

# Climate Adaptation Initiative

EARTH INSTITUTE | COLUMBIA UNIVERSITY

## AT WHAT POINT MANAGED RETREAT?

Resilience Building in the Coastal Zone

June 19–21, 2019 | Columbia University

### Wednesday, June 19, 2019 | Faculty House

6:00pm – 6:30pm Check-in and Networking

6:30pm – 8:00pm Kick-Off Event

**Welcome Remarks, Alex Halliday**, Director, The Earth Institute, Columbia University

**Remarks from Jainey Bavishi**, Director of the New York City Mayor's Office of Resiliency

Panel Discussion:

- *Moderated by* Radley Horton, Lamont Associate Research Professor, Lamont-Doherty Earth Observatory, The Earth Institute, Columbia University
- Elizabeth Yeampierre, Executive Director, UPROSE
- Jesse Keenan, Lecturer in Architecture, Harvard University Graduate School of Design and Visiting Scholar, Federal Reserve Bank of San Francisco
- Liz Koslov, Assistant Professor, University of California, Los Angeles
- Robin Bronen, Executive Director, Alaska Institute for Justice

8:00pm – 9:00pm Networking Reception

### Thursday, June 20, 2019 | Jerome Greene Hall

8:30am – 9:00am Check-in and Coffee

9:00am – 10:30am Opening Session [ROOM 104/106]

**Welcome by Alex de Sherbinin**, Center for International Earth Science Information Network (CIESIN), The Earth Institute, Columbia University

- **Why are we talking about retreat?** Katharine Mach, Senior Research Scientist, Stanford University Woods Institute for the Environment
- **Relocation is More Than a New Address**, Shavonne Smith, Shinnecock Environmental Department and Chenae Bullock, Moskehtu Consulting
- **Reimagining Our Coasts: Toward a Transformative Research, Collaborative Learning and Action Agenda**, Susanne Moser, Susanne Moser Research & Consulting, and Richard Moss, American Meteorological Society
- *Discussion moderated by Andrew Revkin, environmental science writer*

**Poster List:**

- A Damage Allowance Framework to Support the Appraisal of Coastal Flood Mitigation Strategies, D.J. Rasmussen, Princeton University
- After Relocation: Reimagination of the Post-Retreat Landscape, Bella Purdy, MIT
- Coastal Zones Resilience to Climate Change in Oman: Adaptive Governance and Institutional Strategies, Elnazir Ramadan, Sultan Qaboos University
- Collaboration and Mitigation: The Case of Pelluhue Tsunami Reconstruction, Maria Garces Marques, Columbia University
- Estimating the Costs of 1m and 3m Sea-Level Rise in Chennai, Arjun Bhargava, Resilient Chennai, Greater Chennai Corporation
- Impact Assessment of an On-Shoreline Highway Extension in Dakar (Senegal): Coastal Erosion and Flood Risks, Awa Bousso Drame, Sorbonne University and Columbia University
- Transaction to Adaptation: Promoting Climate-Smart Land Use with Transfer of Development Rights, Ellen Plane, University of California, Berkeley
- Remote Sensing Mapping of Changing Coastal Ecosystems in the Face of Increasing Anthropogenic and Natural Disturbance, Maria Tzortziou, CUNY, LDEO Columbia University
- Social Capital and Social Cohesion in Community Relocation, Tamsen Reed, Washington University, St. Louis
- Urban Groundwater Flooding Driven by Sea-Level Rise, Xin Su, Stevens Institute of Technology
- Vulnerability of Coastal Land Use to Sea-Level Rise, a Case Study: Jask County in Iran along the Sea of Oman, Lida Davar, University of Tehran, University of California, Santa Cruz

**Session 1A [ROOM 107]: Environmental Justice & Equity**

Chair: Liz Koslov, University of California, Los Angeles

- Implications of Climate-Induced Retreat for Receiving Communities, Alice Kaswan, University of San Francisco School of Law
- Lessons from U.S. Buyout Programs, AR Siders, Harvard University
- Managed retreat in Global South megacities: disentangling policy, practices, and environmental justice, Idowu Ajibade, Portland State University
- Post-Hurricane Gentrification: Mapping Reconstruction and Social Equity in New York City, Allison Bridges, The Earth Institute, Columbia University
- Community-Led Relocation: When does Retreat Begin? Robin Bronen, Alaska Institute for Justice

**Session 1B [ROOM 104/106]: Post-Disaster Buyout Programs: Insights for Adaptation Planning in the New York Region**

Moderator: Lauren Wang, Senior Policy Advisor, NYC Mayor's Office of Resiliency

This panel session will convene experts on buyout programs in New York City and the Greater New York Region as a panel and will explore how buyouts can pave the way for long-term land use transition in low-lying coastal areas. The panel will include discussion of topics such as community buy-in, program design, land stewardship, long-term planning, and governance.

