

## BIOGRAPHICAL SKETCH

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#### Professional Preparation

California Institute of Technology, Engineering & Applied Mathematics, B.S. with Honors, 1968

Harvard University, Applied Mathematics, M.S., 1969

Harvard University, Applied Mathematics, Ph.D., 1971

Harvard University, Research Fellow in Geophysical Fluid Dynamics, Harvard University, 1971-1974

#### Appointments

1994–Present: Louis B. Slichter Professor of Earth Sciences in the Institute of Geophysics and Planetary Physics and Department of Atmospheric and Oceanic Sciences, UCLA, Los Angeles, CA

1974–2005: Research Scientist at the National Center for Atmospheric Research, Boulder, CO

#### Five Relevant Products

Liang, J.H., J.C. McWilliams, P.P. Sullivan, & B. Baschek, 2011: Modeling bubbles and dissolved gases in the ocean. *J. Geophys. Res.* **116**, C03015.

McWilliams, J.C., 2016: Submesoscale currents in the ocean. *Proc. Roy. Soc. A* **472**, 20160117, 1-32.

McWilliams, J.C., & B. Fox-Kemper, 2013: Oceanic wave-balanced surface fronts and filaments. *J. Fluid Mech.*, **730**, 464-490.

McWilliams, J.C., J. Gula, M.J. Molemaker, L. Renault, & A.F. Shchepetkin, 2015: Filament frontogenesis by boundary layer turbulence. *J. Phys. Ocean.* **45**, 1988-2005.

Sullivan, P.P., J.C. McWilliams, & E.G. Patton, 2014: Large eddy simulation model of marine atmospheric boundary layers above a spectrum of moving waves. *J. Atmos. Sci.* **71**, 4001-4027.

#### Five Other Significant Products

McWilliams, J.C., 2009: Targeted coastal circulation phenomena in diagnostic analyses and forecasts. *Dyn. Atmos. Oceans*, **48**, 3-15.

McWilliams, J.C., 2007: Irreducible imprecision in atmospheric and oceanic simulations.

*Proc. Nat. Acad. Sci.* **104**, 8709-8713.

McWilliams, J.C., 2006: *Fundamentals of Geophysical Fluid Dynamics*. Cambridge University Press, Cambridge.

Shchepetkin, A.F., & J.C. McWilliams, 2009: Computational kernel algorithms for fine-scale, multiprocess, longtime oceanic simulations. In: *Handbook of Numerical Analysis: Computational Methods for the Atmosphere and Oceans*, R. Temam & J. Tribbia, eds., Elsevier Science, 119-181.

Shchepetkin, A.F., & J.C. McWilliams, 2005: The regional oceanic modeling system (ROMS): A split-explicit, free-surface, topography-following-coordinate oceanic model. *Ocean Modelling* **9**, 347-404

### **Synergistic Activities**

2000-present: Development of the UCLA Regional Oceanic Modeling System (UCLA ROMS)

2001-present: Fellow of the American Geophysical Union

2002-present: Member of the National Academy of Sciences

2009-present: Board of Governors, Southern California Coastal Ocean Observing System (SCCOOS)

2010-2013: Member of National Research Council, Committee on Sea Level Rise in California, Oregon, and Washington

2013: Member of External Review Committee, Department of Physics, University of Toronto