

## ANTHONY KIRINCICH

### EDUCATION

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|------|---------------------------------------------------------|
| 2007 | Ph.D., Oregon State University, Physical Oceanography   |
| 2003 | M.S., University of Rhode Island, Physical Oceanography |
| 1997 | B.E., Vanderbilt University, Environmental Engineering  |

### POSITIONS HELD

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| 2009-present | Scientist, Physical Oceanography, Woods Hole Oceanographic Institution (2009-2013 Assistant, 2013-2017 Associate w/o Tenure, 2017-present Associate) |
| 2007-2009    | Postdoctoral Scholar/Investigator, Woods Hole Oceanographic Institution,                                                                             |
| 2002-2007    | Graduate Research Assistant, Oregon State University                                                                                                 |
| 2001-2002    | Teaching Fellow, Office of Marine Programs, University of Rhode Island                                                                               |
| 2000-2001    | Research Technician, University of Rhode Island, Geophysical Fluid Dynamics Laboratory.                                                              |
| 1999-2000    | Environmental Engineer, Naval Facilities Engineering Service Center, Pt Hueneme, CA.                                                                 |
| 1998-1999    | Environmental Educator, U.S. Peace Corps, Macedonia.                                                                                                 |
| 1997-1998    | Environmental Engineering Technician, Alt & Witzig Engineering, Indianapolis, IN.                                                                    |

### RESEARCH INTERESTS

**Coastal physical oceanography** including: the mechanisms controlling across shelf exchange, the role of turbulence in circulation dynamics, and the effects of spatial variability on lateral exchange and transport across the shelf. **Instrument and technique development** related to acoustic Doppler current profilers, high frequency coastal radar systems, and oceanic and atmospheric observing systems.

### RECENT/NOTABLE PUBLICATIONS

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1. Kirincich, A., Krishnamurthy, R., Turner, D. D., Adler, B., Agarwal, N., Berg, L. K., ... & Zippel, S. (2026). Improving Process Level Understanding of Boundary Layer Winds over the Northeast US Shelf: The Third Wind Forecast Improvement Project (WFIP3). *Bulletin of the American Meteorological Society*, BAMS-D-25-0201.1.
2. Chang, Y., Zippel, S., & Kirincich, A. (2026). Shear-flow instability of wind-wave coupling: numerical solutions compared to observations. *Journal of Physical Oceanography*, e250241.
3. Solari, M. S., Roy, S., Moss, C., Lundquist, J. K., Adler, B., Bianco, L., ... & Zippel, S. F. (2026). Observations of the Marine Atmospheric Boundary Layer's Response to a Solar Eclipse. *Boundary-Layer Meteorology*, 192(6), 32.
4. Kirincich, A., & Emery, B. (2026). Mapping Coastal Ocean Surface Winds with High-Frequency Radar: A Tomographic Approach. *Journal of Atmospheric and Oceanic Technology*, 43(5), 637-654.
5. Seo, H., Sauvage, C., Renkl, C., Lundquist, J. K., & Kirincich, A. (2025). Sea surface warming and ocean-to-atmosphere feedback driven by large-scale offshore wind farms under seasonally stratified conditions. *Science Advances*, 11(45), eadw7603.
6. Chang, Y., A. Kirincich, and J. B. Edson (2025), Observations of coastal wind momentum flux: dependence on fetch and waves with comparisons to COARE. *Journal of Physical Oceanography*.

