

CURRICULUM VITAE

Antonio J. Busalacchi Jr.
April, 2020

Address: University Corporation for Atmospheric Research, 3375 Mitchell Lane, Boulder, Colorado 80307

Education: Florida State University, B.S., Physics (Magna Cum Laude), 1977; M.S., Oceanography, 1980; Ph.D., Oceanography, 1982

Professional Experience

President, University Corporation for Atmospheric Research, 2016-2018
Glenn L. Martin, Professor, 2016-2018
Chair, University of Maryland Council on the Environment, 2011-2016
Director, Earth System Science Interdisciplinary Center, University of Maryland, College Park, 2000-2016
Professor, Department of Atmospheric and Oceanic Science, University of Maryland, College Park, 2000-2018
Affiliate Professor, Department of Geology, University of Maryland, College Park, 2000-2016
Affiliate Professor, Maryland Institute for Applied Environmental Health, School of Public Health, 2009-
Director, Cooperative Institute for Climate Studies (CICS) 2002-2006
Chief, Goddard Laboratory for Hydrospheric Processes, Greenbelt, MD, 1991-2000
Associate Chief for Research, Goddard Laboratory for Hydrospheric Processes, 1990-1991
Head, Oceans and Ice Branch, Goddard Laboratory for Hydrospheric Processes, 1988-1990
Oceanographer, Oceans and Ice Branch, Goddard Laboratory for Oceans, Lab. Atmospheric Sciences, 1982-1988
Adjunct Professor of Oceanography, University of Rhode Island, 1994-
Associate Professor Adjoint, University of Colorado, Dept of Aerospace Engineering Sciences, Boulder, 1987-1990
Graduate Research Assistant, Mesoscale Air-Sea Interaction Group, Florida State University, 1977-1982

Honorary and

Professional Societies:

American Geophysical Union
American Meteorology Society
The Oceanography Society
Phi Beta Kappa
Phi Kappa Phi
Pi Mu Epsilon
Sigma Xi

Citations and Awards:

Grumman Aerospace Engineering Award, 1974
Sigma Xi J. R. Fisher Award, Florida State University, 1982
NASA/Goddard Special Achievement Award for Superior Accomplishment, 1987
NASA/Goddard Special Service Award, 1989, 1990
NASA/Goddard Performance Award, 1989, 1990
Arthur S. Flemming Award, as one of five outstanding young scientists
in the Federal Government, 1991
NASA/Goddard Special Act Group Award, 1990
Florida State University, "Grad Made Good" Alumnus of the Year Award, 1995
H. Burr Steinbach Visiting Scholar, Woods Hole Oceanographic Institution, 1997
NASA/Goddard Excellence in Outreach Award, 1999
Presidential Rank Meritorious Executive Award, 1999
NOAA/OAR Outstanding Scientific Paper Award, 2000
Fellow, American Meteorological Society, 2005
Walter Orr Roberts Interdisciplinary Science Lecturer, AMS, 2006
Fellow, American Geophysical Union, 2009
Fellow, American Association for the Advancement of Science, 2011
Member, National Academy of Engineering, 2016

National Academies of Sciences, Engineering and Medicine Service (formerly NRC)

Member, Pilot Program Ad-Hoc Committee for the Gulf Scholars Program, 2019-
Member, Gulf Research Program Advisory Board, 2017- 2019
Member, Standing Committee to Advise the Gulf Research Program on the Understanding Gulf Ocean Systems Research Campaign, 2018 - 2020
Co-Chair, Decadal Survey for Earth Science and Applications from Space, 2015-2016
Member, Intelligence Science and Technology Experts Group (ISTEG), 2015-
Chair, Board on Atmospheric Sciences and Climate, 2009-2014, Member 2008-2014, Member Ex-Officio 2003-2008

Member, Standing Committee of Earth Science and Applications from Space, 2012-2016
Member, Committee on Assessing the Impacts of Climate Change on Social and Political Stresses, 2011-2012
Co-Chair, Committee on National Security Implications of Climate Change on US Naval Forces, 2009-2011
Member, Committee for the Assessment of NASA's Earth Science Program, 2011-2012
Chair, Committee on Earth Science and Application: Ensuring the Climate Measurements from NPOESS and GOES-R, 2007-2008
Member, IOM/NRC Committee on the Effect of Climate Change on Indoor Air Quality and Public Health, 2010-
Member, Committee on the Assessment of Impediments to Interagency Cooperation on Space and Earth Science Missions, 2009-2011
Member, Committee on America's Climate Choices: Panel on Advancing the Science of Climate Change, 2009-2010
Chair, Climate Research Committee, 2003- 2008, Member, 2001 – 2008
Member, Committee for the Review of the NASA Science Mission Directorate Science Plan, 2006
Lifetime National Associate of the National Academies, 2003
Member, Committee on Extending the Effective Lifetimes of Earth Observing Research Missions, 2004-2005
Member, Committee to Review the NASA Earth Science Enterprise Strategic Plan, 2003
Member, Committee on Earth Studies, 2002-2005, 2008-2012
Member, Panel on Climate Change Feedbacks, 2001-2002
Member, Panel on a Review of "A Plan for a New Science Initiative on the Global Water Cycle", 2001
Member, Panel on Near-Term Development of Operational Ocean Observations, 1991 - 1993
Member, Tropical Ocean Global Atmosphere (TOGA) Advisory Panel, 1989 - 1996

Relevant Professional and Service Activities

Member, WMO Research Board, 2020-
Member, Maryland Commission on Climate Change Scientific and Technical Work Group, 2015-2016
Member, AGU Ocean Sciences Fellows Committee, 2015-2017
Trustee, University Corporation for Atmospheric Sciences (UCAR) Board of Trustees, 2014-2016
Chair, Section W Committee on Atmospheric and Hydrospheric Sciences, American Association for the Advancement of Science (AAAS), 2014; Chair Elect 2013
Chair, Joint Scientific Committee, World Climate Research Programme, 2008-2014, Member, 2007-2014
Member, American Meteorological Society (AMS) Fellows Committee, 2013-2016
Member, FSU Graduate School Advancement Council, 2013-2016
Member, Interdisciplinary Selection Committee, World Cultural Council, Albert Einstein World Award of Science, 2010-present
Vice-Chair, DOE Climate Change Science Program Research Product Development Advisory Committee, 2007-2008, Member, 2006-2007
Member, Universities Space Research Association (USRA) Earth Science Council, 2009-2014
Chair, NOAA Climate Working Group, 2006-2012, Member, 2003-2012
Chair, NOAA Climate Test Bed Science Advisory Board, 2004-2014
Member, NCAR/TIMES Advisory Panel, 2005-2008
Member, NOAA/NCEP Ocean Modeling Review Panel, 2004
Associate Editor, Journal of Physical Oceanography, 2004-
Elected Officer/Member-at-Large, Section Committee on Atmospheric and Hydrospheric Sciences, American Association for the Advancement of Science, 2004-2008
Member, Pacific Northwest National Laboratory Fundamental Science Directorate Review Committee, 2004-
Member, Los Alamos National Laboratory Earth and Environmental Sciences Division Review Committee, 2003-2008
Member, Joint Center for Satellite Data Assimilation Scientific Steering Group, 2002-2008
Member, American Institute for Physics, Committee on Media and Government Relations, 2006-2008
Member, American Institute for Physics, Advisory and Liaison Committee for Public Policy, 2003-2005
Member, AGU Council on Public Affairs, 2002-2007
Co-Chair, IAPSO Session Decadal-Centennial Climate Variability of the Ocean-Atmosphere System, 2005
Co-Chair, AMS Crosscutting Symposium on Forecasting the Weather and Climate of the Atmosphere and Ocean, 2004
Co-Sponsor and organizer with Norwegian Embassy "Transatlantic Research Conference on Climate Change and New Energy Technology" October 7, 2003
Co-Chair, AMS Special Session on State of the Science: The Role of the Carbon Cycle in the Earth System, 2003
Member, NCAR/ESIG Review Panel, 2001
Co-Chair, CLIVAR International Science Steering Group, 2000-2006, Member 1997-2006
Member, NCEP Advisory Panel, 1999-
Chairman, Hayes Center Review Panel, 1998
Chairman, International Pacific Research Center Scientific Advisory Panel, 1997-

