

Roger M. Samelson

Professor of Oceanic and Atmospheric Sciences
College of Earth, Ocean, and Atmospheric Sciences
104 CEOAS Admin Bldg
Oregon State University
Corvallis, OR 97331-5503
USA

Tel.: (541) 737-4752

Fax: (541) 737-2064

Email: roger.samelson@oregonstate.edu

Web: <https://ceoas.oregonstate.edu/people/roger-samelson>

Education

BS, Stanford University (Physics), 1981

MS, Oregon State University (Mathematics), 1987

PhD, Oregon State University (Physical Oceanography), 1987

Employment

Woods Hole Oceanographic Institution: GFD Summer Fellow, 1983; Postdoctoral Investigator, 1987-89;
Assistant Scientist, 1989-93; Associate Scientist, 1993-97; Assoc. Scientist w/ tenure, 1997

Oregon State University: Associate Professor, 1997-2001; Professor, 2001-

Editorial Positions

Journal of Physical Oceanography: Editor, 1999-2006; Associate Editor, 2007-

Journal of Nonlinear Science: Editorial Board, 1998-2007

Service

Organizing committee, 2001 National Science Foundation Workshop on Mathematics and the Geosciences
Organizing committee, 2001 Society for Industrial and Applied Mathematics Math Awareness Month
Program steering committee, Gordon Research Conference on Coastal Ocean Circulation, 2001, 2005
Science steering committee, National Science Foundation Coastal Ocean Processes (CoOP) Program, 2003-2008

President's Advisory Committee on University Relations, University Corporation for Atmospheric Research 2007-2013

Geosciences Review Panel, National Science Foundation, 199x, 200x, 2009

Search Committee, Journal of Geophysical Research-Oceans Editors, American Geophysical Union, 2008-2010

Fellows Committee, 2017-2019, American Meteorological Society

Honors Nominations Committee, 2020-2021, The Oceanography Society

Scientific Organizing Committee, 2022 US CLIVAR Workshop on the Role of the Gulf Stream in Weather and Climate

Honors and Awards

1983 Student Fellow, Woods Hole Geophysical Fluid Dynamics Summer Program

1987 Phi Kappa Phi

1992 Office of Naval Research Young Investigator Award

1996 Invited contributor, Office of Naval Research 50th Anniversary Volume

1999 Naval Research Laboratory Alan Berman Research Publications Award

2015 Fellow of the American Geophysical Union
2016 Fellow of the American Meteorological Society
2019 Fellow of The Oceanography Society

Research Experience

PI or Co-I with scientific, technical, and management responsibilities on numerous research grants from ONR, NSF, and NASA, current participant in the ONR NORSE Directed Research Initiative, and current member of the NASA Ocean Vector Winds Science Team (OVWST) and Ocean Surface Topography Science Team (OSTST), with overall research performance evidenced by 116 scientific publications in peer-reviewed journals as listed below.

Refereed Publications

1. Samelson, R. M., and J. S. Allen, 1987. Quasi-geostrophic topographically generated mean flow over the continental margin. *Journal of Physical Oceanography*, 17(11), 2043-2064.
2. Samelson, R. M., and R. A. de Szoeke, 1988. Semigeostrophic wind-driven thermocline upwelling at a coastal boundary. *Journal of Physical Oceanography*, 18(10), 1372-1383.
3. Samelson, R. M., and C. A. Paulson, 1988. Towed thermistor chain observations of fronts in the subtropical North Pacific. *Journal of Geophysical Research*, 93(C3), 2237-2246.
4. Pedlosky, J., and R. M. Samelson, 1989. Wind forcing and the zonal structure of the equatorial undercurrent. *Journal of Physical Oceanography*, 19(9), 1244-1254.
5. Samelson, R. M., 1989. Stochastically forced current fluctuations in vertical shear and over topography. *Journal of Geophysical Research*, 94(C6), 8207-8215.
6. Samelson, R. M., 1990. Evidence for wind-driven current fluctuations in the eastern North Atlantic. *Journal of Geophysical Research*, 95(C7), 11,359-11,368; correction, *Journal of Geophysical Research*, 97(C1), 821-822 (1992).
7. Samelson, R. M., and J. Pedlosky, 1990. Local baroclinic instability of flow over variable topography. *Journal of Fluid Mechanics*, 221, 411-436.
8. Allen, J. S., R. M. Samelson, and P. A. Newberger, 1991. Chaos in a model of forced quasi-geostrophic flow over topography: An application of Melnikov's method. *Journal of Fluid Mechanics*, 226, 511-547.
9. Pedlosky, J., and R. M. Samelson, 1991. Radiation-induced baroclinic instability. *Geophysical and Astrophysical Fluid Dynamics*, 58, 243-262.
10. Samelson, R. M., and B. Shroyer, 1991. Currents forced by stochastic winds with meridionally-varying amplitude. *Journal of Geophysical Research*, 96(C10), 18,425-18,429.
11. Samelson, R. M., 1992. Fluid exchange across a meandering jet. *Journal of Physical Oceanography*, 22(4), 431-440.
12. Samelson, R. M., 1992. Supercritical marine layer flow along a smoothly-varying coastline. *Journal of the Atmospheric Sciences*, 49, 1571-1584.
13. Samelson, R. M., 1992. Surface-intensified Rossby waves over rough topography. *Journal of Marine Research*, 50(3), 367-384; Corrigendum, *Journal of Marine Research*, 56(1), 293 (1998).
14. Niiler, P. P., J. Filloux, W. T. Liu, R. M. Samelson, J. D. Paduan, and C. A. Paulson, 1993. Wind-forced variability of the deep eastern North Pacific: observations of seafloor pressure and abyssal currents. *Journal of Geophysical Research*, 98(C12), 22,589-22,602.
15. Oh, S. P., J. Pedlosky, and R. M. Samelson, 1993. Linear and finite-amplitude localized baroclinic instability. *Journal of the Atmospheric Sciences*, 50(16), 2772-2784.

