

New Jersey's Lower
Hudson River Waterfront

25 Years of Construction: Challenges for the Next 25 Post Sandy Era

A conference to address
waterfront sustainability.



STEVENS
INSTITUTE OF TECHNOLOGY
THE INNOVATION UNIVERSITY®

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INTRODUCTION

Looking for resilience and stability along the NJ Lower Hudson Riverfront.

In March 2012, well before Hurricane Sandy, the Hudson River Waterfront Conservancy of NJ, Inc. decided to celebrate its 25th Anniversary with a conference that would put focus on the foundations of the riverfront that support and make possible the Hudson River Waterfront Walkway. The reason for this was simple: over the last decade, the Conservancy had seen the deterioration of many sections of the riverfront, in some areas due to age and the powerful force of the ebb and flow of the river itself, and in other locations the collapse of faulty or inappropriate construction. With these observations came the problem of how to fund renovations to make the shorefront and the Walkway stable. In July 2012, the Conservancy approached the Stevens Institute of Technology's Davidson Laboratory/Center for Maritime Systems to suggest co-sponsorship of a conference to be held on the Stevens campus. As is evident, the request was met with a positive and supportive response. At the time, Sandy was not on anyone's radar and the date was set for October 8, 2013.

The hurricane hit October 29, 2012 leaving in its wake new public awareness of the impact a hurricane or the convergence of a nor'easter which high tides can create. The planning for the conference took on an added importance . In particular, there had to be included in the conference an understanding of the options for rehabilitation and improvement not just directed to owners of waterfront property and waterfront municipal gov-

ernment, but for the awareness of the general public. In this quest, each of the nine municipalities along the western side of the Hudson River must comprehend and accept that it has to adopt new approaches to the flooding problem. They must work more closely with FEMA for base level mapping and broadening their responsibility for stabilizing the riverfront into a united NJ shoreline regional approach. In planning the conference, it became clear that a renewal of dedication to the fulfillment of the Public Trust Doctrine, which requires that the general populace has use of the waterfront, must occur. Along the Hudson River, this means assuring the creation and long term maintenance of the Hudson River Waterfront Walkway.

All of these requirements are at the foundation and the intent of this conference. It is a big order which we hope you will find achieved to some degree at the end of this day. For the purpose of knowing your reactions, you will find an Evaluation form inserted into the Program. Please be sure to fill it out and leave it in the basket at the rear of the room. You may also go on line to www.HudsonRiverWaterfront.org or e-mail info@HudsonRiverWaterfront.org to share your reactions.

Thank you for being part of this event. The Conservancy and Davidson Laboratory /Center for Maritime Systems remain dedicated to looking for and finding resilience and stability along the NJ Lower Hudson Riverfront.

AGENDA

New Jersey's Lower Hudson River Waterfront– **25 Years of Construction:** **Challenges for the Next 25 Post Sandy Era**

8:30 AM Registration & Breakfast

9:00 AM **Logistics and introduction of Dean**

Alan F. Blumberg, Ph.D., George Meade Bond Professor of Ocean Engineering;
Director of The Davidson Laboratory/Center for Maritime Systems,
Stevens Institute of Technology;

9:10 AM **Welcome to Stevens**

Michael S. Bruno, Ph.D., Dean of the School of Engineering and Science,
Professor of Ocean Engineering, Stevens Institute of Technology

9:15 AM **Introduction to The Hudson River Waterfront Walkway- Its genesis.**

Helen Manogue, President, Hudson River Waterfront Conservancy of NJ, Inc.

9:30 AM **Introduction of Keynote Speaker**

John Weingart, Associate Director, Eagleton Institute, Rutgers University

9:45 AM **Keynote Address**

Christopher J. Daggett, President and CEO, Geraldine R. Dodge Foundation
Former Commissioner of NJ Department of Environmental Protection and
Administrator of U.S. Environmental Protection Agency, Region 2

10:15 AM Break

UNDERSTANDING THE THREAT

10:45 AM **A changing climate.**

Radley M. Horton, Ph.D., Associate Research Scientist, Center for Climate Systems,
Columbia University; Principal Investigator, Northeast Climate Science Center

