

Philip Mark Orton

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HIGHLIGHTS

Specialization in physical oceanography, coastal engineering, storm surges, and climate change

Extensive experience providing science in service to societal decisionmaking

Since 2010, I have published 31 peer-reviewed articles and been PI, lead author, or co-author on 27 funded research proposals worth over \$5 million to my institution

RESEARCH INTERESTS

Storm surges and sea level rise; coastal engineering and adaptation; estuary and coastal ocean circulation and physics; turbulent mixing; air-sea interaction and gas exchange; sediment transport and morphologic change; urban and coastal atmospheric science; numerical ocean, atmosphere and sediment modeling.

EDUCATION

2010 Columbia University, Ph.D., physical oceanography
Minors: chemical oceanography, fluid dynamics
Graduate Advisor: W.R. McGillis
Dissertation Title: Estuarine turbulence and air-water CO₂ transfer
1996 University of South Carolina, M.S., marine science (adviser: Gail Kineke)
1994 University of Michigan, B.S., physical oceanography

APPOINTMENTS

2014 - 2019 Research Assistant Professor, Stevens Institute of Technology
2012 - 2013 Research Scientist, Stevens Institute of Technology
2011 - 2012 Postdoctoral Research Scientist, Stevens Institute of Technology
2010 (3 mo) Postdoctoral Research Scientist, Lamont-Doherty – NSF-RAPID oil spill grant
2004 - 2010 Graduate Research Assistant, Lamont-Doherty Earth Observatory, Columbia U.
1998 - 2003 Research Associate, Oregon Graduate Institute
1997 - 1998 Research Assistant, United States Geological Survey
1995 - 1996 Graduate Research Assistant, University of South Carolina

GRANTS

2019 NSF-Prediction of and Resilience Against Extreme Events (PREEVENTS), “Geomorphic Versus Climatic Drivers of Changing Coastal Flood Risk” (P. Orton, PI; \$1.2M total, \$380k to Stevens)
2019 NOAA-COCA/SARP, “Compound Fluvial-Coastal Flood and Climate Adaptation: A Transferable Framework of Engagement, Modeling and Cost-Benefit Analysis”, (Orton, PI, \$300k).

- 2019 NOAA-COCA/SARP, “Enabling urban residents to adapt to coastal flooding: Evidence from New York City neighborhoods” (M. Madajewicz, PI; Orton Co-PI, \$32k to Stevens).
- 2019 Hudson River Foundation, “Distribution, transport, and fate of microplastics and associated pollutants in the Lower Hudson River and waterways around New York City” (B. Yan, PI; P. Orton, Co-PI, \$30k to Stevens).
- 2018 Spitzer Foundation, “Building sustained capacity for urban resilience: Reconciling regional drivers & local needs” (A. Parris, PI; P. Orton Co-PI, \$65k to Stevens).
- 2018 Catalyzing a deeper understanding of the effects of storm surge barriers on the Hudson River estuary, NOAA National Estuarine Research Reserve System Science Collaborative, 2018 Collaborative Science Catalyst (Orton, lead-PI, \$131k)
- 2018 Update/validate/visualize Stevens NYHOPS forecasts for ULCV and SULCV navigation guidance in the NY/NJ Harbor near Bergen Point, NJ, New Jersey Department of Transportation, (Miller, PI; Orton co-author, \$289k).
- 2017 The Hudson River Flood Hazard Decision Support System-Accurate Modeling of Flood Zones for Combined Sea Level Rise, Storm Surge and Rain, NYSERDA (K. MacManus, PI; \$45k to Stevens)
- 2016 Planning for the Future by Understanding the Past, US Army Corps of Engineers (S. Talke, PI; \$70k to Stevens)
- 2016 NOAA-CPO-CSI-COCA, “Incorporating Interactive Visions and Bioeconomic Values of Ecosystem Services into Climate Adaptation: An Example from Jamaica Bay, Brooklyn / Queens, New York City” (Co-PI; C. Bond lead-PI; \$70k to Stevens)
- 2015 NOAA-CPO-CSI-RISA, “Supporting Regional Implementation of Integrated Climate Resilience: Consortium for Climate Risk in the Urban Northeast (CCRUN) Phase II” (R. Horton, F. Montalto, W. Solecki lead-PIs; P. Orton and 4 others Co-PIs; \$425k to Stevens, through 9/30/2020)
- 2014 Continuation of Inundation Hazard Assessment for New York City from Hurricane Storm Surge, Rainfall, and Climate Change (P. Orton, lead PI, A. Blumberg, Co-PI; new funds, \$85k, through 6/2016)
- 2014 Department of the Interior, National Parks Service, “Coastal adaptation impacts on Jamaica Bay water quality, waves and flooding” (P. Orton, Lead-PI, \$700k, through 10/2016)
- 2014 Office of Naval Research, Naval Research Laboratory, “Improved Coastal Flood Forecasts with COAMPS-TC” (J. Pullen, PI; Orton and A. Blumberg, Co-PIs, \$110k)
- 2014 NASA Interdisciplinary Research in Earth Science, “Vulnerability of the U.S. Atlantic Coast to Hazards Associated with Extreme Winter Storms (Y. Kushnir, PI; P. Orton and five others, Co-PIs; \$1.5M, \$210k to Stevens)
- 2013 Housing and Urban Development (HUD) Rebuild By Design (K. Orff, PI; P. Orton, co-author and partner; \$200k, \$10k to Orton)
- 2013 NOAA Sea Grant, “Collaborative climate adaptation planning for urban coastal flooding” (Orton, Co-PI; P. Rowe, PI; A. Blumberg, Co-PI; \$150k, \$85k to Stevens)

