

## Dr. Julie Pullen

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### **CURRENT POSITION:**

**Associate Professor**, Ocean Engineering, Stevens Institute of Technology, Hoboken NJ, 2015-ongoing  
**Adjunct Research Scientist**, Lamont Doherty Earth Observatory, Columbia University, New York NY, 2009-ongoing

### **PREVIOUS POSITIONS:**

**Director, DHS National Center of Excellence for Maritime Security**, Stevens Institute of Technology, Hoboken NJ, 2011-2015  
**Research Associate Professor** in Ocean Engineering, Stevens Institute of Technology, Hoboken NJ, 2008-2015  
**Director, Maritime Security Laboratory**, Stevens Institute of Technology, Hoboken NJ, 2008-2011  
**Marie Tharp Visiting Fellow**, Earth Institute, Columbia University, New York NY, 2008-2009  
**Research Scientist**, Marine Meteorology Division, Naval Research Laboratory, Monterey CA, 2003-2008  
**Science Fellow**, Center for International Security and Cooperation, Stanford University, 2002-2003  
**Postdoctoral Researcher**, Marine Meteorology Division, Naval Research Laboratory, Monterey CA, 2000-2002

### **EDUCATION:**

Ph.D., **Physical Oceanography**, Oregon State University, 2000  
M.S., **Applied Mathematics**, University of Arizona, 1993  
B.A., **Physics and Mathematics**, Macalester College, 1991

### **LEADERSHIP AND PROFESSIONAL SERVICE:**

Councilor for Physical Oceanography, The Oceanography Society, 2015-  
Member, National Research Council committee “Developing a U.S. Research Agenda to Advance Subseasonal to Seasonal Forecasting,” 2014-2016  
Member, GODAE Coastal Ocean and Shelf Seas Task Team, 2014-  
Co-chair, meeting committee, DHS Maritime Risk Symposium, 2014-2015  
Co-chair, Steering Committee, Annual Waterfront Conference, 2014-  
Member, Board, Waterfront Alliance (and co-chair Policy Committee), 2013-  
Member, validation test panel 3 for transition of Coupled Ocean-Atmosphere-Wave Model to Navy operations, 2013-  
Member, New York City Panel on Climate Change, Health Working Group, 2013-  
Member, Coastal zone chapter working group, Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network, 2013-  
Member, Advisory Board, Federation of American Scientists, 2013-  
Member, Regional Catastrophic Planning Team, Regional Improvised Nuclear Device (IND) Plan Committee, 2011-2012  
Member, program committee, Gordon Research Conference on Coastal Ocean Modeling, 2011  
Member, program committee, 2nd International Waterside Security Conference, Italy, 2010  
Co-chair, meeting committee, 2010 Ocean Sciences, 2008-2010

Member, validation test panel 1 for transition of Coupled Ocean-Atmosphere Model to Navy operations, 2008-2010  
Member, Committee on the Coastal Environment, American Meteorological Society, 2007-2010  
Chair, Committee on the Coastal Environment, American Meteorological Society, 2005-2007  
Co-chair, 7th Conference on Coastal Atmospheric and Oceanic Prediction and Processes (joint with the 7th Symposium on the Urban Environment), 2006-2007  
Member, Scientific Steering Committee, Philippines Straits Dynamics Experiment, 2007-2010  
Member, program committee, Gordon Research Conference on Coastal Ocean Modeling, 2007  
Science co-lead on Navy Rapid Transition Project “Coupled Modeling Initiative” to demonstrate and deliver a globally relocatable coupled ocean/atmosphere/wave modeling and data assimilation system to the Navy SEAL Mission Support Center, 2005-2007  
Member, management team for the Department of Homeland Security Urban Dispersion Program tracer release field experiment in midtown Manhattan, August 2005

### PEER-REVIEWED PUBLICATIONS:

F. Saleh, V. Ramaswamy, N. Georgas, A. F. Blumberg, **J. Pullen**, S. Chen, T. Holt, and J. Schmidt, “An Operational Integrated Weather-Hydrologic-Coastal-Stormwater Framework to Forecast Urban Flooding: City of Hoboken Application,” *Journal of Environmental Modelling and Software*, submitted 2016.

F. Saleh, V. Ramaswamy, N. Georgas, A. F. Blumberg, **J. Pullen**, “Comparison between Retrospective Ensemble Streamflow Forecasts Using Meteorological Inputs from ECMWF and GEFS: A Multi-Scale Catchment Investigation,” *Journal of Hydrology*, submitted 2016.

