

*EBC and Sustainable Solutions Lab at UMass Boston
Climate Adaptation Forum*

Disruptive Climate, Disruptive Technologies

Friday, June 7, 2019

University of Massachusetts Club | Boston



Save the Date! **September 20, 2019**
Climate Adaptation Forum: Public Health

EBC & Sustainable Solutions Lab at UMass Boston – Quarterly Climate Adaptation Forum
EBC Contact: Jackson Bailey, jbailey@ebcne.org | SSL Contact: Rebecca Herst, rebecca.herst@umb.edu
www.climateadaptationforum.org

AGENDA

- 8:00 a.m. Welcome**
- David Cash, Ph.D., Forum Organizer
Dean, John W. McCormack Graduate School of Policy and Global Studies
University of Massachusetts Boston
- 8:05 a.m. Forum Introduction & Overview**
- Kelly Knee, Forum Co-Chair
Executive Director – Ocean Science, RPS Group
- 8:10 a.m. Lightning Round of Disruptive Technologies**
- Biobot**
- Mariana Matus, Co-Founder & CEO, Biobot
- Emerald Tutu**
- Gabriel Cira, Architect, Very Flat
 - Nicholas Lutsko, Postdoctoral Associate, MIT
- Green Stream Technologies**
- Karen Lindquist, Chief Operating Officer, Green Stream Technologies
- ISeeChange**
- Julia Kumari Drapkin, CEO and Founder, ISeeChange
- Risk Map**
- Mayank Ojha, Research Associate, Urban Risk Lab, MIT
- Upstream Tech**
- Marshall Moutenot, Managing Director, Upstream Tech
- WAVE of Change**
- Valentina Sumini, Postdoctoral Associate, MIT MediaLab
 - Alpha Yacob, Ph.D. Candidate, MIT
- 9:00 a.m. Keynote Presentation: Building a Resilient Tomorrow: Will Tech Get Us There?**
- Alice Hill, Research Fellow, Hoover Institution, Stanford University
- 9:30 a.m. Networking Break**
- 10:00 a.m. Rhode Island's Coastal Hazard Application Viewer**
- Teresa Crean, Coastal Research Associate
Community Planning and Coastal Resilience
University of Rhode Island Coastal Resources Center
- 10:05 a.m. Scenario Base Permitting and the Use of the Environmental Risk Index**
- Grover Fugate, Executive Director
Rhode Island Coastal Resources Management Council

10:20 a.m. Using Artificial Intelligence and Machine Learning to Address Climate Risk

- Alan Blumberg, Co-Founder and Chief Scientist
Hydroscience Risk Analysis, Jupiter Intelligence
- Leah Cohen, Customer Engagement Leader, Jupiter Intelligence

10:35 a.m. Modelling and Visualizing Climate Change and the Cascading Effects

- Roger ter Heide, CPO, SIM-CI

10:50 a.m. Turning Risks into Opportunities

- Shruthi Rao, CEO, Adapt Ready

11:05 a.m. Open Discussion

Moderator: Alice Hill, Hoover Institution

Panel Members:

- Leah Cohen, Jupiter Intelligence
- Teresa Crean, URI Coastal Resources Center
- Shruthi Rao, Adapt Ready
- Roger ter Heide, SIM-CI

11:40 a.m. Closing Remarks: Mark Costa, Forum Co-Chair
Water Resources Engineer, VHB

11:45 a.m. Adjourn

FORUM CO-CHAIRS

Mark Costa, Water Resources Engineer
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Mark is a water resources project manager in VHB's Watertown office with 12 years of professional experience. Mark focuses on surface hydrology, riverine and coastal hydraulics, stormwater, climate change adaptation, resilient design, and permitting for a wide range of land development, energy, and transportation improvements projects.

His experience includes coastal and riverine flood modeling which incorporates future climate conditions to evaluate flood impacts to support his engineering design projects. Mark is currently managing the Suffolk Downs Redevelopment Resiliency and Climate Change Adaptation study which presents how the built infrastructure affects the movement of water on and off the Project site. The study also analyzes over 1,000 abutting properties in Revere and Boston and potential regional flood protection infrastructure to protect the project site and abutting properties under current and future climate conditions.

Kelly Knee, Executive Director – Ocean Science
RPS Group
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Kelly is an engineer and data management specialist with RPS ASA and currently serves as the Executive Director of the RPS Ocean Sciences Division. She has a broad engineering and scientific background but has specialized in coastal flooding issues for almost 17 years. Over her 15 years at ASA she has completed numerous coastal flooding and vulnerability studies both nationally and internationally.

In addition to her focus on coastal issues, Kelly has also has more than 13 years of experience in GIS, modeling, software development, ocean observing, and data management and communication. She currently manages numerous complex data management, distribution, and visualization projects for NOAA, the USACE, and the Northeast Regional Ocean Council. Prior to joining ASA in 2004 she used a Fulbright Fellowship to study the impacts of sea level rise and storm surge flooding in the country of Mauritius by integrating GIS and systems engineering models.