- 2013 New England Interstate Water Pollution Control Commission, “Research Plan to Advance the Understanding of Potential Coastal Green Shoreline Infrastructure Strategies in New York City” (H. Roberts, PI; Orton, J. Miller, Co-PIs; \$80k, \$11k to Stevens)
- 2013 NOAA Coastal and Ocean Climate Applications, “Quantifying the Value and Communicating the Protective Services of Living Shorelines Using Flood Risk Assessment” (Blumberg, PI; Orton, Becker and Sanderson Co-PIs; \$330k)
- 2013 Hudson River Foundation, “Real-Time Observations in the Hudson River during Extreme Events” (Blumberg, PI; Orton Co-PI; \$75k)
- 2013 NY Sea Grant, “Analyzing history to project and manage the future: Simulating the effects of climate on Long Island Sound’s physical environment and living marine resources” (N. Georgas, PI; Orton, Blumberg, Howell, Co-PIs; \$380k)
- 2013 New York City Office of Emergency Management, “Proposed technical study of the effects of sea level rise on coastal flooding in New York City” (Orton, Blumberg, Georgas, Gornitz; \$180k)
- 2012 NYSERDA: “The Hudson River Flood Hazard Decision Support System – Accurate Modeling of Flood Zones for Combined Sea Level Rise, Storm Surge, and Rain” (M. Becker, PI; Orton, Blumberg, Lall, Co-PIs, \$300k)
- 2012 NOAA-COCA: “Building resilience to storm surges and sea level rise: A comparative study of coastal zones in New York City and Boston (M. Madajewicz lead PI; A. Blumberg Co-PI; P. Orton and M. Becker, Co-Is; \$300k, \$55k to Stevens)
- 2011 NASA: “Hurricane Wind and Inundation Risk on the U.S. Northeast and New York City” (T. Hall, PI; Orton, Blumberg, co-authors; \$300k, \$226k to Stevens)
- 2010 NSF, “RAPID: Impact of Gulf Oil Surface Films on Atmosphere-Ocean Exchange” (W. McGillis, PI; P. Orton, co-author, \$124k)

TEACHING & MENTORING

- 2019 Supervised a successful PhD Degree thesis/defense, Lun Yin
- 2016 - 2018 Taught Intermediate Fluid Dynamics for undergraduate and graduate students
- 2017 - 2018 Supervised three Ph.D. students to successful qualifier exams
- 2017 Supervised a successful Master’s Degree thesis/defense, Praneeth Gurumurthy
- 2015 - 2017 Supervising a post-doctoral scientist with three peer-reviewed publications
- 2008 - 2013 Supervised or co-supervised six summer research internships
- 2008 - 2009 Taught weekly enviro. science course for high school students (NSF fellowship)
- 2006 - 2017 21 guest class lectures for Stevens/Columbia courses (e.g. climate, oceanography)
- 2005 - 2006 Hudson River Snapshot Day field trip guest scientist (for 9th graders)
- 2005 - 2006 Teaching assistant, "Dynamics of Climate Variability and Change"
- 2004 - 2007 Lamont Open House hands-on exhibits related to physical oceanography
- 1999 Organized and led an informal seminar on Environmental Economics
- 1994 - 1996 Teaching Assistant, then curriculum developer, University of South Carolina