16. Samelson, R. M., 1993. Linear instability of a mixed-layer front. *Journal of Geophysical Research*, 98(C6), 10,195-10,204.
17. Brown, M. G., and R. M. Samelson, 1994. Particle motion in vorticity-conserving, two-dimensional, incompressible flows. *Physics of Fluids*, 6(9), 2875-2876.
18. Samelson, R. M., and S. J. Lentz, 1994. The horizontal momentum balance in the marine atmospheric boundary layer during CODE-2. *Journal of the Atmospheric Sciences*, 51, 3745-3757.
19. Rogerson, A. M., and R. M. Samelson, 1995. Synoptic forcing of coastal-trapped disturbances in the marine atmospheric boundary layer. *Journal of the Atmospheric Sciences*, 52(11), 2025-2040.
20. Samelson, R. M., and D. C. Chapman, 1995. Evolution of the instability of a mixed-layer front. *Journal of Geophysical Research*, 100(C4), 6743-6759.
21. Samelson, R. M., and A. M. Rogerson, 1996. Life-cycle of a linear coastal trapped disturbance. *Monthly Weather Review*, 124(8), 1853-1863.
22. Samelson, R. M., 1997. Coastal boundary conditions and the baroclinic structure of wind-driven continental shelf currents. *Journal of Physical Oceanography*, 27, 2645-2662.
23. Samelson, R. M., and G. K. Vallis, 1997. Large-scale circulation with small diapycnal diffusion: the two-thermocline limit. *Journal of Marine Research*, 55, 223-275.
24. Samelson, R. M., and G. K. Vallis, 1997. A simple friction and diffusion scheme for planetary geostrophic basin models. *Journal of Physical Oceanography*, 27, 186-194.
25. Brink, K. H., and Samelson, R. M., 1998. Comments on "Direct atmospheric forcing of geostrophic eddies. Part II: Coherence maps." *Journal of Physical Oceanography*, 28, 1003-1009.
26. Samelson, R. M., 1998. Large-scale circulation with locally enhanced vertical mixing. *Journal of Physical Oceanography*, 28, 712-726.
27. Samelson, R. M., R. Temam, and S. Wang, 1998. Some mathematical properties of the planetary geostrophic equations for large-scale ocean circulation. *Applicable Analysis*, 70, 147-173.
28. Burk, S., T. Haack, and R. M. Samelson, 1999. Mesoscale simulation of supercritical, subcritical, and transcritical flow along coastal topography. *Journal of the Atmospheric Sciences*, 56, 2780-2795.
29. Samelson, R. M., 1999. Geostrophic circulation in a rectangular basin with a circumpolar connection. *Journal of Physical Oceanography*, 29, 3175-3184.
30. Samelson, R. M., 1999. Internal boundary layer scaling in 'two-layer' solutions of the thermocline equations. *Journal of Physical Oceanography*, 29, 2099-2102.
31. Samelson, R. M., 1999. Note on a baroclinic analog of vorticity defects in shear. *Journal of Fluid Mechanics*, 382, 367-373.
32. Samelson, R. M., 1999. The vertical structure of linear coastal-trapped disturbances. *Monthly Weather Review*, 127, 201-213.
33. Nuss, W., J. Bane, W. Thompson, T. Holt, C. Dorman, F. M. Ralph, R. Rotunno, J. Klemp, W. Skamarock, R. Samelson, A. Rogerson, C. Reason, and P. Jackson, 2000. Coastally trapped wind reversals: progress toward understanding. *Bulletin of the American Meteorological Society*, 81(4), 719-743.
34. Samelson, R. M., R. Temam, and S. Wang, 2000. Remarks on the planetary geostrophic model of gyre scale ocean circulation. *Differential and Integral Equations*, 13, 1-14.
35. Samelson, R. M., R. Temam, and S. Wang, 2000. Smooth solutions and attractor dimension bounds for planetary geostrophic ocean models. *Quarterly Journal of the Royal Meteorological Society*, 126, 1977-1981.
36. Samelson, R. M., 2001. Lyapunov, Floquet, and singular vectors for baroclinic waves. *Nonlinear Processes in Geophysics*, 8, 439-448.