Kelly holds a B.S. in Environmental Engineering and an M.S. in Water Resources Engineering from Tufts University.

KEYNOTE SPEAKER

Alice Hill, Research Fellow
Hoover Institution, Stanford University
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Alice Hill is a Research Fellow at the Hoover Institution at Stanford University. She previously served at the White House as Special Assistant to President Barack Obama and Senior Director for Resilience Policy on the National Security Council. Hill served on Obama's Climate Team and led the creation of national policy regarding catastrophic risk, including the impacts of climate change. Hill previously served as Senior Counselor to the Secretary of the Department of Homeland Security (DHS), as an ex-officio member of the Third National Climate Assessment, and as chief of the white-collar crime unit in the Los Angeles US Attorney's Office.

SPEAKERS

Alan Blumberg, Co-Founder and Chief Scientist, Hydroscience Risk Analysis
Jupiter Intelligence
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Dr. Alan Blumberg is a world renowned urban oceanographer with expertise in predictive modeling, ocean physics and developing forecasting systems around urban coastal regions. Dr. Blumberg is currently a member of the New York City Panel on Climate Change and has previously served as a member of the U.S. Environmental Protection Agency's Science Advisory Board and as an advisor on storm surge risk to both the National Oceanic Atmospheric Association (NOAA) and the National Aeronautics and Space Administration (NASA).

Dr. Blumberg led a group that developed 2-hour to 4-day flood predictions for the Port Authority of New York and New Jersey. His extensive expertise in analyzing the relationship between coastal waters and the adjoining urban environment is particularly relevant to Jupiter's FloodScore platform which predicts the risk of more frequent flooding events.

Prior to joining Jupiter, Blumberg co-developed the Princeton Ocean Model (POM) which predicts oceanic currents, temperature and other critical variables. The POM has been adopted by over 3000 groups around the world. In addition to working at the forefront of hydrodynamic model development, Dr. Blumberg has published over 160 peer-reviewed journal articles.

Gabriel Cira, AIA, Architect
Very Flat / Emerald Tutu
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Gabriel is a licensed architect based in Cambridge MA, where he runs the design office Very Flat. He works on projects that operate within architecture's relationship with history and myth, and he believes in architecture's role as a vector of "social representation" in cities. His current projects focus on historic preservation and accessibility.

Leah Cohen, Customer Engagement Leader
Jupiter Intelligence
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Leah Cohen is Customer Engagement Leader at Jupiter, which is a Silicon Valley-based start-up dedicated to supporting public and private sector clients manage the risks from extreme weather and climate change. Prior to joining Jupiter, Leah worked on business continuity and resilience at Bloomberg, LP.

She also worked for the NYC Mayor's Office of Long-Term Planning and Sustainability under Mayor Bloomberg, where she managed the City's relationship with the NYC Panel on Climate Change and served as chair of New York City's Climate Change Adaptation Task Force. She also served as Director of Climate Analysis for Mayor Bloomberg's Special Initiative for Rebuilding and Resiliency following Hurricane Sandy. In this capacity, she worked with New York City's panel of climate scientists, FEMA, and other federal agencies to develop the climate risk information that was used to inform the City's rebuilding efforts.

Leah holds a B.A. in International Relations from Stanford University, an M.P.P. from Harvard Kennedy School, and a J.D. from Harvard Law School.

Teresa Crean, Coastal Research Associate
Community Planning and Coastal Resilience
University of Rhode Island Coastal Resources Center
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Teresa Crean, AICP, is a community planner and extension specialist with the Coastal Resources Center (CRC) and Rhode Island Sea Grant at the University of Rhode Island's Graduate School of Oceanography. Teresa facilitates projects in Rhode Island that address coastal adaptation to climate change and sea level rise at the state and local level. This work involves applying decision support tools that communicate challenges and opportunities to targeted stakeholders while collaboratively considering policies and projects that may increase resiliency in the face of potential impacts from coastal hazards. All work employs a research and planning process that integrates the best available science with open input and involvement from a broad range of stakeholders, decision makers and the public. Teresa earned a Master of Landscape Architecture (M.L.A.), SUNY College of Environmental Science and Forestry at Syracuse, and a B.S. in Environmental Policy/Natural Resource Management, University of Michigan.

Grover Fugate, Executive Director
RI Coastal Resources Management Council
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Grover Fugate is Executive Director of the Rhode Island Coastal Resources Management Council (CRMC). In his role of nearly 31 years, Fugate has been responsible for overseeing the development of all policies and programs for the state's coastal program. He currently is the project manager the Council's new Shoreline Change Special Area Management Plan (SAMP) which is a forward looking plan at how climate change is impacting Rhode Island's shoreline and developing appropriate responses to this threat and protecting the state's coastal infrastructure. The CRMC, in coordination with the University of Rhode Island, is working to improve the resiliency of RI coastal communities in order to protect people, property and vital infrastructure such as drinking water supplies, utilities, and roadways. The Beach SAMP aims to improve the coastal resiliency of cities and towns throughout RI to the threats of erosion and flooding caused by storms events or sea level rise. Using up-to-date research and expertise from a wide range of public and private sectors, the Beach SAMP will help inform state and local policy and planning initiatives.