Chairman, IRI Working Group on Modelling and Prediction, 1998-1999
Member, CLIVAR Atlantic Ocean Sector Panel, 2000-2004
Member, IRI Advisory Panel, 1998-1999
Editor, Journal of Climate, 1997-1999
Member, NASA Earth System Science and Applications Advisory Committee (ESSAAC), 1997-1998
Member, Variability of the American Monsoon System (VAMOS) Panel, 1998-
Member, NOAA Council on Long-Term Climate Monitoring, 1998-2003
Co-Chair, Union Special Session on The 1997-98 El Nino: Observations and Predictions, Fall AGU, 1998
Chairman, Oceans Section AGU Western Pacific Geophysics Meeting, Taiwan, August 1998
Scientific Organizing Committee, International Conference on Satellites, Oceans and Society, Lisbon, August, 1998
Scientific Organizing Committee, Pacific Ocean Remote Sensing Conference, 1998-
Chairman, American Astronautical Society Goddard Symposium, March, 1998
Member, JIMAR Scientific Review Panel, 1997
Member, NOAA ENSO Systems Council, 1996-1998
Member, NSF IAI Scientific Review Panel, 1996
Member, International Pacific Research Center (IPRC) Science Feasibility Working Group, 1996-1997
Member, Pilot Research Array in the Tropical Atlantic (PIRATA) SWG, 1996-
Member, NCAR/ESIG Review Panel, 1996
Member, SIO/LDEO Consortium Review Panel, 1996
Co-Chairman, Special Session Western Pacific Geophysics Meeting, Indo-Pacific Ocean Modelling, 1996
Member, Center for Ocean Land Atmosphere Advisory Panel (COLA), 1995-1997
Member, Executive Board, Joint Center for Earth System Technology, U. of Maryland Baltimore County, 1995-2000,
Chairman, 1996-1998
Chairman, Executive Board, Joint Center for Observational System Science, Scripps Institution of Oceanography, 1996-2000
Session Co-Chair for Organizational Issues and Follow-on Activities, International Forum on Forecasting El Nino: Launching an
International Research Institute, 1995
Member, Tropical Atmosphere Ocean (TAO) Array Implementation Panel, 1995-2000
Member, NOAA Long-Term Ocean Observations Review Panel, 1993
Chairman, Workshop on In-Situ and Satellite Measurements in Support of Short-Term Climate Prediction, Venice, Italy, May, 1993
Chairman, NASA HPCC NRA Earth Science Selection Panel, 1992
Chairman, Special Session Fall AGU, TOGA Program on Seasonal to Interannual Prediction, TPOP, 1991, Co-Chairman, 1993
Co-Investigator, NASA SeaWifs Ocean Color Mission, 1993 -2000
Member, International Research Institute for Climate Prediction (IRICP) Task Group, 1992
Member, U.S. Senior Executive Service (SES), 1991-2000
Co-Investigator, NASA Tropical Rainfall Measurement Mission (TRMM) 1991 - 1993, 1997-1999
Chairman, SeaWifs Ocean Color Data Source Evaluation Board, 1990-1991
Member, NOAA Climate and Global Change Program Surface and Upper Ocean Observation Project Science Team, 1990-1995
Member, Steering Committee for USRA/GSFC Graduate Student Summer Program in Earth Sciences, 1990 - 2000
Member, TOGA Coupled Ocean-Atmosphere Response Experiment (COARE) Science Working Group, 1989 - 1993
Member, NASA EOS Project Science Office, 1989 - 1992
Member, Organizing Committee for Western Pacific International Meeting and Workshop on TOGA-COARE, Noumea, New
Caledonia, May 24-30, 1989
Member, WOCE Data Management Working Group, 1988-1993
Co-Investigator, NASA Ocean Topography Experiment (TOPEX) Science Definition Team, 1987-96, Principal Investigator, 1996-
Member, NSF Division of Ocean Sciences Summer and Winter Review Panels, 1987
Member, NOAA Office of Climate and Atmospheric Research Review Panel, 1986
Member, Space and Earth Sciences Computing Requirements Committee, 1986
Co-Investigator, NASA Scatterometer (NSCAT) Project, 1986 -
NASA/Goddard RTOP Manager for Physical Oceanography, 1985 - 1988
NASA representative, NCAR Advisory Panel on Scientific Computing, 1985 - 1990
Associate Editor, Journal of Geophysical Research-Oceans, 1985 -1999
Member, NASA Space and Earth Sciences Computer Users Committee, 1985-88; Co-Chairman, 1987-88
Member, Equatorial Theoretical Panel (sponsored by NSF) 1977
Reviewer; Annales Geophysicae, Geophysical Research Letters, Journal of Geophysical Research, Journal of Marine Research,
Journal of Physical Oceanography, Monthly Weather Review, NASA, NOAA, NSF, Oceanologica Acta, Journal of Climate

Public Testimony:

U.S. Senate, Committee on Appropriations, Subcommittee on Commerce, Justice, Science and Related Agencies, Chairman, Senator Shelby, *National Water Hazards & Vulnerabilities: Improved Forecasting for Response & Mitigation*, April 4, 2017

U.S. House of Representatives, Committee on Science, Space and Technology, Subcommittee on Environment, Chairman, Representative Bridenstine, *Private Sector Weather Forecasting: Assessing Products and Technologies*, June 8, 2016

U.S. House of Representatives, Committee on Science, Space and Technology, Subcommittee on Space and Subcommittee on Environment, Chairmen, Representatives Babin and Bridenstine, *Exploring Commercial Opportunities to Maximize Earth Science Investments*, November 17, 2015

U.S. House of Representatives, Commerce, Justice, Science Subcommittee, Appropriations Committee, Chairman, Representative Frank Wolf, *Testimony of the Association of Public and Land-Grant Universities, Board on Oceans, Atmosphere and Climate on the FY12 Budgets for NSF, NOAA, and NASA*, March 11, 2011

U.S. House of Representatives, Commerce, Justice, Science Subcommittee, Appropriations Committee, Chairman, Representative Alan Mollohan, *The Role of Space-Based Ocean Observations in Support of Climate Understanding and Prediction*, March 18, 2009