AWARDS

- 2017 Hyperion Innovation Excellence Award for supercomputing applications
- 2017 Conservation Achievement Award from the NY-NJ Harbor & Estuary Program and the NYSDEC Hudson River Estuary Program for the HRECOS system

- 2014 - 2015 Flood adaptation design awards – Buckminster Fuller design challenge, 2015
ACEC New York PLATINUM AWARD, ASLA-New York Collaborative Design
2014 Housing and Urban Development Rebuild By Design – winning design team

SYNERGISTIC ACTIVITIES

Governmental service/science – Intergovernmental Panel on Climate Change (IPCC)

Contributing Author for the Sixth Assessment Report (AR6) on the topic of ‘Ocean, Cryosphere, and Sea Level Change’; NYC Panel on Climate Change (NPCC; 2013-present), appointed by NJ Governor to the New Jersey Wetland Mitigation Council (2017-present), NY/NJ Harbor Estuary Program Science and Technical Advisory Panel (2017-present), New Jersey Climate Adaptation Alliance Science and Technical Advisory Panel (2015-6), Adviser to NYC’s Special Initiative on Rebuilding and Resilience after Sandy (2013)

Science Outreach – Media for Hurricane Sandy and coastal flood adaptation: national, local TV/newsprint (ABC 20/20, MSNBC, NPR, PBS, FOX, NBC, CBS, WNYC, New York Times); Lead author of <http://SeaAndSkyNY.com> blog (80000+ views)

Opinion/Editorial – New York Times Op-Eds: *The Next Mayor of New York Needs to Continue to Lead on Climate* (2013); (On question “Should New York Build Sea Gates?”) *Big Projects, Big Problems, So Think Small* (2012); *Sniffing Out the Truth* (2007)

Peer-review - Reviewer for the National Science Foundation, Environmental Protection Agency, The Water Institute of the Gulf, Sea Grant, Hudson River Foundation, Journal of Physical Oceanography, Nature Climate Change, Journal of Geophysical Research, Geophysical Research Letters, Deep Sea Research, Journal of Atmospheric and Oceanic Technology, Climatic Change, Journal of Marine Science and Engineering, Ocean and Coastal Management, Journal of Waterway, Port, Coastal and Ocean Engineering, Scientific Reports, Bulletin of the American Meteorological Society, Natural Hazards, Estuaries and Coasts

Academic service – Monmouth University’s Urban Coast Institute Steering Committee (2018-present); Jamaica Bay Science and Resilience Institute, Executive Committee and Science Steering Committee (2016-present); NY/NJ Harbor Estuary Program Science and Technical Advisory Panel (2017-present); Stevens Academic Planning and Resources Committee (2016-present).

PEER-REVIEWED PUBLICATIONS (underlined cases, as graduate/postdoc adviser)

1. Gurumurthy, P., P. M. Orton, S. A. Talke, N. Georgas, and J. F. Booth (2019), Mechanics and Historical Evolution of Sea Level Blowouts in New York Harbor, Journal of Marine Science and Engineering, 7(5), 160, doi:10.3390/jmse7050160.
2. Orton, P., N. Lin, V. Gornitz, B. Colle, J. Booth, K. Feng, M. Buchanan, and M. Oppenheimer (2019), New York City Panel on Climate Change 2019 Report Chapter 4: Coastal Flooding, Ann. N. Y. Acad. Sci., 1439, 95-114, doi:10.1111/nyas.14011.
3. Gornitz, V., M. Oppenheimer, R. Kopp, P. Orton, M. Buchanan, N. Lin, R. Horton, and D. Bader (2019), New York City Panel on Climate Change Chapter 3: Sea Level Rise, Ann. N. Y. Acad. Sci., 1439, 71-94, doi:10.1111/nyas.14006.
4. Patrick, L., W. Solecki, V. Gornitz, P. Orton, and A. Blumberg (2019), New York City Panel on Climate Change 2019 Report Chapter 5: Mapping Climate Risk, Ann. N. Y. Acad. Sci., 1439, 115-125, doi:10.1111/nyas.14015.