- Jane K. Brogan, Chief Policy & Research Offer, NYS Governor's Office of Storm Recovery
- Fawn Z. McGee, Director, Blue Acres Buyout Program & Bureau Chief, State Land Acquisition, NJ Department of Environmental Protection
- Deborah H. Morris, Executive Director of Resiliency Planning, Policy, and Acquisitions, NYC Department of Housing Preservation & Development

- David Tobias, Section Chief, Land Acquisition Programs, NYC Department of Environmental Protection

### **Session 1C [ROOM 105]: Exposure Modeling**

Chair: Richard Seager, Lamont-Doherty Earth Observatory, Columbia University

- Antarctic instability, uncertain sea-level rise, and implications for coastal flood risk, Robert Kopp, Rutgers University
- Determining the Onset of Chronic Flooding in Coastal Communities, Tom Herrington, Monmouth University
- Facing higher sea levels and flooding: Case study--Broad Channel, Queens, New York City, Vivien Gornitz, Columbia University
- Potential sea-level rise impacts on internal migration in the Mediterranean region – Analysis of different adaptation strategies, Lena Reimann, Kiel University
- Shifting Shorelines: Adaptation Strategies for the Fraser River Delta, Kees Lokman, University of British Columbia

### **Session 1D [ROOM 102B]: International Perspectives**

Chair: John Sutter, CNN

- Climate Passports, John Sutter, CNN
- Planning and the Complex Dynamics of Relocating Disaster-Impacted Communities – Implications for Managed Retreat, Balakrishnan Balachandran, University of Illinois and Urbana Champaign
- Responding to Rising Seas: An OECD Report, Alexander Bisaro, Global Climate Forum
- Small Island Developing States (SIDS), Climate Change, and Disaster Adaptation: The Case of Dominica, Ted Serrant, Houston ISD/University of the West Indies Open Campus
- The World Bank's West Africa Coastal Areas (WACA) Program, Margaret Arnold, World Bank

**12:30pm – 1:30pm      Lunch (boxed lunch provided)**

**1:30pm – 3:00pm      Breakouts**

### **Session 2A [ROOM 104/106]: Coastal Adaptation in California**

Chair: Charles Lester, University of California, Santa Barbara

The panel brings together five, diverse actors who work on climate change adaptation planning and implementation along California's coast, including issues surrounding managed retreat. The panel highlights lessons learned about sea level rise adaptation, emphasizing the planning, regulatory, political, scientific and other lessons by federal, state, local, academic and NGO actors. These five adaptation actors from academia, nongovernmental organizations, federal agencies, state government and local municipalities regularly play a role in defining, designing, and implementing adaptation work. This panel will focus on how these unique actors work independently and in concert to grapple with coastal adaptation planning, especially sea level rise.

- Alyssa Mann, The Nature Conservancy, "California's Coastal Future: A Roadmap to Resilience"
- Charles Lester, University of California, Santa Barbara, "Advancing State Interests in Coastal Adaptation: Lessons from California"
- Juliette Finzi-Hart, USGS Pacific Coastal and Marine Science Center in Santa Cruz, "Partnering to Bring Coastal Storm and Sea Level Rise to CA Coastal Communities"
- Nick Sadrpour, University of Southern California (USC) Sea Grant, "Connecting Communities on the Urban Coast"
- Stefanie Sekich-Quinn, Surfrider Foundation, "On the Ground: NGOs Advancing Coastal Adaptation"

