Philip Mark Orton

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RESEARCH INTERESTS

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

PROFESSIONAL PREPARATION

University of Michigan	physical oceanography	B.S. 1994
University of South Carolina	marine science	M.S. 1996
Columbia University	physical oceanography	Ph.D. 2010
Stevens Institute of Technology	oceanic/atmospheric modeling	post-doc 2010-2011

APPOINTMENTS

2020 - present	Research Associate Professor, Stevens Institute of Technology
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 (bold facing shows role of overall project director)

2023	**NOAA Office of Response and Restoration, FY23 Disaster Preparedness for Coastal Communities, "Co-developing ensemble flood forecast products to improve communication and preparedness across diverse populations" (P. Orton, Co-PI and project lead; Peter Rowe, Sea Grant PI, $100k)**
2023	MARACOOS subcontract under "Strengthening Mid-Atlantic Infrastructure, Data Products and Services" (P. Orton, Stevens PI, $80k)
2023	NOAA Cimate Adaptation Partnerships (CAP), "Co-developing a decision support framework for adaptation to coastal flooding: A comparative case study of communities in New York and Virginia" (Co-PI; Lead-PI is M. Madajewicz, Columbia University; $36k).
2023	DHS/FEMA Cooperating Technical Partners Program, "Identifying flood risk hotspots using remote sensing and in situ observations" (P. Orton, Co-I; M. Temimi, PI; $250k).
2022	**United States Geological Survey, via the North Atlantic Coast Cooperative Ecosystem Studies Unit (CESU), "Assessing Pluvial-Coastal Flood Risk and Potential Climate Inequities in New York City" (P. Orton, PI, $449k)**

2022 New York City Town & Gown, “Climate Vulnerability, Impact, and Adaptation Analysis (VIA RFP)” (Towers and McPherson, Co-PIs, Orton Co-I, $215k)

2022 Matrix New World Engineering, “NY Oceangrid: Proposal for Velocity Data and Analysis Services” (P. Orton, PI, $20k).

2022 New Jersey Department of Environmental Protection, “New Jersey Coastal Consortium for Resilient Communities (NJCCRC) Initiative” (J. Miller PI, Orton Co-PI).

2021 NOAA-RISA, Supporting Regional Implementation of Integrated Climate Resilience: Consortium for Climate Risk in the Urban Northeast (CCRUN) Phase III (P. Orton Co-PI, $264k to Stevens)

2021 Environmental Defense Fund, Storm Surge Barrier Protection: An Additional Climate Hazard for Estuary Ecosystems (Orton, PI; $25,000)

2020 Supporting Regional Implementation of Integrated Climate Resilience: Consortium for Climate Risk in the Urban Northeast (CCRUN) Phase II – one year extension (R. Horton, F. Montalto, W. Solecki lead-PIs; P. Orton and 4 others Co-PIs; $82k to Stevens)

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 The Port Authority of New York/ New Jersey, "High-Resolution Storm Surge Forecasts for New York & New Jersey Infrastructure Sites" (Muhammad Hajj PI, Co-PIs: Raju Datla, Jon Miller, Philip Orton, Reza Marsooli and David Runnels, $4.94M).

2019 NSF-Coasts and People (CoPe), “CoPe RCN: Advancing Interdisciplinary Research to Build Resilient Communities and Infrastructure in the Nation?s Estuaries and Bays” (M. Li, PI; P. Orton Co-Pi, $20,000 to Stevens).

2019 New York State Energy Research and Development Authority, “Influence of Storm Surge Barrier Closures on Estuary Physical Conditions” (Orton, PI, $42,500).

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 et al. 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 New Jersey Department of Transportation, “Update/validate/visualize the Stevens NYHOPS model for ULCV and SULCV navigation guidance in the NY/NJ Harbor near Bergen Point, NJ” (P. Orton and J. Miller; $289k)

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, PI, $131k)

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 Jersey DEP, "Flood adaptation strategies for the NJ Hudson River waterfront" (Blumberg, PI; Miller and Herrington Co-Is; Orton, co-author; $213k)

