

Curriculum Vitae: Adrienne J. Sutton

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RESEARCH INTERESTS: My current research focus is on characterizing the extent and magnitude of ocean acidification in the surface waters of the open ocean and coral reef environments. Specifically, I am interested in using interdisciplinary approaches to explore how physical and biological mechanisms, such as the El Nino/Southern Oscillation and coral reef metabolism, drive variations in ocean carbon chemistry across time and space. One of these approaches uses autonomous instrumentation on mooring platforms to better understand the natural variability and long-term trends in ocean carbon.

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

Dissertation: *Evaluation of agricultural nutrient reductions in restored riparian buffers*

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

1999

with Dr. Peter J.S. Franks

PROFESSIONAL AND RESEARCH EXPERIENCE

**Research Scientist, National Oceanic and Atmospheric Administration (NOAA) -
University of Washington (UW) Joint Institute for the Study of the Atmosphere and
Ocean (JISAO), Pacific Marine Environmental Laboratory (PMEL), Seattle, WA** 2012-present

Research Scientist in PMEL Carbon Program; oversee scientific and technical details of the PMEL ocean acidification mooring network in open ocean and coral reef environments

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

Postdoctorate researcher with Dr. Richard Feely

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

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

**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

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

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

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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 (NH_4 , NO_{3+2} , NO_2 , TN, PO_4 , 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 1999

Lab work: methods used to culture phytoplankton; fluorometer for analysis of photosynthesis in phytoplankton; water column measurements (e.g., phytoplankton, zooplankton, chlorophyll, CTD)

GUEST LECTURES AND SELECTED PRESENTATIONS

Sutton, A.J. 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.

Sutton, A.J., R.A. Feely, C.L. Sabine, J. Newton, J. Salisbury, D. Vandemark, S. Musielewicz, S. Maenner, R. Bott, and N. Lawrence-Slavas. 2011. Natural variability of pCO_2 and pH in the Atlantic and Pacific coastal margins of the U.S. AGU Fall Meeting. San Francisco, CA (poster).

Sutton, A.J. 2011. Ocean acidification: the other CO_2 Problem. Institutes for Journalism and Natural Resources Puget Sound Learning Expedition, Quilcene, WA (Invited).

Sutton, A.J. 2011. Ocean acidification and the Pursuit to Understand the Impacts in Pacific Northwest Marine Ecosystems. Northwest Aquatic and Marine Educators Annual Conference, Port Angeles, WA (poster).

Sutton, A.J. 2011. Biogeochemistry overview: global and coastal ocean acidification. National Council for Science and the Environment, Washington, DC (Invited).

Sutton, A.J. 2010. Ocean acidification: an overview. Centers for Ocean Sciences Education Excellence (COSEE) Pacific Partnerships - Community College Faculty Summer Teaching Institute: Climate change and eutrophication in coastal and marine ecosystem. Shannon Point Marine Center, Western Washington University, Anacortes, WA (Invited).

Sutton, A.J. 2010. Ocean acidification and the Global Carbon Cycle. COSEE Pacific Partnerships - Community College Faculty Summer Teaching Institute: Climate change and eutrophication in coastal and marine ecosystem. Shannon Point Marine Center, Western Washington University, Anacortes, WA (Invited).

Sutton, A.J. 2010. Ocean acidification: the other CO_2 Problem. Washington State Ocean Caucus outreach meeting. Westport, WA (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).

- Sutton, A.J. and T.R. Fisher. 2006. Watershed-scale assessment of restored riparian buffers and water quality. American Water Resources Association Annual Conference, Baltimore, Maryland.
- Sutton, A.J. 2005. Water quality effects of restored riparian buffers at multiple scales in the natural environment, Delmarva Peninsula, USA. ESA Annual Meeting, Montreal, Canada.

PEER-REVIEWED PUBLICATIONS

- Sutton, A.J.**, R.A. Feely, C.L. Sabine, C.E. Cosca, and S. Maenner-Jones. [in prep]. Influence of ENSO events on surface ocean pCO₂ in the Equatorial Pacific from 1997 to 2011.
- Hively, W.D., C.J. Hapeman, L.L. McConnell, T.R. Fisher, C.P. Rice, G.W. McCarty, A.M. Sadeghi, D.R. Whittall, P.M. Downey, G.N. de Guzman, K. Bialek, M.W. Lang, A.B. Gustafson, **A.J. Sutton**, K.A. Sefton, J.A. Harman Fetcho. 2011. Relating Nutrient and Herbicide Fate with Landscape Features and Characteristics of 15 Subwatersheds in the Choptank River Watershed. *Science of the Total Environment*.
- Sutton, A.J.**, T.R. Fisher, and A.B. Gustafson. 2010. Effects of re-established stream buffers on water quality in non-tidal streams in the Choptank River basin. *Water, Air, and Soil Pollution* 208: 101-118.
- Sutton, A.J.**, T.R. Fisher, and A.B. Gustafson. 2009. Historical changes in water quality at German Branch watershed in the Choptank River basin. *Water, Air, and Soil Pollution* 199: 353-369.
- Fisher, T.R., J.A. Benitez, K.-Y. Lee, and **A.J. Sutton**. 2006. History of land cover change and biogeochemical impacts in the Choptank River basin in the mid-Atlantic region of the U.S. *International Journal of Remote Sensing* 27: 3683-3703.

