

Dillon J. Amaya

Research Scientist, NOAA Physical Sciences Laboratory

Email: dillon.amaya@noaa.gov

Website: www.dillonamaya.com

[Google Scholar](#)

Appointments & Education

Assistant Professor Department of Marine, Earth and Atmospheric Sciences North Carolina State University, Raleigh, NC	2026-present
Research Scientist NOAA Physical Sciences Laboratory, Boulder, CO	2021-2026
Postdoctoral Fellow Cooperative Institute for Research in Environmental Sciences (CIRES) University of Colorado Boulder, Boulder, CO	2020-2021
Ph.D., Oceanography Dissertation: Tropical-extratropical climate interactions on seasonal-to-decadal timescales Advisors: Shang-Ping Xie and Art Miller Scripps Institution of Oceanography, San Diego, CA	2019
M.S., Oceanography Scripps Institution of Oceanography, San Diego, CA	2015
B.S., Meteorology Texas A&M University, College Station, TX	2014

Publications

In Progress

Amaya DJ, H-H Wei, M Newman, J Barsugli, and S Yeager. Seasonal precipitation skill in current climate forecast models is due to initial tropical conditions alone. In revision. [Pre-print](#).

Cluett AA, MG Jacox, SJ Bograd, MP Buil, **DJ Amaya**, MA Alexander. Inherent non-stationarity in the dominant patterns and regional impacts of North Pacific climate variability. In revision.

Karnauskas KB, R Bures, RE Baker, J Baldwin, K Chen,..., **DJ Amaya**. Cross-disciplinary perspectives on harnessing climate data in health research. In revision.

Peer Reviewed

2026 **Amaya DJ**, MG Jacox, and MA Alexander. Skillful high-resolution seasonal forecasts of the California Current System using model-analogs. *Prog. in Ocean*.
<https://doi.org/10.1016/j.pocean.2026.103723>.

Anderson W, M Arcodia, **DJ Amaya**, E Becker, et al. The Critical Need for Hindcast Infrastructure in Climate Science and Sectoral Applications. *BAMS*. <https://doi.org/10.1175/BAMS-D-24-0311.1>

Freeman NM, G Hervieux, MA Alexander, MG Jacox, **DJ Amaya**, JD Scott, and A Capotondi. Characterizing compound physical and biogeochemical extremes in the California Current Large Marine Ecosystem. *PLOS Climate*. <https://doi.org/10.1371/journal.pclm.0000638>.

Gehne M, J Dias, JD Scott, **DJ Amaya**, MG Jacox, MA Alexander, and A Cluett. Influence of Atmospheric Errors on Weeks 2-4 California Current System predictions. *Mon. Weather Rev.* <https://doi.org/10.1175/MWR-D-26-0009.1>.

Jeffree J, N Maher, **DJ Amaya**, D Domménget. Adapting analogue forecasting to compare ENSO remote influences across different models and regions. *Cli. Dyn.* Accepted.

Miller AJ, MA Alexander, **DJ Amaya**, N Cordero-Quiros, CA Edwards, MG Jacox, J Li, and MR Stukel. Physical oceanographic mechanisms associated with recent ecological responses in the California Current Ecosystem. *BioScience*. <https://doi.org/10.1093/biosci/biag020>.

2025 **Amaya DJ**, N Maher, C Deser, MG Jacox, MA Alexander, M Newman, et al. (2025). Linking projected changes in seasonal climate predictability and ENSO amplitude. *J. Clim.* <https://doi.org/10.1175/JCLI-D-23-0648.1>.

Alexander MA, JD Scott, MG Jacox, **DJ Amaya**, and LM Wilczynski (2025). Processes that influence bottom temperatures in the California Current System. *JGR: Oceans*. <https://doi.org/10.1029/2024JC021886>.

Bastien-Olvera BA, O Aburto-Oropeza, F Favoretto, **DJ Amaya**, et al. (2025). A warming ocean threatens mangrove restoration targets and deepens global inequities in ecosystem service losses. *Env. Res.: Clim.* <https://doi.org/10.1088/2752-5295/adffa9>.

