

8th Annual NOAA-CREST Symposium

Climate and Extreme Weather Impacts on Urban Coastal Communities

The City College of the City University of New York
Steinman Hall Auditorium, The City College of New York, NY

June 5-6, 2013

Agenda

June 5, 2013

- 8:00 - 9:00 AM REGISTRATION (Steinman Hall Lobby)
Coffee & Bagels
- 9:00 - 9:10 AM SYMPOSIUM OVERVIEW AND Housekeeping
Reza Khanbilvardi, NOAA-CREST Director, CCNY, NY
- 9:10 - 9:20 AM WELCOME ADDRESS
President Lisa S. Coico, City College of New York, NY

PLENARY SESSION

- 9:20 - 9:45 AM Using Satellite Data for Extreme Weather Events and Climate Change at NOAA/STAR
Al Powell, Director, NOAA/NESDIS/STAR, MD
- 9:45 -10:00 AM CREST Sciences address Extreme Weather and Climate issues
Reza Khanbilvardi, NOAA-CREST Director, CCNY, NY
- 10:00 -10:25 AM Climate Science, Impacts, and Adaptation at the Consortium for Climate Risk in the Urban Northeast (CCRUN)
Cynthia Rosenzweig, NASA/GISS, Director, Center for Climate Systems Research, Columbia University, NY

10:25-10:40AM Coffee Break

10:40-12:40 PM Technical SESSION I – Extreme Events in Urban Coastal Communities

Chair – Alan Blumberg, Stevens Tech, NJ
Co-Chair – Jorge Gonzalez, NOAA-CREST, CCNY, NY

- 10:40-11:00AM Tropical Moisture Exports and Extreme Rainfall
Upmanu Lall, Earth Institute, Columbia University, NY
- 11:00- 11:20AM Extreme Weather Forecasting - Coastal Urban Ecosystems
Jorge Gonzalez, Senior Scientist, NOAA-CREST, CCNY, NY
- 11: 20-11:40 AM Improving Storm Surge Forecasts and Adapting Our Urban Coasts
Alan Blumberg, George Meade Bond Professor and Director, Davidson Laboratory/Center for Maritime Systems Stevens Institute of Technology, NJ

- 11:40 -12:00 Noon Evaluating Impacts of Climate Change and Hurricanes on Secondary Production in Coastal Embayment
Michael Weinstein, Senior Scientist, NRDP, NJIT, NJ
- 12: 00-12: 20 PM Preparation, Response, and Recovery – Early Lessons from Hurricane Sandy and New York City: From Climate Non-Stationarity to Policy Non-Stationarity
William Solecki, Professor and Director, CUNY Institute for Sustainable Cities, Hunter College, NY
- 12:20-12:40 PM Assessing the Ecological Impacts of Hurricane Sandy on the New Jersey Shorelines: Recovery and Resilience
Firas Saleh, Postdoctoral Scientist, Center for Natural Resources Development and Protection, NJIT, NJ
- 12:40-1:30 PM Lunch – Sponsored by ESES/CCNY
Faculty Dining Hall - North Academic Center (NAC) City College of New York, NY
Luncheon Speaker - Ms. Norma Morato, Univision TV**
- 1:30 – 3:10PM Technical Session IIA (Concurrent Session) Steinman Hall Auditorium**
- Climate Vulnerability & Assessment, Mitigation and Adaptation
Chair – William Solecki, CISC, Hunter College, CUNY, NY
Co-Chair – Radley Horton, Earth Research Institute, Columbia University, NY**
- 1:30- 1:50PM Winter climate extremes over the northeast United States and teleconnections with large-scale climate variability
Liang Ning, Postdoctoral Scientist, Northeast Climate Science Center, University of Massachusetts – Amherst, MA
- 1:50-2:10PM Vulnerability to Extreme Heat in New York City
Jaime Madrigano, The Earth Institute, Columbia University, New York, NY
- 2:10-2:30PM Integrated Climate Adaptation Among Livestock Smallholders in the Gandaki River Basin, Nepal
Nir Krakuer, Assistant Professor, NOAA-CREST, CCNY, NY
- 2:30-2:50PM Health Exposure, Socio-Economic Vulnerability, and Infrastructure at Risk to Current and Projected Coastal Flooding in New York City
Lesley Patrick, Doctoral Candidate, NOAA-CREST, Program Manager, CISC, Hunter College, CUNY, NY
- 2:50-3:10PM Changes of the Hydrological Balance of Caribbean Lakes – Modeling and Observations
Daniel Comarazamy, Postdoctoral Scientist, NOAA-CREST, CCNY, NY

