

Curriculum Vitae: Adrienne J. Sutton

NOAA/PMEL, 7600 Sand Point Way NE, Seattle, WA 98115
work: 206.526.6879 fax: 206.526.6744 email: adrienne.sutton@noaa.gov
websites: [bio](#), [program](#), [ORCID](#)

RESEARCH INTERESTS: Adrienne Sutton's research centers around the patterns of air-sea CO₂ exchange and ocean acidification, aiming to advance understanding of the ocean carbon cycle and how it is changing over time. Her recent publications focus on characterizing natural variability and long-term anthropogenic trends using time series observations and models, uncertainty in observation-based CO₂ flux estimates, and modern-day exposure of marine organisms to corrosive carbonate chemistry conditions. Adrienne also collaborates with her team and engineers on observing technology development and maintains nearly 40 moored autonomous time series around the globe that track air-sea CO₂ and surface ocean biogeochemistry.

EDUCATION

**Ph.D., University of Maryland Center for Environmental Science (UMCES),
Horn Point Laboratory, Cambridge, MD** 2000-2006

GPA 3.7, Area of Study: Oceanography, Advisor: Dr. Thomas Fisher

B.S., University of North Carolina at Wilmington (UNCW), Wilmington, NC 1996-2000

GPA 3.6, B.S. in Biology and Marine Biology with Chemistry minor, *cum laude*

Honors Directed Individual Study with Dr. Stephen Skrabal

2000

Research Experience for Undergraduates (REU), Scripps Institution of Oceanography
with Dr. Peter J.S. Franks

1999

PROFESSIONAL AND RESEARCH EXPERIENCE

**Oceanographer, National Oceanic and Atmospheric Administration (NOAA)
Pacific Marine Environmental Laboratory (PMEL), Seattle, WA** 2017-present

**Affiliate Assistant Professor, University of Washington (UW) School of
Oceanography, Seattle, WA** 2020-present

Principal investigator in PMEL Carbon Program; oversee scientific and technical details of NOAA's
air-sea CO₂ flux and ocean acidification (OA) mooring network; ocean carbon sensor development

Affiliate Assistant Professor, School of Oceanography, University of Washington

**Research Scientist 4, NOAA - UW Joint Institute for the Study of the Atmosphere
and Ocean (JISAO), PMEL, Seattle, WA** 2012-2017

Principal investigator in PMEL Carbon Program; oversee scientific and technical details of NOAA's
air-sea CO₂ flux and ocean acidification (OA) mooring network

Cruise experience: R/V Fairweather, West Coast OA Cruise, Co-Chief Scientist and lead DIC analyst, 3 – 14
August 2013; R/V Kilo Moana, Validation Team of Wendy Schmidt Ocean Health XPRIZE competition,
14 – 20 May 2015

National Research Council (NRC) Research Associate, NOAA, PMEL, Seattle, WA 2010-2012

Postdoctorate researcher with Drs. Richard Feely and Chris Sabine

Cruise experience: R/V Wecoma, West Coast OA Cruise, DIC analyst, 9 August – 3 September 2011;

R/V Shimada, West Coast OA Cruise, DIC analyst, 4 – 18 September 2012

Lab work: DIC measurements; use of autonomous sensors (CO₂, pH, SSTC, dissolved oxygen,
fluorescence, and turbidity); OA mooring data quality control

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Assistant Director of Strategic Planning, Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO), Oregon State University, Corvallis, OR 2008-2009
Postdoctorate researcher with Drs. Jane Lubchenco and Bruce Menge
Developed PISCO's 5-Year Science Plan

Congressional Affairs Specialist, NOAA Office of Legislative Affairs, Washington, DC 2007-2008
Congressional Affairs Specialist for NOAA's role in the U.S. Climate Change Science Program and the Intergovernmental Panel on Climate Change
Office of Legislative Affairs representative for NOAA's Science Advisory Board
Issue areas: NOAA's Office of Oceanic and Atmospheric Research, including climate science, ocean exploration and undersea research, weather and air quality research, hurricane research, invasive species, NOAA's Laboratories and Cooperative Institutions, National Sea Grant College Program

Knauss Sea Grant Fellow, NOAA Office of Legislative Affairs 2006-2007
Issue areas: harmful algal blooms, hypoxia, oceans and human health, fishery regulations, marine protected areas, coral reefs, northeast and Chesapeake Bay fisheries, sea turtles

Research Assistant, laboratory of Dr. Thomas Fisher, UMCES 2000-2006
Lab work: nutrient analyses (NH₄, NO₃₊₂, NO₂, TN, PO₄, TP, PP, TSS, Si, DOC); gas and liquid chromatography; membrane inlet mass spectrometry; stream water flow measurements; groundwater hydrologic characterizations; soil property characterizations; use of ISCO 3700 portable samplers; use of Solinst automatic temperature and pressure loggers; use of GPS

Undergraduate Honors Student, laboratory of Dr. Stephen Skrabal, UNCW 2000
Lab work: trace metal analyses including cathodic stripping voltammetry

REU Fellow, laboratory of Dr. Peter J.S. Franks, Scripps Institution of Oceanography (SIO) 1999
Lab work: methods used to culture phytoplankton; fluorometer for analysis of photosynthesis in phytoplankton; water column measurements (e.g., phytoplankton, zooplankton, chlorophyll, CTD)

PEER-REVIEWED PUBLICATIONS

*Indicates advisee-led publication. [See ORCID](#) for links to publications.