U.S. Senate, Committee on Commerce, Science, and Transportation, Chairman, Senator Daniel Inouye; *U.S. Weather and Environmental Satellites: Ready for the 21ST Century?*, July 11, 2007

State of Maryland Senate, Committee on Education, Health, and Environmental Affairs; *State of Climate Science*, February 20, 2007

U.S. Senate, Committee on Commerce, Science, and Transportation, Chairman, Senator John McCain; *Climate Change Science*, October 1, 2003

Refereed Publications:

- 1980 Busalacchi, A. J., and J. J. O'Brien: The seasonal variability in a model of the tropical Pacific. *J. Phys. Oceanogr.*, 10, 1929-1951.
- 1981 O'Brien, J. J., A. J. Busalacchi, J. Kindle: Ocean models of El Nino, Chapter 7 in Resource Management and Environmental Uncertainty. Edited by M. Glantz and J. D. Thompson, Wiley-Interscience, 159-212.
- 1981 E. E. Hoffman, A. J. Busalacchi, J. J. O'Brien: Wind generation of the Costa Rica Dome, *Science*, 214(4520), 552-554.
- 1981 Busalacchi, A. J., and J. J. O'Brien: Interannual variability of the equatorial Pacific in the 1960s. *J. Geophys. Res.*, 86, 10901-10907.
- 1983 Busalacchi, A. J., K. Takeuchi, and J. J. O'Brien: On the interannual wind-driven response of the tropical Pacific Ocean. In Hydrodynamics of the equatorial ocean. Edited by J. C. J. Nihoul, Elsevier, 155-195.
- 1983 Busalacchi, A. J., K. Takeuchi, and J. J. O'Brien: Interannual variability of the equatorial Pacific-revisited. *J. Geophys. Res.*, 88, 7551-7562.
- 1983 Busalacchi, A. J. and J. Picaut: Seasonal variability from a model of the tropical Atlantic. *J. Phys. Oceanogr.*, 13, 1564-1588.
- 1984 Picaut, J., J. Servain, A. J. Busalacchi, and M. Seva: Interannual variability versus seasonal variability in the tropical Atlantic. *Geophys. Res. Lett.*, 11, 787-790.
- 1985 Busalacchi, A. J., and M. A. Cane: Hindcasts of sea level variations during the 1982-83 El Nino. *J. Phys. Oceanogr.*, 15, 213-221.
- 1985 Servain, J., J. Picaut, and A. J. Busalacchi: Interannual and seasonal variability of the tropical Atlantic Ocean depicted by sixteen years of sea-surface temperature and wind stress, Chapter 16 in Coupled Ocean-Atmosphere Models. Edited by J. C. J. Nihoul, Elsevier.
- 1987 Atlas, R., A. J. Busalacchi, M. Ghil, S. Bloom, and E. Kalnay: Global surface wind and flux fields from assimilation of SEASAT data. *J. Geophys. Res.*, 92, 6477-6487.
- 1988 Busalacchi, A. J., and M. A. Cane: The effect of varying stratification on low frequency equatorial motions. *J. Phys. Oceanogr.*, 18, 801-812.
- 1988 McPhaden, M., A. J. Busalacchi, J. Picaut, and G. Raymond: A model study of potential sampling errors due to scatter around XBT transects in the tropical Pacific. *J. Geophys. Res.*, 93, 8119-8130.

- 1988 McPhaden, M. J., A. J. Busalacchi, and J. Picaut: Observations and wind-forced model simulations of the seasonal cycle in tropical Pacific sea surface topography. *J. Geophys. Res.*, **93**, 8131-8146.
- 1989 Busalacchi, A. J., and F. Blanc: On the role of closed and open boundaries in a model of the tropical Atlantic Ocean. *J. Phys. Oceanogr.*, **19**, 831-840.
- 1990 Picaut, J., A. J. Busalacchi, M. J. McPhaden, and B. Camusat: Validation of the geostrophic method for estimating zonal currents at the equator from GEOSAT altimeter data. *J. Geophys. Res.*, **95**, 3015-3024.
- 1990 Zimelman, D. F., and A. J. Busalacchi: The wet tropospheric range correction: Product intercomparisons and simulated effect for tropical Pacific altimeter retrievals. *J. Geophys. Res.*, **95**, 2899-2922.
- 1990 Busalacchi, A. J., M. J. McPhaden, J. Picaut, and S. Springer: Sensitivity of wind-driven tropical Pacific Ocean simulations on seasonal and interannual time scales. *J. Marine Systems*, **1**, 119-154.
- 1990 Springer, S. R., M. J. McPhaden, and A. J. Busalacchi: Oceanic heat content variability in the tropical Pacific during the 1982-1983 El Niño. *J. Geophys. Res.*, **95**, 22089-22101.
- 1993 Lau, K. M., and A. J. Busalacchi: El Niño Southern Oscillation, In *Global Change Atlas*, Eds. R. Gurney, J. Foster and C. Parkinson, Cambridge University Press, 281-294.
- 1993 Busalacchi, A. J., R. M. Atlas, and E. C. Hackert: Comparison of SSM/I vector wind stress with model-derived and subjective products for the tropical Pacific. *J. Geophys. Res.*, **98**, 6961-6977.
- 1994 Busalacchi, A. J., M. J. McPhaden, and J. Picaut: Variability in equatorial Pacific sea surface topography during the verification phase of the TOPEX/Poseidon mission. *J. Geophys. Res.*, **99**, 24,725-24,738.
- 1994 Chen, D., L. M. Rothstein, and A. J. Busalacchi: A hybrid vertical mixing scheme and its application to tropical ocean models. *J. Phys. Oceanogr.*, **24**, 2156-2179.
- 1994 Chen, D., A. J. Busalacchi, and L. M. Rothstein: The roles of vertical mixing, solar radiation, and wind stress in model simulation of the sea surface temperature seasonal cycle in the tropical Pacific Ocean. *J. Geophys. Res.*, **99**, 20,345-20,359.
- 1995 Acker, J. G., and A. Busalacchi: Workshop on Satellite and In Situ Observations for Climate Prediction. *Bull. Amer. Meteor. Soc.*, **76**, 241-249.
- 1995 Miller, R. N., A. J. Busalacchi, and E. C. Hackert: Sea surface topography fields of the tropical Pacific from data assimilation. *J. Geophys. Res.*, **100**, 13,389-13,425.
- 1995 Katz, E. J., A. J. Busalacchi, M. Bushnell, L. Gourdeau, M. McPhaden, and J. Picaut: A comparison of coincidental time series of the ocean surface height by satellite altimeter, mooring, and inverted echo sounder. *J. Geophys. Res.*, **100**, 25101-25108.
- 1995 Picaut, J., A. J. Busalacchi, M. J. McPhaden, L. Gourdeau, F. I. Gonzalez, and E. C. Hackert: Open-ocean validation of TOPEX/Poseidon sea level in the western equatorial Pacific. *J. Geophys. Res.*, **100**, 25109 - 25127.
- 1995 Chen, D., S. E. Zebiak, A. J. Busalacchi, and M. A. Cane: An improved procedure for El Niño forecasting: Implications for predictability. *Science*, **269**, 1699-1702.
- 1996 Busalacchi, A. J.: Data assimilation in support of tropical ocean circulation studies. In: *Modern Approaches to Data Assimilation in Ocean Modeling*, P. Malanotte-Rizzoli, Ed., Elsevier, p. 235-270.
- 1996 Murtugudde, R., R. Seager, and A. J. Busalacchi: Simulation of tropical oceans with an ocean GCM coupled to an atmospheric mixed layer model. *J. Clim.*, **9**, 1795-1815.
- 1996 Cane, M. A., A. Kaplan, R. N. Miller, B. Tang, E. C. Hackert, and A. Busalacchi: Mapping tropical Pacific sea level: data assimilation via a reduced state space Kalman filter. *J. Geophys. Res.*, **101**, 22,599-22617.
- 1996 Menkes, C., J.-P. Boulanger, and A. J. Busalacchi: Evaluation of TOPEX and basin-wide TOGA TAO sea surface topographies and derived geostrophic currents. *J. Geophys. Res.*, **101**, 25087 - 25099.
- 1997 Busalacchi, A. J.: Oceanic observations. Special Issue on Assimilation of Observations in Meteorology and Oceanography, *J. Meteor. Soc. Japan*, **75**, 131-154.
- 1997 Chen, D., S. E. Zebiak, M. A. Cane, and A. Busalacchi: On the initialization and predictability of a coupled ENSO forecast model. *Mon. Wea. Rev.*, **125**, 773-788.
- 1997 Kalnay, E., D. Anderson, A. F. Bennett, A. J. Busalacchi, S. E. Cohn, P. Courtier, J. Derber, A. C. Lorenc, D. Parrish, J. Pursner, N. Sato, and T. Schlatter: Data Assimilation in the ocean and in the atmosphere: What should we do next?, *J. Meteor. Soc. Japan*, **75**, 489-496.
- 1997 Miller, R. N., A. J. Busalacchi, and E. C. Hackert: Applications of data assimilation to analyses of the ocean on large scales. Special Issue on Assimilation of Observations in Meteorology and Oceanography, *J. Meteor. Soc. Japan*, **75**, 445-462.
- 1998 Hackert, E. C., R. N. Miller, and A. J. Busalacchi: An optimized design for a moored instrument array in the tropical Atlantic Ocean. *J. Geophys. Res.*, **103**, 7491-7509.
- 1998 McPhaden, M. J., A. J. Busalacchi, R. Cheney, J.-R. Donguy, K. S. Gage, D. Halpern, M. Ji, P. Julian, G. Meyers, G. T. Mitchum, P. P. Niiler, J. Picaut, R. W. Reynolds, N. Smith, and K. Takeuchi: The Tropical Ocean-Global Atmosphere Observing System: A Decade of Progress. *J. Geophys. Res.*, **103**, 14,169-14,240.
- 1998 Murtugudde, R., and A. J. Busalacchi: Salinity Effects in a Tropical Ocean Model. *J. Geophys. Res.*,