### **Session 2B [ROOM 107]: Migration as Adaptation**

Chair: Alex de Sherbinin, CIESIN, Columbia University

- Disaster Exposure and Migration: The Impact of Major and Minor Flood Events on Population Loss, Nora Schwaller, University of North Carolina, Chapel Hill
- Flood Risk Perception and Resulting Outcomes of Population Movement Among Coastal Residents of Lagos, Nigeria, Susan Ekoh, SUNY ESF
- Impact of Rohingya crisis on the resilience of coastal community in Bangladesh: GIS and satellite remote sensing analysis of deforestation, Sakib Imtiaz, Disaster Management Watch
- Regular Migration Pathways for Climate Migrants: Leveraging Free Movement of Persons Frameworks to Facilitate Climate-Induced Migration, Ama Francis, Sabin Center for Climate Change Law, Columbia University
- Where Migrants Go: Patterns in the Post-Disaster Reception and Long-Term Outcomes for Relocated Households in Receiving Communities, Carlos Martin, Urban Institute

### **Session 2C [ROOM 102B]: Exposure Modeling**

Chair: Radley Horton, Lamont-Doherty Earth Observatory

- Assessment of Guyana's Coastal Morphodynamics in the face of sea level rise, Temitope D. Timothy Oyedotun, University of Guyana
- Envisioning Coastal Futures: Exploring Alternative Scenarios for the US Pacific Northwest Coastline, Peter Ruggiero, Oregon State University
- How do Vertical Barriers Influence Mortality Risk in Low-Lying Neighborhoods Under Sea-Level Rise?, Fanglin Zhang, Stevens Institute of Technology
- Should coastal planners worry about where the ice is melting?, Eric Larour, NASA/JPL

### **Session 2D [ROOM 105]: Communication Strategies & Public Engagement**

Chair: Carri Hulet, Consensus Building Institute

- A Receding Coast: The Architecture and Infrastructure of South Louisiana, Virginia Hanusik, Metropolis Magazine
- Broken Hearts and Burn-Out: Psychosocial Support Needs in Moving Towards Retreat, Susanne Moser, Susanne Moser Research & Consulting
- Building a Community Consensus for Adaptation Planning in Piermont, NY, Kristin Marcell, NYS DEC/Cornell Water Resources Institute
- Communicating Climate Change Through Public Service Journalism, Clarisa Diaz, WNYC
- One Hundred More Years: How to Facilitate Municipal Planning Under Deep Uncertainty? Caitlin Spence, Metropolitan Area Planning Council

**3:00pm – 3:30pm**      **Poster Session and Coffee**

**3:30pm – 5:00pm**      **Breakouts**

### **Session 3A [ROOM 102A]: Climate Change and Population Mobility: Empirical Models and Policy Perspectives**

Chair: Elizabeth Fussell, Brown University

- Reframing Sea Level Rise and Human Migration, David Wrathall, Oregon State University
- Demographic Dynamics and Population Responses to Varying Natural Hazard Exposures Across the US, 1970-2014, Sara Curran, University of Washington

Co-authors: Elizabeth Fussell (Brown University), Matthew Dunbar (University of Washington), Luanne Thompson (University of Washington)

- Insights and limitations from an agent-based evaluation of human response to sea-level rise in Bangladesh, Andrew Reid Bell, New York University
- Investigating Climate Impacts on South African Internal Migration through Flow Network Analysis, Tingyin Xiao, Princeton University

Co-authors: Michael Oppenheimer (Princeton University), Xiaogang He (Princeton University), Marina Mastrorillo (Princeton University)

- Urban Change in the Low Elevation Coastal Zone: 1990-2015, Deborah Balk  
Co-authors: Gordon McGranahan, Kytt MacManus, and Hasim Engin

### **Session 3B [ROOM 107]: International Comparative Perspectives**

Chair: William Solecki, Hunter College-City University of New York

- Exploring the Barriers and Opportunities of Using Managed Retreat in Scotland, UK, James Fitton, Aalborg University
- Is Managed Retreat a Reality? Lessons from Western Australia, Ashley Robb, Curtin University / Western Australian Local Government Association
- The Politics of Managed Retreat in French Coastal Areas: Incentives and Step-by-Step Politicization, Nicolas Rocle and Jeanne Dachary-Bernard, IRSTEA – National Research Institute of Science and Technologies for Environment and Agriculture
- Managed Retreat in New Zealand, Catherine Iorns Magallanes, Victoria University of Wellington (*virtual*)
- Disappear Here—Withdrawal of Government as Risk Manager in the Context of Climate Change Adaptation in the Coastal Zone, Paul Govind, Macquarie University (*virtual*)