1:30-3:10PM Technical Session IIB (Concurrent Session) in Steinman Hall T 124

Coastal Water Quality Monitoring and Assessment

Chair – Sam Ahmed, NOAA-CREST, CCNY, NY

Co-Chair – Michael Weinstein, NJIT, NJ

- 1:30-1:50PM CREST Long Island Coastal Observatory- a Resource for Regional Observations and Evaluations of Satellite Ocean Color Data Processing
Sam Ahmed, Herbert Kayser Professor, NOAA-CREST, CCNY, NY
- 1:50-2:10PM Environmental Stressors Driving Relative Sea Level Rise of River Delta Systems
Zachary Tessler, Research Associate, CUNY Crossroads Initiative, CCNY, NY
- 2:10-2:30PM Ocean Color Observations and Their Applications to Climate Studies
Alex Gilerson, Associate Professor, NOAA-CREST, CCNY, NY
- 2:30-2:50PM A Bidirectional Reflectance Distribution Correction Model for the Retrieval of Water Leaving Radiance Data in Coastal Waters
Soe Hlaing, Postdoctoral Scientist, NOAA-CREST, CCNY, NY
- 2:50-3:10PM Hyperspectral Remote Sensing of Tropical Coastal Environments: The Use of HICO Data to Derive Water Quality Parameters in Southwestern Puerto Rico
Roy Armstrong, Professor, NOAA-CREST, UPRM, PR

3:10PM – 3:25 PM BREAK

3:25-4:15PM Education and Communication Session

- 3:25 PM- 4:15PM Towards A Weather Ready Nation: Public Education, Engagement and Communication on Extreme Weather Events (Steinman Hall Auditorium)**
Shakila Merchant, Assistant Director, NOAA-CREST (Moderator)
NOAA-CREST, CCNY, NY
Sean Potter, Executive Producer of Online News and Social Media
Office of Communications, NOAA/NWS
George McKillop, Chief, Hydrologic Service Division,
National Weather Service, Weather Forecast Office, NY

**4:30 – 6:30 PM Poster Session, Networking and Reception (Ice-Breaker)
(Sponsored by Dean, Grove School of Engineering)**

Opening remarks – Dean Joe Barba, GSOE, CCNY, NY

(Please see the details at the end of the agenda)

North Academic Ball Room, North Academic Center, CCNY, NY

June 6, 2013

8:30-10:00AM Technical Session III – Steinman Hall Auditorium

Science of Climate and Climate Change

Chair – William Rossow, NOAA-CREST, CCNY, NY

Co-Chair – Kyle McDonald, NOAA-CREST, CCNY, NY

- 8:30 - 8:50 AM Do we know how storms will change in a climate warming?
William Rossow, Distinguished Professor, NOAA-CREST, CCNY, NY
- 8:50-9:10AM Terrestrial Ecosystems and Freeze Thaw
Kyle McDonald, Senior Scientist, NOAA-CREST, CCNY, NY
- 9:10-9:30 AM Use of Satellite Tools to Monitor and Predict “Super Storm” Sandy 2012 –
Current and Emerging Products
Ralph Ferraro, Physical Scientist, NOAA/NESDIS/STAR, MD
- 9:30-9:50 AM Climate Services from the New Generation of NOAA Operational
Satellites
Felix Kogan, Physical Scientist, NOAA/NESDIS/STAR, MD

10:00-10:15 AM Break

10:15 -12:00Noon Technical Session IVA - Steinman Hall Auditorium

Rain, Snow and Coastal Flood Hazards

Chair – Upmanu Lall, Columbia University, NY

Co-Chair – Reza Khanbilvardi, NOAA-CREST, NY

- 10:15- 10:35 AM Case Study of Torrential Rain and Flood in the Merrimack River Valley in
May 2006
**Jian-Hua Qian, Assoc. Professor, University of Massachusetts-Lowell,
MA**
- 10:35 - 10:55AM Prediction of coastal flooding at residence zones and transportation
infrastructure at the east bank of Delaware Bay in sea-level rise
conditions
Hansong Tang, Assistant Professor, NOAA-CREST, CCNY, NY
- 10:55-11:15AM CREST-SAFE: A Long Term Field Campaign Experiment for Snow Using
Microwave Remote Sensing
Tarendra Lakhankar, Research Scientist, NOAA-CREST, CCNY, NY
- 11:15-11:35AM A Short-term Rainfall Prediction Algorithm
Nazario Ramirez, Professor, NOAA-CREST, UPRM, PR
- 11:35-11:55AM Towards developing a global Inundation/flood monitoring system using
ATMS
**Kibrewossen Tesfagiorgis, Postdoctoral Scientist, NOAA-CREST, CCNY,
NY**

