

## CURRICULUM VITAE

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Climate Research Division  
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BIRTH: July 6, 1958 Cleveland, Ohio

DEGREES: 1980 B.S. in Physical Oceanography  
Florida Institute of Technology

1986 Ph.D. in Physical Oceanography  
Scripps Institution of Oceanography, UCSD

### POSITIONS HELD:

2000-present Research Oceanographer  
Senior Lecturer in Climate Sciences  
Associate Director, Climate Research Division  
Scripps Institution of Oceanography

1996-2000 Associate Research Oceanographer  
Lecturer in Climate Sciences  
Climate Research Division, Scripps Institution of Oceanography

1992-1994 Scientist (while on leave from SIO)  
SACLANT Undersea Research Centre, La Spezia, Italy

1991 Orson Anderson Visiting Scholar  
IGPP, Los Alamos National Laboratory

1988 Lecturer (while at SIO)  
Department of Geography, San Diego State University

1988-1996 Assistant Research Oceanographer  
Climate Research Division, Scripps Institution of Oceanography

1986-1988 Andrew W. Mellon Foundation Postdoctoral Fellow  
Climate Research Group, Scripps Institution of Oceanography

1980-1986 Research Assistant  
Institute of Geophysics and Planetary Physics  
Scripps Institution of Oceanography

1980 Physicist  
Naval Research Laboratory, Orlando, Florida

### PROFESSIONAL

SOCIETIES: American Meteorological Society, American Geophysical Union  
The Oceanography Society

DISSERTATION:

Miller, A. J., 1986. Barotropic planetary-topographic oscillations in ocean basins. Ph.D. dissertation. Scripps Institution of Oceanography, University of California, San Diego, 133 pp.

REFEREED PUBLICATIONS:

Miller, A. J., 1986: Non-divergent planetary oscillations in mid-latitude ocean basins with continental shelves. *Journal of Physical Oceanography*, **16**, 1914-1928.

Miller, A. J., W. R. Holland and M. C. Hendershott, 1987: Open-ocean response and normal mode excitation in an eddy-resolving general circulation model. *Geophysical & Astrophysical Fluid Dynamics*, **37**, 253-278.

Miller, A. J., 1989: On the barotropic planetary oscillations of the Pacific. *Journal of Marine Research*, **47**, 569-594.

Miller, A. J. and J. O. Roads, 1990: A simplified coupled model of extended-range predictability. *Journal of Climate*, **3**, 523-542.

Miller, A. J., 1992: Large-scale ocean-atmosphere interactions in a simplified coupled model of the midlatitude wintertime circulation. *Journal of the Atmospheric Sciences*, **49**, 273-286.

Miller, A. J., 1992: On forced barotropic vorticity oscillations. *Journal of Physical Oceanography*, **22**, 808-810.

Miller, A. J., J. M. Oberhuber, N. E. Graham and T. P. Barnett, 1992: Tropical Pacific Ocean response to observed winds in a layered ocean general circulation model. *Journal of Geophysical Research*, **97**, 7317-7340.

Miller, A. J., D. S. Luther and M. C. Hendershott, 1993: The fortnightly and monthly tides: Resonant Rossby waves or nearly equilibrium gravity waves? *Journal of Physical Oceanography*, **23**, 879-897.

Miller, A. J., T. P. Barnett and N. E. Graham, 1993: A comparison of some tropical ocean models: Hindcast skill and El Niño evolution. *Journal of Physical Oceanography*, **23**, 1567-1591.

Miller, A. J., D. R. Cayan, T. P. Barnett, N. E. Graham and J. M. Oberhuber, 1994: Interdecadal variability of the Pacific Ocean: Model response to observed heat flux and wind stress anomalies. *Climate Dynamics*, **9**, 287-302.

Miller, A. J., D. R. Cayan, T. P. Barnett, N. E. Graham and J. M. Oberhuber, 1994: The 1976-77 climate shift of the Pacific Ocean. *Oceanography*, **7**, 21-26.

Miller, A. J., H. G. Arango, A. R. Robinson, W. G. Leslie, P.-M. Poulain and A. Warn-Varnas, 1995: Quasigeostrophic forecasting and physical processes of Iceland-Faroe Frontal variability. *Journal of Physical Oceanography*, **25**, 1273-1295.