<https://doi.org/10.1175/JPO-D-24-0242.1>

7. Emery, B. M. and A. Kirincich, (2024), Estimating Scattering Patch Area for a Direction Finding HF Radar, *IEEE Journal of Oceanic Engineering*, doi: 10.1109/JOE.2024.3388101.
8. Trockel, J., B. Emery, A. Kirincich, M. Muglia, H. Roarty, P. Taylor, D. Trockel, T. Updike, and C. Whelan, (2023), Strategies for Operating HF Radars in Field of View of Offshore Wind Turbines, *OCEANS 2023 - MTS/IEEE U.S. Gulf Coast*, Biloxi, MS, USA, 2023, pp. 1-6, doi: 10.23919/OCEANS52994.2023.10337105.
9. Tai, S-L., L.K. Berg, R. Krishnamurthy, R. Newsom, and A. Kirincich, (2023). Validation of turbulence intensity as simulated by the weather research and forecasting model off the U.S. Northeast coast. *Wind Energy Science Discussions*, 8, 433-448, <https://doi.org/10.5194/wes-2022-84>.
10. Kirincich, A., and B. Emery, (2023). Revisiting HF ground wave propagation losses over the ocean: A comparison of long-term observations and models. *Radio Science*, 58(4), e2022RS007550, <https://doi.org/10.1029/2022RS007550>.
11. Kirincich, A. R., Hodges, B., P. Flament, & V. Futch (2022), Horizontal stirring over the Northeast U.S. continental shelf: the spatial and temporal evolution of surface eddy kinetic energy. *Journal of Geophysical Research: Oceans*, 127, <https://doi.org/10.1029/2021JC017307>.
12. Emery, B., Kirincich, A. R., & Washburn, L. (2022), Direction finding and likelihood ratio detection for oceanographic HF radars. *Journal of Atmospheric and Oceanic Technology*, 39, 223-235, <https://doi.org/10.1175/JTECH-D-21-0110.1>.
13. Lentz, S. J., A. R. Kirincich, A. J. Plueddemann (2022), A note on the depth of side-lobe contamination in acoustic Doppler current profiles. *Journal of Atmospheric and Oceanic Technology*, 39, 31 – 35, <https://doi.org/10.1175/JTECH-D-21-0075.1>.
14. Emery, B. & A. R. Kirincich (2021), HF radar observations of nearshore winds. In *Ocean Remote Sensing Technologies: High-Frequency, Marine and GNSS-Based Radar*; Huang, W., Gill, E.W., Eds.; SciTech Publishing: Raleigh, NC, USA; pp. 191–216, [https://doi.org/10.1049/sbra537e\\_ch8](https://doi.org/10.1049/sbra537e_ch8).
15. Lemagie, E., Kirincich, A. R., & Lentz, S. (2021), The summer heat balance of the Oregon inner shelf over 2 decades: Intraseasonal variability. *Journal of Geophysical Research: Oceans*, 126, e2020JC016720, <https://doi.org/10.1029/2020JC016720>.
16. Rypina, I. I., Kirincich, A., & Peacock, T., (2021), Horizontal and vertical spreading of dye in the coastal ocean of the northern Mid-Atlantic bight. *Continental Shelf Research*, 230, 104567
17. Serra, M., P. Sathe, I. Rypina, A. R. Kirincich, S.D. Ross, P. Lermusiaux, A. Allen, T. Peacock, and G. Haller (2020), Search and rescue at sea aided by hidden flow structures. *Nature Communications*, 11, <https://doi.org/10.1038/s41467-020-16281-x>.
18. Lemagie, E., Kirincich, A. R., & Lentz, S. (2020), The summer heat balance of the Oregon inner shelf over two decades: Mean and interannual variability. *Journal of Geophysical Research: Oceans*, 125, e2019JC015856, <https://doi.org/10.1029/2019JC015856>.
19. Kirincich, A. R., Emery, B., Washburn, L., & Flament, P. (2019), Improving surface current resolution using direction finding algorithms for multi-antenna high frequency radars. *Journal of Atmospheric and Oceanic Technology*, <https://doi.org/10.1175/JTECH-D-19-0029.1>.
20. Connolly, T. P., & Kirincich, A. R. (2019), High-resolution observations of subsurface fronts and alongshore bottom temperature variability over the inner shelf. *Journal of Geophysical Research: Oceans*, 124, 593–614, <https://doi.org/10.1029/2018JC014454>.
21. Brink, K. H. and A. R. Kirincich (2017), Coastal ocean observing systems. book chapter for *The SEA volume on Ocean Prediction and Observing systems*. *Journal of Marine Research*, 75, 161-188, <https://doi.org/10.1357/002224017821836743>.