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

2015 - 2023 Supervised four post-doctoral scientists with seven peer-reviewed publications
2019 - 2022 Supervised PhD dissertations and successful defenses: L. Yin, F. Zhang, Z. Chen
2017 - 2023 Created and taught Sea Level Science biannual special topics course
2017 - 2020 Supervised four Ph.D. students to successful qualifier exams
2016 - 2018 Taught Intermediate Fluid Dynamics course (undergraduate, graduate students)
2017 Supervised a successful Master's Degree thesis/defense, Praneeth Gurumurthy
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

2010 - present Lead or co-author on 30 funded research proposals worth about $10 million from over 10 diverse federal, state and city agencies (NSF, USACE, NOAA, NASA, NPS, Sea Grant, NYSERDA, NYC, NJ-DEP, HRF, NJDOT, NEIWPCC, HUD)
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

2000 - 2008 Lead or coauthor on 6 successful grant or fellowship proposals (e.g. NSF, NOAA)

SYNERGISTIC ACTIVITIES

1. (2023) Convener and chair of the session, "Effects of human modifications of estuaries" at the Coastal and Estuarine Research Federation (CERF) Biennial Conference.
2. (2020) Convener and chair of the session, "Dynamics of estuary climate change impacts and the natural and human response" at the American Geophysical Union Fall Meeting, December 2020
3. (2016-present) Jamaica Bay Science and Resilience Institute, Executive Committee and Science Steering Committee (2016-present)
4. (2013-present) Member of the NYC Panel on Climate Change (NPCC), with monthly meetings with New York City Mayor's Office of Resiliency over year-long periods, resulting in four peer-reviewed chapter/papers
5. (2019) Contributing author to the Intergovernmental Panel on Climate Change (IPCC) Sixth Assessment Report (AR6) on the topic of 'Ocean, Cryosphere, and Sea Level Change'
6. (2011-2022) Science communication – interviewed on national, local broadcast media (e.g. ABC 20/20, MSNBC, NPR, PBS, FOX, NBC, CBS, WNYC) and print media (e.g. Wired, Scientific American, Popular Science, Reuters, Washington Post) and author of Op-Eds (three in the New York Times) and the http://SeaAndSkyNY.com blog (90000+ views)

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

1. Ghanbari, M., T. Dell, F. Saleh, Z. Chen, J. Cherrier, B. Colle, J. Hacker, L. Madaus, P. Orton, and M. Arabi, 2024: Compounding effects of changing sea level and rainfall regimes on pluvial flooding in New York City. Natural Hazards, 1-24.
2. Enriquez, A. R., T. Wahl, S. A. Talke, P. M. Orton, J. F. Booth, M. Agulles, and S. Santamaria-Aguilar (2023), MatFlood: An efficient algorithm for mapping flood extent and depth, Environmental Modelling & Software, 169, 105829, doi: 10.1016/j.envsoft.2023.105829.
3. Mita, K. S., Orton, P., Montalto, F., Saleh, F., & Rockwell, J. (2023). Sea Level Rise-Induced Transition from Rare Fluvial Extremes to Chronic and Compound Floods. Water, 15(14), 2671. DOI: 2073-4441/15/14/2671
4. Orton, P. M., Ralston, D., van Prooijen, B., Secor, D., Ganju, N. K., Chen, Z., Fernald, S., Brooks, B. and Marcell, K., 2023. Increased utilization of storm surge barriers: A research agenda on estuary effects. Earth's Future. DOI: 10.1029/2022EF002991.
5. Chen, Z. and Orton, P. M. (2023). Effects of Storm Surge Barrier Closures on Estuary Saltwater Intrusion and Stratification. Water Resources Research, e2022WR032317. DOI:10.1029/2022WR032317
6. Pareja-Roman, L. F., Orton, P. M., & Talke, S. A. (2023). Effect of estuary urbanization on tidal dynamics and high tide flooding in a coastal lagoon. *Journal of Geophysical Research: Oceans*, 128, e2022JC018777.
7. Ayyad, M., P. M. Orton, H. E. Safty, Z. Chen, and M. R. Hajj (2022), Ensemble Forecast for Storm Tide and Resurgence from Tropical Cyclone Isaias, *Weather and Climate Extremes*, DOI: 10.1016/j.wace.2022.100504.

