Volpe The National Transportation Systems Center

Transportation System Resilience, Extreme Weather, and Climate Change

A Thought Leadership Series

Tuesday, October 8, 2013

Steve Winkelman
Director of Transportation and Adaptation Programs
Center for Clean Air Policy

Can We Get There from Here? Transportation and Climate Adaptation: Prospects for the Future

About the Speaker

Steve Winkelman has 20 years of experience in the transportation, energy and environmental fields, assisting government officials around the world with policy design, implementation and evaluation of low-emissions development strategies. His research and writing focus on the intersections of infrastructure, transportation and land use planning, climate policy and economics. He facilitates stakeholder dialogues to diagnosis problems and craft effective solutions.

Steve directs CCAP efforts to advance sustainable urban development and transportation efficiency in developing countries, including development of an urban transportation Nationally Appropriate Mitigation Action (NAMA) in Colombia, low-emissions development strategies in Mexico, and transportation energy savings in Saudi Arabia. He has analyzed the economic costs and benefits of a variety of low-emissions development technologies, policies and measures. Steve is co-author of Growing Wealthier: Smart Growth, Climate Change and Prosperity (CCAP 2011) and of *Growing Cooler: The Evidence on Urban Development and Climate Change* (ULI 2008), which assesses economic benefits for businesses, governments and households.

Steve has been active in climate adaptation since 2006. He directed the Urban Leaders Adaptation Initiative, helping leading governments "Ask the Climate Question" when making infrastructure and land use decisions to improve their resilience to climate change impacts (partners included NYC, Chicago, Miami-Dade County, Los Angeles, San Francisco, King County, Phoenix, Milwaukee and Toronto). His team provided technical and policy assistance to help these cities develop and implement climate adaptation plans and policies and produced a paper on Green Infrastructure and Urban Climate Adaptation. Steve lead an expert workshop on transportation adaptation for NOAA and developed recommendations on data, modeling and capacity building needs as well as policy recommendations for improving state and local practitioners' ability to plan and prepare transportation infrastructure for climate change impacts.

U.S. Department of Transportation
Research and Innovative Technology Administration
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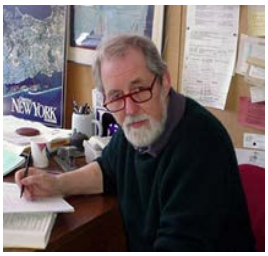
He launched CCAP's Weathering Climate Risks program focused on community preparedness for extreme weather and climate change, emphasizing private sector engagement and the economics of resilience. He is currently assisting the District of Columbia government in analyzing and implementing resilience policies and measures to mitigate flooding and extreme heat. He continues to help DC engage the private sector on adaptation and assess economic impacts of climate change and the benefits of adaptation. He is leading a paper on Measuring Climate Resilience to compile practical and meaningful climate adaptation metrics for planners, practitioners and policymakers using CCAP's "PIE" framework: People, Infrastructure, Economy. We are considering physical metrics (e.g., inundation levels), measures of implementation progress (e.g., square meters of green roofs installed) and outcome indicators (e.g., hours of power outage).

Steve's policy, data and capacity-building recommendations have been included in several House and Senate bills on transportation, climate change and resilience. He has testified to four U.S. Congressional committees and has been a featured presenter at numerous conferences and workshops. His work has been covered by media outlets such as: the Atlantic, Climate Wire, CNN, E&E News, E&E TV, Greenwire, Grist, Huffington Post, National Journal, New York Times, and the Wall Street Journal.

Prior to joining CCAP, Steve managed ICF's Climate Wise industrial energy efficiency work for the US EPA. At Argonne National Laboratory he designed, built and tested a magnetically levitated vehicle (maglev). His first transportation job was as a crew member for a hot-air ballooning company in France. He is a member of the National Academies Transportation Research Board Special Task Force on Climate Change. Steve holds a BS in Physics from the University of Michigan and an MA in Public Policy from the University of Minnesota.