- 11:15 AM** **How does a municipality plan for changing climate?**
Honorable Dawn Zimmer, Mayor of Hoboken, New Jersey
- 11:30 AM** **Panel Discussion:** Radley M. Horton, Ph.D.; Mayor Dawn Zimmer
- 11:45 AM** Lunch
- 12:15 PM** **Introduction of Luncheon Speaker** Alan F. Blumberg, Ph.D.
Luncheon Speaker Hendrick Ovink, Senior Advisor to HUD Secretary Shaun Donovan
- TECHNOLOGY AND METHODS FOR MITIGATING THE THREAT**
- 1 PM** **Architecture/planning—New Approaches**
Alexandros Washburn, Chief Urban Designer of City of NY, Department of City Planning
- 1:15 PM** **Green technology.**
Franco Montalto, Ph.D., Associate Professor and Director of Sustainable Water Resources Engineering Laboratory, Drexel University
- 1:30 PM** **Review of today's technology.**
Jon K. Miller, Ph.D., Research Assistant Professor of Coastal and Ocean Engineering, Center for Maritime Systems, Stevens Institute of Technology
- 1:45 PM** **Panel Discussion:** Alexandros Washburn; Franco Montalto, Ph.D.; Jon K. Miller, Ph.D.
- FINANCING THE FUTURE**
- 2 PM** **Public/Private Foundations/Trusts**
Frank Scangarella, Assistant Director, NJ Environmental Infrastructure Trust Fund
- 2:15 PM** **FEMA and the Community Rating System basis for insurance discounts**
Cathleen Carlisle, Sr. Mitigation Planner, FEMA Region 2
- 2:30 PM** **A new path to funding?**
Beth Ravit, Ph.D., Department of Environmental Sciences;
Founder and Co-Director of Center for Urban Environmental Sustainability, Rutgers University
- 2:45 PM** **Panel Discussion:** Frank Scangarella; Cathleen Carlisle; Beth Ravit, Ph.D.
- 3:00 PM** Break

AGENDA

continued

ADAPTING TO THE FUTURE ALONG THE HUDSON RIVER WATERFRONT

3:15 PM

The Walkway: It's Role and Requirements

Henry M. White III, Principal, HM White Site Architects

Former President of the Hudson River Waterfront Conservancy of NJ, Inc.

3:30 PM

Disaster Mitigation and Repair-

Chris C. Obropta, Ph.D. Rutgers Cooperative Extension;

Associate Professor, School of Environmental and Biological Studies, Rutgers University

3:45 PM

The Future?

Claire Weisz, FAIA, Founding Partner WXY Architecture + Urban Design

FINAL Q & A—

4 PM

Panel Discussion: Moderator: Alan F. Blumberg, Ph.D.; All speakers

4:30 PM

Tour of Davidson Laboratory and Emersion Laboratory.

Led by Alan F. Blumberg, Ph.D.

5 PM

Reception in the Babbio Center Atrium: at foot of southern campus walk; 6th St./River Terrace

SPEAKERS

Alan F. Blumberg is George Meade Bond Professor of Ocean Engineering, and Director of The Davidson Laboratory/Center for Maritime Systems at Stevens Institute of Technology. The main focus of his work is directed towards understanding and predicting the physical dynamics of estuarine and coastal ocean circulation and the creation of ocean observing and forecasting systems which are used for environmental studies, surface vessel operations, and for securing the future safety and sustainability of urban coastal regions.

Dr. Blumberg is presently leading several major studies to predict and assess storm flooding events in New York and New Jersey. He is working with the NY City Mayor's office on

the effects of sea level rise on coastal flooding, with the NJ Governor's Office on state-wide storm surge reduction alternatives and with NASA and NOAA assessing impacts from storms of the future.

He has written over 130 peer-reviewed journal articles and conference proceedings. Dr. Blumberg is the recipient of the 2001 American Society of Civil Engineers Karl Emil Hilgard Hydraulic Prize and the 2007 Denny Medal from the Institute of Marine Engineering, Science and Technology. He received a doctorate in ocean physics from The Johns Hopkins University and did post-doctoral work with Princeton University in their Geophysical Fluid Dynamics Program.

Michael S. Bruno is Dean of the School of Engineering and Science, and Professor of Ocean Engineering at Stevens Institute of Technology, Hoboken, New Jersey. He is the Director of the Center for Secure and Resilient Maritime Commerce and Coastal Environments (CSR), a Department of Homeland Security National Center of Excellence. His research and teaching interests include ocean observation systems, maritime security, and coastal ocean dynamics. He is author of more than 100 technical publications in various aspects of the field.

