

CHARLESTON
JUNE 13-15, 2021

KEEPING HISTORY

ABOVE WATER

COMMUNITIES IN ACTION

HOSTED BY

CLEMSON UNIVERSITY'S MASTER OF RESILIENT URBAN DESIGN
PROGRAM AND CLEMSON UNIVERSITY/COLLEGE OF CHARLESTON'S
MASTER OF SCIENCE IN HISTORIC PRESERVATION PROGRAM



WELCOME

Life in Charleston is and always has been oriented toward the water. Science clearly indicates that as the 21st century progresses, the city's prosperity will be tied to its ability to manage risks associated with floods (surge, tidal, rainfall, storm water, drainage, surface, groundwater) and sea-level rise. With growing public awareness that Charleston's historic buildings and landscapes are among the city's most valuable and vulnerable economic and social resources, any plan for the future must consider these material assets from the past. Fortunately, stakeholders in Charleston are already taking action.

Keeping History above Water: Charleston will build upon the past successes of KHAW events in other cities. With the theme "Communities in Action," this workshop is specifically not about climate change, per se, but rather what communities are doing to ameliorate climate-related water impacts on historic resources in Charleston and across the United States. The workshop will feature a keynote panel, morning presentations and afternoon tours, site visits and hands-on projects that allow attendees to experience how stakeholders are taking on water-related preservation challenges. The keynote panel will discuss the climate/sea level challenges people in the Gullah Geechee Heritage Corridor are facing, how these forces impact their tangible and intangible cultural heritage, and how those challenges are being met.

This is the sixth iteration of Keeping History Above Water and is a partnership between the **Clemson Design Center in Charleston's** graduate programs in **Historic Preservation and Resilient Urban Design** in collaboration with the Newport Restoration Foundation.

JUNE 13-15, 2021



**We are grateful to all of the wonderful partnerships
that have made this conference possible**

THE NEWPORT RESTORATION FOUNDATION
**NATIONAL PARK SERVICE: NATIONAL CENTER FOR PRESERVATION
TECHNOLOGY AND TRAINING**
CLEMSON ARCHITECTURAL FOUNDATION
THE CITY OF CHARLESTON: OFFICE OF CULTURAL AFFAIRS
SOUTH CAROLINA SOCIETY HALL
FLOOD MITIGATION INDUSTRY ASSOCIATION
GULLAH GEECHEE CULTURAL HERITAGE CORRIDOR
FOX AUDIO VISUAL
CLEMSON UNIVERSITY SCHOOL OF ARCHITECTURE

**We would also like to thank all of our additional partners
that have dedicated their time:**

Christina Butler	Historic Park
City of Charleston Planning, Preservation and Sustainability and Stormwater Management	Historic Charleston Foundation
College of Charleston	Johnson, Mirmiran & Thompson, Inc.
Clemson University	The National Society of the Colonial Dames of America in the State of South Carolina
DesignWorks, LC	Preservation Society of Charleston
Fort Sumter and Fort Moultrie National	Taylor Schenker

**A special thank you to the graduate students in Historic Preservation and
Resilient Urban Design who helped with all the details:**

Kelly Bulak Amy Nguyen Courtney Wolff



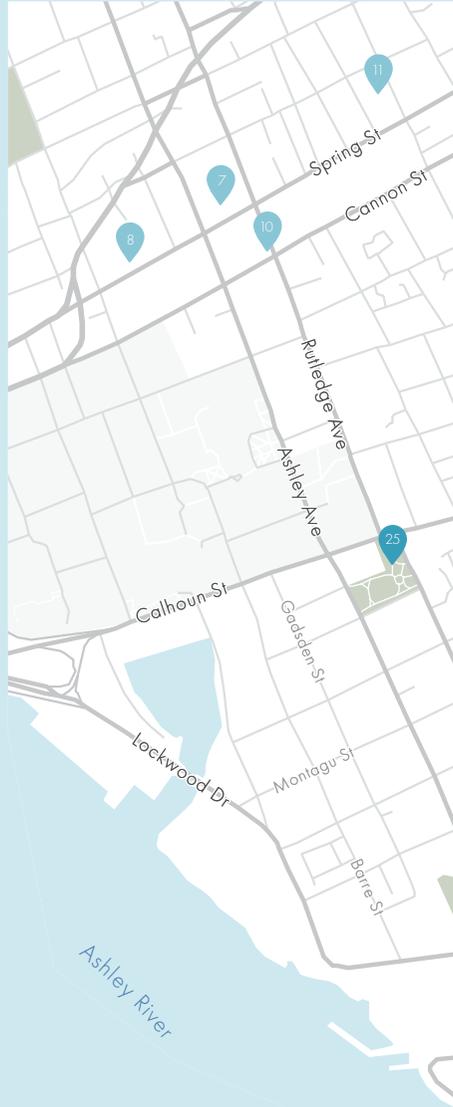
POINTS OF

Places to Dine

- 1 Queology Barbecue
- 2 Magnolias
- 3 Galpao Gaucho Brazilian Steakhouse
- 4 Poogan's Porch
- 5 167 Raw
- 6 Hymans Seafood
- 7 Xiao Bao Biscuit
- 8 Bo Banh Mi
- 9 Frannie & the Fox
- 10 Fuel Charleston
- 11 Chubby Fish
- 12 Le Farfalle
- 13 Cafe Framboise
- 14 Breizh pan Crepes
- 15 Off Track Ice Cream
- 16 Ding Tea
- 17 Kudo Coffee and Craft Beer
- 18 City Lights Coffee
- 19 Bitty and Beau's Coffee
- 20 Carmella's