11:10 TO 11:20 AM Break

10:15 to 12:00 Noon Technical Session IVB - Steinman Hall – T124

Atmosphere and Air Quality

Chair – Pat McCormick, NOAA-CREST, Hampton University, VA

Co-Chair – John Anderson, NOAA-CREST, Hampton University, VA

- 10:15-10:35AM Stratospheric Aerosol and Gas Experiment (SAGE III) on the ISS
Pat McCormick, Professor, NOAA-CREST, Hampton University, VA
- 10:35-10:55AM GOES-R ABI Sounding Algorithm Development: “ABI+PHS” Approach and Processing of Cloudy Observations
Stanislav Kireev, Research Scientist, NOAA-CREST, Hampton University, VA
- 10:55-11:15AM FPGA Programming for Real Time Analysis of LIDAR Systems
Sameh Abdelazim, Assistant Professor, Fairleigh Dickinson University, NJ
- 11:15-11:35AM Limb Scattering Radiative Transfer Model Development in Support of the Ozone Mapping and Profiler Suite (OMPS) Limb Profiler Mission
Robert Loughman, Scientist, NOAA-CREST, Hampton University, VA
- 11:35-11:55AM Noise Reduction in Lidar Signals Using Interval-Thresholded Empirical Mode Decomposition
Kevin Leavor, Postdoctoral Scientist, NOAA-CREST, Hampton University, VA

12:00-1:00 PM Lunch Break

1:00 – 2:30 PM Technical Session VA (Concurrent Session) – Steinman Hall Auditorium

Remote Sensing and Monitoring of Extreme Events

Chair – Al Powell, NOAA/NESDIS, MD

Co-Chair – Ruben Delgado, NOAA-CREST, UMBC, MD

- 1:00 – 1:20PM Transport of Asian Dust to the Mid-Atlantic United States: Lidar, satellite observations and PM_{2.5} speciation
Ruben Delgado, Research Faculty Professor, NOAA-CREST, UMBC, MD
- 1:20-1:40PM Hurling over regional observations of extreme weather events while forming partnerships
Mark Arend, Research Scientist, NOAA-CREST, CCNY, NY
- 1:40-2:00PM Cross Validation of Solar Radiation Using remote sensing equipment & GOES Satellite
Hamed Parsiani, Professor, NOAA-CREST, UPRM, PR
- 2:00-2:20 PM Microwave-based Snowfall Rate Estimation, Artificial Neural Network Approach

2:20 - 2:40 PM **Ali Zahraei, Postdoctoral Scientist, NOAA-CREST, CCNY, NY**
Improving hydrological modeling in NYC reservoir watersheds using remote sensing evapotranspiration and soil moisture product.
Naira Chaouch, Research Scientist, NOAA-CREST, CCNY, NY

1:00 – 2:40 PM Technical Session VB (Concurrent Session) Steinman Hall T124

Storm, Drought and Extreme Weather Events

Chair – James Booth, Columbia University, NY

Co-Chair – Brian Vant Hull, NOAA-CREST, CCNY, NY

1:00-1:20PM Heat Waves, Heat Islands & Global Warming, Oh My: LA's One Hot City
Steve LaDochy, Professor, Dept. of Geosciences & Environment, California State University, Los Angeles, CA

1:20 -1:40PM Classifying Extratropical Cyclone Extremes in the Northeast: A Probability Based Approach
James Booth, Scientist, NASA-GISS, Columbia University, NY

1:40 -2:00PM Delaware Reservoirs' Drought Risk Assessment: A Paleo View
Naresh Devineni, Research Scientist, Columbia Water Center, Columbia University, NY

2:00 -2:20PM A Simple Web-Based Method for Scheduling Irrigation in Puerto Rico
Eric Harmsen, Professor, NOAA-CREST, UPRM, PR

2:20-2:40PM Mapping Manhattan's Urban Heat Island
Brian Vant Hull, Scientist, NOAA-CREST, CCNY, NY