22. Kirincich, A. R. (2017), Improved detection of the first-order region for direction-finding HF radars using image processing techniques. *Journal of Atmospheric and Oceanic Technology*, 34, 1679-1691, <https://doi.org/10.1175/JTECH-D-16-0162.1>.
23. Kirincich, A. R., and S. Lentz (2017), The importance of lateral variability on exchange across the inner shelf south of Martha's Vineyard, MA. *Journal of Geophysical Research: Oceans*, 122, 2360–2381, <https://doi.org/10.1002/2016JC012491>.
24. Kirincich, A. R., (2016b), The occurrence, drivers, and implications of submesoscale eddies on the Martha's Vineyard inner shelf. *Journal of Physical Oceanography*, 46, 2645-2662, <https://doi.org/10.1175/JTECH-D-15-0242.1>.
25. Kirincich, A. R., (2016a), Remote sensing of the surface wind field over the coastal ocean via direct calibration of HF radar backscatter power. *Journal of Atmospheric and Oceanic Technology*, 33, 1377-1392, <https://doi.org/10.1175/JTECH-D-15-0242.1>.
26. Kirincich, A. R., and G. Gawarkiewicz, (2016), Drivers of spring and summer variability in the coastal ocean offshore of Cape Cod, MA. *Journal of Geophysical Research: Oceans*, 121, 1789-1805, <https://doi.org/10.1002/2015JC011252>.
27. Rypina, I.I., A. R. Kirincich, S. Lentz, and M. Sundermeyer, (2016), Investigating the eddy diffusivity concept in the coastal ocean. *Journal of Physical Oceanography*, 46, 2201-2218, <https://doi.org/10.1175/JPO-D-16-0020.1>.
28. Kirincich, A. R. (2013), Long-term observations of turbulent Reynolds stresses over the inner continental shelf. *Journal of Physical Oceanography*, 43, 2752-2771, <https://doi.org/10.1175/JPO-D-12-0153.1>.
29. Kirincich, A. R. (2013), Toward real-time, remote observations of the coastal wind resource using high frequency radar. *Marine Technology Society Journal*, 47, 206-217, <https://doi.org/10.4031/MTSJ.47.4.2>.
30. Kirincich, A. R., S. J. Lentz, J. T. Farrar, and N. Ganju (2013), The spatial structure of tidal and mean circulation over the inner shelf south of Martha's Vineyard, MA. *Journal of Physical Oceanography*, 43, 1940-1958, <https://doi.org/10.1175/JPO-D-13-020.1>.
31. Kirincich, A. R., T. dePaolo, and E. Terrill (2012), Improving HF radar estimates of surface currents using signal quality metrics, with application to the MVCO high resolution radar system. *Journal of Atmospheric and Oceanic Technology*, 29, 1377-1390. <https://doi.org/10.1175/JTECH-D-11-00160.1>.
32. Kirincich, A. R., and J. H. Rosman (2011), A comparison of methods for estimating stresses from ADCP measurements in wavy environments. *Journal of Atmospheric and Oceanic Technology*, 28, 1539-1553, <https://doi.org/10.1175/JTECH-D-11-00001.1>.
33. Kirincich, A. R., S. J. Lentz, and G. Gerbi, (2010), Calculating Reynolds stresses from ADCP measurements in the presence of surface gravity waves using the modeled co-spectra method. *Journal of Atmospheric and Oceanic Technology*, 27, 889-907, <https://doi.org/10.1175/2009JTECHO682.1>.
34. Woodson, C. B., L. Washburn, J. A. Barth, D. J. Hoover, A. R. Kirincich, M. A. McManus, J. P. Ryan, and J. Tyburczy, (2009), Northern Monterey Bay upwelling shadow front: observations of a coastally- and surface-trapped buoyant plume. *Journal of Geophysical Research*, 114, C12013, <https://doi.org/10.1029/2009JC005623>.
35. Kirincich, A. R., S. J. Lentz, and J. A. Barth (2009), Wave-driven inner-shelf motions on the Oregon coast. *Journal of Physical Oceanography*, 39, 2942-2956. <https://doi.org/10.1175/2009JPO4041.1>.
36. Kirincich, A. R. and J. A. Barth (2009), Along-shelf variability of inner-shelf circulation along the central Oregon coast during summer. *Journal of Physical Oceanography*, 39, 1380-1398, <https://doi.org/10.1175/2008JPO3760.1>.