T. Meir, **J. Pullen**, A. Blumberg, T. Holt, P. Bieringer, and G. Bieberbach, “Simulation of airborne transport and dispersion for urban waterside releases,” *Journal of Applied Meteorology and Climatology*, revised 2016.

**J. Pullen**, R. Allard, S. Chen, A.J. Miller and H. Seo, “Coupled ocean-atmosphere forecasting at short and medium time scales,” in *The Sea, Volume 17: The Science of Ocean Prediction* (book), eds. N. Pinardi, P. Lermusiaux, and K. H. Brink, revised 2016.

F. Saleh, V. Ramaswamy, N. Georgas, A. Blumberg, and **J. Pullen**, “A retrospective streamflow ensemble forecast for an extreme hydrologic event: a case study of Hurricane Irene on the Hudson River basin,” *Hydrology and Earth System Sciences*, 20, 2649-2667, 2016.

R. Dawson, S.A. Khan, V. Gornitz, M. Fernanda-Lemos, L. Atkinson, **J. Pullen**, A. Murdukhayeva and J. Camilo, “Urban areas in coastal zones” in *Climate Change and Cities: Second Assessment Report of the Urban Climate Change Research Network* (book), 2016.

**J. Pullen**, A.L. Gordon, M. Flatau, J. D. Doyle, C. Villanoy and O. Cabrera, “Multiscale influences on extreme winter rainfall in the Philippines,” *Journal of Geophysical Research-Atmospheres*, 120(8), 3292-3309, 2015.

P. L. Kinney, T. Matte, K. Knowlton, J. Madrigano, E. Petkova1, K. Weinberger, A. Quinn, M. Arend and **J. Pullen**, “New York City Panel on Climate Change 2015 Report Chapter 5: Public health impacts and resiliency,” *Annals of the New York Academy of Sciences*, 1336, 67–88, 2015.

V. H. Kourafalou, P. De Mey, J. Staneva, N. Ayoub, A. Barth, Y. Chao, M. Cirano, J. Fiechter, M. Herzfeld, A. Kurapov, A.M. Moore, P. Oddo, **J. Pullen**, A.J. van der Westhuysen and R.H. Weisberg, "Coastal Ocean Forecasting: science foundation and user benefits," *Journal of Operational Oceanography*, 8(sup1), s147-s167, 2015.

**J. Pullen** and M. Bruno, "The Center for Secure and Resilient Maritime Commerce: A DHS National Center of Excellence in Maritime Security," in Cases on Research and Knowledge Discovery: Homeland Security Centers of Excellence (book), 2014.

T. Meir, P. Orton, **J. Pullen**, T. Holt, W. Thompson and M. Arend, "Forecasting the New York City urban heat island and sea breeze during extreme heat events," *Weather and Forecasting*, 28, 1460-1477, 2013.

**J. Pullen**, J. Chang and S. Hanna, "Air/Sea transport, dispersion and fate modeling for the Fukushima Nuclear Power Plant crisis," *Bulletin of the American Meteorological Society*, 93(13), 31-39, 2013.

S. Grimmond, A. Baklanov, M. Best, R. Betts, J. Feddema, P. Falloon, G. Folberth, R. Francis, T. Holt, T. Jackson, E. Larson, M. McCarthy, T. Meir, N. Mirumachi, K. Oleson, P. Orton, and **J. Pullen**, "Contributions of coastal megacities to environmental changes at regional and global scales," Megacities and the Coast: Risk, Resilience and Transformation (book), ed. M. Pelling and S. Blackburn, Routledge, 2013.

P. Orton, N. Georgas, A. Blumberg and **J. Pullen**, "Detailed modeling of recent severe storm tides in estuaries of the New York City region," *Journal of Geophysical Research-Oceans*, 117(C9), 2012.

**J. Pullen**, A. L. Gordon, J. Sprintall, C. M. Lee, M. A. Alford, J. D. Doyle and P. W. May, "Atmospheric and oceanic processes in the vicinity of an island strait," *Oceanography*, 24(1), 112-121, 2011.

P. W. May, J. D. Doyle, **J. Pullen**, and L. David, "Two-way coupled atmosphere-ocean modeling of the PhilEx intensive observational period," *Oceanography*, 24(1), 48-57, 2011.