Tuesday, November 19, 2013



Dr. Klaus H. Jacob
Special Research Scientist
Lamont-Doherty Earth Observatory
Adjunct Professor
School of International and Public Affairs
Columbia University

Pre-Sandy Impact Modeling of Storm Surge on the New York City Metro Region's Transportation Infrastructure, Validation by Sandy, and post-Sandy Resilience Issues

About the Speaker

Dr. Jacob is a geophysicist and Special Research Scientist at Columbia University's Lamont-Doherty Earth Observatory where he retired from a full time Research Professor position in 2001. He teaches Disaster Risk Management as an Adjunct Professor at Columbia's School of International and Public Affairs; and has taught Urban Disaster Resiliency Studios for Caracas, Istanbul and Accra at Columbia's Graduate School of Architecture, Planning and Preservation.

Current research is focused on climate change, sea level rise, and impacts on coastal megacities and their infrastructure. He serves on the Mayor's New York City Panel on Climate Change, and as a research advisor to the U.S. HUD post-Sandy competition "Rebuilding by Design" that facilitates innovative use of up to $20B of the $50-60B that Congress and the Obama Administration have set aside for creating post-Sandy climate-resilient rebuilding investments. He prepared the New York Metropolitan Transportation Authority's (MTA)

climate change adaptation plan; and coauthored the U.S. National Academy's report on "Impacts of Climate Change on U.S. Transportation."

On The NY State ClimAID project he headed the adaptation research teams on Transportation and on Telecommunication.

Prior seismological research took him to 5 continents, including Alaska, Central America, Australia, Pakistan, India and Singapore often working on the basic Earth science underpinnings for the seismic safety of major engineering projects. He was a cofounder of the National Center for Earthquake Engineering Research and during its tenure coauthored National and New York City Seismic Building Codes, and worked intensively with FEMA, NYSEMO and NYC OEM on developing effective natural disaster mitigation plans. He has testified before the Congressional panel on NEHRP funding, and has served the New York State Attorney General's Office as expert in the seismic safety of nuclear power plants and on climate resiliency matters for electric utilities.

He was named by TIME magazine one of globally 50 "people who mattered in 2012" for forecasting, as part of the NYS ClimAID project, in great detail the consequences of a SANDY-like coastal storm on New York City a year before hurricane SANDY actually hit. Sandy eerily verified these forecasts.

He received his PhD in Geophysics from the University of Frankfurt/Main, Germany. Since then (1968) he has worked for 45 years at the Lamont-Doherty Earth Observatory of Columbia University.

Wednesday, December 4, 2013

Susanne E. DesRoches, LEED AP BD+C
Assistant Chief, Resilience and Sustainability
Port Authority of New York & New Jersey

About the Speaker

Susanne DesRoches currently holds the position of Assistant Chief, Resilience and Sustainability at The Port Authority of New York & New Jersey. Most recently, she assumed the lead role for the Hurricane Sandy immediate recovery and future climate resiliency efforts in the Engineering Department. She has represented the Agency on numerous regional climate change initiatives including the New York City Building Resiliency Task Force, the New York City Climate Change Adaptation Task Force and the New York State Climate Action Council.

Susanne manages the sustainable design program for Agency capital projects. In this capacity, she oversees the sustainability and climate resiliency of large-scale projects such as the LaGuardia Modernization Program and Newark Terminal A Redevelopment. She led the development and adoption of the PA Sustainable Infrastructure Guidelines, a sustainability rating system for infrastructure projects. Currently, she is overseeing the integration of future climate impacts in development of Agency resiliency design guidelines.

Susanne holds a Bachelor of Industrial Design from Pratt Institute and a Masters in Public Administration in Environmental Science and Policy from Columbia University. She is faculty in the Master of Science in Sustainability Management at Columbia University.

Tuesday, December 17, 2013

Gregg Fleming
Director, Center for Environmental and Energy Systems
Volpe, The National Transportation Systems Center

U.S. Initiatives to Reduce Transportation-Related Global Greenhouse Gas Emissions

About the Speaker

As Director of the Environmental and Energy Systems Technical Center at the Volpe Center, Gregg Fleming has over 25 years of experience in all aspects of transportation-related acoustics, air quality, and climate issues. He has guided the technical work of numerous, multi-faceted teams on projects supporting all levels of Government, Industry, and Academia, including the International Civil Aviation Organization, the Federal Aviation Administration, the Federal Highway Administration, the National Highway Safety Administration, the National Park Service, the National Aeronautics and Space Administration, the Environmental Protection Agency, and the National Academy of Sciences.