Gunnarson JL, Y Wang, A Gagliardi, D Shing Hiung, N Takahashi, J Wong, **DJ Amaya**, and C Deser (2025). Removing ENSO's influence from global SST variability, with insights into the record-setting marine heatwaves of 2023-2024. *BAMS*. <https://doi.org/10.1175/BAMS-D-24-0023.1>.

Kramer SM, KB Karnauskas, MT Elling, L Zhang, H Liu, Y Chen, **DJ Amaya**, et al. (2025). ColdBlobMIP: A multi-model assessment of the atmospheric response to the North Atlantic warming hole. *Geophys. Res. Lett.* <https://doi.org/10.1029/2025GL117784>.

Li J, AJ Miller, **DJ Amaya**, W Wang, P Li, Y Gu, and P Bai. Vertical structure of chlorophyll-a during marine heatwaves in the California Current Ecosystem. *Comm. Earth & Env.* <https://doi.org/10.1038/s43247-025-02835-8>.

Seltzer AM, RL Tyne, I Musan, JF Langman, **DJ Amaya**, et al. (2025). Past aquifer responses to climate recorded by fossil groundwater. *Science Advances*. <https://doi.org/10.1126/sciadv.adu7812>.

Smith KE, A Sen Gupta, **DJ Amaya** et al (2025). Baseline Matters: Challenges and implications of different marine heatwave baselines. *Prog. in Ocean*. <https://doi.org/10.1016/j.pocean.2024.103404>.

Toride K, M Newman, A Hoell, A Capotondi, J Schlör, and **DJ Amaya** (2025). Using deep learning to identify initial error sensitivity of ENSO forecasts. *AI for Earth Sys.* <https://doi.org/10.1175/AIES-D-24-0045.1>.

2024 **Amaya DJ**, MG Jacox, MA Alexander, SJ Bograd, and L Jia (2024). Seasonal upwelling forecasts in the California Current System. *Geophys. Res. Lett.* <https://doi.org/10.1029/2024GL111083>.

Capotondi A, RR Rodrigues, A Sen Gupta, JA Benthuyssen, C Deser, TL Frölicher, NS Lovenduski, **DJ Amaya** et al (2024). A global overview of marine heatwaves in a changing climate. *Comm. Earth & Env.* <https://doi.org/10.1038/s43247-024-01806-9>.

Cluett AA, MG Jacox, **DJ Amaya**, MA Alexander, and JD Scott (2024). Atmospheric precursors of skillful SST prediction in the Northeast Pacific. *J. Clim.* <https://doi.org/10.1175/JCLI-D-24-0121.1>.

Deser C, AS Phillips, MA Alexander, **DJ Amaya**, A Capotondi, MG Jacox, and JD Scott (2024). Future changes in the Intensity and Duration of Marine Heat and Cold Waves: Insights from Coupled Model Initial-Condition Large Ensembles. *J. Clim.* <https://doi.org/10.1175/JCLI-D-23-0278.1>.

Jacox MG, **DJ Amaya**, and MA Alexander (2024). Marine Heatwaves in 2023 [in “State of the Climate in 2023”]. *BAMS*. <https://doi.org/10.1175/BAMS-D-24-0100.1>.

Jacox MG, S Bograd, J Fietcher, M Pozo-Buil, MA Alexander, **DJ Amaya**, N Cordero Quirós, H Ding, R Rykaczewski et al. (2024). Linking upwelling dynamics and subsurface nutrients to projected productivity changes in the CCS. *Geophys. Res. Lett.* <https://doi.org/10.1029/2023GL108096>.

Larson SM, KM McMonigal, Y Okumura, **DJ Amaya**, A Capotondi, K Bellomo, IR Simpson, and AC Clement (2024). Ocean realism shapes sea surface temperature variability in a CESM2 coupled model hierarchy. *J. Clim.* <https://doi.org/10.1175/JCLI-D-23-0621.1>.

Yang, C, R Bourdallé-Badie, M Drevillon, **DJ Amaya**, et al. (2024). Gathering users and developers to shape together the next-generation ocean reanalyses: Ocean reanalysis workshop of the European Copernicus Marine Service. *BAMS*. <https://doi.org/10.1175/BAMS-D-24-0034.1>.