### **Session 3C [ROOM 105]: Government Planning**

Chair: Justin Kozak, Center for Planning Excellence

- Break the Cycle of Disaster Dependency: Steps to Ready the Nation for Catastrophic Disaster, Frances Bui, CDM Smith
- Classifying Risk to Help Prioritize Recovery and Resilience Management Strategies, Carolyn Fraioli, New York State Department of State, Rebecca Newell, New York State Department of State, Jane K. Brogan, Governor's Office of Storm Recovery
- Coastal Zones Resilience to Climate Change in Oman: Adaptive Governance and Institutional Strategies, Elnazir Ramadan, Sultan Qaboos University
- Reframing Climate Adaptation at a Hyper-Local Scale in Miami, Tyler Harrison and Joanna Lombard, University of Miami
- Retreat is the Tree. Adaptation is the Forest, Adam Parris, Science and Resilience Institute at Jamaica Bay

### **Session 3D [ROOM 102B]: Trends in Vulnerability**

Chair: Robin Bronen, Alaska Institute for Justice

- A Rising Tide Lifts All Hazards: Vulnerability in the Coastal United States, Jeremy Brooks, National Center for Disaster Preparedness, The Earth Institute, Columbia University
- Assessment of the Vulnerable State of Fuvemeh Community in the Volta Delta, Ghana, Kwasi Appeaning Addo, University of Ghana
- Differential Exposure in the Coastal Zone, Alex de Sherbinin, The Earth Institute, Columbia University
- Evaluating Sea-Level Rise Vulnerability Assessments in the United States, Fu Xinyu, Georgia State University
- Planning a Resilient Region: Mapping Exposure, Sensitivity, and Adaptive Capacity, Caitlin Spence, Metropolitan Area Council

5:00pm – 6:00pm

**Undercurrents: Navigating the Human Dynamics of Climigration - An Applied Theatre Approach [ROOM 104/106]**

This session demonstrates an arts-meets-science approach to facilitating more productive conversations about managed retreat. Applied theatre is a method that invites audience members to observe social dynamics, as portrayed by professional actors, around a challenging topic, and then interact with the characters in order to dive more deeply into their thoughts, feelings and reactions. Undercurrents aims to help professionals develop a more nuanced understanding of a complex issue, while also building empathy across a range of perspectives within communities facing managed retreat. It was developed by a UNH team including professional actors, a climate scientist and outreach specialist. The workshop is executed by UNH's PowerPlay team.

Organized by: Julia Peterson, Cameron Wake, CJ Lewis, and David Kaye, University of New Hampshire, with support from:



6:00pm – 6:45pm

**Managed Retreat, a documentary film, produced and directed by Nathan Kensinger [ROOM 104/106]**

Managed Retreat is a short documentary portrait of three New York City neighborhoods that, in the aftermath of Hurricane Sandy, were purchased by the NY State government, to be demolished and returned to nature as part of the city's first 'managed retreat' from rising sea levels. This observational documentary follows the process of retreat over the course of five seasons, as homes are destroyed and wild animals begin to return.

A short Q&A with the director will follow the film. <http://nathankensinger.com/managed-retreat/>

**Friday, June 21, 2019 | Jerome Greene Hall**

8:30am – 9:00am

**Check-in and Coffee**

9:00am – 10:30am

**Breakouts**

**Session 4A [ROOM 107]: Financial, Legal and Other Tools**

Chair: Lisa Dale, Columbia University

- Changing the National Flood Insurance Program for a Changing Climate, Dena Adler, Sabin Center for Climate Change Law, Columbia Law School
- Climate Leases: A New Tool for Valuing Property Under Climate Change, Belinda Storey, Climate Sigma
- Managed Retreat at the Coast: The Case for New Costing and Funding Instruments, Judy Lawrence, Victoria University of Wellington
- The Role of Insurance: Views from the Private Industry, Rohini Sengupta, Willis Towers Watson

### **Session 4B [ROOM 104/106]: Community Resilience & Planned Relocation**

Chair: Liz Koslov, University of California, Los Angeles

- Building Long-Term Community Resilience Through Child-Focused Disaster Preparedness, Antonia Samur, The Earth Institute, Columbia University
- From Retreating to Receiving Communities: Addressing the Spectrum of Adaptation Needs on the Louisiana Coast, Matthew Sanders, Louisiana Office of Community Development
- Puerto Rico Project for the Future 2045: The North Region, Nancy Clark, University of Florida
- Resilient Neighborhood Planning and Design after Sandy in New York City, Thaddeus Pawlowski, The Center for Resilient Cities and Landscapes, Columbia University
- Revisiting Resilience Strategies in Jean Lafitte, Louisiana, Justin Kozak, Center for Planning Excellence