Julia Kumari Drapkin, CEO and Founder
ISeeChange
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Dedicated to connecting communities to each other and their changing environment, Julia Kumari Drapkin founded ISeeChange after a decade of reporting natural disasters and climate change across the globe and in her own backyard on the Gulf Coast. ISeeChange has received national and regional awards, as well as recognition by the Obama White House Climate Data Initiative, NASA, MIT Solve, Grist, and Echoing Green. Prior to journalism, Julia did anthropology and archaeology for 7 years in Central America.

Karen Lindquist, Chief Operating Officer
Green Stream Technologies, Inc.
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Karen is co-founder and COO of Green Stream Technologies, Inc. She drives sales, marketing, business development and oversees finance, HR and legal while the business is growing. Karen has over 30+ years' international experience in B2B sales, marketing, product development and portfolio management. Karen holds an MBA from Henley Management College in the UK. Her interests include weather and climate change, global trends, education and public speaking. Recently Karen has focused her learning on entrepreneurship.

Nicholas Lutsko, Postdoctoral Associate
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Nick is a postdoctoral researcher in the Earth, Atmospheric and Planetary Sciences department at MIT. He works broadly in the field of atmospheric dynamics, using a combination of theory and idealized models, as well as on the problem of constraining Earth's climate sensitivity.

Mariana Matus, Co-Founder & CEO
Biobot
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Dr. Mariana Matus is CEO and Cofounder at Biobot Analytics where she leads the development of technology to transform sewers into public health observatories. Biobot is based on her PhD dissertation conducted at the MIT Computational and Systems Biology program. Dr. Matus has over 10 years of research experience at top academic institutions. She holds a Bachelor in Genome Sciences from Universidad Nacional Autonoma de Mexico and a Masters in Biotechnology from Wageningen University.

Marshall Moutenot, Managing Director
Upstream Tech
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Marshall is the Managing Director of Upstream Tech and a co-founder, overseeing the product development, growth and partnerships. Prior to co-founding Upstream Tech, he worked in a number of early- and late-stage technical companies that have collectively raised over \$100M USD in venture capital. He was awarded Forbes 30 Under 30 in Energy and has served on panels for the United Nations Economic and Social Council. Marshall holds a BA in Computer Science from Tufts University.

Mayank Ojha, Research Associate
MIT- Urban Risk Lab / Risk Map
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Mayank is an Architect, Urbanist and Geomaticist researching and developing situation awareness and decision support platforms for various cities in India, Indonesia, US and Japan. These tools help connect local communities and emergency managers, assisting with disaster preparedness, risk mitigation and real-time data visualization. The Urban

Risk Lab, led by Prof. Miho Mazereeuw at MIT's School of Architecture & Planning, is an inter-disciplinary research group focussing on the role of design in mainstreaming disaster risk reduction.

Shruthi Rao, CEO and Co-Founder

Adapt Ready, Inc.

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Shruthi Rao is the co-founder and CEO of Adapt Ready. Under her leadership, the company has won major industry awards for its innovative risk intelligence platform, including "Risk-Modelling Technology of the Year", "Excellence in Technology", and "Best Customer Service Product" against incumbents such as RMS and AIR Worldwide.

She has 20+ years of experience across diverse industries in business strategy and technology. Shruthi served as a management consultant focused on sustainability for over seven years, where she advised the C-suite of large corporations. Her work received awards and accolades, including "Audacious Idea" at the Green Enterprise IT Symposium.

Shruthi is a firm believer that good for business and good business are not mutually exclusive. Most recently, she was recognized by the Financial Times as one of "Top 50 Female Future Leaders".

Valentina Sumini, Postdoctoral Associate

MIT MediaLab – Responsive Environments / WAVE of Change

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Valentina is a Postdoctoral Associate and a space architect at MIT Media Lab in Responsive Environments. She develops & designs architectures for enabling human space exploration in extra-planetary environments, inventing new materials, new computational design tools and new construction techniques. Her research interests are related to the coupling between the intimate knowledge of the building structural properties, starting from the historical ones, and new and computational design methods to define form-finding optimization process for designing in harsh environments on Earth as well as in Low Earth Orbit, on the Moon and Mars.

Roger ter Heide, CPO

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Roger ter Heide has a background in Physics, IT, and interactive systems. He has been working at SIM-CI on critical infrastructure simulations for the past two years, first as CTO and currently as Chief Product Officer. He has worked with Municipalities, Regional Government and Emergency Management Agencies on resilience, readiness, mobility and innovation.

Alpha Yacob, Ph.D. Candidate | Building Technology

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Alpha Yacob Arsano is a PhD candidate in Architecture and Building Technology at the Massachusetts Institute of Technology. Alpha is an architect, specializing in climate responsive design, with a great interest in promoting passive building strategies in different climatic conditions. She studies the potential of natural ventilation in buildings to provide thermal comfort for occupants in low-energy and low-carbon buildings in a changing climate.