5. Bakhtyar, R., P. M. Orton, R. Marsooli, and J. K. Miller, 2018. Rapid wave modeling of severe historical extratropical cyclones off the Northeastern United States, *Ocean Engin.*, 159, 315–332, doi:10.1016/j.oceaneng.2018.04.037.
6. Marsooli, R., P.M. Orton, J. Fitzpatrick, and H. Smith, 2018. Residence time of a highly urbanized estuary: Jamaica Bay, New York, *J. Mar. Sci. Engin.*, 6(44), doi:10.3390/jmse6020044.
7. Orton, P., F. Conticello, F. Cioffi, T. Hall, N. Georgas, U. Lall, A. Blumberg, and K. MacManus, 2018. Hazard assessment from storm tides, rainfall and sea level rise on a tidal river estuary, *Natural Hazards*, 1-29, doi:10.1007/s11069-018-3251-x.
8. Hu, K., Chen, Q., Wang, H., Hartig, E. K., & Orton, P. M., 2018. Numerical modeling of salt marsh morphological change induced by Hurricane Sandy. *Coastal Engin.*, 132: 63–81.
9. Marsooli, R., Orton, P.M., Mellor, G., Georgas, N. and Blumberg, A.F., 2017. A Coupled Circulation-Wave Model for Numerical Simulation of Storm Tides and Waves, *J. Atmos. Oceanic Tech.*, doi:10.1175/JTECH-D-17-0005.1.
10. Kemp, A. C., T. D. Hill, C. H. Vane, N. Cahill, P. M. Orton, S. A. Talke, A. C. Parnell, K. Sanborn, and E. K. Hartig, 2017. Relative sea-level trends in New York City during the past 1500 years, *The Holocene*, doi:10.1177/0959683616683263.
11. Marsooli, R., P.M. Orton, and G. Mellor, 2017. Modeling wave attenuation by salt marshes in Jamaica Bay, New York, using a new rapid wave model, *J. Geophys. Res.*, 122, doi:10.1002/2016JC012546.
12. Gornitz V., R. Horton D.A. Bader, P.M. Orton, C. Rosenzweig, 2017. Coping with Higher Sea Levels and Increased Coastal Flooding in New York City. In: Leal Filho W., Keenan J. (eds) *Climate Change Adaptation in North America. Climate Change Management*. Springer, Cham. DOI: 10.1007/978-3-319-53742-9_13.
13. Orton, P. M., T. M. Hall, S. Talke, A. F. Blumberg, N. Georgas, and S. Vinogradov, 2016. A Validated Tropical-Extratropical Flood Hazard Assessment for New York Harbor, *J. Geophys. Res.*, 121. doi: 10.1002/2016JC01167.
14. Close, S. L., F. Montalto, P. Orton, A. Antoine, D. Peters, H. Jones, A. Parris, and A. Blumberg, 2016. Achieving sustainability goals for urban coasts in the US Northeast: research needs and challenges, *Local Environ.*, doi:10.1080/13549839.2016.1233526.
15. Georgas, N., L. Yin, Y. Jiang, Y. Wang, P. Howell, V. Saba, J. Schulte, P. Orton, and B. Wen, 2016. An Open-Access, Multi-Decadal, Three-Dimensional, Hydrodynamic Hindcast Dataset for the Long Island Sound and New York/New Jersey Harbor Estuaries, *J. Marine Sci. Engin.*, 4(48), DOI: 10.3390/jmse4030048.
16. Marsooli, R., P.M. Orton, N. Georgas, and A. F. Blumberg, 2016. Three-Dimensional Hydrodynamic Modeling of Coastal Flood Mitigation by Wetlands, *Coast. Eng.*, 111, 83-94.
17. Brandon, C. M., J. D. Woodruff, P. M. Orton, and J. P. Donnelly, 2016. Evidence for Elevated Coastal Vulnerability Following Large-Scale Historical Oyster Bed Harvesting, *Earth Surf. Proc. Landforms*, DOI: 10.1002/esp.3931.
18. Orton, P. M., S. A. Talke, D. A. Jay, L. Yin, A. F. Blumberg, N. Georgas, H. Zhao, H. J. Roberts, and K. MacManus, 2015. Channel Shallowing as Mitigation of Coastal Flooding, *J. Marine Sci. Engin.*, 3(3), 654-673, DOI: 10.3390/jmse3030654.
19. Blumberg, A., N. Georgas, L. Yin, T. Herrington, and P. Orton, 2015. Street scale modeling of storm surge inundation along the New Jersey Hudson River waterfront, *J. Atmos. Oceanic Technol.*, DOI: 10.1175/JTECH-D-14-00213.1.

