web Committee, MEAS
2018 – 2020 Computing and Network Computing Committee, MEAS