2:45 PM Adjourn

Poster Session – June 5, 2013 4: 30 to 6:30 PM

Opening remarks – Dean Joe Barba, Grove School of Engineering, CCNY, NY

North Academic Ball Room, North Academic Center, CCNY, NY

Session: Science of Climate and Climate Change

1. Trends in Intense Precipitation Over Land: Observations and Climate Models
Behzad Asadieh, Doctoral Candidate, Civil Engineering, CCNY, NY
2. Climate Change and Urban Systems: Mapping the mobilization of pollutants due to flooding from sea level rise and its potential Public Health and Other Societal Impacts
Zakkiyyah Shah, Undergraduate Student, NOAA-CREST, Lehman College, NY
3. Cloud Effects of Extratropical Cyclones and Regions of Storminess
James Polly, Doctoral Candidate, NOAA-CREST, CCNY, NY
4. Building Greener Communities: The Energy-Water Nexus
Jose Pillich, Doctoral Candidate, Graduate Center, CUNY, NY
5. Impacts of Climate Changes on the Caribbean Low Level Jet and the Mid-Summer Drought
Equisha Glenn, Graduate Student, NOAA-CREST, CCNY, NY
6. Impact of Climate Change on Reservoir Eco-hydrodynamics
Nihar R. Samal, Research Associate, Institute for Sustainable Cities, CUNY and NYCDEP, NY
7. How do Hydrologic Indicators Respond to Climate Change?
Soni M. Pradhanang, Research Associate, Institute for Sustainable Cities, CUNY and NYCDEP, NY

Session: Rain, Snow and Flood Hazards

8. Assimilating merged remote sensing and ground based snowpack information for runoff simulation using hydrological models
Jose Infante, Doctoral Candidate, NOAA-CREST, CCNY, NY
9. Sensitivity of WRF Downscaled Precipitation and Maximum Temperatures in the Northeast Corridor
Luis Ortiz, Doctoral Candidate, NOAA-CREST, CCNY, NY
10. An auto-calibration procedure applied to the surface runoff component of the GOES-PRWEB operational algorithm
Christie Adorno Garcia, Graduate Research Assistant, NOAA-CREST, UPRM, PR
11. Improvement of Microwave Emission Model using Long Term Field Experiment
Jonathan Munoz, Doctoral Candidate, NOAA-CREST, CCNY, NY
12. Aerosol-Cloud Interaction at City University of City College of New York using Ground Based Remote Sensing System
Zaw Thet Han, Doctoral Candidate, NOAA-CREST, CCNY, NY
13. Using Land Surface Microwave Emissivities to Detect Snow on Different Surface Types.
Narges Shahroudi, Doctoral Candidate, NOAA-CREST, CCNY, NY

Session: Remote Sensing and Monitoring of Extreme Events

14. Benthic Habitat Mapping for La Parguera Marine Reserve, Southwest Puerto Rico, using passive and active remote sensing data
William Hernandez, Doctoral Candidate, NOAA-CREST, UPRM, PR
15. GOES Data to Estimate the Evolution of Effective Radius at Cloud Tops
Joan Castro-Sanchez, NOAA-CREST, UPRM, PR
16. Remote Sensing of Land Surface State Variables Controlling Biogeochemistry in Alaska
Juan Pinales, Graduate Student, NOAA-CREST, CCNY, NY
17. Random Forest LCLU Classification of Gulf Coast
Gregory Aponte, Graduate Student, NOAA-CREST, CCNY, NY
18. Weather related impacts on Coastal Communities and Sustainable Strategies for Resiliency in New York City – Staten Island Case Study
William Valdez, Doctoral Candidate, ESES/NOAA-CREST, CCNY, NY
19. Investigating the cause of the Lakes Enriquillo and Azui growth using Hydrological Modeling
Mahrokh Moknatian, Doctoral Candidate, Civil Engineering, CCNY, NY

