Hyodae Seo

Associate Professor, Department of Oceanography, University of Hawai'i at Mānoa
Associate Director, Uehiro Center for the Advancement of Oceanography
1000 Pope Road, Honolulu, HI 96822
Email: hyodae@hawaii.edu, Tel: 1-808-956-3282; Web: http://hseo.whoi.edu

EDUCATION

2007 Ph.D., Oceanography, Scripps Institution of Oceanography, UC San Diego
2002 B.S., Meteorology, Yonsei University, Seoul, South Korea

POSITIONS HELD

Since 2024 August: Associate Professor, Department of Oceanography, University of Hawai'i at Mānoa
2023 August – 2024 July: Senior Scientist, WHOI
2018 July – 2023 August: Associate Scientist with Tenure, WHOI
2014 September – 2018 June: Associate Scientist, WHOI
2010 October – 2014 August: Assistant Scientist, WHOI
2009 – 2010 Visiting Assistant Researcher, IPRC, University of Hawai'i at Mānoa
2007 – 2008 NOAA Climate and Global Change Postdoctoral Fellow, UCLA & Univ. Hawai'i at Mānoa
2007 Visiting Scientist, International Pacific Research Center, Univ. Hawai'i at Mānoa
2002 – 2007 Graduate Research Assistant, Scripps Institution of Oceanography, UCSD

PUBLICATIONS (*led by student and postdoc under my direct supervision)

2024

63. *Sauvage, C., **H. Seo,** B. W. Barr, J. B. Edison, and C. A. Clayson, 2024: Misaligned Wind-Waves Behind Atmospheric Cold Fronts. *J. Geophys. Res. Oceans*, 129, e2024JC021162. https://doi.org/10.1029/2024JC021162

2023

62. *Steffen, J. D., **H. Seo**, C. A. Clayson, S. Pei, and T. Shionda, 2023: Impacts of Tidal Mixing on Diurnal to Intraseasonal Air-Sea Interactions in the Maritime Continent. *Deep-Sea Res.-II, Revised.*
61. *Castillo-Trujillo A. C.**,** Y.-O. Kwon, P. Fratantoni, K. Chen, **H. Seo**, M. A. Alexander, and V. S. Saba, 2023: An evaluation of eight global ocean reanalyses for the Northeast U.S. continental shelf. *Prog. Oceanogr.*, https://doi.org/10.1016/j.pocean.2023.103126
60. Clayson, C. A., C. A. DeMott, S. P. de Szoeke, P. Chang, G. R. Foltz, R. Krishnamurthy, T. Lee, A. Molod, D. G. Ortiz-Suslow, J. Pullen, D. H. Richter, **H. Seo**, P. C. Taylor, E. Thompson, B. V. Bôas, C. J. Zappa, and P. Zuidema, 2023: A New Paradigm for Observing and Modeling of Air-Sea Interactions to Advance Earth System Prediction. A US CLIVAR Report, US CLIVAR Project Office, 86 pp. https://doi.org/10.5065/24j7-w583.
59. Beaudin, E., E. Di Lorenzo, A. J. Miller, **H. Seo**, and Y. Joh, 2023: Impact of Extratropical Northeast Pacific SST on U.S. West Coast Precipitation, *Geophys. Res. Lett.*, 50, e2022GL102354
58. *Sauvage, C., **H. Seo**, C. A. Clayson, and J. B. Edson, 2023: Improving wave-based air-sea momentum flux parameterization in mixed seas. *J. Geophys. Res. Oceans*, 128, e2022JC019277.
57. **Seo, H.**, L. W. O'Neill, M. A. Bourassa, A. Czaja, K. Drushka, B. Fox-Kemper, I. Frenger, S. T. Gille, B. P. Kirtman, S. Minobe, A. G. Pendergrass, L. Renault, M. J. Roberts, N. Schneider, R. J. Small, A. Stoffelen, and Q. Wang, 2023: Ocean Mesoscale and Frontal-scale Ocean-Atmosphere Interactions and Influence on Large-scale Climate: A Review. *J. Climate*, 36, 1981-2013. https://doi.org/10.1175/JCLI-D-21-0982.1