2023 **Amaya DJ**, MG Jacox, MR Fewings, VS Saba, MF Stuecker, RR Rykaczewski, et al. (2023). Marine heatwaves need clear definitions so coastal communities can adapt. *Nature*. <https://doi.org/10.1038/d41586-023-00924-2>.

Amaya DJ, MA Alexander, MG Jacox, JD Scott, C Deser, A Capotondi and A Phillips (2023). Bottom marine heatwaves along the continental shelves of North America. *Nat. Comm.* <https://doi.org/10.1038/s41467-023-36567-0>.

Amaya DJ, MA Alexander, MG Jacox, and JD Scott (2023). An evaluation of high-resolution ocean reanalyses in the California Current System. *Prog. in Ocean*. <https://doi.org/10.1016/j.pocean.2022.102951>

Alexander, MA, JD Scott, MG Jacox, C Deser, **DJ Amaya**, A Capotondi, and AS Phillips (2023). A survey of coastal conditions around the continental US using a high-resolution ocean reanalysis. *Prog. in Ocean*. <https://doi.org/10.1016/j.pocean.2023.103055>.

Jacox, MG, MP Buil, S Brodie, MA Alexander, **DJ Amaya**, SJ Bograd, et al. (2023). Downscaled seasonal forecasts for the California Current System: Skill assessment and prospects for living marine resource applications. *PLOS Climate*. <https://doi.org/10.1371/journal.pclm.0000245>.

Ren, X, W Liu A Capotondi, **DJ Amaya**, and NJ Holbrook (2023). The Pacific Decadal Oscillation modulated marine heatwaves in the Northeast Pacific during past decades. *Comm. Earth & Envir.* <https://doi.org/10.1038/s43247-023-00863-w>.

Shu Q, Y Zhang, **DJ Amaya**, SM Larson, Y Kosaka, J-C Yang, and X Lin (2023). Role of ocean advection during the equatorward propagation of the Pacific Meridional Modes. *J. Clim.* <https://doi.org/10.1175/JCLI-D-22-0296.1>.

2022 **Amaya DJ**, MG Jacox, J Dias, MA Alexander, KB Karnauskas, JD Scott, and M Gehne (2022). Subseasonal-to-seasonal forecast skill in the California Current System and its connection to coastal Kelvin waves. *JGR: Oceans*. <https://doi.org/10.1029/2021JC017892>.