- 103, 3283-3300.
- 1998 Murtugudde, R., A. J. Busalacchi, and J. Beauchamp: Seasonal-to-Interannual Effects of the Indonesian Throughflow on the Tropical Indo-Pacific Basin. *J. Geophys. Res.*, 103, 21,425-21,441.
- 1998 Rothstein, L. M., R.-H. Zhang, A. J. Busalacchi, and D. Chen: A numerical simulation of the mean water pathways in the subtropical and tropical Pacific Ocean. *J. Phys. Oceanogr.*, 28, 322-343.
- 1998 Servain, J., A. J. Busalacchi, M. J. McPhaden, A. D. Moura, G. Reverdin, M. Vianna, and S. E. Zebiak: A Pilot Research Moored Array in the Tropical Atlantic (PIRATA). *Bull. Am. Meteor. Soc.*, 79, 2019-2031.
- 1998 Stockdale, T., A. J. Busalacchi, D. E. Harrison, and R. Seager: Oceanic Modeling of ENSO, *J. Geophys. Res.* 103, 14,325-14,355.
- 1998 Zhang, R.-H., L. M. Rothstein, and A. J. Busalacchi: Origin of Upper-Ocean Warming and El Nino Change on Decadal Scales in the Tropical Pacific Ocean. *Nature*, 391, 879-882.
- 1999 Murtugudde, R., and A. J. Busalacchi: Interannual Variability of the Dynamics and Thermodynamics of the Tropical Indian Ocean, *J. Clim.*, 12, 2300-2326.
- 1999 Murtugudde, R., S. Signorini, J. R. Christian, A. J. Busalacchi, and C. R. McClain: Ocean Color Variability of the Tropical Indo-Pacific Basin Observed by SeaWiFS During 1997-98, *J. Geophys. Res.*, 104, 18,351-18,366.
- 1999 Signorini, S. R., R. G. Murtugudde, C. R. McClain, J. R. Christian, J. Picaut, and A. J. Busalacchi: Biological and Physical Signatures in the Tropical and Sub-tropical Atlantic, *J. Geophys. Res.*, 104, 18,367-18,382.
- 1999 Verron, J., L. Gourdeau, D. T. Pham, R. Murtugudde, and A. J. Busalacchi : An Extended Kalman Filter to Assimilate Satellite Altimeter Data into a Non-linear Numerical Model of the Tropical Pacific Ocean: Method and Validation, *J. Geophys. Res.*, 104, 5441-5458.
- 1999 Zhang, R.-H., and A. J. Busalacchi: A Possible Link between Off-equatorial Warm Anomalies Propagating along the NECC Path and the Onset of the 1997-98 El Nino. *Geophys. Res. Lett.*, 26, 2873-2876.
- 1999 Zhang, R.-H., L. M. Rothstein, A. J. Busalacchi, and X.-Z. Liang: On the Onset of the 1991-92 El Nino Event in the Tropical Pacific Ocean: The NECC Subsurface Pathway, *Geophys. Res. Lett.*, 26, 847-850.
- 1999 Zhang, R.-H., L. M. Rothstein, and A. J. Busalacchi: Interannual and Decadal Variability of the Subsurface Thermal Structure in the Pacific Ocean: 1961-1990, *Clim. Dynam.*, 15, 703-717.
- 2000 Gourdeau, L., J. Verron, T. Delcroix, A. J. Busalacchi, and R. Murtugudde: Assimilation of TOPEX/Poseidon altimetric data in a primitive equation model of the tropical Pacific Ocean during the 1992-1996 ENSO period. *J. Geophys. Res.*, 105, 8473-8488.
- 2000 Murtugudde, R., J. P. McCreary Jr., and A. J. Busalacchi: Oceanic processes associated with anomalous events in the Indian Ocean with relevance to 1997-1998. *J. Geophys. Res.*, 105, 3295-3306.
- 2001 Ballabrera, J., A. J. Busalacchi, and R. Murtugudde: Application of a reduced order Kalman filter to assimilate sea level, sea surface temperature, and wind stress into a coupled atmosphere-ocean model: Impact on the prediction of El Nino. *J. Clim.*, 14, 1720-1737.
- 2001 Hackert, E., A. Busalacchi, and R. Murtugudde: A wind comparison study using an ocean general circulation model for the 1997-98 El Nino. *J. Geophys. Res.*, 106, 2345-2362.
- 2001 Lazar, A., R. Murtugudde, and A.J. Busalacchi: A model study of temperature anomaly propagation from the subtropics to the tropics within the south Atlantic thermocline. *Geophys. Res. Lett.*, 28, 1271-1274.
- 2001 Murtugudde, R. G., J. Ballabrera-Poy, J. Beauchamp, A. J. Busalacchi: Relationship between zonal and meridional modes in the tropical Atlantic. *Geophys. Res. Letters*, 28, 4463-4466.
- 2001 Picaut, J., and A. J. Busalacchi: Tropical Ocean Variability Inferred by Satellite Altimetry. In: Radar Altimetry, L. Fu and A. Cazenave, Eds., Academic Press, 217-236.
- 2001 Turk, D., M. J. McPhaden, A. J. Busalacchi, and M. R. Lewis: Remotely sensed biological production in the tropical Pacific during 1992-1999. *Science*, 293, 471-474.
- 2002 Ballabrera-Poy, J., R. Murtugudde, and A. J. Busalacchi: On the potential impact of sea surface salinity observations on ENSO predictions. *J. Geophys. Res.*, 107 (C12), 8007, doi:10.1029/2001JC000834, SRF 8-1 to SRF 8-11.
- 2002 Christian, J., M. Verschell, R. Murtugudde, A. J. Busalacchi, and C. R. McClain: Biogeochemical modeling of the tropical Pacific Ocean I: Seasonal and interannual variability. *Deep Sea Res.*, 49, 509-543.
- 2002 Christian, J., M. Verschell, R. Murtugudde, A. J. Busalacchi, and C. R. McClain: Biogeochemical modeling of the tropical Pacific Ocean II: Iron biogeochemistry. *Deep Sea Res.*, 49, 545-565.
- 2002 Inui T., A. Lazar, P. Malanotte-Rizzoli, and A. J. Busalacchi: Wind stress effect on subsurface pathways from the subtropical to tropical Atlantic. *J. Phys. Oceanogr.*, 2257-2276.
- 2002 Lazar, A., T. Inui, A.J. Busalacchi, P. Malanotte-Rizzoli, L. Wang, and R. Murtugudde: Seasonality of the ventilation of the tropical Atlantic thermocline. *J. Geophys. Res.*, 107(C8), 3104, doi:10.1029/2000JC000667.
- 2002 Murtugudde, R., J. Beauchamp, and A. Busalacchi: Effects of penetrative radiation on the upper tropical ocean circulation, *J. Clim.*, 15, 470-486.