Session: Atmosphere and Air Quality

20. Aerosol Chemical Composition in the Mid-Atlantic Region: Assimilation with Aerosol LIDAR to Provide Insight into Aerosol Sources and Processes
Jared Johnson, Undergraduate Student, NOAA-CREST, UMBC, MD
21. Tropospheric Temperature Measurements Using the Hampton University Raman Lidar,
Robert Lee, Doctoral Student, NOAA-CREST, Hampton, University, VA
22. Tropical Atlantic Atmospheric Retrievals from the Infrared Atmospheric Sounder Interferometer (IASI) during the Aerosol and Ocean Science Expeditions (AEROSE)
Christopher Spells, Graduate Student, NOAA-CREST, Hampton University, VA
23. Initial Results Obtained from a Differential Absorption Lidar (DIAL) to Measure Tropospheric Ozone in Maryland
John Sullivan, Graduate Student, NOAA-CREST, UMBC, MD
24. Analysis of Evolution of Nabro Eruption using the CALIPSO Data and HYSPLIT Back trajectory Model
Ariana Reese, Graduate Student, NOAA-CREST, Hampton University, VA
25. Mid-IR Quantum Cascade Laser for LIDAR Application
Morann Dagan, Doctoral Candidate, NOAA-CREST, CCNY, NY
26. Design and Optimization of a 1.5 μ m All-fiber Autonomous Scanning Coherence Doppler Lidar for Wind Profiling Application
Miguel Lopez, Doctoral Candidate, NOAA-CREST, CCNY, NY
27. Lidar Ratio Auto-Determination Based on Joint Initial Lidar Ratio and Initial Scattering Ratio Variations and AERONET AOD
Jose Nieves, Doctoral Candidate, Hamed Parsiani, Professor, NOAA-CREST, UPRM, PR
28. Cross Validation of Solar Radiation Using remote sensing equipment & GOES Satellite
Luis M. Tavarez, Undergraduate Student, Hamed Parsiani, Professor NOAA-CREST, UPRM, PR

29. Using Model Forecasts to relate satellite AOD to surface PM2.5
Nazmi Chowdhary, Research Assistant, NOAA-CREST, CCNY, NY
30. Investigating the Effects of Aerosols on Clouds and Convection
Zena Merchant, Graduate Student, NOAA-CREST, CCNY, NY

Session: Storm, Drought and Extreme Weather Events

31. Incorporation of SMOS soil moisture data on national weather services Gridded Flood Guidance on Arkansas Red River Basin
Dugwon Seo, Doctoral Candidate, NOAA-CREST, CCNY, NY
32. History of winter storm tracks in the Northeast US recorded in the 20th Century Reanalysis
Dong Eun Lee, Lamont Doherty Earth Observatory of Columbia University, NY
33. Characterizing Temperature Variations Due to the Urban Heat Island for Climate Health Impacts in New York City
Maryam Karimi, Doctoral Candidate, NOAA-CREST, CCNY, NY
34. Spatial and Temporal Analyses of a Global Warming Reverse-Reaction Coastal-Cooling Along the California Coast
Pedro Sequera, Doctoral Candidate, ESES/NOAA-CREST, CCNY, NY
35. GOES-PRWEB Water and Energy Balance Algorithm Automation
Victor J. Reventos, NOAA-CREST, UPRM, PR
36. Improvements to the WRF Multilayer Urban Parameterization
Estatio Gutierrez, Doctoral Candidate, ESES/NOAA-CREST, CCNY, NY

Session: Coastal Water Quality Monitoring and Assessment

37. NASA Future Ocean Color Satellite Missions and Applications to Studies of Extreme Weather Events and Impacts on Urban Coastal Ecosystems
Maria Tzortziou, Research Associate Professor, University of Maryland & NASA GSFC, MD
38. Comparison of Coastal Inundation from Hurricane Sandy and Past Tropical Storms along New Jersey's East Coast
John Miima, Assistant Professor, NJIT, NJ
39. Polarimetric remote sensing for the retrieval of optical properties of the ocean
Amir Ibrahim, Doctoral Candidate, NOAA-CREST, CCNY, NY
40. Seasonal variation of ocean inherent optical properties and chlorophyll concentration
Ioannis Ioannou, Postdoctoral Scientist, NOAA-CREST, CCNY, NY
41. Imaging of underwater targets with polarimetric camera
Carlos Carrizo, Doctoral Candidate, NOAA-CREST, CCNY, NY
42. Impacts of Land Cover Land Use (LCLU) and Aerosol PSD Variation on Precipitation in a Coastal Urban Environment Using Cloud-Resol
Nathan Hosannah, Doctoral Candidate, NOAA-CREST, CCNY, NY
43. Flow Behaviors under Surface Shear and Velocity Conditions
Rifat Hussain, Undergraduate Student, NOAA-CREST/NSF-REU, CCNY, NY
44. Downscaling Of SMOS Data Using NDVI, Elevation, and Sand Fraction
Juan Mejia, Undergraduate Student, NOAA-CREST/NSF-REU, NY CityTech, NY