Prior to assuming the duties of Dean, Dr. Bruno was the Director of the Center for Maritime Systems and Davidson Laboratory at Stevens

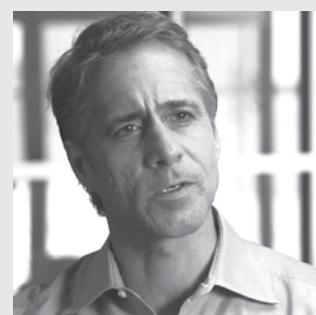
Dr. Bruno is a Member of the Ocean Research Advisory Panel; Member of the Naval Research



Alan F. Blumberg, Ph.D.
Director
Davidson Laboratory/Center for
Maritime Systems;
George Meade Bond Professor of
Ocean Engineering
Stevens Institute of Technology

Advisory Committee; and serves as the Editor-in-Chief of the Journal of Marine Environmental Engineering; Secretary-General of the Pan American Federation of Coastal and Ocean Engineers; and Visiting Professor at University College, London. From 2006 to 2012, he served as a Member of the National Academy's Marine Board, the last two years as Chair. Dr. Bruno is also a Fellow of the American Society of Civil Engineers and a Fulbright Scholar.

Dr. Bruno holds a B.S. degree in Civil Engineering from the New Jersey Institute of Technology, a M.S. degree in Civil Engineering from the University of California at Berkeley, and a PhD degree in Civil and Ocean Engineering from the Massachusetts Institute of Technology and the Woods Hole Oceanographic Institution.



Michael S. Bruno, Ph.D.
Dean
School of Engineering and
Science;
Professor of Ocean Engineering
Stevens Institute of Technology



Helen Manogue

President
Hudson River Waterfront Conservancy
of New Jersey, Inc.

President of the Hudson River Waterfront Conservancy of NJ, Inc. since 2007. Also founder and Coordinator of the Hoboken Quality of Life Coalition and its Committee for a Green Hoboken. Serves as a board member of the Coalition to Preserve the Palisades Cliffs, and until recently was an Executive Committee member of the Sierra Club, Hudson Meadowlands Group (now extinct).

Ms. Manogue is a graduate of Rutgers University's Newark College of Arts and Sciences where she earned a BA summa cum laude with College Honors, and is a member of Phi Beta Kappa.

She is the author of two publications regarding the Hoboken Waterfront published by the Center for Municipal Studies & Services at Stevens Institute of Technology. She retired from the Federal Reserve

Bank of New York where she worked as a bank examiner specializing in compliance with Community Reinvestment Act.

Over the last forty years she has led successful campaigns to prevent an oil refinery and oil tank farms from establishing projects along the Hudson River waterfront; fought for the creation of light rail in place of bus lanes in the waterfront communities along the Hudson; led the effort that obtained state and national historic preservation status for the Erie Lackawanna Terminal in Hoboken preventing its destruction; and with two other activists, devised the Hudson River Waterfront Walkway concept, lobbied for it and won its establishment as a requirement for development along the Hudson riverfront.



John Weingart

Associate Director
Eagleton Institute of Politics
Rutgers University

John Weingart is the associate director of the Eagleton Institute of Politics at Rutgers University. Previously, he worked in New Jersey state government during the administrations of four governors with a focus on environmental and land use issues. He was an assistant commissioner in the New Jersey Department of Environmental Protection and also served as staff director for the Hudson Waterfront Planning and Study Commission.

He is the author of the book, *Waste Is A Terrible Thing To Mind: Risk, Radiation, and Distrust of Government*, and also the host of *Music You Can't Hear On The Radio*, New Jersey's longest-running radio pro-

gram of bluegrass and folk music.

John grew up in New York City which has helped fuel his long and continuing commitment to try to help realize the potential of the Hudson River waterfront

In giving John their *Public Trust Award*, the Hudson Waterfront Conservancy cited his "creativity and ingenuity in the discovery and strengthening of a 1914 law that has become the legally unassailable means by which the Hudson River Waterfront Walkway has become a reality."