- Nicholson, S.-A., D.B. Whitt, I. Fer, M.D. Du Plessis, A.D. Lebéhot, S. Swart, A.J. Sutton, and P.M.S. Monteiro (2022): Storms drive outgassing of CO₂ in the subpolar Southern Ocean. *Sci. Adv.*, 13, 158, doi: 10.1038/s41467-021-27780-w.
- MeléndeZ, M., J. Salisbury, D. Gledhill, C. Langdon, J.M. Morell, D. Manzello, and A.J. Sutton (2022): Net ecosystem dissolution and respiration dominate metabolic rates at two western Atlantic reef sites. *Limnol. Oceanogr.*, doi: 10.1002/lno.12009.
- Newton, J., P. MacCready, S. Siedlecki, D. Manalang, J. Mickett, S. Alin, E. Schumacker, J. Hagen, S. Moore, A. Sutton, and R. Carini (2021): Multi-stressor observations and modeling to build understanding of and resilience to the coastal impacts of climate change. *Oceanography*, 34(4), 86-87, doi: 10.5670/oceanog.2021.supplement.02-31.
- Shadwick, E.H., A.S. Rigual-Hernández, R.S. Eriksen, P. Jansen, D.M. Davies, C.A. Wynn-Edwards, A. Sutton, C. Schallenberg, E. Shulz, and T.W. Trull (2021): Changes in Southern Ocean biogeochemistry and the potential impact on pH-sensitive planktonic organisms. *Oceanography*, 34(4), 14-15, doi: 10.5670/oceanog.2021.supplement.02-06.
- Tamsitt, V., S. Bushinsky, Z. Li, M. du Plessis, A. Foppert, S. Gille, S. Rintoul, E. Shadwick, A. Silvano, A.

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- Sutton, S. Swart, B. Tilbrook, and N.L. Williams (2021): Southern Ocean. In State of the Climate in 2020, Antarctica and the Southern Ocean. Bull. Am. Meteorol. Soc., 102(8), S341–S345, doi: 10.1175/BAMS-D-21-0081.1.
- Lovenduski, N.S., N.C. Swart, A.J. Sutton, J.C. Fyfe, G.A. McKinley, C.L. Sabine, and N.L. Williams (2021): The ocean carbon response to COVID-related emissions reductions. Geophys. Res. Lett., 48(6), e2020GL092263, doi: 10.1029/2020GL092263.
- Chen, S., A.J. Sutton, C. Hu, and F. Chai (2021): Quantifying the atmospheric forcing effect on surface ocean pCO₂ in the North Pacific subtropical gyre in the past two decades. Front. Mar. Sci., 8, 636881, doi: 10.3389/fmars.2021.636881
- Sutton, A.J., N.L. Williams, and B. Tilbrook (2021): Constraining Southern Ocean CO₂ flux uncertainty using uncrewed surface vehicle observations. Geophys. Res. Lett. [Accepted]
- Torres, O., L. Kwiatkowski, A.J. Sutton, N. Dorey, and J.C. Orr (2021): Characterising mean and extreme diurnal variability of ocean CO₂ system variables across marine environments. Geophys. Res. Lett., 48(5), e2020GL090228, doi: 10.1029/2020GL090228.