2022

56. Shinoda, T., T. G. Jensen, Z. Lachkar, Y. Masumoto, and **H. Seo**, 2022: Modeling the Indian Ocean, Intraseasonal variability in the Indian Ocean region. Elsevier Publishing, "*The Indian Ocean and its role in the global climate system."* C. C. Ummehofer and R. R. Hood, editors. *In Press*

2021

55. Kwak, K. H. Song, J. Marshall, **H. Seo**, and D. McGillicuddy, Jr., 2021: Suppressed pCO2 in the Southern Ocean due to the interaction between current and wind. *J. Geophys. Res. Oceans*, 126, e2021JC017884.
54. Shinoda, T., S. Pei, W. Wang, J. X. Fu. R.-C. Lien, **H. Seo**, and A. Soloviev, 2021: Climate Process Team: improvement of ocean component of NOAA Climate Forecast System relevant to Madden-Julian Oscillation simulations. *J. Adv. Model. Earth Syst*., 13, e2021MS002658.
53. **Seo, H**., H. Song, L. W. O'Neill, M. R. Mazloff, and B. D. Cornuelle, 2021: Impacts of ocean currents on the South Indian Ocean extratropical storm track through the relative wind effect. *J. Climate*, 34, 9093-9113.
52. Pei, S., T. Shinoda, J. Steffen, and **H. Seo**, 2021: Substantial Sea Surface Temperature cooling in the Banda Sea associated with the Madden-Julian Oscillation in the boreal winter of 2015. *J. Geophys. Res. Oceans*., 126, e2021JC017226.
51. Shroyer, E., and Co-authors, including **H. Seo**, 2021: Bay of Bengal Intraseasonal Oscillation and the 2018 Monsoon Onset. *Bull. Amer. Meteo. Soc.*, 102(10), E1936-E1951.
50. *****Bartusek, S., **H. Seo**, C. C. Ummenhofer, and J. D. Steffen, 2021: The role of nearshore air-sea interactions for landfalling atmospheric rivers on the U.S. West Coast. *Geophys. Res. Lett*., 48, e2020GL091388.
49. Sun, R., A. C. Subramanian, B. D. Cornuelle, M. R. Mazloff, A. J. Miller, F. M. Ralph, **H. Seo**, and I. Hoteit, 2021: The role of air-sea interactions in atmospheric river events: Case studies using the SKRIPS regional coupled model. *J. Geophys. Res. Atmosphere*, 126, e2020JD032885.

2020

48. Liang, Y.-C., M.-H. Lo, C.-W. Lan, **H. Seo**, C. C. Ummenhofer, S. Yeager, R.-J. Wu, and J. D. Steffen, 2020: Amplified Seasonal Cycle in Hydroclimate over the Amazon River Basin and its Plume Region in the Atlantic. *Nat. Commun.*, 11, 4390.
47. *****Yuan, X., C. C. Ummenhofer, **H. Seo**, and Z. Su, 2020: Relative contributions of heat flux and wind stress on the spatiotemporal upper-ocean variability in the tropical Indian Ocean. *Env. Res. Lett.*, 15, 084047.
46. Gentemann, C., C. A. Clayson, S. Brown, T. Lee, R. Parfitt, J. T. Farrar, M. Bourassa, P. J. Minnett, **H. Seo**, S. T. Gille, and V. Zlotnicki, 2020: FluxSat: Measuring the ocean-atmosphere turbulent exchange of heat and moisture from space. *Remote Sensing*, 12, 1796.
45. Sprintall, J., K. A. Reed, A. H. Butler, G. R. Foltz, S. G. Penny, and **H. Seo**, 2020: Best Practice Strategies for Process Studies designed to Improve Climate Modelling, *Bull. Amer. Met. Soc.*, *Bull. Amer. Met. Soc*., 101, E1842-E1850
44. Song, H., J. Marshall, D. J. McGillicuddy Jr., and **H. Seo**, 2020: The impact of the current-wind interaction on the vertical processes in the Southern Ocean. *J. Geophys. Res.-Oceans*, 125, e2020JC016046
43. Gopalakrishnan, G., A. C. Subramanian, A. J. Miller, **H. Seo**, and D. Sengupta, 2020: Estimation and prediction of the upper ocean circulation in the Bay of Bengal, *Deep-Sea Res. II*, 172, 104721
42. Hagos, S., G. R. Foltz, C. Zhang, E. Thompson, **H. Seo**, S. Chen, A. Capotondi, K. A. Reed, C. DeMott, and A. Protat, 2020: Atmospheric Convection and Air-Sea Interactions over the Tropical Oceans: Scientific Progress, Challenges and Opportunities. *Bull. Amer. Met. Soc.*, 101, E253–E258.
41. Kwon, Y.-O., **H. Seo,** C. C. Ummenhofer, and T. M. Joyce, 2020: Impact of Multidecadal Variability in Atlantic SST on Winter Atmospheric Blocking. *J. Climate*, 33, 867-892