37. Samelson, R. M., 2001. Periodic orbits and disturbance growth for baroclinic waves. *Journal of the Atmospheric Sciences*, 58, 436-450.
38. Samelson, R. M., and E. Tziperman, 2001. Instability of the chaotic ENSO: the growth-phase predictability barrier. *Journal of the Atmospheric Sciences*, 58, 3613-3625.
39. Bielli, S., P. Barbour, R. Samelson, E. Skillingstad, and J. Wilczak, 2002. Numerical simulations of the diurnal cycle along the Oregon coast during summertime northerly flow. *Monthly Weather Review*, 130, 992-1008.
40. de Szoeke, R. A., and R. M. Samelson, 2002. The duality between the Boussinesq and non-Boussinesq hydrostatic equations of motion. *Journal of Physical Oceanography*, 32, 2194-2203.
41. Samelson, R. M., P. Barbour, J. Barth, S. Bielli, T. Boyd, D. Chelton, P. Kosro, M. Levine, E. Skillingstad, and J. Wilczak, 2002. Wind stress forcing of the Oregon coastal ocean during the 1999 upwelling season. *Journal of Geophysical Research-Oceans*, 107 (C5), 10.1029/2001JC000900.
42. Kuebel, B. T., J. S. Allen, and R. M. Samelson, 2003. A modeling study of Eulerian and Lagrangian aspects of shelf circulation off Duck, North Carolina. *Journal of Physical Oceanography*, 33, 2070-2092.
43. Samelson, R. M., R. Temam, C. Wang, and S. Wang, 2003. Surface pressure Poisson equation formulation of the primitive equations: numerical schemes. *SIAM Journal of Numerical Analysis*, 41, 1163-1194.
44. Samelson, R. M., and C. L. Wolfe, 2003. A nonlinear baroclinic wave-mean oscillation with multiple normal-mode instabilities. *Journal of the Atmospheric Sciences*, 60, 1186-1199.
45. Kuebel Cervantes, B. T., J. S. Allen, and R. M. Samelson, 2004. Lagrangian characteristics of continental shelf flows forced by periodic wind stress. *Nonlinear Processes in Geophysics*, 11, 3-16.
46. Perlin, N., R. M. Samelson, and D. B. Chelton, 2004. Scatterometer and model wind and wind stress in the Oregon - northern California coastal zone. *Monthly Weather Review*, 132, 2110-2129.
47. Samelson, R. M., 2004. Simple mechanistic models of mid-depth meridional overturning. *Journal of Physical Oceanography*, 34, 2096-2103.
48. Bane, J. M., M. D. Levine, R. M. Samelson, S. M. Haines, M. F. Meaux, N. Perlin, P. M. Kosro, and T. Boyd, 2005. Atmospheric forcing of the Oregon coastal ocean during the 2001 upwelling season. *Journal of Geophysical Research - Oceans*, 110, C10S02, doi:10.1029/2004JC002653.
49. Choboter, P. F., R. M. Samelson, and J. S. Allen, 2005. A new solution of a nonlinear model of upwelling. *Journal of Physical Oceanography*, 35, 532-544.
50. Dewar, W. K., R. M. Samelson, and G. K. Vallis, 2005. The ventilated pool: A model of subtropical mode water. *Journal of Physical Oceanography*, 35, 137-150.
51. Gan, J., J. S. Allen, and R. M. Samelson, 2005. On open boundary conditions for a limited-area coastal model off Oregon. Part II: Response to wind forcing from a regional mesoscale atmospheric model. *Ocean Modelling*, 8, 155-173, 10.1016/j.ocemod.2003.12.007.
52. Lyman, J., D. Chelton, R. de Szoeke, and R. M. Samelson, 2005. Tropical instability waves as a resonance between equatorial Rossby waves. *Journal of Physical Oceanography*, 35, 232-254.
53. Skillingstad, E., R. Samelson, L. Mahrt, and P. Barbour, 2005. A numerical modeling study of warm offshore flow over cool water. *Monthly Weather Review*, 133, 345-361.
54. Liu, J.-G., R. Samelson, and C. Wang, 2006. Global weak solutions of planetary geostrophic equations with inviscid geostrophic balance. *Applicable Analysis*, 85, 593-605, doi: 10.1080/00036810500328299.
55. Samelson, R. M., T. Agnew, H. Melling, and A. Muenchow, 2006. Evidence for atmospheric control of sea-ice motion through Nares Strait. *Geophysical Research Letters*, 33, L02506, doi:10.1029/2005GL025016.