I. Rypina, L. Pratt, **J. Pullen**, J. Levin and A. L. Gordon, "Chaotic advection in an archipelago," *Journal of Physical Oceanography*, 40(9), 1988-2006, 2010.

R. Signell, J. Chiggiato, J. Horstmann, J. D. Doyle, **J. Pullen**, and F. Askari, "High resolution mapping of Bora winds in the northern Adriatic Sea using synthetic aperture radar," *Journal of Geophysical Research-Oceans*, 115, C04020, 2010.

T. Holt, **J. Pullen**, and C. Bishop, "Urban and ocean ensembles for improved meteorological and dispersion modeling of the coastal zone," *Tellus*, 61A, 232-249, 2009.

**J. Pullen**, J. D. Doyle, P. W. May, C. Chavanne, P. Flament, and R. Arnone, "Monsoon surges trigger oceanic eddy formation and propagation in the lee of the Philippine Islands," *Geophysical Research Letters*, 35(7), 2008.

**J. Pullen**, J. Ching, D. Sailor, W. Thompson, R. Bornstein, and D. Koracin, "Progress toward meeting the challenges of our coastal urban future," *Bulletin of the American Meteorological Society*, 89 (11), 2008.

T. Haack, D. Chelton, **J. Pullen**, J. D. Doyle, and M. Schlax, "Summertime influence of SST on surface wind stress off the U. S. West Coast from the U. S. Navy COAMPS model," *Journal of Physical Oceanography*, 38, 2414-2437, 2008.

R. Signell, S. Carniel, J. Chiggiato, I. Janekovic, **J. Pullen**, and C. Sherwood, "Collaboration tools and techniques for large model datasets," *Journal of Marine Systems*, 69(1), 154-161, 2007.

**J. Pullen**, T. Holt, A. Blumberg and R. Bornstein, "Atmospheric response to local upwelling in the vicinity of New York/ New Jersey Harbor," *Journal of Applied Meteorology and Climatology*, 46, 1031-1052, 2007.

W. Thompson, T. Holt, and **J. Pullen**, "Investigation of a sea breeze front in an urban environment," *Quarterly Journal of the Royal Meteorological Society*, 133, 579-594, 2007.

T. Holt and **J. Pullen**, "Urban canopy modeling of the New York City metropolitan area: A comparison and validation of single-layer and multi-layer parameterizations," *Monthly Weather Review*, 135, 1906-1930, 2007.

**J. Pullen**, J. D. Doyle, T. Haack, C. Dorman, R. Signell and C. M. Lee, "Bora event variability and the role of air-sea feedback," *Journal of Geophysical Research-Oceans*, 112(C3), 2007.

C. Dorman, S. Carniel, L. Cavalieri, M. Sclavo, J. Chiggiato, J. Doyle, T. Haack, **J. Pullen**, B. Grbec, I. Vilibic, I. Janekovi, C. Lee, V. Malaci, M. Orlic, E. Paschini, A. Russo, R. P. Signell, "Winter 2003 Marine atmospheric conditions and the bora over the northern Adriatic," *Journal of Geophysical Research*, 111(C3), 2006.

**J. Pullen**, J. D. Doyle and R. Signell, "Two-way air-sea coupling: A study of the Adriatic," *Monthly Weather Review*, 134(5), 1465-1483, 2006.

J. Book, H. Perkins, L. Cavalieri, J. D. Doyle, and **J. Pullen**, "ADCP observations of the western Adriatic slope current during winter of 2001," *Progress in Oceanography*, 66, 270-286, 2005.

**J. Pullen**, J. Boris, T. Young, G. Patnaik, and J. Iselin, "A comparison of contaminant plume statistics from a Gaussian puff and urban CFD model for two large cities," *Atmospheric Environment*, 39, 1049-1068, 2005.

C. M. Lee, et al. "Northern Adriatic response to a wintertime bora wind event", *Eos Trans. AGU*, 86 (16), p. 157, 165, 2005.

R. Signell, S. Carniel, L. Cavalieri, J. Chiaggiato, J.D. Doyle, **J. Pullen**, and M. Sclavo, "Assessment of wind quality for oceanographic modeling in semi-enclosed basins," *Journal of Marine Systems*, 53, 217-233, 2005.

C. Sherwood, et al. "Sediment dynamics in the Adriatic Sea investigated with coupled models," *Oceanography*, 17 (4), 2004.

