

Dillon J. Amaya

Research Scientist, NOAA Physical Sciences Laboratory

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Appointments & Education

Research Scientist NOAA Physical Sciences Laboratory, Boulder, CO	2021-present
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

Submitted/In Revision

Amaya DJ, N Maher, C Deser, MG Jacox, MA Alexander, M Newman, J Dias, and J Lou. Future changes in seasonal climate predictability. In revision.

Cluett, AA, MG Jacox, **DJ Amaya**, MA Alexander, and JD Scott. Atmospheric precursors of skillful SST prediction in the Northeast Pacific. In revision.

Bastien-Olvera, BA, O Aburto-Oropeza, F Favoretto, **DJ Amaya**, EP Urbano, L Brander and K Ricke. Climate change stalls global mangrove recovery and diminishes their economic value. In revision.

Larson SM, KM McMonigal, Y Okumura, **DJ Amaya**, A Capotondi, K Bellomo, IR Simpson, and AC Clement. Ocean realism shapes sea surface temperature variability in a CESM2 coupled model hierarchy. In revision.

Peer Reviewed

2024 Deser, C, AS Phillips, MA Alexander, **DJ Amaya**, A Capotondi, MG Jacox, and JD Scott. 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, 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 California Current System. *GRL*. Accepted.

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*, 616(7955), 29–32. <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.* 14, 1038. <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.*, 210, 102951. <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.*, 216, 103055. <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*, 2(10), e0000245. <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. *Communications Earth & Environment*, 4(1), 1–9. <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. *Annual Review of Marine Science*. <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*. 604, 486–490. <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.* 8 (18), eabm3468. <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 Karnauskas, 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 Karnauskas, AJ Miller, and NJ Mantua (2021). Are long-term changes in mixed layer depth influencing North Pacific marine heatwaves? *BAMS*. 102 (1), S59–S66, <https://doi.org/10.1175/BAMS-D-20-0144.1>.
- Johnson, GC, RL Lumpkin, SR Alin, **DJ Amaya**, et al. (2021): Global Oceans [in “State of the Climate in 2020”]. *BAMS*. 102 (8), S143 –S198, <https://doi.org/10.1175/BAMS-D-21-0083.1>.
- Karnauskas KB, Zhang L, and **Amaya DJ** (2021). The atmospheric response to North Atlantic SST trends, 1870–2019. *GRL*. 48, e2020GL090677, <https://doi.org/10.1029/2020GL090677>.
- 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.*, 11, 1903. <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*, 5, 296-307, [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.*, 32 (22), 7643-7661, <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.*, 525, <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.*, 53, 3547–3560, <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.*, 51, 305-319, <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.*, 49, 1665-1679, [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*, 120, 6782–6798, [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*, 119, [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.*, 3, 4, 581-594. [doi:10.4236/acs.2013.34061](https://doi.org/10.4236/acs.2013.34061).

Invited Contributions

- 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*, 16, 8-14, U.S. 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*, 14, 1-6, U.S. CLIVAR.

Awards & Recognition

- 2023 *Nature Communications* Editors’ Highlight
NOAA Physical Sciences Laboratory Employee Spotlight
- 2022 NOAA Diversity Award (as a member of the OAR Diversity & Inclusion Advisory Committee)
- 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

Funding

Awarded

- 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, 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

Department Seminars

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
2014	Texas A&M University, College Station, TX

Selected Conference Presentations (Last 5 Years)

2024	AGU (Talk): <i>Future changes in seasonal climate predictability</i> OSM (Talk): <i>Bottom temperature heatwaves along North American coastlines</i>
2023	CESM Workshop (Talk): <i>Future changes in seasonal climate predictability</i> CESM Earth System Prediction Working Group Meeting (Talk): <i>Future changes in seasonal climate predictability</i> AMS (Invited Talk): <i>Ocean teleconnections associated with ENSO and MJO</i> AMS (Talk): <i>Bottom temperature heatwaves along North American coastlines</i>
2022	Eastern Boundary Current Upwelling System (EBUS) Conference (Talk), <i>Bottom marine heatwaves along the continental shelves of North America</i> Eastern Boundary Current Upwelling System (EBUS) Conference (Talk), <i>Seasonal-to-subseasonal forecast skill in the California Current System</i>