Places to Enjoy

- 21 Wragg Square
- 22 Wragg Mall Park
- 23 Marion Square
- 24 Washington Park
- 25 Cannon Park
- 26 Ravenel Waterfront Park
- 27 Rainbow Row
- 28 White Point Garden
- 29 The Battery
- 30 Colonial Lake Park
- 31 Gadsdenboro Park
- 32 South Carolina Aquarium
- 33 The Charleston Museum
- 34 Gibbes Museum of Art



- 35 Historic Charleston City Market
- 36 Mace Brown Museum of Natural History
- 37 SC Historical Society Archives
- 38 Halsey Institute of Contemporary Art

INTEREST



Charleston Harbor



EVENT SCHEDULE

SUNDAY JUNE 13TH
SOUTH CAROLINA SOCIETY HALL

OPENING RECEPTION AND KEYNOTE PANEL DISCUSSION

- 4:00 - 5:00 Opening Reception
- 5:00 - 5:15 Welcoming Remarks
- 5:15 - 6:15 Taking on Climate Challenges to
Gullah Geechee Heritage
*with Abe Jenkins, Jr., Albert George,
Dionne Hoskins-Brown, Ennis Davis*

Conference Venues

City Gallery
34 Prioleau St, Charleston, SC 29401

South Carolina Society Hall
72 Meeting St, Charleston, SC 29401

Hotel Information

Fulton Lane Inn
202 King Street Charleston, SC 29401

Kings Courtyard Inn
198 King Street Charleston, SC 29401

Parking Garages

1 Charleston County Parking Garage
85 Queen St, Charleston, SC 29401

2 Cumberland Street Garage
90 Cumberland St, Charleston, SC 29401

3 Parking Garage
140 E Bay St, Charleston, SC 29401

Walking Distances

--- Hotel to SC Society Hall
0.4 Miles, 8 min walk

--- Hotel to City Gallery
0.6 Miles, 12 min walk

--- SC Society Hall to City Gallery
0.4 Miles, 9 min walk

EVENT MAP





EVENT SCHEDULE

MONDAY JUNE 14TH SOUTH CAROLINA SOCIETY HALL SESSIONS

KEEPING HISTORY ABOVE WATER - LITERALLY: BUILDING ELEVATION AND OTHER STRATEGIES

SESSION 1A

- 8:20 - 10:30 Crafting Guidelines for Flood Risk: Historic Properties and the Challenges of Regulating Adaptation
with Jenifer Eggleston, Jenny Parker, Jen Wellock, Dominique Hawkins, Helen Johnson, Erin Minnigan
- 10:30 - 10:50 Discussion

BREAK

SESSION 3A

- 11:00 - 11:20 Rising Waters: Hardening Your Heritage-Based Economy
with Lisa Craig, Phil Thomason
- 11:20 - 11:40 STAPLEE: A Tool for Assessing Community Priorities for Flood Adaptation
with Lisa Craig
- 11:40 - 12:00 Adaptation Without Loss: Developing Design Solutions and Guidelines for Elevating Historic Buildings in Newport's Point Neighborhood
with Stephen White, Greg Laramie, Helen Johnson
- 12:00 - 12:20 Discussion

SCHEDULE FORMAT



In the mornings, we will have lectures and panel discussions that occur at two separate locations in a session format. Each session will be followed by a short break to accommodate travel between locations.

Lunch is at the City Gallery at 12:30 pm.

A poster gallery event with the Clemson Master of Resilient Urban Design and Master of Science in Historic Preservation Students will be on-going at both locations.

In the afternoon, a variety of tours and workshops are available.

Session 1 begins at 8:20 am

Session 2 begins at 9:30 am

Session 3 begins at 11:00 am

Lunch begins at 12:30 pm

Tours and workshops begin at 1:30 pm

To help you decide which events you would like to attend, scan the QR code below to read the full abstracts.



