

## **John L. Wilkin**

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### **Professional Positions:**

2009- Professor, Department of Marine and Coastal Sciences, Rutgers University, New Jersey  
2001-2009 Assistant/Associate Professor, Marine and Coastal Sciences, Rutgers University  
2000-2001: Research Scientist, NIWA, Auckland, New Zealand  
1998-1999: Senior Lecturer, School of Environmental and Marine Sciences, University of Auckland  
1990-1997: Senior Research Scientist, CSIRO Division of Marine Research, Tasmania, Australia  
1988-1990: Scientist, DSIR Division of Water Sciences, New Zealand Oceanographic Institute

### **Education:**

Ph.D., 1988, Joint Program in Oceanographic Engineering, Massachusetts Institute of Technology and Woods Hole Oceanographic Institution.

S.M., 1985, Department of Civil Engineering, Massachusetts Institute of Technology.

B.E. (Hons), 1982, Theoretical and Applied Mechanics, School of Engineering, University of Auckland.

### **Refereed Publications:**

McSweeney, J. M., R. J. Chant, C. K. Sommerfield, J. L. Wilkin and A. Tabatabai, (2017), Modeling Spatiotemporal Variability of Residual Circulation and Sediment Fluxes in Delaware Estuary, *Journal of Geophysical Research*, in press.

Goni, G. J., R. E. Todd, S. R. Jayne, G. Halliwell, S. Glenn, J. Dong, R. Curry, R. Domingues, F. Bringas, L. Centurioni, S. F. DiMarco, T. Miles, J. Morell, L. Pomales, H.-S. Kim, P. E. Robbins, G. G. Gawarkiewicz, J. Wilkin, J. Heiderich, R. Baltes, J. J. Cione, G. Seroka, K. Knee, and E. R. Sanabria, (2017), Autonomous and Lagrangian Ocean Observations for Atlantic Tropical Cyclone Studies and Forecasts, *Oceanography*, in press

Cipollini, P., J. Benveniste, F. Birol, M. J. Fernandes, E. Obligis, M. Passaro, P. T. Strub, G. Valladeau, S. Vignudelli and J. Wilkin, (2017), Satellite Altimetry in Coastal Regions, in *Satellite Altimetry Over Oceans and Land Surfaces*, Eds. D. Stammer and A. Cazenave, Taylor and Francis CRC Press, Boca Raton, in press

St-Laurent, P., M. Friedrichs, R. Najjar, D. Martins, M. Herrmann, S. Miller and J. Wilkin, (2017), Impacts of Atmospheric Nitrogen Deposition on Surface Waters of the Western North Atlantic Mitigated by Multiple Feedbacks, *Journal of Geophysical Research Oceans*, 122, doi: 10.1002/2017JC013072

Wilkin, J., L. Rosenfeld, A. Allen, R. Baltes, A. Baptista, R. He, P. Hogan, A. Kurapov, A. Mehra, J. Quintrell, D. Schwab, R. Signell, and J. Smith, (2017), Advancing coastal ocean modeling, analysis, and prediction for the U.S. Integrated Ocean Observing System, *Journal of Operational Oceanography*, 10, 115-126, doi:10.1080/1755876X.2017.1322026

- McSweeney, J. M., R. J. Chant, J. L. Wilkin and C. K. Sommerfield, (2016), Suspended-Sediment Impacts on Light-limited Productivity in the Delaware Estuary, *Estuaries and Coasts*, doi:10.1007/s12237-016-0200-3
- Feng, H., D. Vandemark, and J. Wilkin, (2016), Gulf of Maine salinity variation and its correlation with upstream Scotian Shelf currents at seasonal and interannual time scales, *J. Geophys. Res. Oceans*, 121, 8585–8607, doi:10.1002/2016JC012337.
- Mannino, A., S. Signorini, M. Novak, J. Wilkin, M. Friedrichs, and R. Najjar, (2016), Dissolved organic carbon fluxes in the Middle Atlantic Bight: An integrated approach based on satellite data and ocean model products, *J. Geophys. Res. Biogeosci.*, 121, doi:10.1002/2015JG003031.
- Macdonald, H. S., M. Roughan, M. E. Baird and J. Wilkin, (2015), The formation of a cold-core eddy in the East Australian Current, *Continental Shelf Research*, 114, 72-84, doi:10.1016/j.csr.2016.01.002
- Hernandez, F., E. Blockley, G. Brassington, F. Davidson, P. Divakaran, M. Drévillon, S. Ishizaki, M. Garcia-Sotillo, P. Hogan, P. Lagemaa, B. Levier, M. Martin, A. Mehra, C. Mooers, N. Ferry, A. Ryan, C. Regnier, A. Sellar, G. Smith, S. Sofianos, T. Spindler, G. Volpe, J. Wilkin, E. Zaron, A. Zhang, Recent progress in performance evaluations and near real-time assessment of operational ocean products, (2015), *Journal of Operational Oceanography*, 8:sup2, s221-s238, doi:10.1080/1755876X.2015.1050282
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- Zavala-Garay, J., J. Wilkin, and J. Levin (2014), Data assimilation in coastal oceanography: IS4DVAR in the Regional Ocean Modeling System (ROMS), in *Advanced Data Assimilation for Geosciences Lecture Notes of the Les Houches School of Physics 2012*, pp. 555-576, E. Blayo, M. Bocquet, E. Cosme and L. Cugliandolo (Eds.), Oxford Univ. Press, Oxford, doi: 10.1093/acprof:oso/9780198723844.003.0024
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- Wilkin, J., and E. Hunter (2013), An assessment of the skill of real-time models of Middle Atlantic Bight continental shelf circulation, *Journal of Geophysical Research - Oceans*, 118, doi:10.1002/jgrc.20223.
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Wilkin, J. L., and D. C. Chapman (1987), Scattering of continental shelf waves at a discontinuity in shelf width, *Journal of Physical Oceanography*, 17, 713-724.