KEYNOTE SPEAKER

Christopher J. Daggett currently is the President and CEO of the Geraldine R. Dodge Foundation. He served as Deputy Chief of Staff to the Governor of New Jersey from 1982-1983, Cabinet Secretary to the Governor from 1983-1984, Regional Administrator of the US Environmental Protection Agency from 1984-1988, and Commissioner of the NJ Department of Environmental Protection from 1988-1989. After leaving public service at the end of 1989, he became a managing director at William E. Simon & Sons, an investment firm in Morristown. In 1996, he started his own firm dedicated to buying, remediating and redeveloping contaminated proper-

ties, and from 2004-2010, he also served as a principal at J. M. Sorge, Inc., an environmental consulting and management firm. In 2009, Mr. Daggett ran for governor of New Jersey as an independent candidate and was endorsed by the state's leading newspaper, the Star-Ledger.

Since entering the private sector in 1990, Mr. Daggett has served on numerous non-profit boards, mostly in the areas of education, the environment and land use planning. He earned a Bachelor of Arts with honors in Interdisciplinary Studies from the University of North Carolina at Chapel Hill, and a Doctorate in Education from the University of Massachusetts at Amherst.



Christopher J. Daggett
President and CEO
Geraldine R. Dodge Foundation

UNDERSTANDING THE THREAT



Radley M. Horton, Ph.D.
Associate Research Scientist
Center for Climate Systems;
Principal Investigator
Northeast Climate Science Center
Columbia University

Dr. Radley Horton is an Associate Research Scientist at the Center for Climate Systems Research at Columbia University. His research interests include regional climate projections, sea level rise, extreme climate events, loss of Arctic sea ice and its implications, and adaptation to climate variability and change.

Radley is a Convening Lead Author for the Third National Climate Assessment, Northeast Chapter. He is also Deputy Lead for NASA's Climate Adaptation Science Investigator Working Group, charged with linking NASA's science to its institutional stewardship. He served as the Climate Science Lead for the New York City Panel on Climate Change,

and is a Co-Lead for the NOAA-funded Consortium for Climate Risk in the Urban Northeast.

Radley is also the Columbia University lead for the Department of Interior-funded Northeast Climate Science Center. Radley has also been a Co-leader in the development of a global research agenda in support of the United Nations Environmental Program's Programme on Vulnerability, Impacts, and Adaptation (PROVIA) initiative. Radley is also a Co-PI on an NSF funded Climate Change Education Partnership Project. Radley also teaches in Columbia University's Sustainable Development department.



Honorable Dawn Zimmer
Mayor
City of Hoboken, NJ

Dawn Zimmer became the first woman Mayor of the City of Hoboken in 2009. Prior to that, she served as a Councilwoman after becoming involved in civic life as an advocate for park space.

Mayor Zimmer led Hoboken through several major crises, including Hurricane Irene in 2011 and Hurricane Sandy in 2012. She has developed a comprehensive resiliency and readiness plan to protect Hoboken from flooding, power outages, and other effects of climate change. Her "layers of protection" approach incorporates both physical and social infrastructure and includes a combination of green infrastructure, acquisition of open space, a resilient smart energy grid, storm surge barriers, flood pumps,

personal preparedness outreach, and an expansion of the Community Emergency Response Team. Mayor Zimmer is a proponent of preparing communities to "Shelter in Place" through storms and for more extended periods when appropriate. For these efforts, she was recently named a "Hero of the Harbor" by the Metropolitan Waterfront Alliance.

Mayor Zimmer is a member of President Obama's Hurricane Sandy Rebuilding Task Force. She has been an outspoken advocate for changing federal and state regulations related to flood insurance, reconstruction funding, and building standards in order to meet the unique challenges and characteristics of urban communities.

Henk WJ Ovink is senior advisor for Secretary Shaun Donovan of HUD in his role as Chair of the Hurricane Sandy Rebuilding Task Force. Ovink is responsible for the long term planning strategy, the regional design competition 'REBUILD BY DESIGN' and the connected planning conference. He works on the Task Force's legacy process, the regional resilience science center, regional infrastructure coordination and on the overall Task Force strategy.

Before joining the Task Force Ovink was both Director General Spatial Planning and Water affairs and Director National Spatial Planning for the Ministry of Infrastructure and the Environment in the

Netherlands. As Director General he was responsible for the national policy on, the national legal frameworks for and the long term strategy, investments, programs and projects for water affairs and national spatial planning in the Netherlands.

Ovink believes in a content driven organization where politics, content and organization meet. He has a long-term experience in change management within organizations for higher education, consultancy, engineering and all levels of government from municipality, province to national/federal. In his perspective change drives reflection, quality and commitment.