- Di Lorenzo E, T Xu, Y Zhao, M Newman, A Capotondi, S Stevenson, **DJ Amaya**, et al. (2022). Modes and mechanisms of Pacific decadal-scale variability. *Ann. Review of Marine Sci.* <https://doi.org/10.1146/annurev-marine-040422-084555>.
- Jacox MG, MA Alexander, **DJ Amaya**, E Becker, SJ Bograd, S Brodie, EL Hazen, M Pozo Buil, D Tommasi (2022). Global seasonal forecasts of marine heatwaves. *Nature*. <https://doi.org/10.1038/s41586-022-04573-9>.
- Shi H, J Fei-Fei, RCJ Wills, MG Jacox, **DJ Amaya**, BA Black, RA Rykaczewski, SJ Bograd, M Garcia-Reyes, and WJ Sydeman (2022). Global decline in ocean memory over the 21st century. *Sci. Adv.* <https://doi.org/10.1126/sciadv.abm3468>.
- Zhang Y, S-Y Yu, S-P Xie, **DJ Amaya**, Q Peng, Y Kosaka, X Lin, J-C Yang, SM Larson, AJ Miller, L Fan (2022). Role of ocean dynamics in equatorial Pacific decadal variability. *Clim. Dyn.* <https://doi.org/10.1007/s00382-022-06312-2>.
- 2021** **Amaya DJ**, AM Seltzer, KB Karneuskas, JM Lora, X Zhang, and P DiNezio (2021). Air-sea feedbacks shape North American hydroclimate response to ice sheets during the Last Glacial Maximum. *Earth Planet. Sci. Lett.* <https://doi.org/10.1016/j.epsl.2021.117271>.
- Amaya DJ**, MA Alexander, A Capotondi, C Deser, KB Karneuskas, AJ Miller, and NJ Mantua (2021). Are long-term changes in mixed layer depth influencing North Pacific marine heatwaves? *BAMS*. <https://doi.org/10.1175/BAMS-D-20-0144.1>.
- Karneuskas KB, Zhang L, and **Amaya DJ** (2021). The atmospheric response to North Atlantic SST trends, 1870–2019. *Geophys. Res. Lett.* <https://doi.org/10.1029/2020GL090677>.
- Scannell HA and **DJ Amaya** (2021). The 2019–20 northeast Pacific marine heatwave [in “State of the Climate in 2020”]. *BAMS*. <https://doi.org/10.1175/BAMS-D-21-0083.1>.
- Zhang Y, S Yu, **DJ Amaya**, Y Kosaka, SM Larson, X Wang, J-C Yang, MF Stuecker, S-P Xie, AJ Miller, and X. Lin (2021). Pacific Meridional Modes without Equatorial Pacific influence. *J. Clim.* <https://doi.org/10.1175/JCLI-D-20-0573.1>.
- 2020** **Amaya DJ**, AJ Miller, S-P Xie and Y Kosaka (2020). Physical drivers of the summer 2019 North Pacific marine heatwave. *Nat. Comm.* <https://doi.org/10.1038/s41467-020-15820-w>.
- Johnson NC, **DJ Amaya**, Q Ding, Y Kosaka, H Tokinaga and S-P Xie (2020). Multidecadal modulation of key metrics of global climate change. *Glob. and Planet. Change*. <https://doi.org/10.1016/j.gloplacha.2020.103149>.
- Schmidt DF, **DJ Amaya**, KM Grise, and AJ Miller (2020). Shifts of the North Pacific Subtropical High drive upwelling trends in the California Current System. *Geophys. Res. Lett.* <https://doi.org/10.1029/2020GL088996>.
- 2019** **Amaya DJ** (2019). The Pacific Meridional Mode: a Review. *Curr. Clim. Change Reports*. [doi:10.1007/s40641-019-00142-x](https://doi.org/10.1007/s40641-019-00142-x).
- Amaya DJ**, Y Kosaka, W Zhou, Y Zhang, S-P Xie and AJ Miller (2019). The North Pacific pacemaker effect on historical ENSO and its mechanisms. *J. Clim.* <https://doi.org/10.1175/JCLI-D-19-0040.1>.

Wang JK, KR Johnson, A Borsato, **DJ Amaya**, GL Griffiths, GM Henderson and S Frisia (2019). Hydroclimatic variability in southeast Asia over the last two millennia. *Earth Planet. Sci. Lett.* <https://doi.org/10.1016/j.epsl.2019.115737>.

Sanchez SC, **DJ Amaya**, AJ Miller, S-P Xie and CD Charles (2019). Pacific Meridional Mode over the last millennium. *Clim. Dyn.* <https://doi.org/10.1007/s00382-019-04740-1>.

2018 **Amaya DJ**, N Siler, S-P Xie and AJ Miller (2018). The interplay of internal and forced modes of Hadley Cell expansion: lessons from the global warming hiatus. *Clim. Dyn.*, <https://doi.org/10.1007/s00382-017-3921-5>.

2017 **Amaya DJ**, MJ DeFlorio, AJ Miller and S-P Xie (2017). WES feedback and the Atlantic Meridional Mode: observations and CMIP5 comparisons. *Clim. Dyn.* [doi:10.1007/s00382-016-3411-1](https://doi.org/10.1007/s00382-016-3411-1).

2015 **Amaya DJ**, S-P Xie, AJ Miller and MJ McPhaden (2015). Seasonality of tropical Pacific decadal trends associated with the 21st century global warming hiatus, *JGR: Oceans*. [doi:10.1002/2015JC010906](https://doi.org/10.1002/2015JC010906).

2014 **Amaya DJ** and GR Foltz (2014). Impacts of canonical and Modoki El Niño on tropical Atlantic SST, *JGR: Oceans*. [doi:10.1002/2013JC009476](https://doi.org/10.1002/2013JC009476).