56. Samelson, R. M., E. D. Skillingstad, D. B. Chelton, S. K. Esbensen, L. W. O'Neill, and N. Thum, 2006. A note on the coupling of wind stress and sea surface temperature. *Journal of Climate*, 19, 1557-1566.
57. Skillingstad, E., D. Vickers, L. Mahrt, and R. Samelson, 2006. Effects of mesoscale sea-surface temperature fronts on the marine boundary layer. *Boundary Layer Meteorology*, DOI 10.1007/s10546-006-9127-8.
58. Wolfe, C. L., and R. M. Samelson, 2006. Normal-mode analysis of a baroclinic wave-mean oscillation. *Journal of the Atmospheric Sciences*, 63, 2795-2812.
59. Chelton, D. B., M. G. Schlax and R.M. Samelson, 2007. Summertime coupling between sea surface temperature and wind stress in the California Current System. *Journal of Physical Oceanography*, 37, 495-517.
60. Chelton, D. B., M. G. Schlax, R.M. Samelson, and R. A. de Szoeke, 2007. Global observations of large oceanic eddies. *Geophysical Research Letters*, 34, L15606, doi:10.1029/2007GL030812.
61. Durski, S., J. S. Allen, G. D. Egbert, and R. M. Samelson, 2007. Scale evolution of finite amplitude instabilities on a coastal upwelling front. *Journal of Physical Oceanography*, 37, 837-854.
62. Perlin, N, E. Skillingstad, R. Samelson, and P. Barbour, 2007. Numerical simulation of air-sea coupling during coastal upwelling. *Journal of Physical Oceanography*, 37, 2081-2093.
63. Samelson, R., R. Temam, C. Wang, and S. Wang, 2007. A fourth order numerical method for the planetary geostrophic equations with inviscid geostrophic balance. *Numerische Mathematik*, 107(4), 669-705.
64. Wolfe, C. L., and R. M. Samelson, 2007. An efficient method for recovering Lyapunov vectors from singular vectors. *Tellus*, 59A, 355-366.
65. Durski, S. D., R. M. Samelson, J. S. Allen, and G. D. Egbert, 2008. Normal-mode instabilities of a time-dependent coastal upwelling jet. *Journal of Physical Oceanography*, 38, 2056-2071.
66. Samelson, R. M., J. S. Allen, and P. MacCready, 2008. Progress in coastal ocean modeling during CoOP. *Oceanography*, 21, 136-147. Note: Due to a production error, the printed version of this article contains several errors that should have been corrected in proof; please download the *Oceanography* online version.
67. Samelson, R. M., and P. L. Barbour, 2008. Low-level winds, orographic channeling, and extreme events in Nares Strait: a model-based mesoscale climatology. *Monthly Weather Review*, 136, 4746-4759, doi: 10.1175/2007MWR2326.1.
68. Wolfe, C. L., and R. M. Samelson, 2008. Singular vectors and time-dependent normal modes of a baroclinic wave-mean oscillation. *Journal of the Atmospheric Sciences*, 65, 875-894.
69. Kim, S., R. M. Samelson, and C. Snyder, 2009. Ensemble-based estimates of the predictability of wind-driven coastal ocean flow over topography. *Monthly Weather Review*, 137, 2515-2537, DOI: 10.1175/2009MWR2631.1.
70. Marshall, J., A. Andersson, N. Bates, W. Brown, W. Dewar, S. Doney, J. Edson, R. Ferrari, G. Forget, D. Fratantoni, M. Gregg, T. Joyce, K. Kelly, S. Lozier, R. Lumpkin, G. Maze, J. Palter, A. Plueddemann, R. Samelson, K. Silverthorne, E. Skillingstad, F. Straneo, L. Talley, L. Thomas, J. Toole, and R. Weller, 2009. Observing the cycle of convection and restratification over the Gulf Stream and the subtropical gyre of the North Atlantic Ocean: preliminary results from the CLIMODE field campaign. *Bulletin of the American Meteorological Society*, 90, 1337-1350.
71. Samelson, R. M., 2009. A simple dynamical model of the warm-water branch of the mid-depth meridional overturning cell. *Journal of Physical Oceanography*, 39, 1216-1230.
72. Springer, S. R., R.M. Samelson, J. S. Allen, G. D. Egbert, A. L. Kurapov, R. N. Miller and J. C. Kindle, 2009. A Nested Grid Model of the Oregon Coastal Transition Zone: Simulations and Comparisons with Observations During the 2001 Upwelling Season. *J. Geophys. Res.*, 114, C02010, doi:10.1029/2008JC004863.