Hendrick WJ Ovink
Senior Advisor to HUD Secretary
Shaun Donovan

TECHNOLOGY AND METHODS FOR MITIGATING THE THREAT

Alexandros Washburn is the Chief Urban Designer of the City of New York, Department of City Planning and the author of *The Nature of Urban Design: a New York Perspective on Resilience*.

He leads a design studio within government for planning projects ranging in scale from skyscrapers to micro-unit apartments, and he acts as the design eyes for City Planning in zoning, policy and project review. He has a Masters of Architecture from the Harvard Design School, and in past lives he has been a part-

ner at W Architecture and Landscape Architecture, the president of the Moynihan Station Redevelopment Corporation, and Environment and Public Works advisor in the United States Senate.

His goal as Chief Urban Designer is to meet the urban design challenges facing New York City while improving the quality of civic life, and by writing *The Nature of Urban Design*, to widen the circle of those who can learn to change their cities for the better.



Alexandros Washburn
Chief Urban Designer of
the City of New York
Department of City Planning

**Franco Montalto, Ph.D.**

Associate Professor
Department of Civil, Architectural,
and Environmental Engineering;
Director
Sustainable Water Resource
Engineering Laboratory
Drexel University

Dr. Montalto, PE is a licensed civil/environmental engineer and hydrologist with 20 years of experience working in urban and urbanizing ecosystems as a practitioner, designer, and researcher. This experience includes planning, design, implementation, and analysis of ecological restoration and green infrastructure projects, many of which harness natural systems for both wastewater and stormwater treatment. As an Associate Professor in Drexel University's Department of Civil, Architectural, and Environmental Engineering, he directs the Sustainable Water Resource Engineering Laboratory. Dr. Montalto is also the founder of eDesign Dynamics LLC, a consulting firm based In New York City that specializes in green infrastructure and ecological restoration.

Previously, Dr. Montalto served as the Wetlands Engineer at the New Jersey Meadowlands Commission, where he was responsible for the engineering design of the 209-acre Mill Creek Marsh in Secaucus, NJ among other large urban wetland restoration projects. He has worked overseas in various capacities in Europe, Africa, the Caribbean, and Latin America and is the author of numerous publications in the water resources and environmental fields. He was also formerly a Fellow at the Earth Institute at Columbia University, a Fulbright Scholar, and an Adjunct Professor at the Cooper Union for the Advancement of Science and Art, where he received his first degree. His graduate degrees are from Cornell University.

**Jon K. Miller, Ph.D.**

Research Assistant Professor
Center for Maritime Systems
Stevens Institute of Technology

Dr. Miller is a Research Assistant Professor of coastal and ocean engineering at the Center for Maritime Systems at Stevens Institute of Technology. Prior to coming to Stevens, Dr. Miller was a recipient of the prestigious National Defense Science and Engineering Graduate Fellowship (2001-2004) and was named a Fulbright Post-doctoral Scholar (Australia, 2004). While in Australia, Dr. Miller was hosted by the University of Queensland, where he conducted research on shoreline changes related to variations in waves and water levels during extreme storms. In addition to his role as Research Assistant Professor, Dr. Miller also serves as the New Jersey Sea Grant Coastal Processes Specialist and Assistant Director of the New Jersey Coastal Protection Technical Assistance Service (NJ CPTAS). In

his role as Coastal Processes Specialist, Dr. Miller has represented NJ Sea Grant at numerous events including Coast Day and the annual NJ State of the Shore press conference. Through NJ CPTAS, Dr. Miller has authored or co-authored numerous technical reports on topics ranging from surfing reefs, to bayshore stabilization alternatives. In 2006, Dr. Miller co-authored testimony provided to the New Jersey State Environmental Committee on New Jersey's beach nourishment experience and in 2009 Dr. Miller oversaw the development of Stevens' Dynamic Underwater Coastal Kinematic Surveying (DUCKS) System. Dr. Miller's research interests include shoreline changes, coastal processes, nearshore wave measurement and analysis, and remote observing systems.

FINANCING THE FUTURE

Frank Scangarella is the NJ Environmental Infrastructure Trust's Assistant Director and has been with the Trust since 2006.

Frank received his undergraduate degree in Economics from Ramapo College in 1985 with honors and his Juris Doctorate, cum laude from Vermont Law School in 1991 and Masters in Environmental Law, summa cum laude also from Vermont Law School also in 1991. He has been a licensed attorney in the State of New Jersey since 1991.