- Friedlingstein, P., M. O’Sullivan, M.W. Jones, R.M. Andrew, J. Hauck, A. Olsen, G.P. Peters, W. Peters, J. Pongratz, S. Sitch, C. Le Quéré, J.G. Canadell, P. Ciais, R. Jackson, S. Alin, L.E.O.C. Aragão, V. Arora, A. Arneeth, N.R. Bates, M. Becker, A. Benoit-Cattin, H.C. Bittig, L. Bopp, S. Bultan, N. Chandra, F. Chevallier, L.P. Chini, W. Evans, L. Florentie, P. Forster, T. Gasser, M. Gehlen, D. Gilfillan, T. Gkritzalis, L. Gregor, N. Gruber, I. Harris, K. Hartung, V. Haverd, R.A. Houghton, T. Ilyina, A.K. Jain, E. Joetzjer, K. Kadono, E. Kato, V. Kitidis, J.I. Korsbakken, P. Landschützer, N. Lefèvre, A. Lenton, S. Lienert, Z. Liu, D. Lombardozzi, G. Marland, N. Metzl, D.R. Munro, J.E.M.S. Nabel, S.-I. Nakaoka, Y. Niwa, K. O’Brien, T. Ono, P.I. Palmer, D. Pierrot, B. Poulter, L. Resplandy, E. Robertson, C. Rödenbeck, J. Schwinger, R. Séférian, I. Skjelvan, A.J.P. Smith, A.J. Sutton, T. Tanhua, P.P. Tans, H. Tian, B. Tilbrook, G.R. van der Werf, N. Vuichard, A.P. Walker, R. Wanninkhof, A.J. Watson, D. Willis, A.J. Wiltshire, W. Yuan, X. Yue, and S. Zaehle (2020): Global Carbon Budget 2020. Earth Sys. Sci. Data, 12, 3269–3340, doi: 10.5194/essd-12-3269-2020.
- Sutton, A.J., and J.A. Newton (2020): Reaching consensus on assessments of ocean acidification trends. EOS, 101, doi: 10.1029/2020EO150944
- Sabine, C., A.J. Sutton, K. McCabe, N. Lawrence-Slavas, S.R. Alin, R.A. Feely, R. Jenkins, S. Maenner, C. Meinig, J. Thomas, E. van Ooijen, A. Passmore, and B. Tilbrook (2020): Evaluation of a new carbon dioxide system for autonomous surface vehicles. J. Atmos. Oceanic Technol., doi: <https://doi.org/10.1175/JTECH-D-20-0010.1>.
- Cai, W.-J., Y.-Y. Xu, R.A. Feely, R. Wanninkhof, B. Jönsson, S.R. Alin, L. Barbero, J. Cross, K. Azetsu-Scott, A. Fassbender, B.R. Carter, L.-Q. Jiang, P. Pepin, B. Chen, N. Hussain, J. Reimer, L. Xue, J.E. Salisbury, M. Hernandez-Ayon, C. Langdon, Q. Li, A.J. Sutton, C.-T.A. Chen, and D. Gledhill (2020): Controls on surface water carbonate chemistry along North American ocean margins. Nature Commun., 11, 2691, doi: 10.1038/s41467-020-16530-z
- Chai, F., K. Johnson, H. Claustre, X. Xing, Y. Wang, E. Boss, S. Riser, K. Fennel, O. Schofield, and A. Sutton (2020): New perspective of monitoring ocean biogeochemistry with mobile platforms. Nat. Rev. Earth Environ, doi: 10.1038/s43017-020-0053-y.
- Meléndez, M., J. Salisbury, D. Gledhill, C. Langdon, J.M. Morell, D. Manzello, S. Rodriguez-Abudo, S. Musielewicz, and A. Sutton (2020): Seasonal variations of carbonate chemistry at two western Atlantic coral reefs. J. Geophys. Res., 125, e2020JC016108, doi: 10.1029/2020JC016108.
- *Chu, S.N., A.J. Sutton, S.R. Alin, N. Lawrence-Slavas, D. Atamanchuk, C. Meinig, S. Stalin, J.B. Mickett, and A. Tengberg (2020): Field evaluation of a low-powered, profiling pCO₂ system in coastal Washington. Limnol Oceanogr Methods. doi:10.1002/lom3.10354
- Yasunaka, S., S. Koketsu, P.G. Strutton, A.J. Sutton, A. Murata, S. Nakaoka, and Y. Nojiri (2019): Spatio-temporal variability of surface water pCO₂ and nutrients in the tropical Pacific from 1981 to 2015. Deep-Sea Res. II, doi: 10.1016/j.dsr2.2019.104680.
- Lilly, L.E., U. Send, M. Lankhorst, T.R. Martz, R.A. Feely, A.J. Sutton, and M.D. Ohman (2019):