2019

40. **Seo, H.,** A. C. Subramanian, H. Song, and J. S. Chowdary, 2019: Coupled effects of ocean current on wind stress in the Bay of Bengal: Eddy energetics and upper ocean stratification. *Deep-Sea Res. II*, 168, 104617

39. *****Prend, C. J., **H. Seo**. R. A. Weller, and J. T. Farrar, 2019: Impact of freshwater plumes on intraseasonal upper ocean variability in the Bay of Bengal. *Deep-Sea Res.-II*, 161, 63-71.
38. Joyce, T. M., Y.-O. Kwon, **H. Seo**, and C. C. Ummenhofer, 2019: Meridional Gulf Stream shifts can influence wintertime variability in the North Atlantic Storm Track and Greenland Blocking. *Geophys. Res. Lett*., 46, 1702-1708.
37. Weller, R. A., J. T. Farrar, **H. Seo**, C. J. Prend*, D. Sengupta, J. Sree Lekha, M. Ravichandran, and R. Venkatesen, 2019: Moored observations of the surface meteorology and air-sea fluxes in the northern Bay of Bengal in 2015, *J. Climate*, 32, 549-573.

2018

36. *****Parfitt, R., and **H. Seo**, 2018: A New Framework for Near-Surface Wind Convergence over the Kuroshio Extension and Gulf Stream in Wintertime: The Role of Atmospheric Fronts. *Geophys. Res. Lett*., 45, 9909–9918.
35. Pullen, J., R. Allard, **H. Seo**, A. J. Miller, S. Chen, L. P. Pezzi, T. Smith, P. Chu, J. Alves, and R. Caldeira, 2018: Coupled ocean-atmosphere forecasting at short and medium time scales. *J. Mar. Res.*, 75, 877-921.
34. *****Jin, X, Y.-O. Kwon, C. C. Ummenhofer, **H. Seo**, Y. Kosaka, and J. S. Wright, 2018: Distinct mechanisms of decadal subsurface heat content variations in the eastern and western Indian Ocean modulated by tropical Pacific SST, *J. Climate*, 31, 7751-7769.
33. *****Jin, X., Y.-O. Kwon, C. C. Ummenhofer, **H. Seo**, F. U. Schwarzkopf, A. Biastoch, C. W. Böning, and J. S. Wright, 2018: Influences of Pacific Climate Variability on Decadal Subsurface Ocean Heat Content Variations in the Indian Ocean. *J. Climate*, 31, 4157-4174.
32. Kwon, Y.-O., A. Camacho, C. Martinez-Zayas, and **H. Seo**, 2018: North Atlantic Eddy-driven Jet and Blocking Variability in the Community Earth System Model Version 1 Large Ensemble Simulations. *Climate Dyn.*, 51, 3275-3289.