20. Orton, P., S. Vinogradov, N. Georgas, A. Blumberg, N. Lin, V. Gornitz, C. Little, K. Jacob, and R. Horton, 2015. New York City Panel on Climate Change 2015 Report Chapter 4: Dynamic Coastal Flood Modeling. *Ann. New York Acad. Sciences*, 1336(1), 56-66, doi: 10.1111/nyas.12589.
21. Wang, J., D. G. MacDonald, P. M. Orton, K. Cole, and J. Lan, 2015. The Effect of Discharge, Tides, and Wind on Lift-Off Turbulence, *Estuaries Coasts*, 1-15, DOI: 10.1007/s12237-015-9958-y.
22. Georgas, N., Orton, P., Blumberg, A., Cohen, L., Zarrilli, D. and Yin, L, 2014. The Impact of Tidal Phase on Hurricane Sandy's Flooding around New York City and Long Island Sound, *J. Extreme Events*, DOI: 10.1142/S2345737614500067.
23. Talke, S., P. Orton, and D. Jay, 2014. Increasing Storm Tides at New York City, 1844-2013. *Geophys. Res. Lett.*, 41, DOI: doi:10.1002/2014GL059574.
24. Meir, T., Orton, P.M., Pullen, J., Holt, T., Thompson, W.T., Arend, M.F., 2013. Forecasting the New York City urban heat island and sea breeze during extreme heat events. *Weather and Forecasting*. doi: 10.1175/WAF-D-13-00012.1
25. Orton, P., N. Georgas, A. Blumberg, and J. Pullen, 2012. Detailed Modeling of Recent Severe Storm Tides in Estuaries of the New York City Region, *J. Geophys. Res.*, 117:C09030, doi:10.1029/2012JC008220.
26. Harrison, E., Veron, F. Ho, D., Reid, M., Orton, P. and McGillis, W., 2012. Nonlinear interaction between rain-and wind-induced air-water gas exchange, *J. Geophys. Res.*, 117(C3), C03034.
27. Ho, D.T., Schlosser, P. and Orton, P.M., 2011. On factors controlling air-water gas exchange in a large tidal river, *Estuaries and Coasts*, 34:1103-1116, DOI: 10.1007/s12237-011-9396-4.
28. Orton, P.M., McGillis, W.R., and Zappa, C.J., 2011. An autonomous self-orienting catamaran for measuring air-water fluxes and forcing. In: *Gas Transfer at Water Surfaces*, edited by S. Komori et al., Kyoto University Press.
29. Orton, P. M., Zappa, C.J., and McGillis, W.R., 2010. Tidal and atmospheric influences on near-surface turbulence in an estuary, *J. Geophys. Res.*, 115, C12029, doi:10.1029/2010JC006312.
30. Orton, P.M., McGillis, W.R., and Zappa, C.J., 2010. Sea breeze forcing of estuary turbulence and CO₂ exchange. *Geophys. Res. Lett.*, 37, L13603, doi:10.1029/2010GL043159.
31. Hickey, B. M., R. M. Kudela, J. D. Nash, K. W. Bruland, W. T. Peterson, P. MacCready, E. J. Lessard, D. A. Jay, N. S. Banas, A. M. Baptista, E. P. Dever, P. M. Kosro, L. K. Kilcher, A. R. Horner-Devine, E. D. Zaron, R. M. McCabe, J. O. Peterson, P. M. Orton, J. Pan, and M. C. Lohan, 2010. River Influences on Shelf Ecosystems: Introduction and Synthesis, *J. Geophys. Res.*, doi:10.1029/2009JC005452.
32. Horner-Devine, A., Jay, D.A., Orton, P.M., and Spahn, E., 2009. A conceptual model of the strongly tidal Columbia River plume. *Journal of Marine Systems*, 78(3): 460-475, doi:10.1016/j.jmarsys.2008.11.025.
33. Jay, D.A., Pan, J., Orton, P.M., and Horner-Devine, A., 2009. Asymmetry of tidal plume fronts in an eastern boundary current regime. *Journal of Marine Systems*, 78(3): 442-459, doi:10.1016/j.jmarsys.2008.11.015.
34. Orton, P.M. and Visbeck, M., 2009. Variability of internally generated turbulence in an estuary, from 100 days of continuous observations. *Continental Shelf Research*, doi:10.1016/j.csr.2007.07.008.