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- Biogeochemical anomalies at two southern California Current System moorings during the 2014-16 Warm Anomaly-El Niño sequence. *J. Geophys. Res.*, 124, doi: 10.1029/2019JC015255.
- Bourlès, B., M. Araujo, M.J. McPhaden, P. Brandt, G. Foltz, R. Lumpkin, H. Giordani, F. Hernandez, N. Lefèvre, P. Nobre, E. Campos, R. Saravanan, J. Trotte-Duhà, M. Dengler, J. Hahn, R. Hummels, J. Lübbecke, M. Rouault, L. Cotrim, A.J. Sutton, M. Jochum, and R. Perez (2019): PIRATA: A sustained observing system for tropical Atlantic climate research and forecasting. *Earth Space Sci.*, 6, doi: 10.1029/2018EA000428.
- Carter, B.R., N.L. Williams, W. Evans, A.J. Fassbender, L. Barbero, C. Hauri, R.A. Feely, and A.J. Sutton (2019): Time-of-detection as a metric for prioritizing between climate observation quality, frequency, and duration. *Geophys. Res. Lett.*, 46, doi: 10.1029/2018GL080773.
- Feely, R.A., R. Wanninkhof, B.R. Carter, P. Landschützer, A.J. Sutton, C. Cosca, and J.A. Triñanes (2019): Global ocean carbon cycle. In *State of the Climate in 2018, Global Oceans*. *Bull. Am. Meteorol. Soc.*, 100(9), S94–S99, doi: 10.1175/2019BAMSStateoftheClimate.1.
- Fennel, K., S. Alin, L. Barbero, W. Evans, T. Bourgeois, S. Cooley, J. Dunne, R.A. Feely, J.M. Hernandez-Ayon, X. Hu, S. Lohrenz, F. Muller-Karger, R. Najjar, L. Robbins, E. Shadwick, S. Siedlecki, N. Steiner, A. Sutton, D. Turk, P. Vlahos, and Z.A. Wang (2019): Carbon cycling in the North American coastal ocean: A synthesis. *Biogeosciences*, 16, 1281–1304, doi: 10.5194/bg-16-1281-2019.
- Foltz, G.R., P. Brandt, I. Richter, B. Rodriguez-Fonseca, F. Hernandez, M. Dengler, R.R. Rodrigues, J.O. Schmidt, L. Yu, N. Lefevre, L. Cotrim Da Cunha, M.J. McPhaden, M. Cunha de Araujo Filho, J. Karstensen, J. Hahn, M. Martín-Rey, C.M. Patricola, P. Poli, P. Zuidema, R. Hummels, R.C. Perez, V. Hatje, J. Lübbecke, I. Polo, R. Lumpkin, B. Bourlès, F.E. Asuquo, P. Lehodey, A. Conchon, P. Chang, P. Dandin, C. Schmid, A.J. Sutton, H. Giordani, Y. Xue, S. Illig, T. Losada, S. Grodsky, F. Gasparin, T. Lee, E. Mohino, P. Nobre, R. Wanninkhof, N.S. Keenlyside, V. Garçon, E. Sanchez-Gomez, H.C. Nnamchi, M. Drevillon, A. Storto, E. Remy, A. Lazar, S. Speich, M. Pereira Goes, T. Dorrington, W.E. Johns, J.N. Moum, C. Robinson, C. Perruche, R.B. de Souza, A. Gaye, M. Lopez-Parages, P.-A. Monerie, P. Castellanos, N.U. Benson, M.N. Hounkonnou, and Janice Trotte Duha (2019): The Tropical Atlantic Observing System. *Front. Mar. Sci.*, 6, 206, Oceanobs19: An Ocean of Opportunity, doi: 10.3389/fmars.2019.00206.
- Le Quéré, C., R.M. Andrew, P. Friedlingstein, S. Sitch, J. Hauck, J. Pongratz, P. Pickers, J.I. Korsbakken, G.P. Peters, J.G. Canadell, A. Arneeth, V.K. Arora, L. Barbero, A. Bastos, L. Bopp, F. Chevallier, L.P. Chini, P. Ciais, S.C. Doney, T. Gkritzalis, D.S. Goll, I. Harris, V. Haverd, F.M. Hoffman, M. Hoppema, R.A. Houghton, T. Ilyina, A.K. Jain, T. Johannesen, C.D. Jones, E. Kato, R.F. Keeling, K. Klein Goldewijk, P. Landschützer, N. Lefèvre, S. Lienert, D. Lombardozzi, N. Metzl, D.R. Munro, J.E.M.S. Nabel, S.-I. Nakaoka, C. Neill, A. Olsen, T. Ono, P. Patra, A. Peregon, W. Peters, P. Peylin, B. Pfeil, D. Pierrot, B. Poulter, G. Rehder, L. Resplandy, E. Robertson, M. Rocher, C. Rödenbeck, U. Schuster, J. Schwinger, R. Séférian, I. Skjelvan, T. Steinhoff, A.J. Sutton, P.P. Tans, H. Tian, B. Tilbrook, F.N. Tubiello, I.T. van der Laan-Luijckx, G.R. van der Werf, N. Viovy, A.P. Walker, A.J. Wiltshire, R. Wright, and S. Zachle (2018): Global Carbon Budget 2018. *Earth Sys. Sci. Data*, 10, 2141–2194, doi: 10.5194/essd-10-2141-2018.
- Meinig, C., E.F. Burger, N. Cohen, E.D. Cokelet, M.F. Cronin, J.N. Cross, S. de Halleux, R. Jenkins, A.T. Jessup, C.W. Mordy, N. Lawrence-Slavas, A.J. Sutton, D. Zhang, and C. Zhang (2019): Public private partnerships to advance regional ocean observing capabilities: A Saildrone and NOAA-PMEL case study and future considerations to expand to global scale observing. *Front. Mar. Sci.*, 6, 448, Oceanobs19: An Ocean of Opportunity, doi: 10.3389/fmars.2019.00448.
- Moltmann, T., H.-M. Zhang, J.D. Turton, G. Nolan, C.C. Gouldman, L. Griesbauer, Z. Willis, Á. Muñoz Piniella, E. Charpentier, P. Poli, E.F. Burger, R. Lumpkin, C. Meinig, K. O'Brien, A.J. Sutton, D. Zhang, and Y. Zhang (2019): A Global Ocean Observing System (GOOS), delivered through enhanced collaboration across regions, communities, and new technologies. *Front. Mar. Sci.*, 6, 291, Oceanobs19: An Ocean of Opportunity, doi: 10.3389/fmars.2019.00291.
- Pardo, P.C., B. Tilbrook, E. van Ooijen, A. Passmore, C. Neill, P. Jansen, A.J. Sutton, and T.W. Trull (2019):