**J. Pullen**, J. D. Doyle, R. Hodur, A. Ogston, J. Book, H. Perkins, and R. Signell, “Coupled ocean-atmosphere nested modeling of the Adriatic Sea during winter and spring 2001,” *Journal of Geophysical Research-Oceans*, 108(C10), 2003.

R. Hodur, **J. Pullen**, J. Cummings, X. Hong, J.D. Doyle, P. Martin and M. Rennick, “The Coupled Ocean/Atmosphere Mesoscale Prediction System (COAMPS),” *Oceanography*, 15, 88-98, 2002.

**J. Pullen** and J. S. Allen, “Modeling studies of the coastal circulation off northern California: Statistics and patterns of wintertime flow,” *Journal of Geophysical Research-Oceans*, 106, 26959-26984, 2001.

**J. Pullen** and J. S. Allen, “Modeling studies of the coastal circulation off northern California: Shelf response to a major Eel River flood event,” *Continental Shelf Research*, 20, 2213-2238, 2000.

#### **PRESENTATIONS:**

Over 50 invited talks, including in 2015-2016: Columbia, Harvard, Brookhaven National Lab, Jakarta YMC meeting, Singapore Workshop on Intraseasonal Processes and Prediction in the Maritime Continent, Nanyang Technological University in Singapore, Euro-Mediterranean Center for Climate Change in Lecce (Italy).

#### **PRINCIPAL INVESTIGATOR:**

**2016-2019** “Multi-scale met-hydro-ocean connections in the Maritime Continent” (**ONR**)

**2014-2016** “Improved Coastal Flood Forecasts with COAMPS-TC” (**Naval Research Laboratory**)

**2013-2014** “Nuclear Issues Education” (**Carnegie Corporation**)

**2013-2015** “Chemical/Biological Agent Effects Manual: Meteorology and Environmental Data Chapter,” co-author (**Defense Threat Reduction Agency**)

**2013-2014** “Port Resiliency Framework and Toolkit” (**DHS/Coast Guard**)

**2008-2015** Maritime Security Laboratory (ONR) and Department of Homeland Security National Center of Excellence for Maritime Security Research (co-PI, **DHS**)

**2010-2012** “Evaluation of Coastal/Urban COAMPS Predictions” (**Naval Research Laboratory**)

**2009-2013** “Ocean coupling to topographically-enhanced atmospheric flow,” Coupled Processes Departmental Research Initiative (**Office of Naval Research**)

**2006-2009** “Air/sea coupled modeling for the Philippines Straits Dynamics Experiment,” PhilEx Departmental Research Initiative (**Office of Naval Research**)

**2006-2007** “Coupled Air-Sea Modeling for Improved Coastal Dispersion Prediction” (**Defense Threat Reduction Agency** Joint Science and Technology Office – Chemical and Biological Defense Program)

**2005-2008** “Initial and lateral boundary conditions using global HYCOM ocean model fields as input to high-resolution coastal models” (6.2 **National Ocean Partnership Program**)

**2004-2007** “The impact of sea surface temperature on sub-kilometer scale atmospheric prediction with application to chemical and biological dispersion in New York City”  
(**Department of Homeland Security** Urban Dispersion Program)

**2003-2007** “Air-Sea Coupling in the Coastal Zone” focused on the role of air-sea interaction in sea surface temperature, cloud cover and boundary layer dynamics off the coast of California and in the Adriatic (6.1 **Naval Research Laboratory**)

### **TEACHING, MENTORING & ADVISING:**

- OE/CE 533 Nuclear Terrorism and Security, fall 2014 (co-developed/taught new course)
- OE/CE 501 Oceanography, spring 2013 (lecturer)
- OE/CE 688 Coastal Ocean Dynamics, fall 2012 (co-taught)
- OE/CE 591 Introduction to Dynamic Meteorology, spring 2012 (co-taught)
- OC 331 Introduction to Oceanography, sole instructor of three-week physical oceanography section of junior/senior level undergraduate course at Oregon State University, 1998
- OC 430/530 Principles of Physical Oceanography, teaching assistant for graduate course at Oregon State University, 1994

-Maritime Security Summer Research Institute, faculty lead lecturing and supervising research projects of 5-10 advanced undergraduate and graduate students during an 8-week summer school, 2011-2014