- 2002 Picaut, J., E. Hackert, A. Busalacchi, R. Murtugudde, and G. Lagerloef: Mechanisms of the 1997-1998 El Niño-La Niña, as inferred from space-based observations. *J. Geophys. Res.*, 107(C5), 3037, doi:10.1029/2001JC000850, 5- 1 to 5-18.
- 2003 Ballabrera-Poy, J., R. G. Murtugudde, J. R. Christian, and A. J. Busalacchi: Signal-to-noise ratios of observed monthly tropical ocean color. *Geophys. Res. Letters.*, 30, 1645, doi:10.1029/2003GL0116995.
- 2003 Buehner, M., P. Malanotte-Rizzoli, A. Busalacchi, and T. Inui: Estimation of the tropical Atlantic circulation using a reduced-rank stationary Kalman filter, in *Interhemispheric Water Exchange in the Atlantic Ocean*. Elsevier, Oceanographic Series Book, G.J. Goni and P. M. Rizzoli, Eds.
- 2003 Lagerloef, G., R. Lukas, F. Bonjean, J. T. Gunn, G. T. Mitchum, M. Bourassa, and A. J. Busalacchi: El Niño Tropical Pacific Ocean surface current and temperature evolution in 2002 and outlook for early 2003. *Geophys. Res. Lettr.*, 30(10): Art. No. 1514.
- 2003 Murtugudde, R. G., A. J. Busalacchi, and J. McCreary: Response to: Dipoles, Temperature Gradients, and Tropical Climate Anomalies. *Bull. Amer. Meteor. Soc.*, 84 (10): 1422-1423.
- 2004 Murtugudde, R. G., L. Wang, E. Hackert, J. Beauchamp, J. R. Christian, and A. J. Busalacchi: Remote sensing of the Indo-Pacific region: Ocean color, sea level, winds, and SSTs. *Int. J. Remote Sens.*, 25, 1423-1435.
- 2004 Jochum, M., P. Malanotte-Rizzoli, and A. J. Busalacchi: Tropical Instability Waves in the Atlantic Ocean. *Ocean Modelling*, Elsevier, 7, 145-163.
- 2004 Jochum, M., R. Murtugudde, P. Malanotte-Rizzoli, and A. J. Busalacchi: Internal Variability of the Tropical Atlantic Ocean. In: *Ocean-Atmosphere Interaction and Climate Variability*, AGU Geophysical Monograph Series, C. Wang, S.-P., Xie, and J.A. Carton, Eds., 181-188.
- 2004 Zhang, R.-H., A. J. Busalacchi, R. G. Murtugudde, E. C. Hackert, and J. Ballabrera-Poy: A New Approach to Improved SST Anomaly Simulations Using Altimeter Data: Parameterizing Entrainment Temperature from Sea Level. *Geophys. Res. Lettr.*, 31, L10304, doi:10.1029/2003GL019237.
- 2004 Busalacchi, A. J.: The role of the Southern Ocean in global processes: an earth system science approach. *Antarctic Science*, 16, 363-368.
- 2005 Wang, X., J. R. Christian, R. Murtugudde, and A. J. Busalacchi: Ecosystem dynamics and export production in the central and eastern equatorial Pacific: a modeling study of impact of ENSO. *Geophys. Res. Lettr.*, 32, L02608, doi:10.1029/2004GL021538.
- 2005 Zhang, R.-H., and A. J. Busalacchi: Interdecadal Change in Properties of El Niño-Southern Oscillation in an Intermediate Coupled Model. *J. Climate*, 18, 1369-1380.
- 2005 Kroger, J., A. J. Busalacchi, J. Ballabrera-Poy, and P. Malanotte-Rizzoli: Decadal variability of shallow cells and equatorial SST in a numerical model of the Atlantic. *J. Geophys. Res.*, 110, C12003, doi:10.1029/2004JC002703.
- 2005 Wang, X., R. Murtugudde, A. J. Busalacchi, and R. Le Borgne: De-coupling of net community production and new production in the upper euphotic zone of the equatorial Pacific: a model study. *Geophys. Res. Lettr.*, 32, L21601, doi:10.1029/2005GL024100,
- 2005 Luo, Y., L. M. Rothstein, R.-H. Zhang, and A.J. Busalacchi: On the connection between South Pacific subtropical spiciness anomalies and decadal equatorial variability in an ocean general circulation model *J. Geophys. Res.*, 110, C10002, doi:10.1029/2004JC002655.
- 2006 Zhang, R. H., A. J. Busalacchi, R. G. Murtugudde, P. A. Arkin, and J. Ballabrera-Poy: An empirical parameterization for the salinity of subsurface water entrained into the ocean mixed layer (S_e) in the tropical Pacific, *Geophys. Res. Lett.*, 33, L02605, doi:10.1029/2005GL024218
- 2006 Zhang, R.-H., A. J. Busalacchi, and R. G. Murtugudde: Improving SST anomaly simulations in a layer ocean model with an embedded entrainment temperature submodel. *J. Clim.*, 19, 4638-4663.
- 2006 Wang, X., J. R. Christian, R. Murtugudde, and A. J. Busalacchi: Spatial and temporal variability in new production in the equatorial Pacific during 1980-2003: physical and biogeochemical controls. *Deep-Sea Res.*, 53, 677-697.
- 2006 Wang, X., J. R. Christian, R. Murtugudde, and A. J. Busalacchi: Spatial and temporal variability of the surface water pCO₂ and air-sea CO₂ flux in the equatorial Pacific during 1980-2003: a basin-scale carbon model. *J. Geophys. Res.*, 111, C07S04, doi:10.1029/2005JC002972.
- 2006 Hurrell, J.W, M. Visbeck, A. Busalacchi, R. A. Clarke, T. L. Delworth, R. R. Dickson, W.E. Johns, K.P. Koltermann, Y. Kushnir, D. Marshall, C. Mauritzen, M. S. McCartney, A. Piola, C. Reason, G. Reverdin, F. Schott, R. Sutton, I. Wainer, and D. Wright: Atlantic Climate Variability and Predictability: A s perspective. *J. Clim.*, 19, 5100-5121.
- 2007 Ballabrera-Poy, J., R. Murtugudde, R.-H. Zhang, and A. J. Busalacchi: Coupled Ocean-Atmosphere Response to Seasonal Modulation of Ocean Color: Impact on Interannual Climate Simulations in the Tropical Pacific, *J. Clim.*, 20, 353-374.
- 2007 Busalacchi, A., and T. N. Palmer: 1st WCRP Climate Variability and Predictability (CLIVAR) Science Conference-Preface. *J. Clim.*, 19, 4975-4976.