73. Wilkinson, J.P., P. Gudmandsen S. Hanson, R. Saldo and R.M. Samelson, 2009. Hans Island: meteorological data from an international borderline. *EOS Trans. Amer. Geophys. Union*, 90, 190-191.
74. Early, J. J., J. Pohjanpelto, and, R. M. Samelson, 2010. Group foliation for equations in geophysical fluid dynamics. *Discrete and Continuous Dynamical Systems, Series A*, 27(4), 1571-1586, doi:10.3934/dcds.2010.27.1571.
75. Kelly, K. A., R. J. Small, R. M. Samelson, B. Qiu, T. M. Joyce, Y.-O. Kwon, and M. F. Cronin, 2010. Western boundary currents and frontal air-sea interaction: Gulf Stream and Kuroshio Extension. *J. Climate*, 23, 5644-5667, DOI: 10.1175/2010JCLI3346.1.
76. O'Neill, L., S. K. Esbensen, N. Thum, R. M. Samelson, and D. B. Chelton, 2010. Dynamical analysis of the boundary layer and surface wind responses to small-scale SST perturbations. *Journal of Climate*, 23, 559-581, DOI: 10.1175/2009JCLI2662.1.
77. Samelson, R. M., 2010. An effective-beta vector for linear planetary waves on a weak mean flow. *Ocean Modelling*, 32, 170-174, doi:10.1016/j.ocemod.2010.01.006.
78. Shaman, J., R. M. Samelson, and E. Skillingstad, 2010. Air-sea fluxes over the Gulf Stream region: atmospheric controls and trends. *Journal of Climate*, 23, 2651-2670, DOI: 10.1175/2010JCLI3269.1.
79. Chelton, D. B., P. Gaube, M. G. Schlax, J. J. Early and R. M. Samelson, 2011. The Influence of Nonlinear Mesoscale Eddies on Oceanic Chlorophyll. *Science*, 334, 328-332, doi: 10.1126/science.1208897.
80. Chelton, D. B., M. G. Schlax, and R. M. Samelson, 2011. Global observations of nonlinear mesoscale eddies. *Progress in Oceanography*, 91, 167-216, doi:10.1016/j.pocean.2011.01.002.
81. Durland, T. S., D. B. Chelton, R. A. de Szoeke, and R. M. Samelson. Modification of long equatorial Rossby wave phase speeds by zonal currents. *J. Phys. Oceanogr.*, 41, 1077-1101.
82. Early, J. J., R. M. Samelson, and D. B. Chelton, 2011. The evolution and propagation of quasi-geostrophic ocean eddies. *J. Phys. Oceanogr.*, 41, 1535-1555.
83. Falkner, K. K., H. Melling, A. M. Muenchow, J. E. Box, T. Wohlleben, H. L. Johnson, P. Gudmandsen, R. Samelson, L. Copland, K. Steffen, E. Rignot and A. K. Higgins, 2011. Putting the 2010 Petermann Gletscher Ice Island Calving Event into Context. *EOS Trans. Amer. Geophys. Un.*, 92, 117-124.
84. Kim, S., R. Samelson, and C. Snyder, 2011. Toward an uncertainty budget for a coastal ocean model. *Monthly Weather Review*, 139, 866-884.
85. Perlin, N., E. D. Skillingstad, and R. M. Samelson, 2011. Coastal atmospheric circulation around a cape and its response to wind-driven upwelling studied using a coupled ocean-atmosphere model. *Monthly Weather Review*, 139, 809-829.
86. Rivas, D., and R. M. Samelson, 2011. A numerical modeling study of the upwelling source waters along the Oregon coast during 2005. *J. Phys. Oceanogr.*, 41, 88-112, doi: 10.1175/2010JPO4327.1.
87. Samelson, R. M., 2011. Time-dependent adjustment in a simple model of the mid-depth meridional overturning cell. *Journal of Physical Oceanography*, 41, 1009-1025.
88. Shaman, J., R. M. Samelson, and E. Tziperman, 2012. Complex wavenumber Rossby wave ray tracing. *J. Atmos. Sci.*, 69, 2112-2133.
89. Skillingstad, E. D., and R. M. Samelson, 2012. Baroclinic frontal instabilities and turbulent mixing in the surface boundary layer, Part 1: Unforced simulations. *Journal of Physical Oceanography*, 42, 1701-1716.
90. Samelson, R. M., 2013. Lagrangian motion, coherent structures, and lines of persistent material strain. *Ann. Rev. Mar. Sci.*, 5, 137-163, doi: 10.1146/annurev-marine-120710-100819.
91. Perlin, N., S.P. de Szoeke, D. B. Chelton, R. M. Samelson, E. D. Skillingstad, and L. W. O'Neill, 2014. Modeling the atmospheric boundary layer response to mesoscale sea-surface temperature. *Mon. Wea. Rev.*, 142, 4284-4307. doi: <http://dx.doi.org/10.1175/MWR-D-13-00332.1>