Mr. Fleming is responsible for the design, development, and deployment of internationally-recognized environmental analysis tools, including the FAA's Aviation Environmental Design Tool (AEDT), the FAA's Integrated Noise Model (INM), FAA's System for assessing Aviation's Global Emissions (SAGE), and FHWA's Traffic Noise Model (TNM). He is also responsible for evaluating, establishing, and maintaining standardized procedures for national and international aircraft noise certification. Most recently, he has been working with industry and academia on projects related to alternative fuels, with particular focus on approaches to achieving carbon-neutral growth. NHTSA's Corporate Average Fuel Economy (CAFE) program is also directly supported by Mr. Fleming's Technical Center.

Mr. Fleming currently co-chairs the International Civil Aviation Organization's (ICAO) Modeling and Databases Group and represents the Federal Aviation Administration at the United Nations Framework Convention on Climate Change. He has co-authored numerous peer-reviewed journal articles and has participated substantially in the development of national and international standards on technical issues pertaining to acoustics, air quality, and climate change.

Tuesday, February 25, 2014

Dr. Kerry Emanuel

Cecil & Ida Green Professor of Atmospheric Science
Massachusetts Institute of Technology

About the Speaker

Dr. Kerry Emanuel is the Cecil and Ida Green professor of atmospheric science at the Massachusetts Institute of Technology, where he has been on the faculty since 1981, after spending three years on the faculty of UCLA. Professor Emanuel's research interests focus on tropical meteorology and climate, with a specialty in hurricane physics. His interests also include cumulus convection, and advanced methods of sampling the atmosphere in aid of numerical weather prediction. He is the author or co-author of over 100 peer-reviewed scientific papers, and two books, including *Divine Wind: The History and Science of Hurricanes*, published by Oxford University Press and aimed at a general audience, and *What We Know about Climate Change*,

published by the MIT Press.

Dr. Emanuel served as Professor and Director of the Program in Atmospheres, Oceans, and Climate in the Department of Earth, Atmospheric, and Planetary Sciences at MIT from July 2009 to January 2012. He was elected to the National Academy of Sciences in 2007 and serves on the Board on Atmospheric Sciences and Climate of the National Academy. Dr. Emanuel has also served on the Board of the University Corporation for Atmospheric Research and the Council of the American Meteorological Society. Link here for a full list of Dr. Emanuel's publications.

Tuesday, March 11, 2014

William Lyons
Principal Technical Advisor in Transportation Planning
Volpe, The National Transportation Systems Center

The Challenge of Transportation Planning for Resilience

About the Speaker

Mr. William M. Lyons is a Principal Technical Advisor in transportation planning at the Department of Transportation's Volpe Center. He holds an M.A. from the University of California (Institute of Transportation Studies), an M.A. from the University of Lancaster (UK), a B.A. in Government and International Relations from Carleton College, and completed post-graduate studies in transportation and civil engineering at MIT.
Mr. Lyons' research interests include a broad range of topics involving integrated transportation planning and policy, including performance-based planning, planning for megaregions, and innovative ways to incorporate considerations of climate change mitigation and resilience, sustainability, and comprehensive approaches to public health in transportation decisions. In addition to research projects, he leads Volpe support for the Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) on regulatory reviews of transportation planning by states and metropolitan areas. The projects involve multi-disciplinary teams and significant collaboration with transportation planning and operating agencies at federal, state, regional, and local levels.
Mr. Lyons has represented the Volpe Center and the U.S. Department of Transportation (USDOT) on numerous international initiatives. He participated on international studies for the Organization of Economic Cooperation and Development and European Conference of Ministers of Transport (ECMT), including a multi-year study to recommend policies to ministers on urban travel and sustainability. Mr. Lyons serves as coordinator for an agreement for research collaboration with the Dutch Ministry of Transport's Centre for Transport and Navigation and served on the USDOT team reviewing transportation planning and policy in Panama.
Mr. Lyons was on the U.S. DOT team that established the Department's Center for Climate Change and Environmental Forecasting in 1999 to address issues associated with climate change and variability, served on the Center's core team, and led development of the Climate Center's Strategic Plan and research reports on "Greenhouse Gas Reduction Through State and Local Transportation Planning," and "Integration of Climate Change Considerations in Statewide and Regional Transportation Planning." Mr. Lyons has presented results of the Volpe Center research on climate change considerations and transportation planning at conferences of the Transportation Research Board (TRB), Association of Metropolitan Planning Organizations, and Rail~Volution, and is leading organization for a session at the TRB 2014 annual meeting on planning by Metropolitan Planning Organizations to meet the challenges of climate change resilience.
Mr. Lyons is active in the Transportation