2017

31. **Seo, H.**, Y.-O. Kwon, T. M. Joyce, and C. C. Ummenhofer, 2017: On the predominant nonlinear response of the extratropical atmosphere to meridional shift of the Gulf Stream. *J. Climate*, 30, 9679-9702.
30. Morrow, R., L.-L. Fu, T. Farrar, **H. Seo**, P.-Y. Le Traon, 2017: Ocean eddies and mesoscale variability. Satellite Altimetry Over Oceans and Land Surfaces, In D. Stammer and A. Cazenave, editors, *Satellite Altimetry Over Ocean and Land Surfaces*. CRC Press, Taylor and Francis Group, Satellite Altimetry Over Oceans and Land Surfaces.
29. Centurioni, L. R., and Co-authors, 2017: Northern Arabian Sea Circulation-Autonomous Research (NASCar): A Research Initiative Based on Autonomous Sensors. *Oceanography*, 30, 74-87.
28. Ummenhofer, C. C., **H. Seo**, Y-O. Kwon, R. Parfitt, S. Brands, and T. M. Joyce, 2017: Emerging European winter precipitation pattern linked to atmospheric circulation changes over the North Atlantic region in recent decades. *Geophys. Res. Lett*., 44**,** 8557–8566.
27. **Seo, H**., 2017: Distinct influence of air-sea interactions mediated by mesoscale sea surface temperature and surface current in the Arabian Sea. *J. Climate,* 30, 8061-8079.
26. Miller, A. J., M. Collins, S. Gualdi, T. G. Jensen, V. Misra, L. P. Pezzi, D. W. Pierce, D. Putrasahan, **H. Seo**, and Y.-H. Tseng, 2017: Coupled Ocean-Atmosphere-Hydrology Modeling and Predictions, *J. Mar. Res*., 75, 361-402.
25. *****Parfitt, R., A. Czaja, and **H. Seo**, 2017: A simple diagnostic for the detection of atmospheric fronts, *Geophys. Res. Lett*., 44, 4351–4358.
24. Jongaramrungruang, S., **H. Seo**, and C. C. Ummenhofer, 2017: Intraseasonal rainfall variability in the Bay of Bengal during the Summer Monsoon: Coupling with the ocean and modulation by the Indian Ocean Dipole. *Atmos. Sci. Lett*., 18, 88–95.

2016

23. Chowdary, J. S., G. Srinivas, T. S. Fousiya, A. Parekh, C. Gnanaseelan, **H. Seo**, and J. A. MacKinnon, 2016: Representation of Bay of Bengal Upper-Ocean Salinity in General Circulation Models. *Oceanography*, 29, 38–49.

22. **Seo, H**., A. J. Miller, and J. R. Norris, 2016: Eddy-wind interaction in the California Current System: dynamics and impacts, *J. Phys. Oceanogr*., 46, 439-459.
21. Brink, K. H. and **H. Seo,** 2016: Continental Shelf Baroclinic Instability 2: Oscillating wind forcing, *J. Phys. Oceanogr*., 46, 569-582.

2015

20. *****Oltmanns, M., F. Straneo, **H. Seo,** and G. W. K. Moore, 2015: The role of wave dynamics and small-scale topography for downslope wind events in southeast Greenland. *J. Atmos. Sci.*, 72, 2786-2805.
19. Cavanaugh, N., T. Allen, A. Subramanian, B. Mapes, **H. Seo**, A. J. Miller, 2015: The Skill of Tropical Linear Inverse Models in Hindcasting the Madden-Julian Oscillation. *Climate Dyn*., 44, 897-906.

2014

18. **Seo, H.**, A. C. Subramanian, A. J. Miller, and N. R. Cavanaugh, 2014: Coupled impacts of the diurnal cycle of sea surface temperature on the Madden-Julian Oscillation. *J. Climate*, 27, 8422-8443.
17. Park, J.-Y., J.-S. Kug, **H. Seo**, and J. Bader, 2014: Impact of bio-physical feedbacks on the tropical climate in coupled and uncoupled GCMs. *Climate Dyn.*, 43, 1811-1827.
16. **Seo, H**., Y.-O. Kwon, and J.-J. Park, 2014: On the effect of the East/Japan Sea SST variability on the North Pacific atmospheric circulation in a regional climate model. *J. Geophys. Res.-Atmospheres*, 119, 418-444.
15. Subramanian, A, M. Jochum, A. J. Miller, R. Neale, **H. Seo**, D. Waliser, and R. Murtugudde, 2014: The MJO and Global warming: A study in CCSM4. *Climate Dyn.*, 42**,** 2019-2031.