### **Conference Presentations and Lectures (since 2013):**

Wilkin, J., Data Assimilative Modeling in Coastal and Shelf Waters of the U.S. Mid-Atlantic Bight and Gulf of Maine, Invited seminar, King Abdullah University of Science and Technology, 3 May 2017, Jeddah, Saudi Arabia

Wilkin, J., Altimetry in coastal oceanography: Highlights from the 10th Coastal Altimetry Workshop, GODAE Coastal Ocean and Shelf Seas Task Team (COSS-TT), 3-7 April 2017, Cape Town, South Africa

Wilkin, J., A. Moore, B. Laughlin, J. Levin, H. Arango, The impact of satellite altimeter observations on data-assimilative model based estimates of circulation in the Mid-Atlantic Bight, GODAE Coastal Ocean and Shelf Seas Task Team (COSS-TT), 3-7 April 2017, Cape Town, South Africa

Wilkin, J., E. Hunter, Velocity and sea level anomaly wavenumber spectra in the coastal ocean: Observations from HF-radar and altimetry compared with nested high-resolution models, 10<sup>th</sup> Coastal Altimetry Workshop, 21-24 February 2017, Florence, Italy

Wilkin, J., and E. Hunter, Comparing coastal ocean wavenumber spectra for surface currents and sea level from observations by HF-radar (CODAR) and CryoSat-2 satellite altimetry, AGU Fall Meeting, 21-26 Dec, 2016, San Francisco (poster)

Wilkin, J., and E. Hunter, Wavenumber and frequency spectra for velocity and sea level from altimetry, CODAR HF-radar, moorings and nested models, Ocean Surface Topography Science Team (OSTST) Meeting, 1-4 Nov 2016, La Rochelle, France (poster)

Wilkin, J., and E. Hunter, Velocity and sea level anomaly wavenumber spectra in the coastal ocean: Observations from HF-radar and altimetry compared with nested high-resolution models, ROMS User Workshop, 17-20 Oct 2016, Hobart, Australia

Wilkin, J., Data Assimilative Modeling in Coastal and Shelf Waters of the U.S. Mid-Atlantic Bight and Gulf of Maine, JAMSTEC Yokohama Institute for Earth Sciences, 30 June 2016, Yokohama, Japan

Wilkin, J., J. Levin, A. López, J. Zavala-Garay, Downscaling, 2-way Nesting, and Data Assimilative Modeling in Coastal and Shelf Waters of the U.S. Mid-Atlantic Bight and Gulf of Maine, AGU/ASLO/TOS Ocean Sciences Meeting, 21-26 February, 2016, New Orleans

Wilkin, J., A. López and J. Levin, Coastal Altimeter Data Assimilation: Matching dynamics and datum inside the 200-m isobath, 9th Coastal Altimetry Workshop, Reston VA, October 2015.

Wilkin, J., First things first: The mean sea surface and mean dynamic topography, Altimetry for Regional and Coastal Ocean Modeling workshop, in conjunction with GODAE Coastal Ocean and Shelf Seas Task Team (COSS-TT) 4<sup>th</sup> international workshop, Lisbon, Portugal, Sept. 2015 (invited)

Wilkin, J., J. Levin, J. Zavala-Garay, Integrating modeling and data assimilation using ROMS with a Coastal Ocean Observing System for the U.S. Middle Atlantic Bight, Marine Environmental

Monitoring, Modelling and Prediction, 47th International Liège Colloquium, Liège, Belgium, 4-8 May 2015 (invited)

Wilkin, J., J. Levin, J. Zavala-Garay, H. Arango: Regional Ocean Modeling of Coastal Seas -Data Assimilation, Hind-cast Reanalysis and Forecasting, Vietnamese Center for Oceanography, Hanoi, Vietnam, 21 Jan. 2015