Miller, A. J., P.-M. Poulain, A. R. Robinson, H. G. Arango, W. G. Leslie and A. Warn-Varnas, 1995: Quantitative skill of quasigeostrophic forecasts of a baroclinically unstable Iceland-Faroe Front. *Journal of Geophysical Research*, **100**, 10,833-10,849.

Cayan, D. R., A. J. Miller, T. P. Barnett, N. E. Graham, J. N. Ritchie and J. M. Oberhuber, 1995: Seasonal-interannual fluctuations in surface temperature over the Pacific: Effects of monthly winds and heat fluxes. In: *Natural Climate Variability on Decadal-to-Century Time Scales*, National Academy Press, pp. 133-150

Robinson, A. R., H. G. Arango, A. J. Miller, P.-M. Poulain, A. Warn-Varnas and W. G. Leslie, 1996: Real time operational forecasting on shipboard of the Iceland-Faroe frontal variability. *Bulletin of the American Meteorological Society*, **77**, 243-259.

Robinson, A. R., H. G. Arango, A. Warn-Varnas, W. G. Leslie, A. J. Miller, P. J. Haley and C. J. Lozano, 1996: Real-time regional forecasting. In: *Modern Approaches to Data Assimilation in Ocean Modeling*, P. Malanotte-Rizzoli, ed., Elsevier Science, B.V., pp. 377-410.

- Nese, J. M., A. J. Miller and J. A. Dutton, 1996: The nature of predictability enhancement in a low-order ocean-atmosphere model. *Journal of Climate*, **9**, 2167-2172.
- Miller, A. J., P. F. G. Lermusiaux and P.-M. Poulain, 1996: A topographic-Rossby mode resonance over the Iceland-Faeroe Ridge. *Journal of Physical Oceanography*, **26**, 2735-2747.
- Miller, A. J., W. B. White and D. R. Cayan, 1997: North Pacific thermocline variations on ENSO time scales. *Journal of Physical Oceanography*, **27**, 2023-2039.
- Miller, A. J., D. R. Cayan and W. B. White, 1998: A westward-intensified decadal change in the North Pacific thermocline and gyre-scale circulation. *Journal of Climate*, **11**, 3112-3127.
- Auad, G., A. J. Miller and W. B. White, 1998: Simulation of heat storages and associated heat budgets in the Pacific Ocean - Part 1. ENSO timescale. *Journal of Geophysical Research*, **103**, 27,603-27,620.
- Auad, G., A. J. Miller and W. B. White, 1998: Simulation of heat storages and associated heat budgets in the Pacific Ocean - Part 2. Interdecadal timescale. *Journal of Geophysical Research*, **103**, 27,621-27,636.
- Schneider, N., A. J. Miller, M. A. Alexander and C. Deser, 1999: Subduction of decadal North Pacific temperature anomalies: Observations and dynamics. *Journal of Physical Oceanography*, **29**, 1056-1070.
- Miller, A. J. and B. D. Cornuelle, 1999: Forecasts from fits of frontal fluctuations. *Dynamics of Atmospheres and Oceans*, **29**, 305-333.
- Schneider, N., S. Venkze, A. J. Miller, D. Pierce, T. Barnett, C. Deser and M. Latif, 1999: Pacific thermocline bridge revisited. *Geophysical Research Letters*, **26**, 1329-1332.
- Miller, A. J., J. C. McWilliams, N. Schneider, J. S. Allen, J. A. Barth, R. C. Beardsley, F. P. Chavez, T. K. Chereskin, C. A. Edwards, R. L. Haney, K. A. Kelly, J. C. Kindle, L. N. Ly, J. R. Moisan, M. A. Noble, P. P. Niiler, L. Y. Oey, F. B. Schwing, R. K. Shearman, and M. S. Swenson, 1999: Observing and modeling the California Current System. *Eos, Transactions, American Geophysical Union*, **80**, 533-539.
- Miller, A. J. and N. Schneider, 2000: Interdecadal climate regime dynamics in the North Pacific Ocean: Theories, observations and ecosystem impacts. *Progress in Oceanography*, **47**, 355-379.
- Miller, A. J., E. Di Lorenzo, D. J. Neilson, B. D. Cornuelle and J. R. Moisan, 2000: Modeling CalCOFI Observations during El Niño: Fitting physics and biology. *California Cooperative Oceanic Fisheries Investigations Reports*, **41**, 87-97.
- Auad, G., A. J. Miller, J. O. Roads and D. R. Cayan, 2000: Pacific Ocean wind stresses and surface heat fluxes from the NCEP Reanalysis and observations: Cross-statistics and ocean model responses. *Journal of Geophysical Research*, **106**, 22,249-22,265.
- Schneider, N. and A. J. Miller, 2001: Predicting climate changes of the western North Pacific Ocean. *Journal of Climate*, **14**, 3997-4002.
- Schneider, N., A. J. Miller and D. W. Pierce, 2002: Anatomy of North Pacific decadal variability. *Journal of Climate*, **15**, 586-605.
- Miller, A. J., M. A. Alexander, G. J. Boer, F. Chai, K. Denman, D. J. Erickson, R. Frouin, A. J. Gabric, E. A. Laws, M. R. Lewis, Z. Liu, R. Murtugudde, S. Nakamoto, D. J. Neilson, J. R. Norris, J. C. Ohlmann, R. I. Perry, N. Schneider, K. M. Shell, and A. Timmermann, 2003: Potential feedbacks between Pacific Ocean ecosystems and interdecadal climate variations. *Bulletin of the American Meteorological Society*, **84**, 617-633.
- McGowan, J. A., S. J. Bograd, R. J. Lynn and A. J. Miller, 2003: The biological response to the 1977 regime shift in the California Current. *Deep-Sea Research*, **50**, 2567-2582.
- Auad, G., J. P. Kennett and A. J. Miller, 2003: The North Pacific Intermediate Water response to a modern climate shift. *Journal of Geophysical Research*, **108**, article no. 3349.
- Di Lorenzo, E., A. J. Miller, D. J. Neilson, B. D. Cornuelle and J. R. Moisan, 2003: Modeling observed California Current mesoscale eddies and the ecosystem response. *International Journal of Remote Sensing*, in press.