2013

14. **Seo, H.**, and J. Yang, 2013: Dynamical response of the Arctic atmospheric boundary layer process to uncertainties in sea ice concentration. *J. Geophys. Res-Atmosphere*, 118, 12383-12402.
13. Putrasahan, D. A. J. Miller, and **H. Seo**, 2013: Regional coupled ocean-atmosphere downscaling in the Southeast Pacific: Impacts on upwelling, mesoscale air-sea fluxes, and ocean eddies. *Ocean Dynam.*, 63 ,463-488.
12. **Seo, H.** and S.-P. Xie, 2013: Impact of ocean warm layer thickness on the intensity of hurricane Katrina in a regional coupled model. *Meteor. Atmos. Phys.*, 122, 19-32.
11. Putrasahan, D. A. J. Miller, and **H. Seo**, 2013: Isolating Mesoscale Coupled Ocean-Atmosphere Interactions in the Kuroshio Extension Region. *Dyn. Atmos. Oceans*., 63, 60-78.

2012

10. **Seo, H.**, K. H. Brink, C. E. Dorman, D. Koracin, and C. A. Edwards, 2012: What determines the spatial pattern in summer upwelling trends on the U.S. West Coast? *J. Geophys. Res.-Oceans*, 117, C08012.
9. Alexander, M.A., **H. Seo**, S.-P. Xie, and J.D. Scott, 2012: ENSO's impact on the gap wind regions of the eastern tropical Pacific Ocean. *J. Climate*, 25, 3549-3565.

2011

8. **Seo, H.,** and S.-P. Xie, 2011: Response and Impact of Equatorial Ocean Dynamics and Tropical Instability Waves in the Tropical Atlantic under Global Warming: A regional coupled downscaling study. *J. Geophys. Res.-Oceans*, 116, C03026.

2009

7. **Seo, H.**, S.-P. Xie, R. Murtugudde, M. Jochum, and A. J. Miller, 2009: Seasonal effects of Indian Ocean freshwater forcing in a regional coupled model. *J. Climate*, 22, 6577-6596.

2008

6. **Seo, H.**, R. Murtugudde, M. Jochum, and A. J. Miller, 2008: Modeling of Mesoscale Coupled Ocean-Atmosphere Interaction and its Feedback to Ocean in the Western Arabian Sea. *Ocean Modell.*, 25,120-131.
5. **Seo, H.**, M. Jochum, R. Murtugudde, A. J. Miller, and J. O. Roads, 2008: Precipitation from African Easterly Waves in a Coupled Model of the Tropical Atlantic. *J. Climate*, 21, 1417-1431.
4. Small, R. J., S. de Szoeke, S. P. Xie, L. O'Neill, **H. Seo**, Q. Song, P. Cornillon, M. Spall, and S. Minobe, 2008: Air-Sea Interaction over Ocean Fronts and Eddies. *Dyn. Atmos. Oceans.*, 45, 274-319.

2007

3. **Seo, H.**, M. Jochum, R. Murtugudde, A. J. Miller, and J. O. Roads, 2007: Feedback of Tropical Instability Wave - induced Atmospheric Variability onto the Ocean. *J. Climate*, 20, 5842-5855.
2. **Seo, H.,** A. J. Miller and J. O. Roads, 2007: The Scripps Coupled Ocean-Atmosphere Regional (SCOAR) model, with applications in the eastern Pacific sector. *J. Climate*, 20, 381-402.

2006

1. **Seo, H.**, M. Jochum, R. Murtugudde and A. J. Miller, 2006: Effect of Ocean Mesoscale Variability on the Mean State of Tropical Atlantic Climate. *Geophys. Res. Lett.*, 33, L09606.

CURRENT PROJECTS

- ONR Arabian Sea Transition Layer (ASTraL) DRI (2022-2027): Improving the model simulation of surface wave impacts on air-sea fluxes, turbulent boundary layers, and their impacts on Indian monsoons in the Arabian Sea, **sole PI**, $688,863.
- NOAA Climate Variability & Predictability Program (2022-2025): Exploiting coupled ocean-atmosphere-wave model simulations to identify observational requirements for air-sea interaction studies across the tropical Pacific, **lead PI** with co-PI Wijffels, $773,543
- NSF Physical Oceanography Program (2022-2025): Improving understanding of coupled impacts of oceans and waves on air-sea fluxes in the US Northeast Coast, **lead PI** with co-PIs Sauvage, Clayson, & Edson, $831,828
- NASA Modeling, Analysis, and Prediction Program (2021-2024): Improving coupled atmosphere-ocean processes in NU-WRF for the simulation of coast-threatening extratropical cyclones in the northeastern US, **lead PI** with co-Is Clayson & Edson, $1,166,106
- DOE Wind Energy Technologies Office (2021-2026): Improving High Resolution Offshore Wind Resource Assessments and Forecasts using Observations in the MA/RI Lease Areas, **co-PI** with lead PI Kirincich, $8M
- NSF Physical Oceanography & Climate and Large-Scale Dynamics Programs (2020-2023): Collaborative Research: Coupled Ocean-Atmosphere Feedbacks Affecting California Coastal Climate: Current Conditions and Future Projections, **lead PI** with co-PI Miller (SIO), $497,237
- NOAA Climate Variability & Predictability Program (2020-2024): Regional multi-year prediction for the Northeast U.S. Continental Shelf, **co-PI** with lead PI Kwon, $658,422