2013 Kramm G, **DJ Amaya**, T Foken and N Mölders (2013). Hans A. Panofsky's Integral Similarity Function—At Fifty, Atmos. Clim. Sci. [doi:10.4236/acs.2013.34061](https://doi.org/10.4236/acs.2013.34061).

Other Publications

2023 **Amaya DJ** (2023). El Niño is coming, and ocean temps are already at record highs – that can spell disaster for fish and corals. [The Conversation](#).

2020 **Amaya DJ** and National Center for Atmospheric Research Staff (2020). The Climate Data Guide: [Meridional Modes and their Indices](#).

2018 Allen RJ and **DJ Amaya** (2018). The importance of ENSO/PDO to recent tropical widening. In [“Expansion of the Tropics”](#), *Variations*. US CLIVAR.

2017 Victor, DG, N Obradovich and **DJ Amaya** (2017). Why the wiring of our brains makes it hard to stop climate change. September 17, 2017. [LA Times](#).

2016 **Amaya DJ**, NE Bond, AJ Miller and MJ DeFlorio (2016). The evolution and known atmospheric forcing mechanisms behind the 2013-2015 North Pacific warm anomalies. In [“A Tale of Two Blobs”](#), *Variations*. US CLIVAR.

Funding

Awarded

2025-28	NOAA Modeling, Analysis, Predictions, and Projections (MAPP) <i>Assessing the representation of predictive pathways in global models, regional models, and observations to support CEFI science and model development</i> Lead PI: Mike Jacox, with Co-PIs: Mike Alexander, Dillon Amaya , Steve Bograd, and Mer Pozo Buil	\$566,798
2021-24	NSF Paleo Perspectives on Climate Change (P2C2)	\$549,398

An integrated model-proxy approach to understanding the structure and mechanisms of Western US hydroclimate change since the last glacial period

Lead PI: **Dillon Amaya**, with Co-PIs: Alan Seltzer, Kris Karnauskas, Juan Lora and Becca Hatheway

2020-21	CIRES Postdoctoral Fellowship	\$135,000
---------	-------------------------------	-----------

2015-19	NSF Graduate Research Fellowship	\$138,000
---------	----------------------------------	-----------

Awards & Recognition

2025	Outstanding Scientific Paper of the Year, Jacox, Alexander, Amaya et al. (2022), NOAA Research Highlight, Amaya et al. (2025), US CLIVAR
------	---

2023	<i>Nature Communications</i> Editors' Highlight NOAA Physical Sciences Laboratory Employee Spotlight
------	---

2021	Research Highlight, Amaya et al. (2021), US CLIVAR
------	--

2020	CIRES Postdoctoral Visiting Fellowship, University of Colorado Boulder
------	--

2018	Best Oral Presentation, Scripps Student Symposium Editor's Award, Atmospheric Science Letters
------	--

2017	Outstanding Teaching Assistant Award, Scripps Institution of Oceanography Research Highlight, Amaya et al. (2018), US CLIVAR
------	---

2015-18	Graduate Research Fellowship, NSF
---------	-----------------------------------

2015	Research Highlight, Amaya et al. (2015), US CLIVAR
------	--

2014	Ed Felder Award for Excellence in Atmospheric Sciences, Texas A&M University Excellence in Oceanography Award, Texas A&M University Outstanding Student Award, Texas A&M University
------	---

2013-14	Astronaut Foundation Scholar, Astronaut Scholarship Foundation
---------	--

2012-14	Ernest F. Hollings Scholarship, NOAA
---------	--------------------------------------

Department Seminars

2026	University of Wisconsin-Madison, Department of Atmospheric and Oceanic Sciences, Madison, WI Columbia University, Department of Earth and Environmental Sciences, New York, NY North Carolina State University, Department of Marine, Earth, and Atmos. Sciences, Raleigh, NC
------	---

2025	University of Colorado Boulder, Department of Atmospheric and Oceanic Sciences, Boulder, CO Center for Western Weather and Water Extremes (CW3E), San Diego, CA NCAR Climate & Global Dynamics (CGD), Boulder, CO
------	---

2024	Colorado School of Mines, Golden, CO NCAR Climate Analysis Section (CAS), Boulder, CO
------	--

2023	California Current Integrated Ecosystem Assessment, Virtual University of California, Santa Barbara, Department of Geography, Virtual
------	--