- 2007 Hackert, E., J. Ballabrera-Poy, A. J. Busalacchi, R.-H. Zhang and R. Murtugudde: Comparison between 1997 and 2002 El Niño Events: Role of Initial State versus Forcing. *J. Geophys. Res.*, 112, C01005, doi:10.1029/2006JC003724.
- 2007 Hackert, E., J. Ballabrera-Poy, A. J. Busalacchi, R. Zhang, and R. Murtugudde: Role of the initial ocean state for the 2006 El Niño. *Geophys. Res. Lett.*, 34, L09605, doi:10.1029/2007GL029452.
- 2007 Karnauskas, K.B., Murtugudde, R., and A.J. Busalacchi: The effect of the Galápagos Islands on the equatorial Pacific cold tongue. *J. Phys. Oceanogr.*, 37, 1266-1281.
- 2007 Ballabrera-Poy, J., E. Hackert, R. Murtugudde, and A. J. Busalacchi: An observing system simulation experiment for an optimal moored instrument array in the tropical Indian Ocean. *J. Clim.*, 20, 3284-3299.
- 2007 Zhang, R.-H., A. J. Busalacchi, and Y. Xue: Decadal change in the relationship between the oceanic entrainment temperature and thermocline depth in the far western tropical Pacific. *Geophys. Res. Lett.*, 34, L23612, doi:10.1029/2007GL032119
- 2008 Boulès, B., A. J. Busalacchi, E. Campos, F. Hernandez, R. E. M. J. McPhaden, A. D. Moura, P. Nobre, S. Planton, J. Servain, J. Trotte, and L. Yu: The PIRATA Program: History, accomplishments, and future directions. *Bull. Am. Meteor. Soc.*, 89, 1111-1125.
- 2008 Karnauskas, K.B., Ruiz-Barradas, A., Nigam, S., and A.J. Busalacchi: North American droughts in ERA-40 global and North American Regional Reanalysis: A Palmer Drought Severity Index perspective. *J. Clim.*, 21, 2102–2123.
- 2008 Zhang, R.-H., A. J. Busalacchi, and D. G. DeWitt: The roles of atmospheric stochastic forcing (SF) and oceanic entrainment temperature (T_e) in decadal modulation of ENSO. *J. Clim.*, 21, 674-704.
- 2008 Zeng, N., J.-H. Yoon, A. Vintzileos, G. J. Collatz, E. Kalnay, A. Mariotti, A. Busalacchi, and S. Lord: Dynamical prediction of the terrestrial ecosystem and the global carbon cycle: a 25-year hindcast experiment. *Global Biogeochem. Cycles*, 22, GB4015, doi:10.1029/2008GB003183
- 2008 Karnauskas, K.B., Busalacchi, A.J., and R. Murtugudde: Low-frequency variability and remote forcing of gap winds over the east Pacific warm pool. *J. Clim.*, 21, 4901-4918.
- 2008 Karnauskas, K., R. Murtugudde, and A. J. Busalacchi: The effect of the Galapagos Islands on ENSO in forced ocean and hybrid coupled models. *J. Phys. Oceanogr.*, 38, 2519–2534.
- 2008 Munoz, E., A. J. Busalacchi, S. Nigam, and A. Ruiz-Barradas: Winter and summer structure of the Caribbean Low-level jet. *J. Clim.*, 21, 1260-1276 .
- 2008 de Magny, G. C., R. Murtugudde, M. R. P. Sapiiano, A. Nizam, C. W. Brown, A. J. Busalacchi, M. Yunus, B. G. Nair, A. I. Gil, C. F. Lanata, J. Calkins, B. Manna, K. Rajendran, M. K. Bhattacharya, A. Huq, R. B. Sack, and R. R. Colwell: Environmental signatures associated with cholera epidemics. *Proc. Natl. Acad. Sci.*, 105, no. 46, 17676-17681.
- 2008 Wang, X. J., R. Le Borgne, R. Murtugudde, A. J. Busalacchi, and M. Behrenfeld: Spatial and temporal variations in dissolved and particulate organic nitrogen in the equatorial Pacific: biological and physical influences. *Biogeosci. Discuss.*, 5, 3267–3305.
- 2008 Zhang, R.-H., and A. J. Busalacchi: Rectified effects of tropical instability (TIW)-induced atmospheric feedback in the tropical Pacific. *Geophys. Res. Lett.*, 35, L05608, doi:10.1029/2007GL033028.
- 2009 Karnauskas K. B., and A. J. Busalacchi: Mechanisms for the interannual variability of SST in the east Pacific warm pool. *J. Clim.*, 22, 1375-1392.
- 2009 Karnauskas K. B., and A. J. Busalacchi: The role of SST in the east Pacific warm pool in the interannual variability of Central American rainfall. *J. Clim.*, 22, 2605-2623.
- 2009 Zhang, R-H, A. J. Busalacchi, X. Wang, J. Ballabrera-Poy, R. G. Murtugudde, and E. C. Hackert: Role of ocean biology-induced climate feedback in the modulation of El Niño-Southern Oscillation (ENSO). *Geophys. Res. Lett.*, 36, L03608, doi:10.1029/2008GL036568.
- 2009 Zhang, R.-H., and A. J. Busalacchi: Freshwater flux (FWF)-induced oceanic feedback in a Hybrid Coupled Model of the Tropical Pacific. *J. Clim.*, 22, 853-879.
- 2009 Zhang, R.-H., and A. J. Busalacchi: An empirical model for surface wind stress response to SST forcing induced by tropical Instability waves (TIWs) in the eastern equatorial Pacific. *Mon. Wea. Rev.*, 137, 2021-2046.
- 2009 Wang, X., R. Le Borgne, R. Murtugudde, A. J. Busalacchi, and M. Behrenfeld: Spatial and temporal variability of the phytoplankton carbon to chlorophyll ratio in the equatorial Pacific: A basin-scale modeling study, *J. Geophys. Res.*, 114, C07008, doi:10.1029/2008JC004942.
- 2009 Leemans, R., G. Asrara, A. Busalacchi, J. Canadell, J. Ingram, A. Larigaudire, H. Mooney, C. Nobre, A. Patwardhan, M. Rice, F. Schmidt, S. Seitzinger, H. Virji, C. Vorosmarty, and O. Young: Developing a common strategy for integrative global