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94. Gaube, P., D. B. Chelton, R. M. Samelson, M. G. Schlax, and L. W. O'Neill, 2015. Satellite observations of mesoscale eddy-induced Ekman pumping. *J. Phys. Oceanogr.*, 45, 104-132. doi: <http://dx.doi.org/10.1175/JPO-D-14-0032.1>
95. Shroyer, E. L., R. M. Samelson, L. Padman, and A. Münchow, 2015. Modeled ocean circulation in Nares Strait and its dependence on landfast-ice cover. *J. Geophys. Res.*, 120 (12), 7934-7959. doi: 10.1002/2015JC011091
96. Harrison, C. S., B. Hales, S. Siedlecki, and R. M. Samelson, 2016. Potential and timescales for oxygen depletion in coastal upwelling systems: A box-model analysis. *J. Geophys. Res.*, 121, 3202-3227, doi:10.1002/2015JC011328.
97. Orimolade, A. P., B. R. Furevik, G. Noer, O. T. Gudmestad, and R. Samelson, 2016. Waves in polar lows. *J. Geophys. Res.*, 121, doi:10.1002/2016JC012086.
98. Samelson, R. M., M. G. Schlax, and D. B. Chelton, 2016. A linear stochastic field model of mid-latitude mesoscale sea-surface height variability. *J. Phys. Oceanogr.*, 46, 3103-3120, doi: 10.1175/JPO-D-16-0060.1.
99. Samelson, R. M., and E. D. Skillingstad, 2016. Frontogenesis and turbulence: a numerical simulation. *J. Atmos. Sci.*, 73, 5025-5040, doi: 10.1175/JAS-D-16-0145.1.
100. Samelson, R. M., 2017. Time-dependent linear theory for the generation of poleward undercurrents on eastern boundaries. *J. Phys. Oceanogr.*, DOI: 10.1175/JPO-D-17-0077.1.
101. Shroyer, E. L., L. Padman, R. M. Samelson, A. Münchow, and L. A. Stearns, 2017. Seasonal control of Petermann Gletscher ice-shelf melt by the ocean's response to sea-ice cover in Nares Strait. *J. Glaciol.*, 63, 324-330, DOI: 10.1017/jog.2016.140.
102. Skillingstad, E. D., J. Duncombe, and R. M. Samelson, 2017. Baroclinic frontal instabilities and turbulent mixing in the surface boundary layer, Part II: Forced simulations. *J. Phys. Oceanogr.*, DOI: 10.1175/JPO-D-16-0179.1.
103. Chelton, D. B., M. G. Schlax, R. M. Samelson, J. T. Farrar, M. J. Molemaker, J. C. McWilliams, and J. Gula, 2019. Prospects for future satellite estimation of small-scale variability of ocean surface velocity and vorticity. *Prog. Oceanogr.*, 173, 256-350, DOI: 10.1016/j.pocean.2018.10.012.
104. Rodriguez, E., M. Bourassa, D. Chelton, J. T. Farrar, D. Long, D. Perkovic-Martin, and R. Samelson, 2019. The Winds and Currents Mission Concept. *Front. Mar. Sci.* 6:438. doi: 10.3389/fmars.2019.00438.
105. Samelson, R. M., D. B. Chelton, and M. G. Schlax, 2019. The ocean mesoscale regime of the reduced-gravity quasi-geostrophic model. *J. Phys. Oceanogr.*, 49, 2469-2498, DOI: 10.1175/JPO-D-18-0260.1.
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108. Samelson, R. M., L. W. O'Neill, D. B. Chelton, E. D. Skillingstad, P. L. Barbour, and S. M. Durski, 2020. Surface stress and atmospheric boundary layer response to mesoscale SST structure in coupled simulations of the northern California Current System. *Mon. Wea. Rev.*, 148, 259–287. doi: 10.1175/MWR-D-19-0200.1.
109. Skillingstad, E. D., and R. M. Samelson, 2020. Instability processes in simulated finite-width ocean fronts. *J. Phys. Oceanogr.*, 50, 2781–2796. doi: 10.1175/JPO-D-20-0030.1.
110. Jackson, T. D., and Co-authors including R. M. Samelson, 2021. The motion of trees in the wind: a data synthesis. *Biogeosciences*, 18, 4059–4072. doi: 10.5194/bg-18-4059-2021.
111. Samelson, R. M., S. P. de Szoeke, E. D. Skillingstad, P. L. Barbour, and S. M. Durski, 2021. Fog and low-level stratus in coupled ocean-atmosphere simulations of the northern California Current System upwelling season. *Mon. Wea. Rev.*, 149, 1593-1617. doi:10.1175/MWR-D-20-0169.1.
112. Chelton, D. B., R. M. Samelson, and J. T. Farrar, 2022. The effects of uncorrelated measurement noise on SWOT estimates of sea-surface height, velocity, and vorticity. *J. Atmos. Oc. Tech.*, 39, 1053-1083. doi: 10.1175/JTECH-D-21-0167.1.
113. Samelson, R. M., 2022. Wind drift in a homogeneous equilibrium sea. *J. Phys. Oceanogr.*, 52, 1945-1967. doi: 10.1175/JPO-D-22-0017.1.
114. Deremble, B., T. Uchida, W. K. Dewar, and R. M. Samelson, 2023. Eddy-mean flow interaction with a multiple-scale quasi-geostrophic model. *Journal of Advances in Modeling Earth Systems*, 15, e2022MS003572. doi: 10.1029/2022MS003572.
115. Skillingstad, E. D., R. M. Samelson, H. Simmons, L. St. Laurent, S. Merrifield, and L. Centuroni, 2023. Boundary layer energetics of rapid wind and wave forced mixing events. *J. Phys. Oceanogr.*, 53, 1887-1900. doi: 10.1175/JPO-D-22-0150.1.
116. O'Neill, L. W., D. B. Chelton, E. Rodríguez, R. Samelson, and A. Wineteer. Feasibility of estimating sea surface height from surface ocean currents. *J. Atmos. Oc. Tech.*, early on-line release. doi: 10.1175/JTECH-D-23-0096.1.

Books:

1. Samelson, R. M., and S. Wiggins, 2006. *Lagrangian Transport in Geophysical Jets and Waves*. Springer-Verlag, New York, 147 pp.
2. Samelson, R. M., 2011. *The Theory of Large-Scale Ocean Circulation*. Cambridge University Press, New York, 193 pp.