2022	GEOMAR and the Alfred Wegener Institute, Kiel, Germany (Virtual)
------	--

University of Washington, School of Oceanography, Seattle, WA

2021 Physical Sciences Laboratory, NOAA Earth System Research Laboratories, Boulder, CO
Woods Hole Oceanographic Institution, Climate and Paleo Seminar, Woods Hole, MA
University of Connecticut, Department of Marine Sciences, Groton, CT

2020 San Diego State University Climate Justice Series, San Diego, CA ([YouTube Link](#))
University of Washington, Department of Atmospheric Sciences, Seattle, WA
University of Washington, School of Oceanography, Seattle, WA
National Center for Atmospheric Research, Boulder, CO ([YouTube Link](#))
NOAA Marine Prediction Task Force, Boulder, CO

2019 Scripps Institution of Oceanography (Dissertation Defense), San Diego, CA
Geophysical Fluid Dynamics Laboratory, Princeton, NJ
UK Met Office, Exeter, England
University of Exeter, Exeter, England

2018 Georgia Tech University, Atlanta, GA
Ulsan Institute of Science and Technology, Ulsan, South Korea

Conference Presentations (Last 5 Years)

- 2026** OSM (Poster): *Skillful high-resolution seasonal forecasts of the California Current System using model-analogs*
- 2025** AGU (Invited Talk): *Defining extremes in a changing climate: lessons from the MHW community*
AGU (Poster): *Global seasonal precipitation forecasts using model-analogs*
- 2024** AGU (Poster): *Skillful high-resolution seasonal climate forecasts using model-analogs*
Eastern Pacific Ocean Conference, EPOC (Talk): *High-resolution model-analog forecasts of the California Current System*
NOAA S2S Applications Workshop (Invited Talk): *Subseasonal-to-seasonal ocean forecasts relevant for marine resource management*
CESM Workshop (Talk): *Building seasonal climate forecasts from large ensembles*
Earth System Predictability Community Workshop (Poster): *Future changes in seasonal climate predictability*
OSM (Talk): *Bottom temperature heatwaves along North American coastlines*
- 2023** CESM Workshop (Talk): *Future changes in seasonal climate predictability*
CESM Earth System Prediction Working Group Meeting (Talk): *Future changes in seasonal climate predictability*
AGU (Talk): *Future changes in seasonal climate predictability*
AMS (Invited Talk): *Ocean teleconnections associated with ENSO and MJO*
AMS (Talk): *Bottom temperature heatwaves along North American coastlines*
- 2022** Eastern Boundary Current Upwelling System (EBUS) Conference (Talk): *Bottom marine heatwaves along the continental shelves of North America*
Eastern Boundary Current Upwelling System (EBUS) Conference (Talk): *Seasonal-to-subseasonal forecast skill in the California Current System*
Eastern Pacific Ocean Conference, EPOC (Talk): *Dynamical forecasts of coastal upwelling in the California Current System*

OSM (Talk): *Subseasonal-to-seasonal forecast skill in the California Current System and its connection to coastal Kelvin waves* ([YouTube Link](#))

- 2021** AGU (Talk): *Air-sea feedbacks shape North American hydroclimate response to ice sheets during the Last Glacial Maximum* ([YouTube Link](#))
Eastern Pacific Ocean Conference, EPOC (Talk): *Subseasonal-to-seasonal forecast skill in the California Current System and its connection to coastal Kelvin waves*
JpGU (Invited Talk): *The North Pacific pacemaker effect on historical ENSO and its mechanisms*
Climate Variability and Change Working Group Meeting (Talk): *Air-sea feedbacks shape North American hydroclimate response to ice sheets during the Last Glacial Maximum*
Paleo Working Group Meeting (Talk): *Air-sea feedbacks shape North American hydroclimate response to ice sheets during the Last Glacial Maximum*