Research Board (TRB), serving as a member of the Public Transit and Planning and Metropolitan Policy, Planning, and Processes Committees, and Megaregions Public Health, and Sustainability Indicators Sub-committees. Through TRB, he has published numerous reports, served on numerous panels, and organized workshops on planning for megaregions and evaluation methodologies for nonmotorized transportation.

Thursday, April 10, 2014

Dr. Jerry Melillo
Distinguished Scientist and Director Emeritus
The Ecosystems Center
Marine Biological Laboratory,
Woods Hole, Massachusetts

About the Speaker

Dr. Jerry Melillo is a Distinguished Scientist and Director Emeritus at The Ecosystems Center of the Marine Biological Laboratory in Woods Hole, Massachusetts, USA, and a Professor of Biology at Brown University. Dr. Melillo specializes in understanding the impacts of human activities on the biogeochemistry of ecological systems from local to global scales, using a combination of field studies and simulation modeling.

In 1996 and 1997, he served as the Associate Director for Environment in the US President's Office of Science and Technology Policy. Dr. Melillo has completed terms as the President of the Ecological Society of America and of the Scientific Committee on Problems of the Environment (SCOPE), an international environmental assessment body headquartered in Paris. He is an honorary Professor in the Institute of Geophysical Sciences and Natural Resources Research of the Chinese Academy of Sciences, a member of the American Philosophical Society, and a Fellow of the American Academy of Arts and Sciences.

Dr. Melillo has published more than 200 peer-reviewed articles, two ecology textbooks and three edited volumes on biogeochemistry. Over the past decade he has co-led two assessments for the US Global Change Research Program on the impacts of climate change on the United States; the first published in 2000 and the second published in 2009. Dr. Melillo is currently the Chairman of the federal advisory committee overseeing the design and production of the US Global Change Research Program's ongoing assessment activity.

Date to be announced

Polly Trottenberg
Under Secretary for Policy
U.S. Department of Transportation

About the Speaker

Ms. Trottenberg was nominated by President Obama to serve as the Under Secretary of Transportation for Policy in June 2012, and confirmed by the U.S. Senate in January 2013.

In this role, she serves as the principal advisor to the Secretary while providing leadership in the development of policies for the Department, generating proposals and providing advice regarding legislative and regulatory initiatives across all modes of transportation. Her office oversees the Office of Transportation Policy and the Office of Aviation and International Affairs.

Prior to her appointment as Under Secretary, Ms. Trottenberg served as Assistant Secretary for Transportation Policy for three years. During this time, she focused on surface transportation reauthorization, livability, high-speed rail, the

TIGER program and freight policy development.

She was previously the Executive Director of Building America's Future, a non-profit organization created by former Pennsylvania Governor Edward Rendell, former California Governor Arnold Schwarzenegger, and New York Mayor Michael R. Bloomberg, to promote infrastructure investment.

Ms. Trottenberg also worked in the United States Senate for 12 years, most recently as Deputy Chief of Staff and Legislative Director for California Senator Barbara Boxer, Chairman of the Senate Environment and Public Works Committee. Ms. Trottenberg also served as Legislative Director for New York Senator Charles Schumer and as Legislative Assistant to New York Senator Daniel Patrick Moynihan. She has worked extensively on transportation, public works, energy and environmental issues during her congressional career.

Before starting her career on Capitol Hill, Ms. Trottenberg worked at the Port Authority of New York and New Jersey, the Massachusetts State Senate, and the Massachusetts Port Authority.

Ms. Trottenberg received her undergraduate degree from Barnard College and her Master's in Public Policy from the Kennedy School of Government.