- environmental change research and outreach: the Earth System Science Partnership (ESSP) Strategy paper, *Current Opinion in Environmental Sustainability*, 1, 4-13.
- 2010 Zhang, R.-H., G. Wang, D. Chen, A. J. Busalacchi, and E. C. Hackert: Interannual biases induced by freshwater flux and coupled feedback in the tropical Pacific. *Mon. Wea. Rev.*, 138, 2021-2046.
- 2010 Karnauskas, K.B., R. Murtugudde, and A.J. Busalacchi: Observing the Galapagos-EUC Interaction: Insights and Challenges, *J. Phys. Oceanogr.*, 40, 2768-2777.
- 2010 C. Nobre, G. P. Brasseur, M. A. Shapiro, M. Lahsen, G. Brunet, A. J. Busalacchi, K. Hibbard, S. Seitzinger, K. Noone, and J. P. Ometto: Addressing the complexity of the Earth System. *Bull. Amer. Met. Soc.*, 91, 1389-1396.
- 2010 M. A. Shapiro, J. Shukla, G. Brunet, C. Nobre, M. Beland, R. Dole, K. Tremberth, R. Anthes, G. Asrar, L. Barrie, P. Bougeault, G. Brasseur, D. Burridge, A. Busalacchi, J. Caughey, D. Chen, J. Church, T. Enomoto, B. Hoskins, O. Hov, A. Laing, H. Le Treut, J. Marotzke, G. McBean, G. Meehl, M. Miller, B. Mills, J. Mitchell, M. Moncrieff, T. Nakazawa, H. Olafsson, T. Palmer, D. Parson, D. Rogers, A. Simmons, A. Troccoli, Z. Toth, L. Uccellini, C. Velden, and J.M. Wallace: An Earth-system prediction initiative for the 21st century. *Bull. Amer. Met. Soc.*, 91, 1377-1388.
- 2010 McPhaden, M. J., A. J. Busalacchi, and D.L.T. Anderson: A TOGA Retrospective. *Oceanography*, 23, 86-103.
- 2010 Busalacchi, A.J.: Celebrating a decade of progress and preparing for the future: Ocean information for research and applications. In *Proceedings of OceanObs'09: Sustained Ocean Observations and Information for Society (Vol. 1)*, Venice, Italy, 21-25 September 2009, Hall, J., Harrison D.E. & Stammer, D., Eds., ESA Publication WPP-306, doi:10.5270/OceanObs09.pp10, 45-52.
- 2011 Hackert, E., J. Ballabrera-Poy, AJ Busalacchi, RH Zhang, and R. Murtugudde. Impact of sea surface salinity on coupled forecasts in the tropical Pacific. *J.Geophys. Res. Oceans*, 116, C05009, DOI: 10.1029/2010JC006708 .
- 2013 Karnauskas, K.B., R. Seager, A. Giannini, and A. J. Busalacchi: A simple mechanism for the climatological midsummer drought along the Pacific coast of Central America. *Atmosfera*, 26(2), 261-281.
- 2013 Asrar, A.R., J.W. Hurrell, and A.J. Busalacchi: The World Climate Research Programme Strategy and Priorities: Next Decade. In *Climate Science for Serving Society*, Springer, G.R. Asrar and J.W. Hurrell (eds.), *Climate Science for Serving Society: Research, Modeling and Prediction Priorities*, DOI 10.1007/978-94-007-6692-1_1, 1-12.
- 2013 Moss, R.M, and G. A. Meehl, M. C. Lemos, J. B. Smith, J. R. Arnold, J. C. Arnett, D. Behar, G. P. Brasseur, S. B. Broomell, A. J. Busalacchi, S. Dessai, K. L. Ebi, J. A. Edmonds, J. Furlow, L.Goddard, H. C. Hartmann, J. W. Hurrell, J. W. Katzenberger, D. M. Liverman, P. W. Mote, S. C.Moser, A. Kumar, R. S. Pulwarty, E. A. Seyller, B. L. Turner II, W. M. Washington, and T. J. Wilbanks. Hell and High Water: Practice-relevant Adaptation Science. *Science*, 342, 696-698.
- 2014 Hackert, E., A.J. Busalacchi, and J. Ballabrera-Poy. Impact of Aquarius Sea Surface Salinity Observations on Coupled Forecasts for the Tropical Indo-Pacific Ocean, *J. Geophys. Res.-Oceans*, 119 (7), 4045-4067, doi: 10.1002/2013JC009697
- 2014 Ren, L., E. Hackert, P. Arkin, and A. Busalacchi. Estimating the global oceanic net freshwater flux from Argo and comparing it with satellite-based freshwater flux products. *J. Geophys. Res. Oceans*, 119-11, 7869-7881 .
- 2016 Motesharrei, S., J. Rivas, E. Kalnay, G. R. Asrar, A. J. Busalacchi., R. F. Cahalan, M. A. Cane, R. R. Colwell, K. Feng, R. S. Franklin, K. Hubacek, F. Miralles-Wilhelm, T. Miyoshi, M. Ruth, R. Sagdeev, A. Shirmohammadi, J. Shukla, J. Srebric, V. M. Yakovenko and N. Zeng. Modeling Sustainability: Population, Inequality, Consumption, and Bidirectional Coupling of the Earth and Human Systems. *Nat. Sci. Rev.*, 3(4), 470-494, doi:10.1093/nsr/nww081.
- 2017 Schollaert Uz, S., A.J. Busalacchi, T.M. Smith, M.N. Evans, C.W. Brown, and E.C. Hackert: Interannual and Decadal Variability in Tropical Pacific Chlorophyll from a Statistical Reconstruction: 1958-2008. *J. Clim.*, 30, 7293-7315, doi:10.1175/JCLI-D-16-0202.1.
- 2017 Hackert, E.C., A.J. Busalacchi, J. Carton. R. Murtugudde, P. Arkin, and M.N. Evans: The role of the Indian Ocean sector for prediction of the coupled Indo-Pacific system: Impact of atmospheric coupling. *J. Geophys. Res.-Oceans*, doi: 10.1002/2016JC012632.
- 2017 Pinker, R.T., S. Grodsky, B. Zhang, A.J. Busalacchi, and W. Chen: ENSO Impact on Surface Radiative Fluxes as Observed from Space. *J. Geophys. Res. Oceans*, doi: 10.1002/2017JC012900.
- 2019 Zhang, R.H., F. Tian, A. J. Busalacchi, and X. Wang: Freshwater Flux and Ocean Chlorophyll Produce Nonlinear Feedbacks in the Tropical Pacific. *J. Clim.*, doi.org/10.1175/JCLI-D-18-0430.1.
- 2019 Hackert, E.C., R. M. Kovach, A. J. Busalacchi, and Ballabrera-Poy: Impact of Aquarius and SMAP Satellite Sea Surface Salinity Observations on Coupled El Niño/Southern Oscillation Forecasts. *J. Geophys. Res.-Oceans*, 124 (7), 4546-4556, doi: 10.1029/2019JC015130.