Other Academic Experience

- 2025** Regional ocean modeling with MOM6 Workshop, Boulder, CO
CESM Workshop, Boulder, CO
US CLIVAR Bi-Annual Summit, Boulder, CO
- 2024** US CLIVAR PPAI Panel Meeting, Boulder, CO
Optimizing Ocean Observing Networks for Detecting the Coastal Climate Signal Workshop, Boulder, CO
- 2023** US CLIVAR Bi-Annual Summit, Seattle, WA
- 2022** Ocean Observing Co-Design Workshop, Virtual
Daily-to-decadal Ecological Forecasting Workshop, Woods Hole, MA
US CLIVAR Bi-Annual Summit, Washington DC
- 2021** WCRP-CLIVAR Workshop on Climate Interactions Among the Tropical Basins, Virtual
- 2020** CESM Workshop, Boulder, CO
- 2019** The Large Ensemble Workshop, Boulder, CO
Ocean/Atmosphere Dynamics Meeting, Pasadena, CA
- 2017** CESM Tutorial, Boulder, CO
- 2016** CLIVAR Early Career Science Symposium, Qingdao, China
NASA JPL Summer School, Pasadena, CA
ENSO Ecosystems Workshop, San Diego, CA
Pacific Anomalies Workshop II, Seattle, CA
Joint US-Japan Workshop on Climate Change and Variability, San Diego, CA
- 2015** Pacific Anomalies Workshop I, San Diego, WA
Research cruise (32-days): Flow Encountering Abrupt Topography, *R/V Roger Revelle*, Palau
- 2014** Mark A. Cane Symposium, Palisades, NY
- 2013** Research cruise (37-days): PIRATA Northeast Extension, *R/V Ron Brown*, Trop. Atlantic

Professional Service

Professional Committees, Panels & Working Groups

- 2026-27** Member, Guidelines On core data for climate-resilient inland FISHerries (GO FISH)
- 2026-29** Co-chair, NSF NCAR Earth System Prediction Working Group
- 2024-26** Member, US CLIVAR Scientific Steering Committee
- 2024-26** Co-chair, US CLIVAR Predictability, Predictions, and Applications Interface (PPAI) Panel
- 2023-28** Member, International CLIVAR Research Focus Group on Marine Heatwaves
- 2021-24** Member, American Meteorological Society Air-Sea Interactions Committee
- 2021-23** Member, NOAA MAPP Marine Ecosystem Task Force (METF)
- 2020-23** Member, US CLIVAR Predictability, Predictions, and Applications Interface (PPAI) Panel
- 2019-20** Member, North American Regional Representative, Young Earth System Sciences Community
- 2018-19** Member, Scripps Heritage Committee
- 2014-19** Member, Scripps Community Outreach Program for Education (SCOPE)

Conference Sessions & Workshops

- 2026** Co-convener, *Prediction of the Ocean: Physics, Biogeochemistry, Ecosystems, and Applications*, OSM, Glasgow, Scotland
- 2025** Co-convener, US CLIVAR Bi-Annual Summit, Boulder, CO
- 2024** Co-convener, US CLIVAR PPAI Panel Meeting, Boulder, CO
- 2023** Co-convener, US CLIVAR Bi-Annual Summit, Seattle, WA
Co-convener, 23rd Conference on Air-Sea Interactions, AMS, Denver, CO
- 2021** Co-convener, *The role of ocean-atmosphere dynamics in global climate*, OSM, Virtual
Co-convener, *Marine extremes: regional downscaling and climate projections*, OSM, Virtual
Co-chair, Eastern Pacific Ocean Conference (EPOC), Fallen Leaf Lake, CA
- 2020** Co-convener, *Large-scale atmosphere-ocean dynamics of climate variability and climate change*, AGU Fall Meeting, Virtual
Co-chair, Eastern Pacific Ocean Conference (EPOC), Mount Hood, OR
- 2019** Co-chair, The 2nd Meridional Mode Workshop, Columbus, OH
- 2018** Co-convener, *Mechanisms of Low-Frequency Ocean-Atmosphere Variability and Implications for Earth's Energy Budget*, AGU Fall Meeting, Washington D.C.