He served as a New Jersey Deputy Attorney General from 1991 – 95 litigating environmental matters and then as Assistant Counsel to Governor Whitman providing legal and policy advice on environmental, transportation, and financing matters.

In 1999, Frank was recruited by

the NJ Water Supply Authority to oversee Authority legal matters and business operations including procurement, human resources, insurance and information technology. He developed a land acquisition program acquiring over 2500 acres of watershed property through leveraged acquisitions with local, state and federal partners.

As NJEIT's Assistant Director and Chief Operating Officer, Frank is responsible for overseeing daily business operations, loan applications, and new program initiatives. He has focused his efforts on simplifying loan application processes, developing new loan products, and improving budgetary forecasting processes and overseeing the development of web based software for the administration of the financing program.



Frank Scangarella
Assistant Director
NJ Environmental Infrastructure
Trust Fund

Cathleen serves as Senior Planner in the Mitigation Division at FEMA Region II in New York City where she oversees Mitigation Plan Review and manages a comprehensive program of Mitigation Planning technical assistance and training for State and local governments in New Jersey and New York. Previously, she has served as a hazard mitigation program manager for the National Earthquake Hazards Reduction Program in FEMA's Federal Insurance and Mitigation Administration in Washington, DC and as Program and Planning and Policy coordinator for the City of Portland, Oregon

Office of Planning and Development Review where she worked to develop and implement hazard mitigation policy with City Planning and Building Officials, the State of Oregon, and Portland Metro Regional Planning. She holds B.S. and B.A. degrees in Economics and Finance from the University of Utah and a Masters in Public Administration from the University of Oregon, Planning Public Policy and Management Program in the School of Architecture and Allied Arts.



Cathleen Carslile
MPA Senior Planner
Mitigation Division
Department of Homeland
Security-FEMA Region II



Beth Ravit, Ph.D.
Co-Founder and Co-Director
Center for Urban Environmental
Sustainability (CUES)
Rutgers University

Dr. Beth Ravit spent two decades as a corporate executive before entering graduate school and earning her Ph.D. in Environmental Science from Rutgers University. She joined the Rutgers faculty in 2005 and is currently an Instructor in the Department of Environmental Sciences, School of Environmental & Biological Sciences (SEBS), New Brunswick, NJ. Dr. Ravit has successfully lead scientific and design teams working on wetland restorations. Her specific focus is rehabilitation of the Hudson-Raritan Estuary. Dr. Ravit is working in collaboration with NY/NJ Baykeeper at Naval Weapons Station Earle to install an Eastern Oyster reef, leading a research team to determine its effect on shoreline stabilization and protection from erosion and storm surges. In 2006 Dr. Ravit co-founded the Rutgers Center for Urban Environmental Sustainability (CUES), a collaboration of the

Departments of Landscape Architecture and Environmental Sciences. As Co-Director of CUES, Dr. Ravit coordinates interdisciplinary teams to participate in CUES research initiatives. She is also the primary CUES liaison with New Jersey's environmental non-governmental organization (NGO) community. CUES projects have included recovery of gray water from landfill leachate, recycling of biosolid sludge and studies of bioreactor landfill processes. Dr. Ravit is the Co-Chairperson of the Sustainable Jersey Brownfields Task Force. This Task Force is developing Action Items that support the reduction and reuse of NJ's Brownfields inventory. She has authored a dozen peer-reviewed scientific articles related to coastal wetland restoration and remediation. Dr. Ravit is an Executive Board Trustee and Treasurer of Hackensack Riverkeeper, Inc. and a Trustee of the Closter Nature Center.

ADAPTING TO THE FUTURE ALONG THE HUDSON RIVER WATERFRONT



Hank White,
Founder and Principal,
HM White Site Architects

Henry (aka Hank) White, Founder and Principal of HM White, a NYC based landscape architectural and urban design firm, has been responsible for an array of highly acclaimed and award-winning projects within the metropolitan region as well as internationally. His work spans over 25 years and includes the successful bridging of project scales from the New York Times Lobby Garden to the reclamation of Staten Island's St. George maritime park and most recently the highly acclaimed landscape design for the Brooklyn Botanic Garden's new Visitor Center. His environmentally based solutions are the foundation for innovative landscape architectural solutions.