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*
- 2020** AGU (Invited Talk): *The North Pacific pacemaker effect on historical ENSO and its mechanisms* ([YouTube Link](#))
- AGU (Talk): *Are long-term changes in mixed layer depth impacting North Pacific marine heatwaves?* ([YouTube Link](#))
- US CLIVAR PPAI Panel Webinar (Talk): *The return of the Blob: understanding the recent North Pacific marine heatwave and its implications for the future*
- Climate Variability and Change Working Group Meeting (Talk): *The North Pacific pacemaker effect on historical ENSO and its mechanisms*
- Ocean Sciences Meeting (Poster): *The North Pacific pacemaker effect on historical ENSO and its mechanisms*
- 2019** The 2nd Meridional Mode Workshop (Talk): *The Pacific Meridional Mode: a brief review, pacemaking, and the 2019 event*
- DWR Winter Weather Outlook Workshop (Talk): *Blob 2.0 in the Pacific Ocean, implications for this winter?*
- Eastern Pacific Ocean Conference, EPOC (Talk): *The return of “The Blob” – A near real-time assessment of the 2019 North Pacific marine heatwave*
- CICESE-SIO Joint Symposium (Poster): *The PMM pacemaker effect on historical ENSO*
- EGU (Talk): *The North Pacific Meridional Mode effect on historical ENSO and its mechanism*

Other Academic Experience

- 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

Memberships & Committees

- 2024-26** Co-Chair, US CLIVAR Predictability, Predictions, and Applications Interface (PPAI) Panel
- 2023-28** Member, International CLIVAR Research Focus Group on Marine Heatwaves
- 2022-23** Member, OAR Diversity and Inclusion Advisory Committee (ODIAC)
- 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** 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

- 2023** 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
- 2021** 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 Geosciences, Nature Communications, Geophysical Research Letters, Journal of Climate, JGR: Oceans, Atmospheric Science Letters, BAMS

Teaching & Mentoring

- 2023** Guest lecture for Prof. Villas Boas, Colorado School of Mines, *Intro to Oceanography*
Co-instructor for ICTP-CLIVAR Summer School on Marine Heatwaves, Trieste, Italy
Guest lecture for *Climate Science and Policy Master's Program*, SIO
Guest lecture for Prof. John Love, San Diego State University, *Environmental Chemistry*
- 2022** Co-instructor for *Design a Science Exhibit*, University of Colorado Boulder
Guest lecture for *Climate Science and Policy Master's Program*, SIO
Guest lecture for Prof. John Love, San Diego State University, *Environmental Chemistry*
Mentor for NOAA Pathways intern Andrew Mandovi during his internship at NOAA PSL
Mentor for Hollings Scholar Leah Wilczynski during her internship at NOAA PSL
- 2021** Guest lecture for *Climate Science and Policy Master's Program*, SIO
Guest lecture for Prof. John Love, San Diego State University, *Environmental Chemistry*
- 2020** Guest lecture for *Climate Science and Policy Master's Program*, SIO
Guest lecture for Prof. Donata Giglio, University of Colorado Boulder, *Our Changing Environment*
Guest lecture for Prof. John Love, San Diego State University, *Environmental Chemistry*
- 2019** Teaching Assistant and guest lecture for Prof. Joel Norris, *Introduction to Atmospheric Science*
Guest lecture for *Climate Science and Policy Master's Program*, SIO
- 2018** Guest lecture for Prof. Joel Norris, *Introduction to Atmospheric Science*
Two guest lectures for *Climate Science and Policy Master's Program*, SIO
Co-Instructor for *Global Environmental Leadership and Sustainability* Summer Course, UCSD
Guest lecture for Prof. John Love, San Diego State University, *Energy and the Environment*
- 2017** Teaching Assistant and guest lecture for Prof. Joel Norris, *Introduction to Atmospheric Science*
Co-Instructor for *Global Environmental Leadership and Sustainability* Summer Course, UCSD
- 2016** Guest lecture for Prof. Joel Norris and Prof. Shang-Ping Xie, *Dynamics of the Atmosphere & Climate*

Community Involvement & Outreach

Volunteer Activities

- 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

- 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
- 2015** La Jolla Public Library, La Jolla, CA
R/V Roger Revelle, Koror, Palau