Non-refereed Publications:

1. Baumann, R. J., C. A. Paulson, R. M. Samelson, J. St. Martin, and J. D. Wagner, 1983. Towed thermistor chain observations in Fronts '82, Part I: Temperature cross-sections and surface observations. Oregon State University School of Oceanography Informal Report, 187 pp.
2. Samelson, R. M., 1983. A multi-timing analysis of the heat-up problem. In: *Baroclinic Instability and Ocean Fronts, Notes of the Summer Study Program in Geophysical Fluid Dynamics*, M. E. Stern, Director, Woods Hole Oceanographic Institution Technical Report WHOI-83-41, pp. 257-271.
3. Samelson, R. M., 1987. Observations and modeling of fronts and frontogenesis in the upper ocean. Ph.D. Thesis, Oregon State University, Corvallis, Oregon, 91 pp.

4. Weller, R. A., and R. M. Samelson, 1991. Upper ocean variability associated with fronts. In: *Ocean Variability and Acoustic Propagation*, J. Potter and A. Warn-Varnas, eds. Kluwer Academic Publishers, Dordrecht, pp. 463-478.
5. Samelson, R. M., 1996. Chaotic transport and mesoscale motion. In: *Stochastic Modelling in Physical Oceanography*, R. Adler, P. Mueller, and B. Rozovski, eds. Birkhaeuser, Boston, 470 pp.
6. Samelson, R. M., 1999. The role of laboratory experiments in physical oceanography (Response). In: *The Future of Physical Oceanography: Proceedings of the APROPOS Workshop, December 15-17, 1997*, T. Royer and W. Young, eds., UCAR-JOSS, pp. 171-174.
7. Samelson, R. M., 2001. High-Resolution Ocean Topography and Geostrophic Turbulence. In: *Report of the High-Resolution Ocean Topography Science Working Group (HOTSWG) Meeting*. D. B. Chelton, ed. College of Oceanic and Atmospheric Sciences, Oregon State University, Corvallis. Ref. 2001-4, 224 pp.
8. Samelson, R. M., 2003. Rossby, Ertel, and potential vorticity. Unpublished manuscript.
9. Samelson, R. M., and H. Samelson, 2005. Differential forms and vorticity theorems. In: *Applications of Advanced Mathematical and Computational Methods for Atmospheric and Oceanic Problems (MCAO2003)*. J. Tribbia, R. Temam, and S. Wang, eds. National Center for Atmospheric Research, Boulder, 221 pp.
10. Melling, H., Agnew, T., Falkner, K., Greenberg, D., Lee, C., Muenchow, A., Petrie, B., Prinsenberg, S., Samelson, R., and R. Woodgate, 2008. Freshwater fluxes via Pacific and Arctic outflows across the Canadian polar shelf. In: *Arctic-Subarctic Ocean Fluxes: Defining the role of the Northern Seas in Climate*. R. Dickson, J. Meincke, P. Rhines eds. Springer-Verlag, New York, 736 pp.
11. Samelson, R. M., 2009. Time-periodic flows in geophysical and classical fluid dynamics. In: *Handbook of Numerical Analysis, Special Volume on Computational Methods for the Ocean and the Atmosphere*. R. Temam and J. Tribbia, eds. Elsevier, New York, 761 pp.
12. Chelton, D. B., R. M. Samelson and J. T. Farrar, 2015: Theoretical basis for the resolution and noise of SWOT estimates of sea surface height. White paper posted on JPL SWOT website <https://swot.jpl.nasa.gov/documents.htm> (33 pp.).

Book Reviews

1. *Introduction to Geophysical Fluid Dynamics* by B. Cushman-Roisin, *Bulletin of the American Meteorological Society*, 1995, 76, 1228-1229.
2. *The Earth and the Cosmos (The Legacy of Hans Ertel)*, W. Schroeder and H.-J. Treder, eds. *Bulletin of the American Meteorological Society*, 1998, 79, 894-896.
3. *Lectures on Geophysical Fluid Dynamics* by R. Salmon, *EOS Transactions of the American Geophysical Union*, 1998, 79, 547.
4. *Waves and Mean Flows* by O. Buehler, *Bulletin of the American Meteorological Society*, 2010, 91, 1705-1707.

Teaching

MIT/WHOI Joint Program Course No. 12.757 "Dynamical Systems and Chaos," Spring 1990, 1991
 OSU Course OC599 "Periodic Orbit Theory," Spring 1998
 OSU Course OC670 "Fluid Dynamics," Fall 1998
 OSU Course OC671 "Geophysical Fluid Dynamics," Winter 2011-2015
 OSU Course OC672 "Theory of Ocean Circulation," Spring 1999, 2001-2003, 2006, 2008-2010, 2017, 2018, 2020-2024
 OSU Course OC331, "Introduction to Oceanography," Spring 2000
 OSU Course OC505/GEO505, "Atlantic Overturning Circulation" (Journal Club), Spring 2021

Supervision

M. S.: Jenessa Duncombe, 2017; Mihir Shete, 2023.
Ph.D.: Rodrigo Duran, 2019; Jeffrey Early, 2009; Christopher Wolfe, 2006.
Postdoctoral: Nicholas Tuffillaro, 1991-1992; Audrey Rogerson, 1993-1995; Soline Bielli, 1998-2000; Natalie Perlin, 2002-2004; Paul Choboter, 2003-2005; Scott Durski, 2003-2005; Sangil Kim, 2006-2009; David Rivas, 2007-2009; Cheryl Harrison, 2012-2015; Inés Mercedes Leyba, 2023-present.
Undergraduate: Boris Shrayner, WHOI Summer Student Fellow, 1990.