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- Surface ocean carbon dioxide variability in South Pacific boundary currents and Subantarctic waters. *Sci. Rep.*, 9, 7592, doi: 10.1038/s41598-019-44109-2.
- Smith, N., W.S. Kessler, S. Cravatte, J. Sprintall, S. Wijffels, M.F. Cronin, A. Sutton, Y.L. Serra, B. Dewitte, P.G. Strutton, K.L. Hill, A. Sen Gupta, X. Lin, K. Takahashi, D. Chen, and S. Brunner (2019): Tropical Pacific Observing System. *Front. Mar. Sci.*, 6, 31, Oceanobs19: An Ocean of Opportunity, doi: 10.3389/fmars.2019.00031.
- Sutton, A.J., R.A. Feely, S. Maenner-Jones, S. Musielewicz, J. Osborne, C. Dietrich, N. Monacci, J. Cross, R. Bott, A. Kozyr, A.J. Andersson, N.R. Bates, W.-J. Cai, M.F. Cronin, E.H. De Carlo, B. Hales, S.D. Howden, C.M. Lee, D.P. Manzello, M.J. McPhaden, M. Meléndez, J.B. Mickett, J.A. Newton, S.E. Noakes, J.H. Noh, S.R. Olafsdottir, J.E. Salisbury, U. Send, T.W. Trull, D.C. Vandemark, and R.A. Weller (2019): Autonomous seawater $p\text{CO}_2$ and pH time series from 40 surface buoys and the emergence of anthropogenic trends. *Earth Syst. Sci. Data*, 11, 421–439, doi: 10.5194/essd-11-421-2019.
- Terlouw, G.J., L.A.C.M. Knor, E.H. De Carlo, P.S. Drupp, F.T. Mackenzie, Y.H. Li, A.J. Sutton, A.J. Plueddemann, and C.L. Sabine (2019): Hawaii coastal seawater CO_2 network: A statistical evaluation of a decade of observations on tropical coral reefs. *Front. Mar. Sci.*, 6, 226, doi: 10.3389/fmars.2019.00226.
- Todd, R.E., F.P. Chavez, S. Clayton, S. Cravatte, M. Goes, M. Graco, X. Lin, J. Sprintall, N.V. Zilberman, M. Archer, J. Aristegui, M. Balmaseda, J.M. Bane, M.O. Baringer, J.A. Barth, L.M. Beal, P. Brandt, P.H.R. Calil, E. Campos, L.R. Centurioni, M.P. Chidichimo, M. Cirano, M.F. Cronin, E.N. Curchitser, R.E. Davis, M. Dengler, B. deYoung, S. Dong, R. Escribano, A.J. Fassbender, S.E. Fawcett, M. Feng, G.J. Goni, A.R. Gray, D. Gutiérrez, D. Hebert, R. Hummels, S.-I. Ito, M. Krug, F. Lacan, L. Laurindo, A. Lazar, C.M. Lee, M. Lengaigne, N.M. Levine, J. Middleton, I. Montes, M. Muglia, T. Nagai, H.I. Palevsky, J.B. Palter, H.E. Phillips, A. Piola, A.J. Plueddemann, B. Qiu, R.R. Rodrigues, M. Roughan, D.L. Rudnick, R.R. Rykaczewski, M. Seraceno, H. Seim, A. Sen Gupta, L. Shannon, B.M. Sloyan, A.J. Sutton, L. Thompson, A.K. van der Plas, D. Volkov, J. Wilkin, D. Zhang, and L. Zhang (2019): Global perspectives on observing ocean boundary current systems. *Front. Mar. Sci.*, 6, 423, Oceanobs19: An Ocean of Opportunity, doi: 10.3389/fmars.2019.00423.
- Wanninkhof, R., P. Pickers, A.M. Omar, A. Sutton, A. Murata, A. Olsen, B.B. Stephens, B. Tilbrook, D. Munro, D. Pierrot, G. Rehder, J.M. Santana-Casiano, J. Müller, J. Trinanes, K. Tedesco, K. O'Brien, K. Currie, L. Barbero, M. Telszewski, M. Hoppema, M. Ishii, M. González-Dávila, N.R. Bates, N. Metzl, P. Suntharalingam, R.A. Feely, S.-I. Nakaoka, S.K. Lauvset, T. Takahashi, T. Steinhoff, and U. Schuster (2019): A surface ocean CO_2 reference network, SOCONET and associated marine boundary layer CO_2 measurements. *Front. Mar. Sci.*, 6, 400, Oceanobs19: An Ocean of Opportunity, doi: 10.3389/fmars.2019.00400.
- Zhang, D., M. Cronin, C. Meinig, T. Farrar, R. Jenkins, D. Peacock, J. Keene, and A. Sutton (2019): Air-sea flux measurements from a new unmanned surface vehicle compared to proven platforms during SPURS-2 field campaign. *Oceanography*, 32(2), 122–133, doi: 10.5670/oceanog.2019.220.
- Fassbender, A.J., S.R. Alin, R.A. Feely, A.J. Sutton, J.A. Newton, C. Krembs, J. Bos, M. Keyzers, A. Devol, W. Ruef, and G. Pelletier (2018): Seasonal carbonate chemistry variability in marine surface waters of the Pacific Northwest. *Earth Syst. Sci. Data*, 10, 1367–1401, doi: 10.5194/essd-10-1367-2018.
- Feely, R.A., R. Wanninkhof, B.R. Carter, P. Landschützer, A.J. Sutton, and J.A. Triñanes (2018): Global ocean carbon cycle. In *State of the Climate in 2017, Global Oceans*. *Bull. Am. Meteorol. Soc.*, 99(8), S96–S100, doi: 10.1175/2018BAMSStateoftheClimate.1.
- Chatterjee, A., M.M. Gierach, A.J. Sutton, R.A. Feely, D. Crisp, A. Elderling, M.R. Gunson, C.W. O'Dell, B.B. Stephens, and D.S. Schimel. 2017. Influence of El Niño on atmospheric CO_2 over the tropical Pacific Ocean: Findings from NASA's OCO-2 mission. *Science*, 358(6360), eaam5776, doi: 10.1126/science.aam5776.
- Sutton, A.J., R. Wanninkhof, C.L. Sabine, R.A. Feely, M.F. Cronin, and R.A. Weller. 2017. Variability and trends in surface seawater $p\text{CO}_2$ and CO_2 flux in the Pacific Ocean. *Geophys. Res. Lett.*, 44(11),