Wilkin, J.: Report from the Ocean Surface Topography Science Team and Ocean Observations panel for Physics and Climate, GODAE OceanView Science Team Meeting, Beijing, China, 13-17 Oct., 2014

Wilkin, J., J. Levin, N. Fleming, J. Zavala-Garay: Coastal Mean Dynamic Topography Computed Using ROMS Variational Assimilation of Long-Term Mean Observed Currents and Hydrography, ROMS User Workshop, Rovinj, Croatia, 26-29 May, 2014

Wilkin, J., Coastal Ocean Forecasting in the U.S. with ROMS, Coastal Ocean Modelling and Forecasting Workshop, Australian Bureau of Meteorology, Melbourne VIC, Australia, 3 Dec. 2013 (invited)

Wilkin, J., J. Levin, J. Zavala-Garay, Data Assimilative Modeling of the U.S. Mid-Atlantic Bight Shelf, Global Ocean Data Assimilation Experiment Ocean View Symposium, Baltimore MD, 6 Nov 2013 (poster)

Wilkin, J., J. Levin, J. Zavala-Garay, Data Assimilative Modeling of the U.S. Mid-Atlantic Bight Shelf, Mid Atlantic Bight Physical Oceanography and Meteorology meeting, University of Rhode Island, Narragansett RI, 17-18 Oct 2013.

Wilkin, J., J. Levin, J. Zavala-Garay, Data Assimilative Modeling of the U.S. Mid-Atlantic Bight Shelf, Ocean Surface Topography Science Team meeting, Bolder CO, 5-11 Oct 2013.

Wilkin, J., J. Levin and N. Fleming, Mean seasonal circulation of the Mid Atlantic Bight, Gordon Research Conference on Coastal Ocean Circulation, University of New England, 9-13 June 2013 (poster)

Wilkin, J., E. Hunter: An evaluation of real-time forecast models of Middle Atlantic Bight shelf waters, Coastal Ocean Shelf Seas Task Team workshop, Lecce, Italy, 4-7 February, 2013

### **Technical Reports:**

Druon, J.-N., A. Mannino, S. Sgnorini, C.R. McClain, M. Friedrichs, J. Wilkin, and K Fennel, Modeling the Dynamics and Export of Dissolved Organic Matter in the Northeastern U.S. Continental Shelf, NASA Tech. Rep. NASA/TM-2009-214177, 50 pp., 2009.

### **Professional activities:**

Co-chair: Global Ocean Observing System (GOOS) Ocean Observations Panel for Climate (OOPC)

Associate Developer of ROMS, the *Regional Ocean Modeling System* (<http://www.myroms.org>)  
Since 2001 – ongoing

Chair, *Gordon Research Conference* on Coastal Ocean Modeling, June 2015

Co-chair, User Working Group review panel for the *NASA-JPL Physical Oceanography Distributed Active Archive Center* (PO-DAAC)

Member, Scientific committee for the Coastal Altimetry Workshops

2017: Florence, Italy

2015; Reston VA

2014: Konstanz, Germany

2013: Boulder, CO

2012: Riva del Garda, Italy

2011: San Diego, CA

Co-convener, *Regional Ocean Modeling System* User Workshops:

Hobart, Australia, November 2016	Rovinj, Croatia, May 2014
Rio de Janeiro, Brazil, October 2012	UC Santa Cruz, July 2010
University of Hawaii, Honolulu, April 2010,	Sydney, Australia, March 31 – April 2, 2009
Grenoble, France, 6-8 October 2008	

Co-Chair, Interagency Ocean Observation Committee (IOOC) Modeling Strategy Task Team for the U.S. Integrated Ocean Observing System (IOOS) 2014-2016

Scientific Working Team for NASA/CNES Ocean Surface Topography Mission. Since 2008 – ongoing

Journal article reviewer for: Continental Shelf Research, Dynamics of Atmospheres and Oceans, Geophysical Research Letters, Journal of Geophysical Research, Journal of Physical Oceanography, Ocean Dynamics, Ocean Modelling, Oceanography, Remote Sensing of Environment, Science

**Awards:**

Fulbright Graduate Student, 1982

National Oceanographic Partnership Program's (NOPP's) 2007 Excellence in Partnering Award, with colleagues of the U.S. Global Ocean Data Assimilation Experiment (GODAE): Global Ocean Prediction with the HYbrid Coordinate Ocean Model (HYCOM) project.

**Thesis advising and Post-doctoral sponsorship:**

Post-doctoral scholars supervised: Melissa Bowen (Victoria University of Wellington), Paul Goodman (Arizona State University), Byoung-Ju Choi (Kunsan National University), Renato Castelao (Georgia Tech), Greg Gerbi (Skidmore).

Students graduated: Gregg Foti, MS 2007; Weifeng Gordon Zhang, PhD 2010; Naomi Fleming, PhD 2016; Aboozar Tabatabai, PhD 2016; Jacqueline McSweeney, PhD 2016

Students present: Alexander Lopez