35. Pan, J., Jay, D. A., and Orton, P. M., 2007. Analyses of internal solitary waves generated at the Columbia River plume front using SAR imagery, *J. Geophys. Res.*, 112, C07014, doi:10.1029/2006JC003688.
36. Jay, D. A., Orton, P. M., Chisholm, T., Wilson, D.J., and Fain, A.M.V. 2007. Particle trapping in stratified estuaries: Consequences of mass conservation. *Estuaries and Coasts* 30(6), 1095-1105, doi: 10.1007/BF02841399.
37. Jay, D. A., Orton, P. M., Chisholm, T., Wilson, D.J., and Fain, A.M.V. 2007. Particle trapping in stratified estuaries: Application to observations. *Estuaries and Coasts* 30(6), 1106-1125, doi: 10.1007/BF02841400.
38. Orton, P. M., and Jay, D. A., 2005. Observations at the tidal plume front of a high-volume river outflow, *Geophys. Res. Lett.*, 32, L11605, doi:10.1029/2005GL022372.
39. Emmett, R.L, Brodeur, R.D. and Orton, P.M. 2004. The vertical distribution of juvenile salmon (*Oncorhynchus* spp.) and associated fishes in the Columbia River plume. *Fisheries Oceanography* 13:6, 392-402, doi: 10.1111/j.1365-2419.2004.00294.x.
40. Fain, A.M.V., Jay, D. A., Wilson, D. J., Orton, P. M., and Baptista, A. M. 2001. Seasonal, monthly and tidal patterns of particulate matter dynamics in the Columbia River estuary, *Estuaries* 24: 770-786, doi: 10.2307/1352884.
41. Orton, P.M. and Kineke, G.C. 2001. Comparing calculated and observed vertical suspended sediment distributions from a Hudson River Estuary turbidity maximum. *Estuarine, Coastal and Shelf Science*, 52(3), 401-410, doi: 10.1006/ecss.2000.0747.

OP-EDs

- Orton, P.M., NY Times Room-For-Debate editorial, *The Next Mayor of New York Needs to Continue to Lead on Climate* (2013)
- Orton, P.M., NY Times Room-For-Debate editorial, *Should New York Build Sea Gates? Big Projects, Big Problems, So Think Small* (2012)
- O'Mullan, G., Orton, P., McGillis, W., Sambrotto, R., and Mailloux, B., Sniffing out the Truth, *New York Times Sunday Edition*, Opinions Section, January 21, 2007.
- Orton, P.M., Energy crisis much broader than perceived, *The Oregonian*, Editorial Section, January 29, 2001.

OTHER PUBLICATIONS

- Fischbach, J., H. Smith, K. Fisher, P. Orton, E. Sanderson, R. Marsooli, H. Roberts, and others, 2018. Integrated Analysis and Planning to Reduce Coastal Risk, Improve Water Quality, and Restore Ecosystems: Jamaica Bay, New York. Final project report for The Rockefeller Foundation.
- Kopp, R.E., A. Broccoli, B. Horton, D. Kreeger, R. Leichenko, J.A. Miller, J.K. Miller, P. Orton, A. Parris, D. Robinson, C.P. Weaver, M. Campo, M. Kaplan, M. Buchanan, J. Herb, L. Auermuller and C. Andrews. 2016. Assessing New Jersey's Exposure to Sea-Level Rise and Coastal Storms: Report of the New Jersey Climate Adaptation Alliance Science and Technical Advisory Panel. Prepared for the New Jersey Climate Adaptation Alliance. New Brunswick, New Jersey.
- Swanson, L, Dorsch, M., Giampieri, M., Orton, P., Parris, A., and Sanderson, E., 2016. Chapter 4: Biophysical Systems of Jamaica Bay. In E. Sanderson, W. Solecki, J. Waldman, A. Parris (Eds.), *Prospects for Resilience: Insights from New York City's Jamaica Bay*. Island Press, Washington DC.

- Sanderson, E., P. Orton, J. Fischbach, D. Knopman, H. Roberts and W. Solecki (in press)
Computational modelling of the Jamaica Bay System, In (Eds.) E. Sanderson, W. Solecki, J. Waldman and A. Parris, *Prospects for Resilience: Insights from New York City's Jamaica Bay*, Island Press, Washington D.C.
- Higinbotham, J.R., Moisan, J. and Orton, P. 2009. Solar Powered Autonomous Surface Vehicle Development and Operation. *Sea Technology* 50(7).
- Schwing, F.B., Orton, P.M., Jay, D.A., Batchelder, H. and Rosenfeld, L.K. 1999. Conference explores El Nino's relationship to the Northeast Pacific. *EOS: Transactions, American Geophysical Union*, 80(11):122.