- Auad, G., A. J. Miller, and J. O. Roads, 2003: Pacific Ocean forecasts. *Journal of Marine Systems*, in press.
- Moore, A. M., H. G. Arango, E. Di Lorenzo, B. D. Cornuelle, A. J. Miller and D. J. Neilson, 2003: A comprehensive ocean prediction and analysis system based on the tangent linear and adjoint of a regional ocean model. *Ocean Modelling*, in press.
- Miller, A. J., F. Chai, S. Chiba, J. R. Moisan and D. J. Neilson, 2003: Decadal-scale climate and ecosystem interactions in the North Pacific Ocean. *Journal of Oceanography*, in press.
- Di Lorenzo, E., A. J. Miller, N. Schneider and J. C. McWilliams, 2003: The warming of the California Current: Dynamics, thermodynamics and ecosystem implications. *Journal of Physical Oceanography*, *sub judice*.
- Mestas-Nunez, A. M. and A. J. Miller, 2003: Interdecadal variability and climate change in the Eastern Tropical Pacific: A review. *Progress in Oceanography*, *sub judice*.
- Miller, A. J., A. J. Gabric, J. R. Moisan, F. Chai, D. J. Neilson, D. W. Pierce, and E. Di Lorenzo, 2003: Global change and oceanic primary productivity: Effects of ocean-atmosphere-biological feedbacks. *Global Climate Change and Response of the Carbon Cycle in the Equatorial Pacific and Indian Oceans and Adjacent Land Masses*, Elsevier Oceanography Series, *sub judice*.
- Baumgartner, T. R., G. Auad and A. J. Miller, 2003: Pacific sardine habitat changes induced by a climate shift. To be submitted to *Fisheries Oceanography*.