AWARDS AND HONORS

- WHOI Francis E. Fowler IV Ocean and Climate Fellow (2022, link)
- Office of Naval Research (ONR) Young Investigator Award (2015, WHOI press release)
- NOAA Climate and Global Change Postdoctoral Fellowship (2007-2009, class 17)
- Physical Oceanography Dissertation Symposium V, Honolulu (2008)
- NCAR Advanced Study Program (ASP) Graduate Student Visiting Fellowship (2006)
- Scripps Institution of Oceanography Frieman Director's Prize for Excellence in Graduate Student Research (2006, UCSD press release)
- Outstanding Student Paper Award, Ocean Sciences Meeting, Honolulu (2006)

TEACHING @ University of Hawai'i at Mānoa (from August 2024)

- **Fall 2024: GES 311, The Changing Earth and Climate System. Guest lecture, "Why offshore wind energy: Necessity, Challenges and Oceanographers' Role", Nov 21, 2024**

TEACHING @ MIT/WHOI JOINT PROGRAM (until 2024)

- **Spring Semester, 2023:** Air-Sea Interaction and Boundary Layers, MIT/WHOI Joint Program Course 12.870. co-teaching with Tom Farrar
- **Fall Semester, 2017, 2019, 2021:** Climate Variability and Diagnostics, MIT/WHOI Joint Program Course 12.860, co-teaching with Caroline Ummenhofer

- **Fall Semester, 2016, 2017, 2018, 2019**: Introduction to (Observational) Physical Oceanography, MIT/WHOI Joint Program Course 12.808. Co-taught with John Toole,

ADVISING AND MENTORING

Dissertation Committee

- Ph.D. General Exam Advisor for Anthony Meza (MIT-WHOI Joint Program), 2022-2023
- Ph.D. Thesis Committee for Hanyuan Liu (MIT-WHOI Joint Program), 2021-2023
- Ph.D. External Examiner for Christoph Renkl (Dalhousie University, Oceanography), 2020
- Ph.D. Thesis committee for Jared Buckley (University of Massachusetts, Dartmouth), 2015-2019
- M.S. Thesis committee for Xin Zhou (Florida Institute of Technology), 2015-2016
- M.S. Thesis committee for Sara Bosshart (MIT-WHOI Joint Program), 2013

Research Associate

- César Sauvage (2023-): RA3

Postdocs

- Shikhar Rai (2023-)
- Benjamin Barr (2023-)
- Christoph Renkl (2023-)
- Alma Carolina Castillo-Trujillo (2021-)
- César Sauvage (2020-2023), now RA3 at WHOI
- (former) John Steffen (2019-2021, now at NOAA)
- (former) Rhys Parfitt (2016-2018, now Assistant Professor, FSU)