BOOK CHAPTERS, ENCYCLOPEDIA ENTRIES, AND REPORTS

- Wanninkhof, R., R. Feely, **A.J. Sutton**, C. Sabine, K. Tedesco, N. Gruber, and S. Doney. [submitted]. An integrated ocean carbon observing system (IOCOS). In Proceedings of the IOOS Summit, Interagency Ocean Observation Committee (IOOC), Herndon, Virginia, 13-16 November 2012.
- Gledhill, D.K., E.B. Jewett, K. Arzayus, J. Newton, J. Salisbury, and **A.J. Sutton**. [submitted]. An integrated coastal ocean acidification observing system (ICOAOS). In Proceedings of the IOOS Summit, Interagency Ocean Observation Committee (IOOC), Herndon, Virginia, 13-16 November 2012.
- Sutton, A.J.** [in press]. Ocean Acidification – Measurements. In Encyclopedia of Sustainability: Measurements, Indicators, and Research Methods for Sustainability, edited by I. Spellerberg, D. Fogel, and S. Fredericks: Berkshire Publishing. Great Barrington, MA.
- Feely, R.A., R. Wanninkhof, J. Stein, M.F. Sigler, E. Jewett, F. Arzayus, D.K. Gledhill, and **A.J. Sutton**. 2010. NOAA Ocean and Great Lakes Acidification Research Plan. NOAA Special Report, April 2010, 143 pp.
- Fisher, T.R., T.E. Jordan, K.W. Staver, A.B. Gustafson, A.I. Koskelo, R.J. Fox, **A.J. Sutton**, T. Kana, K.A. Beckert, J.P. Stone, G. McCarty, and M. Lang. 2010. The Choptank Basin in transition: intensifying agriculture, slow urbanization, and estuarine eutrophication. In Coastal Lagoons: Systems of Natural and Anthropogenic Change, edited by M. J. Kennish and H. W. Paerl: CRC Press. Boca Raton, FL.
- Sutton, A.J.** 2006. Evaluation of agricultural nutrient reductions in restored riparian buffers. University of Maryland Dissertation.

OUTREACH PUBLICATIONS

- Sutton, A.J.** [submitted]. Everyday Scientists: High School Poets, Home Brewers, and Scuba Divers. *Sources: The Journal of Underwater Education*.

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- 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 GRANTS AND AWARDS (* proposals written by Sutton)

- National Research Council Postdoctoral Research Associate Fellowship (2010) *
- One of 25 honorary members of the 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) *
- "Most Outstanding Poster" MEES Colloquium (October 2005)
- Horn Point Laboratory Student Travel Award (Ecological Society of America 2005 Annual Meeting in Montreal, Quebec, Canada) *
- Horn Point Laboratory Small Grants (awarded annually, 2002-2005) *
- U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service Conservation Effects Assessment Project Grant (2003)
- U.S. Department of Agriculture Cooperative State Research, Education, and Extension Service National Research Initiative Grant (2002) *
- U.S. Department of Agriculture Chesapeake Watershed Forestry Grants (2002) *
- 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)
- Dean's List UNCW (1996-2000)
- Athletic scholarship (1996-2000)
- NSF Research Experience for Undergraduates Grant (1999) *
- CAA Conference Rookie of the Year (1997)

COMMITTEES

- Science Communication Task Force**, UW College of the Environment, 2012.
- Steering Committee**, Coral Reef Ocean Acidification Monitoring Portfolio Workshop, 2012.
- Steering Committee**, International Ocean Acidification Monitoring Workshop, 2012.
- Advisor**, Wendy Schmidt Ocean Health X PRIZE, 2012.

SCIENCE EDUCATION AND COMMUNITY OUTREACH ACTIVITIES

- High school student mentor**, pilot project of the Educurious Expert Network, Bellevue Big Picture School, 2011.
- Workshop presenter**, Expanding Your Horizons for Middle School Girls, Bellevue Community College, annual since 2011.
- Guest speaker**, Seattle Girls School science class, 2010; UW School of Marine and Environmental Affairs, Contemporary Issues in Marine Affairs Course, 2012; JISAO summer intern lecture series, 2012.

National Association of Underwater Instructors (NAUI) SCUBA Instructor, 2007-present.

American Red Cross First Aid and CPR Instructor, 1995-2008.

Swim coach, various teams, 1993-2005.

Summer science camp teacher, Wilmington, NC, 1998.

PROFESSIONAL SERVICE

American Geophysical Union. Member, 2009-present.

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

NOAA Science Advisory Board Congressional Liaison, 2007-2008.

Scientific Session Convener at AGU Fall Meeting 2010 and Ocean Sciences 2012.

Reviewer for *Limnology and Oceanography*, *Journal of Geophysical Research – Oceans*, *Biogeosciences*.

NAUI Member, 2007-present.