### **Session 4C [ROOM 105]: Decision Making on Retreat**

Chair: Katharine Mach, Stanford University

- Bermanism, Kelly Main, Massachusetts Institute of Technology
- Coastal Retreat Efforts So Far? Unplanned, Small, and Largely Unaided, Karen O'Neill, Rutgers University, Heather Fenyk, Lower Raritan Watershed Partnership, and Shannon Caplan, Rutgers University
- Game-Theoretic Modeling of Pre-Disaster Relocation, Yuqun Zhou, University of Wisconsin-Madison
- Managed Retreat in the Coastal Zone: Who Decides When Enough is Enough?, Brent Doberstein, University of Waterloo
- Who pays, who decides, and what are we paying for: regional and comparative perspectives on a comprehensive approach to building resilience in NY-NJ Harbor, Kate Boicourt, Waterfront Alliance and Sanjukta Sen, Field Operations

### **Session 4D [ROOM 102B]: Infrastructure and Investment**

Chair: Rachel Isacoff, Climate Adaptation Consultant

- Infrastructure Retreat in a Connected World, Rae Zimmerman, New York University – Wagner School
- Assessing exposure and resilience with CRISP: The Coastal Risk Investment Strategy Program, Charles K. Huyck, ImageCat
- “Managed Retreat” – Practitioners’ Perspectives: Where Theory Meets Reality, Jon Philipsborn, Americas Climate Adaptation Practice Director, AECOM
- Home, Place and Dislocation – Reflections and Contributions from Urban Geography and Hazards Geography, William Solecki and Kristopher Cadieux, Department of Geography and Environmental Science, Hunter College – CUNY

**10:30am – 11:00am    Coffee Break**

**11:00am – 12:30pm    Breakouts**

### **Session 5A [ROOM 107]: International Comparative Perspectives**

Chair: William Solecki, Hunter College-City University of New York

- Climate and Design Methods for Adapting to Flood Risks in Dar es Salaam, Tanzania, Clarisa Diaz, New York University
- Explaining Retreat: The Governance of Relocations in the Maldives, Geronimo Gussmann, Global Climate Forum e.V.
- Opening Up Long Term Adaptation Options Including Managed Retreat Using Dynamic Adaptive Pathways Planning in a New Zealand Coastal Setting, Judy Lawrence, Victoria University of Wellington
- Planning to Retreat: Governance Challenges and Policy Learning in New Zealand, Christina Hanna, University of Waikato
- The Unusual Suspects: Climate Change Adaptation in Coastal Towns and Small Cities, James Fitton, Aalborg University

## **Session 5B [ROOM 105]: Real Estate Markets & Economic Aspects of Retreat**

Chair: Jesse Keenan, Harvard University and Federal Reserve Bank of San Francisco

- Decommodification and Managed Retreat, Michael Pappas, University of Maryland Carey Law School
- Fiscal Vulnerability to Sea Level Rise and Local Land Use / Fiscal Policy Responses: An Opportunity for Transformative Planning?, Linda Shi, Cornell University
- Mapping the Impact of Floods on House Markets from Space: A Test Case of Hurricane Florence in 2018, Marco Tedesco, Lamont-Doherty Earth Observatory
- Modeling Urban Shoreline Protection Versus Retreat Across Ecosystem Services and Monetary and Human Risk, Philip Orton, Stevens Institute of Technology
- When Rising Seas Swamp Coastal Real Estate: Implications for Coastal Retreat, Rachel Cleetus, Union of Concerned Scientists
- Who Pays? The Economics of Managed Retreat, Belinda Storey, Victoria University of Wellington