Reviewer

NOAA Climate Variability and Predictability Panel, NASA Physical Oceanography Panel, NSF Paleo Perspectives on Climate Change (P2C2), Nature, Nature Geosciences, Nature Communications, npj Climate and Atmospheric Science, Geophysical Research Letters, Journal of Climate, JGR: Oceans, Atmospheric Science Letters, Bulletin of the American Meteorological Society

Teaching & Mentoring

Teaching

- 2026** Instructor, MEA 460: Principles of Physical Oceanography, NCSU
- 2025** Guest lecture, *Climate Science and Policy Master's Program*, UCSD
- 2024** Guest lecture, *Chaos and Predictability*, CU Boulder
Guest lecture, *Climate Science and Policy Master's Program*, UCSD
- 2023** Co-developed and co-instructor, ICTP-CLIVAR Summer School on Marine Heatwaves, Trieste, Italy
Guest lecture, *Intro to Oceanography*, Colorado School of Mines
Guest lecture, *Climate Science and Policy Master's Program*, UCSD
Guest lecture, *Environmental Chemistry*, SDSU
- 2022** Co-developed and co-instructor, ATLS 4519-006: *Design a Science Exhibit*, CU Boulder
Guest lecture, *Climate Science and Policy Master's Program*, UCSD
Guest lecture, *Environmental Chemistry*, SDSU
- 2021** Guest lecture, *Climate Science and Policy Master's Program*, UCSD
Guest lecture, *Environmental Chemistry*, SDSU
- 2020** Guest lecture, *Climate Science and Policy Master's Program*, UCSD
Guest lecture, *Our Changing Environment*, CU Boulder
Guest lecture, *Environmental Chemistry*, SDSU
- 2019** Teaching Assistant and guest lecture, *Introduction to Atmospheric Science*, UCSD
Guest lecture, *Climate Science and Policy Master's Program*, UCSD
- 2018** Co-developed and co-instructor *Global Environmental Leadership and Sustainability*, UCSD
Guest lecture, *Introduction to Atmospheric Science*, UCSD
Guest lecture, *Climate Science and Policy Master's Program*, UCSD
Guest lecture, *Environmental Chemistry*, SDSU
- 2017** Co-developed and co-instructor *Global Environmental Leadership and Sustainability*, UCSD
Teaching Assistant and guest lecture, *Introduction to Atmospheric Science*, UCSD
- 2016** Guest lecture, *Dynamics of the Atmosphere & Climate*, UCSD

Mentoring

- 2024** Co-mentor, Hollings Scholar Jacqueline Kiszka
- 2023-** Co-advisor, doctoral student Jemma Jeffree, The Australian National University
- 2022** Co-mentor, Hollings Scholar Leah Wilczynski
Co-mentor, NOAA Pathways intern Andrew Mandovi

Community Involvement & Outreach

Volunteer Activities

- 2023-** Tour guide for NOAA Science on a Sphere, visitors include K-12 school groups, government officials and the general public, Boulder, CO
- 2014-19** Conducted 73 tours of the Scripps Pier for local K-12 school groups, perspective donors, visiting government officials, and the general public, San Diego, CA

Outreach Presentations

- 2024** Middle School Outreach Day, Boulder, CO
Association of Public Health Nurses, Denver, CO
- 2023** National Marine Sanctuaries Webinar Series on Marine Heatwaves, Virtual ([YouTube Link](#))
Boulder High School, Boulder, CO
Lakeview Intermediate School, Virtual
- 2021** Science Journalism Seminar on Marine Heatwaves, Virtual ([YouTube Link](#))
Aledade Health Insurance Climate Change Committee, Virtual
Geological Society of South Africa, Virtual
- 2020** Aledade Health Insurance Climate Change Committee, Virtual
- 2019** Grain Valley High School, Grain Valley, MO
American Academy of Religion Conference, San Diego, CA
- 2018** Horn of Africa Somali Refugee Organization, San Diego, CA
Franciscan School of Theology, Oceanside, CA
San Diego Independent Scholars, San Diego, CA
Yew Chung International School of Hong Kong, Kowloon, Hong Kong
- 2017** San Diego Yacht Club, San Diego, CA
El Cajon Rotary Club, El Cajon, CA
Pioneer Ridge Middle School, Independence, MO
- 2016** Tijuana Estuary Reserve, Imperial Beach, CA
Encinitas Rotary Club, Encinitas, CA
Correia Middle School, San Diego, CA