National Academies of Sciences, Engineering and Medicine Reports (Formerly NRC)

- 1994 National Research Council: Ocean-Atmosphere Observations for Short-term Climate Predictions, National Academy Press, Washington, D.C., 51 pp.
- 1996 National Research Council: Learning to Predict Climate Variations Associated with El Nino and the Southern Oscillation: Accomplishments and Legacies of the TOGA Program, National Academy Press, Washington, D.C., 192 pp.
- 2002 National Research Council: Review of USGCRP Plan for a New Science Initiative on the Global Water Cycle, National Academy Press, Washington, D.C., 46 pp.
- 2003 National Research Council: Understanding Climate Change Feedbacks, National Academies Press, Washington, D.C., 166 pp.
- 2004 National Research Council: Steps to Facilitate Principal-Investigator-Led Earth Science Missions, National Academies Press, Washington, D.C., 94 pp.
- 2005 National Research Council: Extending the Effective Lifetimes of Earth Observing Research Missions, National Academies Press, Washington, D.C., 36 pp.
- 2006 National Research Council: Review of the Science Mission Directorate's (SMD's) Draft Science Plan: Letter Report, National Academy Press, Washington, D.C., 27 pp.
- 2007 National Research Council: Options to Ensure the Climate Record from the NPOESS and GOES-R Spacecraft: A Workshop Report, National Academies Press, Washington, D.C., 84 pp.
- 2008 National Research Council: Ensuring the Climate Record from the NPOESS and GOES-R Spacecraft: Elements of a Strategy to Recover Measurement Capabilities Lost in Program Restructuring, National Academies Press, Washington, D.C., 190 pp.
- 2010 National Research Council: National Security Implications of Climate Change for U.S. Naval Forces: Letter Report, National Academies Press, Washington, D.C., 21 pp.
- 2010 National Research Council: America's Climate Choices: Advancing the Science of Climate Change, National Academies Press, Washington, D.C., 506 pp.
- 2011 National Research Council: National Security Implications of Climate Change for U.S. Naval Forces, National Academies Press, Washington, D.C., 172 pp.
- 2011 National Research Council: Assessment of Impediments to Interagency Cooperation on Space and Earth Science Missions, National Academy Press, Washington, D.C., 76 pp.
- 2011 National Research Council: Climate Change, the Indoor Environment, and Public Health, National Academy Press, Washington, D.C., 272 pp.
- 2012 National Research Council: Earth Science Applications from Space: A Midterm Assessment of NASA's Implementation of the Decadal Survey, National Academy Press, Washington, D.C., 111pp.
- 2013 National Research Council: Assessing the Impacts of Climate Change on Social and Political Stresses, National Academy Press, Washington, D.C., 238 pp..

Other Publications and Reports:

- 1981 Busalacchi, A.J., and J.J. O'Brien: An ocean model which predicts El Nino. In *Recent Progress in Equatorial Oceanography*, J.P. McCreary, Jr., D.W. Moore, and J.M. Witte, Eds., Nova Univ. Press, Ft. Lauderdale, FL, 75-86.
- 1983 Picaut, J., J. Servain, Y. Gouriou, P. Lecomte, N. Merabet, M. Seva, A. Busalacchi, J. McCreary, D. Moore, and B. Burtchy: Modelisation et observations des variations thermiques basse frequence dans l'Atlantique Tropicale. CNEXO Rep., Univ. de Bretagne Occidentale, 242 pp.
- 1984 Picaut, J. and T. Busalacchi: The French connection: Oceanographic research. Thought and Action the NEA Higher Education Journal 1, 178179.
- 1986 Busalacchi, A. J., and J. Picaut: The winddriven sealevel response of the tropical Atlantic Ocean, 196479, Geophys. J. R.Astr. Soc., 87, 117.
- 1987 Busalacchi, A J.: Atlantic seasonality: II. Theory, In Further Progress in Equatorial Oceanography: A Report of the U.S. TOGA Workshop on the Dynamics of the Equatorial Oceans, E. Katz and J. Witte, Eds., Nova Univ. Press, Ft. Lauderdale, FL, 235254.
- 1987 Cane, M. A. and A J. Busalacchi: Atlantic seasonality: III. Conclusions, In Further Progress in Equatorial Oceanography: A Report of the U.S. TOGA Workshop on the Dynamics of the Equatorial Oceans. E. Katz and J. Witte, Eds., Nova Univ. Press, Ft. Lauderdale, FL, 255258.
- 1987 Picaut, J., M. J. McPhaden, A. J. Busalacchi, S. P. Hayes, G. Raymond, R. Tournier, and J. Marchand: Validation d'un modele du Pacifique tropical a l'aide de donnees XBT, mouillages chaines a thermistances. IFREMER rep. 19.18.132, ORSTOM/Nourmea, 117 pp.
- 1989 Busalacchi, A. J., M. J. McPhaden, J. Picaut, and S. Springer: Uncertainties in tropical Pacific Ocean simulations: The

seasonal and interannual sea level response to three analyses of the surface wind field. Proceedings of the Western Pacific International Meeting and Workshop on TOGACOARE, Noumea, New Caledonia, May 24 20, 1989, 367377.

- 1989 Picaut, J., B. Camusat, T. Delcroix, M. J. McPhaden, and A. J. Busalacchi: Surface equatorial flow anomalies in the Pacific Ocean during the 198687 ENSO using GEOSAT Altimeter data. Proceedings of the Western Pacific International Meeting and Workshop on TOGACOARE, Noumea, New Caledonia, May 2420, 1989, 301309.
- 1996 Busalacchi, A.J.: Oceanic Fluxes: Observations and Applications to Monitoring, Process Studies and Prediction Efforts, *An. Acad. Bras. Ci.*,68 (Supl. 1), 6775.
- 1999 Vianna, M. L., J. M. Servain, and A. J. Busalacchi: The PIRATA Program: Monitoring tropical Atlantic Waters. *Sea Tech.*, October, 1999.
- 2006 Busalacchi, A.J.: Book Review of “The Ocean Carbon Cycle and Climate by M. Follows and T. Oguz, Eds. 2004, 395 pp., Kluwer Academic /Springer-Verlag”, *Bull. Am. Meteor. Soc.*, 1097-1099.
- 2015 Asrar, G., J. Schmetz, S. Bony, O. Boucher, A. Busalacchi, A. Cazenave, M. Dowell, G. Flato, G. Hegerl, E. Kallen, T. Nakajima, A. Ratier, R. Saunders, J. Slingo, B-J Sohn, B. Stevens, P. Zhang, and F. Zwiers: Climate Symposium 2014- Findings and Recommendations. *Bull. Am. Meteor. Soc.*, 96, ES145–ES147. doi: 10.1175/BAMS-D-15-00003.1