Invited Lectures

1997 Gordon Research Conference on Coastal Ocean Circulation
1997 National Science Foundation APROPOS Workshop on the Future of Physical Oceanography
1998 Workshop on Mathematical Problems in Meteorology and Oceanography, Indiana University
1999 Summer School on Lagrangian Transport, Stirring and Mixing in Geophysical Flows, California Institute of Technology
2003 National Center for Atmospheric Research Summer School on Applications of Advanced Mathematical and Computational Methods for Atmospheric and Oceanic Problems (MCAO2003)
2006 American Institute of Mathematics Workshop on Mathematical and Geophysical Fluid Dynamics: Analytical and Stochastic Methods
2006 Collaborations in Mathematics and Geosciences Summer School on Modern Mathematical Methods in Physical Oceanography
2008 J. Pedlosky Symposium, Woods Hole Oceanographic Institution
2009 Gordon Research Conference on Coastal Ocean Circulation
2010 Max Planck Institute PKS workshop on complex systems, Dresden, Germany
2010 IMAGE workshop, NCAR; School of Oceanography, UW
2013 Oberwolfach Mathematisches Forschungsinstitut, Germany
2013 IMA, U. Minnesota
2013 MPI, Dresden, Germany
2015 American Meteorological Society, Annual Meeting, Phoenix, AZ

Memberships

American Geophysical Union
American Meteorological Society
The Oceanography Society

Recent College and University Service

COAS Atmosphere-Ocean Search Committee, 2003-2004
COAS Faculty Advisory Committee, 2003-2004
COAS Coastal Modeler Search Committee, 2004-2005
COAS Computer Committee, 2004-2005
COAS Promotion and Tenure Committee, 2004-2005
COAS Computer Committee, 2005-2006
COAS Faculty Hiring Consultation Committee, 2005-2006
COAS Promotion and Tenure Committee (chair), 2006-2007
COAS Ad-Hoc Physical Oceanography Graduate Recruitment Committee, 2006-2007
COAS Curricular Committee on Earth Systems Science, 2007-2010
COAS 50th Anniversary Symposium Committee, 2008-2009
Council of Fellows, NOAA-OSU Cooperative Institute for Oceanographic Satellite Studies, 2003-
COAS-Geosciences Merger Next Steps Committee, 2010-2011
OSU Workforce Time and Attendance System Stakeholders' Committee, 2011-2012
CEOAS High-Latitude Search Committee, 2011-2012
CEOAS College Advisory Committee, 2011-2013
CEOAS Instructional Programs Committee, 2013-2015
OSU ADVANCE Recruitment and Promotion Activities Committee, 2015-2016

CEOAS Promotion and Tenure Committee, 2016-2017
CEOAS Physical Oceanography Faculty Search Committee, 2016-2018
CEOAS Physical Oceanography Graduate Admissions Committee, 2017-2018
CEOAS Physical Oceanography Institutional Postdoctoral Scholar Search Committee, 2018-2019
CEOAS Safety Committee, 2018-2019
CEOAS Senior Faculty Review Committee, 2018-2019
CEOAS Promotion and Tenure Committee, 2019-2020
CEOAS Atmospheric Sciences Faculty Search Committee, 2020-2021
CEOAS Peer Review of Teaching Committee, 2020-2021
CEOAS Senior Faculty Review Committee, 2021-2022
CEOAS Promotion and Tenure Committee, 2022-2023
CEOAS Diversity, Equity and Inclusion Committee, 2023-2024
CEOAS Doherty Chair in Ocean and Climate Science Faculty Search Committee, 2023-2024

Reviews

Atmospheric Science Letters
Biogeosciences Discussions
Boundary Layer Meteorology
Bulletin of the American Meteorological Society
Climate Dynamics
Communications in Nonlinear Science and Numerical Simulation
Computational Methods in Science and Technology
Deep-Sea Research
Dynamics of Atmospheres and Oceans
Environmental Research Letters
European Journal of Mechanics – B Fluids
European Physical Journal Plus
Fonds de recherche Nature et technologies Québec
Geophysical Research Letters
International Journal of Climatology
Journal of the Atmospheric Sciences
Journal of Climate
Journal of Fluid Mechanics
Journal of Geophysical Research – Oceans
Journal of Geophysical Research – Atmospheres
Journal of Marine Research
Journal of Mathematical Physics
Journal of Physical Oceanography
Marine Pollution Bulletin
Monthly Weather Review
National Environment Research Council, UK
National Science Foundation
Nature Communications
Nature Geosciences
Netherlands Organisation for Scientific Research
NSERC Discovery Program - Canada
Nonlinear Processes in Geophysics
Oceanography
Ocean Modelling
Paleoceanography
Physica D
Physics of Fluids
Physics Review Letters
Proceedings of the National Academy of Sciences
Proceedings of the Royal Society A

Progress in Oceanography
Quarterly Journal of the Royal Meteorological Society
Remote Sensing of Environment
Science
Surveys in Geophysics
Theoretical and Computational Fluid Dynamics
US-Israel Bi-National Science Foundation