#### SCIENTIFIC SERVICE:

- Editorial Board, *Atmospheric Science Letters*, Royal Meteorological Society (2000-present)
- Special Issue Editorial Board, *Journal of Oceanography*, The Oceanographic Society of Japan (2002)
- Reviewer for *Journal of Physical Oceanography*, *Journal of Climate*, *Journal of Geophysical Research*, *Tellus*, *Monthly Weather Review*, *Dynamics of Atmospheres and Oceans*, *Geophysical Research Letters*, *Journal of the Atmospheric Sciences*, *Fisheries Oceanography*, *Journal of Marine Systems*, *Progress in Oceanography*, *Fisheries Oceanography*, *Oceanologica Acta*, *EOS*, *Deep-Sea Research*, *Conservation Biology*, *Canadian Journal of Fisheries and Aquatic Sciences*, *Journal of Marine Research*, *International Journal of Remote Sensing*, *Bulletin of the American Meteorological Society*, *Journal of Oceanography*, *United Nations University Press*, and *Cambridge University Press*.
- Reviewer for NSF, NOAA, NASA, IRI, NCAR, NERC (UK), and BSF (Israel-USA)
- Panelist for NSF Ocean Sciences Division (1996) and NOAA CLIVAR Program (2001)
- Member, U.S. CLIVAR Pacific Sector Implementation Panel (2002-present)
- Overview Advisory Group, GLOBEC Climate Impacts on Open Ocean Top Predators Program
- Committee on Academic Personnel, Scripps Institution of Oceanography (1998-99, 1999-2000, 2000-01)
- Supervisor, SIO Climate Computing Facility (2000-present)
- SIO Climate Research Division Seminar Series Coordinator (1998-present)
- Surfside Climate Workshop Co-organizer: "California Current Modeling and Observations" (1999)  
"Oceanic Ecosystem Feedbacks with Interdecadal Climate Variability" (2001)
- Climate-Culture Workshop Co-organizer: "Impacts of Climate Variability on Cultural Development in Peru and the Andes" (2003)
- CIFAR Synthesis Workshop Co-organizer: "The Climate Regime Shift Hypothesis and the Decline of the Steller Sea Lion Population" (2003)
- Interviewed by numerous local, national, and international newspaper, magazine, radio, and television reporters (1995-present)

## TEACHING ACTIVITIES:

Instructor, Introduction to Meteorology, Geography 103, SDSU (1988)

Postdoctoral advisor to:

Guillermo Auad, SIO (1996-2001)

Doctoral advisor to:

Emanuele Di Lorenzo, Climate Sciences, SIO (Ph.D. 2003)

Hey-Jin Kim, Climate Sciences, SIO (2002-present)

Hyodae Seo, Climate Sciences, SIO (2002-present)

Doctoral committee member to:

Xiang San Liang, Applied Mathematics, Harvard University (Ph.D. 2002)

Thomas Reichler, Climate Sciences, SIO (Ph.D., 2002)

Catherine Johnson, Biological Oceanography, SIO (Ph.D. 2003),

David Field, Biological Oceanography, SIO (2000-present)

Ehecatl Muñoz-Mejía, Fisheries Ecology, CIBNOR, La Paz, Mexico, (2002-present)

SIO Climate Sciences Curriculum Open House Coordinator (1998, 1999, 2004)

## CURRENT RESEARCH FUNDING:

Analysis of Decadal Variability in the North Pacific (NSF)

- with N. Schneider (SIO)

Modular Ocean Data Assimilation (NSF)

- with A. Bennett (OSU), B. Cornuelle (SIO), A. Moore (CU), H. Arango, (Rutgers), et al.

ROMS Tangent Linear and Adjoint Models: Testing and Applications (ONR)

- with A. Moore (CU), H. Arango, (Rutgers), and B. Cornuelle (SIO)

Ocean Carbon Flux, Transport and Burial Within the Western and Eastern U.S. Coastal Zones (NASA)

- with J. McWilliams (UCLA), D. Haidvogel (Rutgers), J. Moisan (NASA/Wallops) et al.

Experimental Climate Prediction Center (NOAA)

- with J. Roads (SIO) et al.

Consortium for the Ocean's Role in Climate (NOAA)

- with R. Davis (SIO) et al.

North Pacific Climate Variability and Steller Sea Lion Ecology: Retrospective and Modeling Study (NOAA)

- with S. Bograd (PFEL), F. Schwing (PFEL), M. Alexander (CDC) et al.

Impact of Climate Variability on Eastern North Pacific Sea Levels (NOAA)

- with P. Bromirski (SIO) and R. Flick (SIO)

Predictability and Diagnosis of Low-Frequency Climate Processes in the Pacific (DOE)

- with N. Schneider (SIO), T. Barnett (SIO), and D. Cayan (SIO)

Weekly to Seasonal Fog Prediction Along the California Coast (CDBW)

- with D. Cayan (SIO)