Hank has championed ground breaking urban forestry practices while

serving as a NYC's Municipal Arts Society's Streets and Sidewalk Committee member. As president for more than 7 years, he has been a board member since 1995 of Trees New York - a non-profit organization supporting the care and quality of NYC's street tree inventory. As a board member to the Hudson River Waterfront Conservancy for over twelve years, Hank was awarded in 2010 a Certificate of Excellence for his design and environmental professional services. Hank was appointed as a member of Harvard University Graduate School of Design's Alumni Council where he promoted the school's landscape architectural program as a global and national resource in addressing climate change and sustainable design and planning initiatives.

Christopher C. Obropta, Ph.D., P.E. is the Extension Specialist in Water Resources with Rutgers Cooperative Extension, and he is an Associate Professor with the Department of Environmental Sciences at the School of Environmental and Biological Sciences, Rutgers University. He has a doctorate in Civil Engineering from Stevens Institute of Technology, a M.S. in Civil Engineering from New Jersey Institute of Technology, and a B.S. in Civil Engineering from New Jersey Institute of Technology. Prior to joining Rutgers, Dr. Obropta was an environmental consultant for 12 years at Omni Environmental Corporation in Princeton, New Jersey. With his extensive

and impressive background, Dr. Obropta leads his highly specialized staff from the Rutgers Cooperative Extension Water Resources Program to identify and address community water resources issues using sustainable and practical science-based solutions throughout New Jersey. Over the last several years, he and his staff have been working with communities to implement green infrastructure practices throughout New Jersey. Through this grass roots community-based green infrastructure initiative, numerous rain gardens as well as rain water harvesting systems have been successfully installed in Newark and Camden.



Christopher C. Obropta, Ph.D.
Associate Professor
Dept. of Environmental Sciences;
Extension Specialist
Rutgers Cooperative Extension
Rutgers University

Claire Weisz, FAIA is a founding partner of WXY. WXY is based in New York City and known for innovation in the art of planning, urban design and architecture. As an architect and as a co-founder of the Design Trust for Public Space, she has revived the discourse and design of public space through a variety of projects that focus on infrastructure, neighborhoods and urban ecology. She has lectured and taught across the US and Canada and is

currently on faculty at NYU's Wagner School of Public Service and a Visiting Critic of Urban Design at Cornell's College of Architecture, Art and Planning in NYC.



Claire Weisz, FAIA
Founding Partner, WXY
Architecture + Urban Design

Hudson River Waterfront Conservancy of NJ

The Conservancy was created in 1988 when the Rules and Regulations for the Hudson River Waterfront Walkway were codified (N.J.A.C. 7:7E-3.48). The Conservancy was established as a nonprofit organization composed of waterfront stakeholders including interested citizens, waterfront property owners, businesses, corporations and local government representatives. Its purpose is to assist the New Jersey Department of Environmental Protection that upholds the creation, maintenance and provision of free, unobstructed public access to the Walkway. The Conservancy confers with and advises the NJ DEP on applications for Waterfront Development permits. It acts as "boots on the ground" to report damaged sections of the pathway (especially after events such as Hurricane Sandy), required maintenance and removal of obstacles that prevent public access. As part of its mandate, the Conservancy meets

with waterfront property owners to review the requirements of the Regulations and to address problems. It maintains an active website www.hudsonriverwaterfront.org where information is supplied about special events, Conservancy letters to the editor and press releases, a virtual library of waterfront rules and regulations and commentary on current events affecting the Walkway and the Waterfront. This conference celebrates the 25th anniversary of the Conservancy as well as the official beginning of the Hudson River Waterfront Walkway.



Hudson River Waterfront Conservancy of NJ, Inc.

Helen Manogue, President

Donald Stitzenberg, Esq., Vice President

Edward Rogaski, Jr. Treasurer

Peggy Wong, Secretary

Mary Hogan

William Neyenhouse PP

Howard Singer, Ph.D.