## **Session 5C [ROOM 104/106]: Decision Making on Retreat**

Chair: Anamaria Bukvic, Virginia Tech

- An Agent-Based Model to Evaluate Land Occupation Dynamics of Coastal Communities, Ayse Karanci, University of Florida
- Best Practices Aren't Enough: Governance Transformation in Louisiana, Justin Kozak, Center for Planning Excellence
- Optimizing Choices Between Local Adaptation and Permanent Retreat Under Deep Climate Change Uncertainty, Jory Hecht, University of Vermont
- Redlining, Blight and Urban Renewal: A Cautionary Tale for Managed Retreat, Lynnette Widder, Columbia University
- To Adapt or not to Adapt: Decision-Making by Residents of Urban Coastal Areas, Malgosia Madajewicz, Columbia University
- Unpacking Relocation Challenges after Devastation – An Assessment from a Governance Perspective, Kanako Iuchi, Tohoku University and John Mutter, Columbia University

**12:30pm – 1:30pm      Lunch (boxed lunch provided)**

**1:30pm – 3:00pm      Breakouts**

## **Session 6A [ROOM 107]: Beyond to Stay or Move: The How and Why of Some Communities' Decision-Making**

Moderator: Nathan Jessee, Temple University

This panel session will discuss the impacts of waterway manipulation, fossil fuel extraction, development, and climate change on historic communities and tribes in coastal Louisiana. In this panel, community organizers and tribal leaders from coastal Louisiana will discuss how and why their communities are taking adaptive actions, be it adapting in place or resettling to a new location, and all of the nuances in between this spectrum of decision-making.

Panel:

- Chief Albert Naquin, Isle de Jean Charles Biloxi-Chitimacha-Choctaw Tribe
- Chief Shirell Parfait-Dardar, Grand Caillou/Dulac Band of Biloxi-Chitimacha-Choctaw Tribe
- Council Person Christine Verdin, Pointe-au-Chien Indian Tribe
- Elder Rosina Philippe, Grand Bayou Village, Atakapa-Ishak/Chawasha
- Reverend Tyrone Edwards, Zion Travelers Baptist Church
- Theresa Dardar, Pointe-au-Chien Indian Tribe

Other panel collaborators:



- Dr. Julie Maldonado, Livelihoods Knowledge Exchange Network (LiKEN) and Rising Voices
- Dr. Shirley Laska, Professor Emerita in Sociology University of New Orleans and Lowlander Center
- Dr. Kristina Peterson, Lowlander Center

### **Session 6B [ROOM 104/106]: Infrastructure at Risk**

Chair: Richard Moss, American Meteorological Society

- Adaptation through Amphibiation, Elizabeth English, University of Waterloo
- Assessing the Threats from Climate Change to Marion, Massachusetts' Vulnerable Wastewater Pumping Infrastructure, Frances Bui, CDM Smith
- How do we Flood Mitigate and Ultimately Relocate Millions of Buildings?, Roderick Scott, Ducky Johnson Home Elevation, LLC
- The Coastal Act, Power Plants and the Case for Undevelopment, Sarah Newkirk, The Nature Conservancy
- The Dynamics of Abandonment along Human-Occupied Coastlines, Dylan McNamara, University of North Carolina Wilmington

### **Session 6C [ROOM 105]: Experience with Buyouts**

Chair: Rachel Isacoff, Climate Adaptation Consultant

- Adaptive Mobility: The Case of Property Buyouts and Resettlement Pathways in Urban Flood Zones, Kevin Loughran, Rice University
- Managed Retreat or Managed Decline? – Federal Buyout Policies, Marginalization, and the Local Production of Climate Adaptation, Jared Enriquez, Cornell University
- Strategic Property Buyouts to Enhance Flood Resilience: Creating a Model for Flood Risk Reduction, Community Protection, and Environmental Gains, Lily Verdone, The Nature Conservancy in Texas
- The Real Estate of New Jersey and New York Buyout Areas: A Difference-in Differences Analysis, Peter Mattingly, NYU Wagner Graduate School of Public Service

### **Session 6D [ROOM 102B]: Non-Coastal Retreat issues**

Chair: Alex de Sherbinin, CIESIN, Columbia University

- Extreme Wetbulb Temperature, Radley Horton, Columbia University
- Forest Diebacks and Retreat, Paula Puskarova, University of Economics in Bratislava
- The Peruvian Coastal Desert: Agriculture and Resiliency, Claudia Tomateo, Urban Systems Lab – The New School
- Wildfire Risk in the American West, Lisa Dale, Columbia University

**3:00pm – 3:30pm      Coffee Break**

**3:30pm – 5:00pm      Breakouts**

### **Session 7A [ROOM 105]: Experience with Buyouts, Continued**

Chair: Justin Kozak, Center for Planning Excellence

- Mechanisms for Buyouts and Relocation: What Works and What Not in Hampton Roads, Anamaria Bukvic, Virginia Tech