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5627–5636, doi: 10.1002/2017GL073814.

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- *Okazaki, R.R., A.J. Sutton, R.A. Feely, A.G. Dickson, S.R. Alin, C.L. Sabine, P.M.E. Bunje, and J.I. Virmani. 2017. Evaluation of marine pH sensors under controlled and natural conditions for the Wendy Schmidt Ocean Health XPRIZE. *Limnol. Oceanogr. Methods*, 15, 586–600, doi: 10.1002/lom3.10189.
- *Fassbender, A.J., S.R. Alin, R.A. Feely, A.J. Sutton, J. Newton, and R.H. Byrne (2017): Estimating total alkalinity in the Washington State coastal zone: Complexities and surprising utility for ocean acidification research. *Estuar. Coast.*, 40(2), 404–418, doi: 10.1007/s12237-016-0168-z.
- Reimer, J.J., W.-J. Cai, L. Xue, R. Vargas, S. Noakes, X. Hu, S.R. Signorini, J.T. Mathis, R.A. Feely, A.J. Sutton, C.L. Sabine, S. Musielewicz, B. Chen, and R. Wanninkhof. 2017. Time series $p\text{CO}_2$ at a coastal mooring: internal consistency, seasonal cycles, and interannual variability. *Cont. Shelf Res.*, 145, 95–108, doi: 10.1016/j.csr.2017.06.022
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OUTREACH PUBLICATIONS

- Sutton, A.J. 2016. Career profiles: Options and insights—Adrienne J. Sutton, Research Scientist, University of Washington Joint Institute for the Study of the Atmosphere and Ocean, NOAA Pacific Marine Environmental Laboratory. *Oceanography*, 29(2), 298–299. [[available online](#)]
- Sutton, A.J. 2012. Everyday Scientists: High School Poets, Home Brewers, and Scuba Divers. *Sources: The Journal of Underwater Education* 24(4): 56-57. [[pdf](#)]

Curriculum Vitae: Adrienne J. Sutton

- Sutton, A.J. 2011. Coral Reefs Face Increasing Stress from Local Human Activities, Warming Waters, and Ocean Acidification. *Sources: The Journal of Underwater Education* 23(3): 34-35. [[pdf](#)]
- Sutton, A.J. 2010. Ocean Acidification: A Fundamental Problem for the Future of Recreational Diving. *Sources: The Journal of Underwater Education* 22(2): 54-57. [[pdf](#)]
- Sutton, A.J. 2010. Deep-Sea Corals and the Changing Chemistry of the Sea. NOAA National Marine Sanctuary Deep-Sea Coral Expedition online cruise report. [[website](#)]

SELECTED PRESENTATIONS

- Sutton, A.J. 2021. New observing technologies investigating the Southern Ocean carbon sink, COP26 Cryosphere Pavilion event “Tale of Two Oceans”, virtual, November 2021 (invited).
- Sutton, A.J. 2021. Advances and new opportunities in air-sea CO₂ observing, University of Southern Mississippi’s Marine Science Spring Semester Series, virtual, May 2021 (invited).
- Sutton, A.J. 2021. Tropical Pacific biogeochemistry: background, gaps, and open questions, US CLIVAR Phenomena, Observations, and Synthesis (POS) Panel webinar series, virtual, April 2021 (invited).
- Sutton, A.J. 2021. Recent advances in observing technology create new opportunities in air-sea CO₂ exchange research, NOAA Geophysical Fluids Dynamics Laboratory Virtual Formal Seminar Series, virtual, March 2021 (invited).
- Sutton, A.J., S. Chu, A. Fassbender, K. McCabe, P. Monteiro, C. Sabine, and B. Tilbrook. 2020. Recent progress and future opportunities in autonomous ocean CO₂ flux observing, 2020 AGU Fall Meeting, virtual, December 2020.
- Sutton and Newton. 2020. Developing best practices for determining multi-decadal change in ocean acidification time series, GAO-ON Ocean Acidification Week, virtual, September 2020 (invited).
- Sutton, A.J. Uncertainty in autonomous ocean carbonate chemistry observations. 2020. Evolving and Sustaining Ocean Best Practices System Workshop IV, virtual, September 2020 (invited).
- Sutton, A.J. NOAA-ON Buoy Data Tools and Synthesis. 2020. NOAA Ocean Acidification Program Review, virtual, August 2020 (invited).
- Sutton and Chu. Considering Low-Cost Options for Measuring Ocean Carbon Chemistry, USGCRP Integrated Observations Interagency Working Group Meeting, virtual, August 2020 (invited).
- Sutton, A.J., N.L. Williams, and B. Tilbrook. 2020. Air-sea CO₂ flux measurements on the first autonomous circumnavigation of Antarctica, Ocean Sciences Meeting, San Diego, California, February 2020.
- Sutton, A.J. and 30+ collaborators. 2019. Autonomous Ocean Acidification Observations for Constraining Variability, Detecting Trends, and Predicting Biological Exposure, 4th Global Ocean Acidification Observing Network International Workshop, Hangzhou, China, April 2019.
- Sutton, A.J. and 30+ collaborators. 2019. Constraining change and variability in surface ocean CO₂: A global network of autonomous time series, OceanObs’19, Honolulu, Hawaii, September 2019.
- Sutton, A.J. and 30+ collaborators. 2018. Ocean Carbon Variability and Change Constrained by Seawater *p*CO₂ Time Series Observations, AGU Fall Meeting, Washington DC, December 2018.
- Sutton, A.J. and 30+ collaborators. 2018. Magnitude and timing of ocean carbon uptake variability constrained by seawater *p*CO₂ time series observations, Synthesis and intercomparison of ocean carbon uptake in CMIP6 models, Ocean Carbon and Biogeochemistry Project, Washington DC, December 2018. (invited)
- Sutton, A.J. and 30+ collaborators. 2018. Ocean carbon variability and change constrained by seawater *p*CO₂ time series observations, UMCES Horn Point Laboratory Cambridge, MD, December 2018 (invited).
- Sutton, A. J., R.A. Feely, and C.L. Sabine. 2018. Surface ocean carbon from days to decades: unique signals emerging from moored autonomous time series, Ocean Sciences Meeting, Portland, Oregon, February 2018.