Student mentoring

- Yoo-Jun Kim (University of Tokyo), Nov. 2023-Mar. 2024: High-resolution wind modeling.
- Peisen Tan (University of Miami), Summer of 2023: Laboratory and numerical modeling of short wind waves and swell interactions.
- Sam Bartusek (Princeton University, SSF 2019, now at Columbia University): Coastal Ocean impacts on landfalling ARs (Bartusek et al. 2021).
- Yuqing Liu (Bremen Univ., Guest Student, 2018, now at AWI, Germany): Submesoscale air-sea coupling
- Manthan Shah (Northeastern Univ., Guest Student, 2018): Scale-dependence of SST-wind coupling
- Xu Yuan (Univ. Twente, Guest Student, 2018): Upper-ocean variability in the tropical Indian Ocean (Yuan et al. 2020)
- Xiaolin Jin (Tsinghua University, Visiting Student, 2017), Decadal Subsurface Ocean Heat Content Variations in the Indian Ocean. (Jin et al. 2018a, Jin et al. 2018b)
- Samuel Coakley (Rutgers University, SSF 2017): Southeast Asian monsoon variability in the CESM-Last Millennium Ensemble
- David Smith (Northeastern University, Guest Student, 2016): Decadal predictability of the North Atlantic Blocking
- Channing Prend (Columbia Univ., SSF 2016, Scripps Ph.D.): Impact of freshwater plumes on intraseasonal SST variability in the Bay of Bengal (Prend et al. 2018, Weller et al. 2019)
- Siraput Jongaramrungruang (Univ. Cambridge, SSF 2015, now at Caltech): Interannual modulation of intraseasonal convection in the Bay of Bengal Jongaramrungruang et al. 2017)
- Alicia Camacho (Valparaiso University, UCAR SOARS student 2015, Ph. D. from Stony Brook University): North Atlantic Oscillation, Jet and Blocking in CESM1 Large Ensemble Simulations. (Kwon et al. 2018)

- Carlos Martinez (Texas A&M University, UCAR SOARS student 2014, Ph.D. from Columbia University): North Atlantic Atmospheric Blocking and Atlantic Multi-decadal Oscillation in CESM1 Large Ensemble Simulations. (Kwon et al. 2018)

PROFESSIONAL ACTIVITIES

Community Activities

- WHOI Representative for UCAR (2018-2023)
- UCAR President's Advisory Committee on University Relations (PACUR): 2023-Present (link)
- Co-Chair, US CLIVAR Working Group on Mesoscale and Frontal-scale Ocean-Atmosphere Interactions and Influence on Large-scale Climate (2019-Present, link)
- Member, US CLIVAR Air-Sea Transition Zone Study Group (2022-2023, link)
- Associate Editor, *Journal of Climate* (2019- Present)
- (Past) Member, AMS STAC Committee on Air-Sea Interaction (2019- 2022)
- (Past) Member, US CLIVAR Process Study and Model Improvement Panel (2016-2020)
- (Past) Associate Editor: *Atmospheric Science Letters* (2015-2017)
- (Past) Member, AMS STAC Committee on Coastal Environment (2011-2017)

WHOI Committee and Service

- WHOI Physical Oceanography Recruitment Committee for Scientific Staff (2020-2021)
- WHOI High-Performance Computing Strategy Committee (2022-2023)
- WHOI Summer Student Fellowship Coordinator (2017-2019)
- WHOI HPC User Advisory Committee (2010-2017)
- WHOI Physical Oceanography Department seminar series organizer (2010-2011)

Agency proposal review panels

- NASA SWOT (2012); DOE ESMD (2020)

Society Memberships

- American Geophysical Union (2002-Present)
- American Meteorological Society (2002-Present)
- The Oceanography Society (2012-Present)

RECENT SEMINARS & TALKS (Full list: https://hseo.whoi.edu/lecture-seminars-and-talks)

2023

- Surface drag effects of wave-wind misalignment: Examples, parameterizations, and impacts. ASTraL Science Update, 04/01/2024
- "Coupled" effects of offshore wind farms. Santa Cruz, BOEM CA Upweling Workshop, 03/01/2024
- Improving wave-mediated air-sea momentum flux parameterization; Geophysical Flows: From the Field to the Lab Discussion meeting (January 10 - 12, 2024), Chennai, India, 01/11/2024 pdf

2023

- (Invited) Ocean Mesoscale Air-Sea Interactions: Physics, Impacts, and Role of Surface Waves, AOGS, Singapore, 08/04/2023
- (Invited) Surface waves, aerodynamic roughness & air-sea momentum flux: Mesoscale Air-Sea Interactions & Offshore Wind Energy, Yonsei University, Seoul, South Korea, 07/20/2023
- (Invited) Surface Waves, Aerodynamic Roughness, and Air-Sea Momentum Flux in the Context of Mesoscale and Frontal-Scale Air-Sea Interaction. Mid-latitude Ocean-Atmosphere Interactions: Their Processes and Predictability. Toyama, Japan, 06/16/2023
- Wind-Current Coupling in the Context of Mesoscale and Frontal-Scale Air-Sea Interaction. Winds and Currents (Odysea) Webinar, 06/06/2023