- Property Acquisition and Equity: What Build it Back’s Property Acquisition Program can Teach us about Vulnerability, Housing Mobility, and Relocation and Retreat Assistance, Deborah Morris, New York City Housing Preservation and Development
- Retrofitting the Plan: Mitigating Future Floods Through Comprehensive Land Acquisition Planning in Houston, TX, Shanasia Sylman, Harvard Graduate School of Design
- Taking Stock: Examining the Efficacy of Home Buyout Programs in Mitigation and Retreat, Sherri Binder, BrokoppBinder Research & Consulting
- The Landscape of Voluntary Property Buyouts to Manage Flood Risk in the United States, Carolien Kraan, Stanford University

### **Session 7B [ROOM 102A]: Communication Strategies & Public Engagement**

Chair: Carri Hulet, Consensus Building Institute

- Eastie for Eastie: A Community-Based Toolkit for Managed Retreat, Collyn Chan and Kelly Main, MIT
- Envisioning Coastal Retreat: From Informational Fit and Interplay to Imaginative Fit and Interplay, David Eisenhauer, Rutgers University
- Facing the Formidable: Fostering Community-Inspired Visions for Long-Term Adaptation, Ellis Calvin, Regional Plan Association
- Undercurrents: Using Applied Theatre for More Productive Conversations, Julia Peterson and Cameron Wake, University of New Hampshire
- User-Centered Design Approach to Climate Change Risk Communications and Tools Created for Public Learning Needs and Capacities, Joshua DeVincenzo, The Earth Institute, Columbia University

### **Session 7C [ROOM 107]: Legal Aspects of Managed Retreat**

Chair: Michael Gerrard, Sabin Center for Climate Change Law and Columbia Law School

- Addressing Existing Use ‘Rights’ in Land Use Planning: Challenges and Options for Local Government in New Zealand, Ben France-Hudson, University of Otago
- Framing Coastal Retreat in International Climate Settings: From Impacts to Responses in the UNFCCC and the IPCC, Ben Orlove, Columbia University
- From Words to Deeds: Understanding Managed Retreat in the Context of Legal Rights, Duties and Responsibilities, Mark Davis, Tulane University
- Learning from Relocation: Applying Federal Housing and Community Development Displacement Lessons to Managed Retreat, Carlos Martin, Urban Institute
- Roads to Nowhere, Heather Payne, Seton Hall University School of Law

### **Session 7D [ROOM 102B]: Protecting Wetland Migration Pathways**

Moderator: Robert Pirani, Program Director, New York – New Jersey Harbor & Estuary Program, Hudson River Foundation

This panel will explore what it takes to protect wetland migration pathways; places where tidal wetlands are likely and able to move with sea-level rise. With sea level rise, these vulnerable ecosystems encounter the “coastal squeeze,” where urban land uses do not allow for the migration of wetlands, an ecological process that had occurred for thousands of years prior to human existence.

- Chris Field, Postdoctoral Fellow, Socio-Environmental Synthesis Center
- Isabelle Stinnette, Restoration Program Manager, New York – New Jersey Harbor & Estuary Program, Hudson River Foundation
- Marit Larson, Chief of Natural Resources, New York City Department of Parks & Recreation
- Sacha Spector, Program Director for the Environment, Doris Duke Charitable Foundation

**5:00pm – 6:00pm Closing Plenary [ROOM 104/106]**

**Saturday, June 22, 2019 : Optional Tour, Edgemere, Queens (RSVP REQUIRED; TOUR IS FULL)**

8:15am Meet at Wall St/Pier 11

8:30am Ferry departs

9:30am Tour of Edgemere, Queens, led by Thaddeus Pawlowski:

This tour begins with a discussion of the geography of New York Harbor, changing land uses on New York's waterfront, and the regional impact of Hurricane Sandy. Participants will then learn about the Resilient Edgemere Neighborhood Plan and meet with officials from the Mayor's Office, NYC Planning, Housing Preservation and Development, and the New York City Housing Authority. We will visit houses that were damaged or destroyed by Hurricane Sandy and learn about efforts to restore the natural coastline and rebuild more resilient housing. The tour will conclude at Edgemere Farm.

11:00am Tour Ends