8. De Leo, F., Talke, S.A., Orton, P.M., Wahl, T. (2022), The effect of harbor developments on future high-tide flooding in Miami, Florida, Journal of Geophysical Research, DOI: 10.1029/2022JC018496.
9. Rodríguez Enríquez, A., Wahl, T., Baranes, H., Talke, S. A., Orton, P. M., Booth, J. F., & Haigh, I. D. (2022). Predictable changes in extreme sea levels and coastal flood risk due to nodal and perigean astronomical tidal cycles. Journal of Geophysical Research, 127.
10. Palinkas, C. M., Orton, P., Hummel, M. A., Nardin, W., Sutton-Grier, A. E., Harris, L., et al. (2022). Innovations in Coastline Management With Natural and Nature-Based Features (NNBF): Lessons Learned From Three Case Studies. *Frontiers in Built Environment*, 8. Review Article.
11. de Ruig, L. T., Haer, T., de Moel, H., Orton, P. M., Botzen, W. J. W., & Aerts, J. C. J. H. (2022). An agent-based model for evaluating reforms of the National Flood Insurance Program: A benchmarked model applied to Jamaica Bay, NYC. *Risk Analysis*, 00, 1-18.
12. Zhang, F. and P. M. Orton (2022), Importance of Neighborhood Aspect Ratio and Storm Climate to Adaptation Efforts to Reduce Coastal Flood Mortality, *Frontiers in Built Environment*, 7 (769161), DOI: 10.3389/fbuil.2021.769161.
13. Strauss, B., P. Orton, K. Bittermann, M. K. Buchanan, R. E. Kopp, S. Kulp, C. Massey, H. de Moel, and S. Vinogradov (2021), Economic Damages from Hurricane Sandy Attributable to Sea Level Rise Caused by Anthropogenic Climate Change, *Nature Communications*, 12(2720), DOI: 10.1038/s41467-021-22838-1.
14. Li, S., T. Wahl, S. A. Talke, D. A. Jay, P. M. Orton, X. Liang, G. Wang, and L. Liu (2021), Evolving tides aggravate nuisance flooding along the U.S. coastline, *Science Advances*, 7(10), eabe2412, doi:10.1126/sciadv.abe2412.
15. Miller, L. A., and P. M. Orton (2021), Achieving Negative Emissions through the Ocean Sequestration of Vegetation Biomass as Black Pellets, *Climatic Change*, 167(3): 1-23.
16. Orton, P. M., E. W. Sanderson, S. A. Talke, M. Giampieri, and K. MacManus (2020), Storm tide amplification and habitat changes due to urbanization of a lagoonal estuary, *Nat. Hazards Earth Syst. Sci.*, 20(9), 2415-2432, doi:10.5194/nhess-20-2415-2020.
17. Chen, Z., P. M. Orton, and T. Wahl (2020), Storm Surge Barrier Protection in an Era of Accelerating Sea Level Rise: Quantifying Closure Frequency, Duration and Trapped River Flooding, *Journal of Marine Science and Engineering*, 8(9), 725, doi:10.3390/jmse8090725.
18. Zhang, F., P. M. Orton, M. Madajewicz, S. C. K. Jagupilla, and R. Bakhtyar (2020), Mortality during Hurricane Sandy: The effects of waterfront flood protection on Staten Island, New York, *Natural Hazards*, doi:10.1007/s11069-020-03959-0.
19. Gornitz, V., M. Oppenheimer, R. Kopp, R. Horton, D. Bader, P. Orton, and C. Rosenzweig (2020), Enhancing New York City's Resilience to Sea Level Rise and Increased Coastal Flooding, *Urban Climate*, 33, 100654, doi:10.1016/j.uclim.2020.100654.
20. 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.
21. 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.
22. 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.

23. 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.
24. 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.
25. 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.
26. 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.
27. 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.
28. 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.
29. 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.
30. 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.
31. 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.
32. 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.
33. 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.
34. 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.
35. 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.
36. 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.
37. 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.

38. 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.
39. 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.
40. 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.
41. 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*.
42. 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.
43. 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
44. 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.
45. 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.
46. 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.
47. 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.
48. 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.
49. Orton, P.M., McGillis, W.R., and Zappa, C.J., 2010. Sea breeze forcing of estuary turbulence and CO_2 exchange. Geophys. Res. Lett., 37, L13603, doi:10.1029/2010GL043159.
50. 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.
51. 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.
52. 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.

53. 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.
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