- (Invited) Surface Waves, Aerodynamic Roughness, and Air-Sea Momentum Flux, Japan Geosciences Union (JpGU), 05/21/2023. pdf
- (Invited) Air-Sea Interaction and Offshore Wind energy, Korean Meteorological Agency (KMA), virtual, 01/27/2023 pdf

2022

- (Invited) Coupled Modeling of Mesoscale Air-Sea Interaction: Physics, Impacts, and Role of Surface Waves. Seoul National University, Korea, 09/22 pdf
- Ocean Mesoscale Air-Sea Interaction over Gulf Stream: Drivers, Physics, and Influence. US CLIVAR Wither the Gulf Stream Workshop. Wither the Gulf Stream Workshop, 06/22 pdf
- Surface wave impacts on air-sea momentum flux in the Northwest Atlantic Ocean: coupled modeling and bulk formula. Workshop on Air-Sea Interaction and Implications for Offshore Wind Energy, 02/10/2021.

2021

- Mesoscale Air-Sea Interaction Working Group: Motivation, Science Goals, and Recommendations. US CLIVAR POS Panel Meeting, 08/21/2021
- Mesoscale/Frontal-scale Air-Sea Interaction: Review. 12.860 Guest Lecture. 5/13/2021
- Impacts of ocean currents on the extratropical storm track through the "relative wind" effect. International Workshop on Midlatitude Air-Sea Interaction. 06/10/2021
- Impacts of ocean-atmosphere coupled feedback on weather and climate. NOAA Priorities for Weather Research (PWR) Observations and Data Assimilation Task Team Symposium. 07/08/2021
- Mesoscale Air-Sea Interaction Working Group Motivation, Science Goals, and Recommendations. US CLIVAR POS Panel. 08/02/2021

2020

- Coupled Ocean-Atmosphere Interactions over Oceanic Boundary Currents. Ocean Sciences Meeting, San Diego, February 2020, pdf
- Small-scale upper ocean processes in the Bay of Bengal: Do they matter to air-sea interaction and monsoon? MISO-BoB Discussion Meeting, Ahmedabad, India, January 2020

2019

- Review of Mesoscale and frontal-scale air-sea interactions: physics, diagnostics, and impacts. US CLIVAR Summit, Long Beach, Aug. 6, 2019.
- Coupled ocean-atmosphere interaction mediated by the ocean mesoscale eddies in the Northwest Tropical Atlantic Ocean. ATOMIC PI Meeting, Boulder, July 29, 2019
- Coupled ocean-atmosphere interactions over the oceanic boundary currents. IAPSO IUGG, Montreal, July 13, 2019.
- Distinct influence of coupled ocean-atmosphere interactions mediated by sea surface temperature and current. Yonsei University, Seoul, Korea, March 5, 2019.
- Coupled ocean-atmosphere interaction mediated by SST and surface current: Distinctive impacts and scale dependence. OFES Meeting, Japan, Feb 28, 2019.
- Coupled effects of ocean current on wind stress in the Bay of Bengal: EKE and ML stratification. MISO-BoB Meeting, ICTS, Bangalore, Feb 22-23, 2019
- Coupled ocean-atmosphere interaction mediated by SST and surface current: Distinctive impacts and scale dependence. OFES Meeting, Japan, Feb 28-Mar 1, 2019

2018

- Modulation of wind work by surface current; eddy energetics and mixed layer stratification in the Bay of Bengal. MISO-BoB meeting, APL/UW, November 8-9, 2018
- My air-sea coupling study at Scripps. Multi-modal Oscillation in Ocean Basin in honor of Art Miller. La Jolla, August 24, 20148
- Distinct Influence of air-sea coupling mediated by SST and current, Ocean Sciences Meeting, Portland, February 2018
- Coupled modeling of air-sea interactions and MISO in the Bay of Bengal. ICO-BoB2. Columbo, Sri Lanka, Jan. 10-11, 2018