Curriculum Vitae: Adrienne J. Sutton

- Sutton, A.J., C.L. Sabine, and R.A. Feely. 2017. Moored autonomous observing of air-sea CO₂ flux and ocean acidification: A growing global network, 10th International Carbon Dioxide Conference, Interlaken, Switzerland, August 2017.
- Sutton, A.J., C.L. Sabine, and R.A. Feely. 2016. Natural variability and anthropogenic change revealed by moored time series observations of pCO₂ and pH. Oceans in a High CO₂ World, Hobart, Australia, 3 May 2016.
- Sutton, A.J., C.L. Sabine, and R.A. Feely. 2016. Using present day observations to detect when ocean acidification exceeds natural variability of surface seawater Ωaragonite. Ocean Sciences Meeting, New Orleans LA, 22-26 Feb 2016.
- Sutton, A. J., R.A. Feely, C.L. Sabine, M.J. McPhaden, and T. Takahashi. 2014. Natural and anthropogenic change since 1997: A synthesis of Equatorial Pacific surface ocean pCO₂ observations on the TAO Array. Ocean Sciences Meeting, Honolulu HI, 24-28 Feb 2014.
- Sutton, A.J., R.A. Feely, C.L. Sabine, C.E. Cosca, and S. Maenner-Jones. 2012. Rising Atmospheric CO₂ and Ocean Acidification: the Tropical Oceans and Beyond. Tropical Oceans: Challenges of the 21st Century Meeting, Universidade Federal of Pernambuco, Recife, Brazil (invited).
- Sutton, A.J., R.A. Feely, C.L. Sabine, S.R. Alin, and J. Mathis. 2012. Rising Atmospheric CO₂ and Ocean Acidification: From the Poles to Puget Sound. NOAA Senior Research Council Meeting, Seattle, WA (invited).
- Sutton, A.J., R.A. Feely, C.L. Sabine, and S.R. Alin. 2012. From the global ocean to the Puget Sound: how OA is playing out locally and afar. JISAO Annual Luncheon, Seattle, WA (invited).
- Sutton, A.J., M. Conathan, C.A. English, A. Mace, and J.J. Meyer. 2012. Pups in the Shark Tank: skills marine studies graduates develop while navigating Washington's political waters. Ocean Sciences Meeting, Salt Lake City, UT, 19-24 Feb 2012.
- Sutton, A.J. 2011. Biogeochemistry overview: global and coastal ocean acidification. National Council for Science and the Environment, Washington, DC (invited).
- Regular presentations on ocean and climate policy and legislation to NOAA's Science Advisory Board and other NOAA Leadership panels. 2006-2008.
- Sutton, A.J. 2008. Ocean issues in the 110th Congress and why Washington needs more scientists. UMCES Horn Point Laboratory Cambridge, MD (invited).

SELECTED AWARDS

- Department of Commerce Bronze Award for successfully deploying the first MAPCO₂ buoy in a southern hemisphere coral reef to monitor ocean acidification (2021)
- Department of Commerce Group Gold Medal in Scientific/Engineering Achievement for the first autonomous circumnavigation of Antarctica, allowing three-season observation of carbon dioxide flux in the Southern Ocean (2020)
- UNCW Athletic Hall of Fame inductee (2014)
- National Research Council Postdoctoral Research Associate Fellowship (2010)
- Colonial Athletic Association's (CAA) Silver Anniversary Team for Women's Swimming and Diving (2009)
- NOAA Administrator's Award for outstanding leadership in and dedication to developing U.S. Climate Change Science Program (CCSP) Synthesis & Assessment Products integrating climate research for decision support (July 2008)
- NOAA Recognition Award for exceptional performance (July 2007 and Nov 2007)
- John A. Knauss Marine Policy Fellowship (Feb. 2006-Jan. 2007)
- Horn Point Laboratory Graduate Fellowship (2000-2002)
- UNCW Departmental Honors in Biology (2000)
- CAA Conference Scholar Athlete (1997-2000)
- UNCW Golden Seahawk Academic Award (1997-2000)

Curriculum Vitae: Adrienne J. Sutton

Dean's List UNCW (1996-2000)

NSF Research Experience for Undergraduates Fellowship, SIO (1999)

CAA Conference Rookie of the Year (1997)

COMMITTEES

Scientific Steering Group, International Ocean Carbon Coordination Project, 2021 to present.

Executive Council, Global Ocean Acidification Observing Network, 2021 to present.

Science Steering Committee, OceanSITES, 2011 to present.

Scientific Steering Group, PIRATA, 2018 to present.

Member, United Nation's Sustainable Development Goal 14.3.1 Indicator Development Expert Group, 2017 to present.

Member, Filling the gaps in observation-based estimates of air-sea carbon fluxes, Ocean Carbon and Biogeochemistry Program Working Group, 2019 to present.