Dorcey Winant

Stevens Institute of Technology Davidson Laboratory

Stevens Institute of Technology has a proud legacy of maritime engineering dating back to its founding in 1870 by Edwin A. Stevens, one of the pioneers of naval engineering. That legacy continued with the commissioning of Davidson Laboratory during World War II by the U.S. Navy. Davidson Laboratory with its professional staff of 30 conducts transformational multi-disciplinary research required to tackle today's most challenging marine and ocean engineering problems. The Laboratory houses researchers with expertise in Urban Ocean Physics, Coastal Engineering, Naval Engineering, and Underwater Acoustics, among others. In the 1994, in recognition of the Laboratory's expertise, the State of New Jersey established the Coastal Protection Technical Assistance Service (CPTAS) at Stevens. The CPTAS is charged with providing expertise to the State of New Jersey and its municipalities on issues related to

coastal hazards, resiliency, and sustainability. Significant research is conducted that integrates the emerging key impacts and vulnerabilities of coastal urban regions with an improved understanding of the dynamics of coastal urban meteorology and oceanography. Understanding the interaction of the coastal cities with the environment will make it possible to achieve unprecedented advances that contribute to securing the future for urban coastal regions.

Davidson Laboratory Capabilities:

Physical Modeling: Davidson Laboratory houses a 313'x 12'x 6' deep towing tank, with a dual flap programmable wave maker capable of generating 2' foot waves. Over the past 20 years Davidson Laboratory researchers have tested dozens of shore protection structures in the tank, including beach dewatering, coastal revetments, and offshore breakwaters. Stevens' researchers have used their expertise to conduct research in other facilities such as the US Army Corps of Engineers Longshore Sediment Transport Facility in Vicksburg, MI.

Field Data Collection: The Coastal Engineering Lab conducts high-resolution field investigations of shore protection projects



including beach fill evolution, shoreline structure interaction, wave transformation, and sediment transport. Field research is supported by the Laboratory's two research vessels and a jet ski based coastal bathymetric surveying system. In-situ wave and current measurements are obtained by the Center's marine operations group which maintains and operates Acoustic Doppler Current Profilers, Wave meters, and Acoustic Doppler Velocimeters.

Urban Ocean Forecasting: Stevens' researchers developed and currently operate the New York Harbor Observation and Prediction System, which is a real time data collection and modeling system for the New York Bight. The backbone of the modeling component of NYHOPS is ECOM-SED, a shallow water version of the Princeton Ocean Model which was developed at Stevens. NYHOPS is capable of providing hindcasts and forecasts of the waters sur-

rounding New York and New Jersey on a very fine scale.

Coastal Urban Resiliency: The work includes very detailed modeling and simulation of the key phenomena associated with urban resilience. The phenomena of interest include physical, and organizational phenomena surrounding threats to urban environments, and organizational responses to these threats and their aftermath. Results from such modeling and simulation endeavors are presented via large-scale interactive visualizations that support use by politicians, policy and decision-makers, enterprise executives, and other community stakeholders. These capabilities enable transformational understanding of processes within evolving complex urban coastal environments.

Monitoring: Stevens' researchers frequently conduct bathymetric and topographic surveys using the specially designed DUCKS surveying system. DUCKS integrates traditional RTK GPS measurements with acoustic sounding information using a computer system mounted on the back of a personal watercraft. The versatile system allows measurement of the bathymetry in extremely shallow areas, and in places like the surfzone where traditional measurement approaches fail.



A walk on the Hudson River Waterfront Walkway.

Stevens Institute of Technology
www.stevens.edu

The New York–New Jersey Harbor & Estuary Program

The New York – New Jersey Harbor & Estuary Program is pleased to support this important discussion about the future of public access to the New Jersey's Hudson River waterfront. In our estuary, the most urban in the nation, there is a delicate balance between intensive human uses and riparian habitats. Water-based public recreation areas are an important part of this array, from which we reap the benefits of tourism and recreation. They also foster an awareness of and appreciation for our estuary while providing opportunities for physical activity. The overall result are healthier, stronger, and more livable and desirable communities.

Publicly accessible waterfront spaces are also at the forefront of vulnerability to climate change and coastal storms. It is critical

that we identify and implement solutions that both ensure the maintenance of public access to our waterways for years to come, and foster healthy habitats, waterways, and communities.

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"The world will not evolve past its current state of crisis by using the same thinking that created the situation."

—Albert Einstein



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Supporting Groups:

- American Littoral Society**
- Association of NJ Environmental Commissions**
- NJ Conservation Foundation**
- NJ League of Women Voters**
- NY/NJ Baykeeper**
- Trust for Public Land**

Hudson River Waterfront Conservancy of NJ, Inc., P.O. Box 6217, Hoboken, NJ 07030

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