-Faculty lead, Mentoring Physical Oceanography Women to Increase Retention (MPOWIR) for monthly mentoring sessions with early career participants, 2015-ongoing

-Senior scientist (invited), MPOWIR Pattullo Conference, 2013

-Ph.D. student: Talmor Meir (completed May 2015)

-Postdoctoral co-advisor: Philip Orton, Justin Schulte

-Member, Ph.D. committee for graduate student Antonio Martinho, oceanography department, Naval Postgraduate School, Monterey, CA, 2001-2003

### **FELLOWSHIPS AND HONORS:**

**2008** Marie Tharp Visiting Fellowship, Earth Institute, Columbia University

**2003&2007** Alan Berman Outstanding Research Publication Award, Naval Research Laboratory

**2002-2003** Science Fellowship, Center for International Security and Cooperation, Stanford

**2000-2002** Postdoctoral Fellowship, Consortium for Oceanographic Research and Education, Naval Research Laboratory

**1997** Wayne V. Burt Award for Academic Excellence, College of Oceanic and Atmospheric Sciences, Oregon State University

**1991-1993** Graduate Research Fellowship, University of Arizona

**1991** Physics Department Achievement Award, Macalester College

## **ACADEMIC COMMITTEES:**

- 2016-** Research and Entrepreneurship Committee, Stevens
- 2013-** Steering Committee for NSF ADVANCE Diversity Initiative, Stevens
- 2013-** DHS Maritime Fellowships Selection Committee, Stevens
- 2011-2012** Strategic Planning subcommittee on Research and Scholarship at Stevens
- 1998-1999** Promotion and Tenure Committee, College of Oceanic and Atmospheric Sciences, Oregon State University
- 1997-1999** John Byrne Lecture Series Organizing Committee  
College of Oceanic and Atmospheric Sciences, Oregon State University
- 1996-1997** Computer Committee  
College of Oceanic and Atmospheric Sciences, Oregon State University
- 1995-1996** Student Advisory Committee  
College of Oceanic and Atmospheric Sciences, Oregon State University

## **MEMBERSHIPS:**

- 2015-** New York Academy of Sciences
- 2002-** International Association for Urban Climate
- 2000-** American Association for the Advancement of Science
- 1998-** The Oceanography Society
- 1997-** American Geophysical Union
- 1997-** American Meteorological Society

## **MANUSCRIPT & PROPOSAL REVIEWS:**

- 2000-** National Science Foundation (in-person and virtual panels); DHS proposal review; Proceedings of the National Academy of Sciences; Monthly Weather Review; Continental Shelf Research; Journal of Geophysical Research-Oceans; Journal of Geophysical Research-Atmospheres; Journal of Applied Meteorology and Climatology; Estuarine, Coastal and Shelf Science; Bulletin of the American Meteorological Society; Annales Geophysicae

## **SPECIALIZED EXPERIENCE:**

- 2015** Subject Matter Expert (transport and dispersion) for NYC Department of Health Legionella Outbreak
- 2014** Subject Matter Expert for U.S. Coast Guard Long-term Strategic Planning "Evergreen" workshop
- 2013** Subject Matter Expert (CBRNE) for Thunderstorm Technology Demonstration at Joint

## Interagency Task Force-South

- 2008** Research Cruise for Philippines Straits Dynamics Experiment on the R/V Melville (22 January – 1 February); designed ship sampling strategies using real-time ocean and atmosphere regional operational forecasts and assisted with CTD casts  
Chief Scientist: Arnold Gordon, Columbia University
- 2005** Member, external evaluation committee for Top Officials 2 Full Scale Exercise (TOPOFF-2 simulated radiological and biological releases in Chicago and Seattle to test federal, state and local agency preparedness)
- 2003** Participant in American Meteorological Society Summer Policy Colloquium, Washington DC; a two week program to educate atmospheric scientists in science and technology policy
- 1999** Research Cruise for Strata Formation on Margins (Eel River, Northern California) on the R/V Wecoma (28 March – 3 April); assisted with mooring recovery/deployment, sediment core processing, and CTD casts.  
Chief Scientist: Andrea Ogston, University of Washington
- 1996** Research Cruise for Santa Barbara Channel - Santa Maria Basin Circulation Study on the R/V Sproul (8-15 January); assisted with data sampling design, mooring recovery/deployment, CTD casts, drifter deployment and XBT launches.  
Chief Scientist: Myrl Hendershott, Scripps Institution of Oceanography