Co-chair, Biogeochemistry Task Team, Tropical Pacific Observing System 2020, 2015 to 2021.

Advisory Board, Advancing Climate Literacy through Investment in In-service and Pre-service Science Educators, Lawrence Hall of Science at the University of California Berkeley and Western Washington University, 2014 to 2018.

Advisor, Wendy Schmidt Ocean Health XPRIIZE, 2012 to 2016.

Science Communication Advisory Group, UW College of the Environment, 2012 to 2017.

PROFESSIONAL SERVICE

Earth Science Women's Network, 2020-present.

Society for Women in Marine Science, Seattle Chapter, 2020-present.

American Geophysical Union. Member, 2009-present.

American Society of Limnology and Oceanography, Dissertations Initiative for the Advancement of Limnology and Oceanography, 2007-2011.

Scientific Session Convener at AGU Fall Meeting 2010, 2016; Ocean Sciences 2012, 2014, 2020, 2022; Goldschmidt 2017.

Reviewer for Nature, Geophysical Research Letters, PLOS ONE, Scientific Reports, Limnology and Oceanography, Journal of Geophysical Research – Oceans, Progress in Oceanography, Biogeosciences, Aquatic Geochemistry, Journal of Advances in Modeling Earth Systems, Frontiers in Marine Science, Global Biogeochemical Cycles, Ocean Science.

NOAA Science Advisory Board Congressional Liaison, 2007-2008.

POSTGRADUATE-SCHOLAR ADVISOR

Sophie Chu (UW JISAO, 2017-2019)

Andrea Fassbender (Postdocs Applying Climate Expertise Postdoctoral Fellowship Program, 2015-2016)

Remy Okazaki (Wendy Schmidt Ocean Health XPRIIZE Validation Lead, 2014-2016)

GRADUATE ADVISOR

Treasure Warren (UW School of Oceanography, 2021 to present)

SCIENCE EDUCATION AND COMMUNITY OUTREACH ACTIVITIES

Mentor, Global Ocean Acidification Observing Network Pier2Peer Program: Mary Chris Lagumen, University of the Philippines, 2016-present.

Curriculum Vitae: Adrienne J. Sutton

Undergraduate summer interns: Ilyana Collins (co-mentored), NOAA Educational Partnership Program with Minority Serving Institutions Undergraduate Scholarship Program, 2020 to 2021; Isabelle Chan (co-mentored), Research Experience for Undergrads, 2019; Treasure Warren, Research Experience for Undergrads, 2018; Virginia Parker, NOAA College-Supported Internship Program, 2018.

High school student mentor: pilot project of the Educurious Expert Network, Bellevue Big Picture School, 2011.

Trainer, Ocean Teacher Global Academy, Ocean Acidification Course, virtual, 2021.

Trainer, Technical Meeting on the Management, Analysis and Quality Control of Ocean Acidification Observation Data, Ocean Acidification International Coordination Centre of the International Atomic Energy Agency, Monaco, 2018.

Workshop presenter, Expanding Your Horizons for Middle School Girls, Bellevue Community College, semi-annual 2011 to 2016.

Guest speaker/lecturer, UW Marine Pollution class, 2019, 2020; UW Chemical Oceanography seminar, 2019; American Petroleum Institute Upstream Water Issues Group, 2017; Seattle Art Institute, 2016; Graduate and Professional Student Senate Science and Policy Summit, 2015; Guest Scientist, tOAStER (the Oceanography All Student Educational Retreat), UW School of Oceanography, 2013; Western Washington Univ. Huxley College of the Environment on the Peninsulas, Puget Sound Research course, 2013; Central Washington Univ. Oceans and Atmosphere course, 2013; UW School of Marine and Environmental Affairs, Society and Oceans course, 2012; JISAO summer intern lecture series, 2012; UW School of Marine and Environmental Affairs Contemporary Issues in Marine Affairs Course, 2012; Institutes for Journalism and Natural Resources Puget Sound Learning Expedition, 2011; COSEE Pacific Partnerships - Community College Faculty Summer Teaching Institute, 2011; Seattle Girls School science class, 2010; Washington State Ocean Caucus, 2010.

SELECTED PRESS

[*New technology offers insights on Southern Ocean's carbon secrets*](#), Yale Climate Connections, July 2021

[*Is the Southern Ocean absorbing or emitting carbon dioxide?*](#), NOAA Research News Highlight, February 2021

[*Study sheds light on Antarctic Ocean climate riddle*](#), Climatewire, January 2021

[*Little boats for whale songs sail into climate hot spots*](#), E&E News, September 2020

[*An ocean of data: A day in the life of a NOAA oceanographer*](#), NOAA Research Women's History Month Spotlight, March 2020

[*Seafaring robot crashes into iceberg, still finishes scientific trip around Antarctica*](#), Mashable, August 2019

[*Saildrone's Journey Around Antarctica Uncovers New Climate Clues*](#), Bloomberg Businessweek, August 2019

[*First saildrone circumnavigates Antarctica, seeking carbon dioxide*](#), Climate.gov, August 2019

[*The Southern Ocean may be less of a carbon sink than we thought*](#), ScienceNews, June 2019

[*New NOAA, partner buoy in American Samoa opens window into a changing ocean*](#), NOAA Research, May 2019

[*Scientists seek larger ocean acidification monitoring buoy network*](#), Environmental Monitor, October 2014