ABSTRACTS

**not all days have all sessions*



EVENT SCHEDULE

MONDAY JUNE 14TH CITY GALLERY SESSIONS

KEEPING ARCHAEOLOGICAL SITES, HISTORIC SITES, AND COLLECTIONS ABOVE WATER

SESSION 1B

- 8:20 - 8:40 The North American Heritage at Risk Project
*with Sarah Miller, Lindsey E. Cochran, Meg Gaillard,
Karen Y. Smith, Emily Jane Murray, Lori Lee*
- 8:40 - 9:00 Conversations with the Community about Heritage at Risk
*with Emily Jane Murray, Sarah E. Miller, Emma Dietrich,
Robbie Boggs*
- 9:00 - 9:20 Discussion

BREAK

SESSION 2B

- 9:30 - 9:50 Community Archaeology on a Heritage at Risk Site,
Pockoy Island Shell Rings on Botany Bay Plantation
Heritage Preserve, Charleston County, South Carolina
with Meg Gaillard
- 9:50 - 10:10 What Do We Do When We Cannot Keep
Archaeological Heritage Above Water? Two Case
Studies from Charleston County, South Carolina
with Karen Smith
- 10:10 - 10:30 Heritage at Risk: Bringing the Alliance for Response
Initiative to Charleston
with Kimberly Roche
- 10:30 - 10:50 Discussion

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SESSION 3B

- | | |
|---------------|---|
| 11:00 - 11:20 | Preserving Threatened Historic Resources on Johnssee Island
<i>with Anna-Catherine Carroll</i> |
| 11:20 - 11:40 | Disaster Resilience on the Texas Gulf Coast:
Communities and Historic Sacred Spaces
<i>with Sandeep Langar, Angela Lombardi, William A. Dupont, Saadet
Toker-Beeson, Sedef Doganer, Jie Huang, Kasim A. Korkmaz</i> |
| 11:40 - 12:00 | Tides of Change: A Decade of Climate Change Vulnerability
Assessment and Mediation Protocol Development at the
Strawbery Banke Museum in Portsmouth, NH
<i>with Benjamin Curran</i> |
| 12:00 - 12:20 | Discussion |

BREAK

- | | |
|---------------|---------------------------|
| 12:30 - 01:30 | Lunch |
| 01:30 - 04:00 | Tours (see tour schedule) |



EVENT SCHEDULE

TUESDAY JUNE 15TH SOUTH CAROLINA SOCIETY HALL SESSIONS

FROM A SINGLE BUILDING TO GLOBAL NETWORKS: SCALAR APPROACHES TO DEALING WITH WATER

SESSION 1A

- 08:20 - 08:40 Preservation Work at Ca' d'Zan: A Case Study in Waterproofing a 20th-century Historic House
with Marissa Hershon, Amy Elizabeth Uebel
- 08:40 - 09:00 Flood Resiliency Testing of Pre-1970 Construction Building Materials and Techniques: Premiering a New Laboratory Capability in Virginia
with Paige Pollard, Kerry M. Shackelford
- 09:00 - 09:20 Discussion

BREAK

SESSION 2A

- 09:30 - 10:30 Looking Towards the Future, Learning from the Past: A Case Study of Interdisciplinary Climate Adaptation Planning in Cambridge, MA
with Sarah Scott, John Bolduc, Bella Purdy, Jeff Roberts, Charles Sullivan
- 10:30 - 10:50 Discussion

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SESSION 3A

- | | |
|---------------|---|
| 11:00 - 11:20 | Preserving Paradise: Addressing PTSD (Post Tropical Storm Distress)
<i>with Leslee Keys, Clay Henderson</i> |
| 11:20 - 11:40 | Bridging the Gap: An Approach for Integrating Cultural Resources Inventory Data and Climate Change Vulnerability Data to Reduce Risk and Inform Resilience Policy and Planning
<i>with January Tavel, Tait Elder</i> |
| 11:40 - 12:00 | Coupled Infrastructures: Synergies between Global Economies and Coastal Landscape Communities at Risk of Permanent Flooding
<i>with Andreea Hoxha, Dana Hills</i> |
| 12:00 - 12:20 | Discussion |



EVENT SCHEDULE

TUESDAY JUNE 15TH
CITY GALLERY SESSIONS

ALTERNATIVE METHODS FOR PLANNING, DOCUMENTATION, AND PRESERVATION

SESSION 1B

- 8:20 - 8:40 Historic Buildings Lead the Way in Flood Hazard Mitigation/Adaptation
with Roderick Scott
- 8:40 - 9:00 The Trials and Tribulations of Elevating the First House on the National Register of Historic Places in New York State
with Julie Nucci
- 9:00 - 9:20 Discussion

BREAK

SESSION 2B

- 9:30 - 10:30 Harnessing Digital Technologies to Inform Flood and Sea Level Rise Adaptation Planning
with Simeon Warren, Lisa Craig, Brent Fortenberry, Sujin Kim, Morris (Marty) Hylton III
- 10:30 - 10:50 Discussion

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SESSION 3B

- | | |
|---------------|--|
| 11:00 - 11:20 | Saving our Nation's Heritage with
Climate Change Litigation
<i>with Andrea McGimsey, Elizabeth Merritt</i> |
| 11:20 - 11:40 | Relocating Historic Properties with the Tides of Change
<i>with Diana Inthavong</i> |
| 11:40 - 12:00 | Discussion |

BREAK

- | | |
|---------------|---------------------------|
| 12:30 - 01:30 | Lunch |
| 01:30 - 04:00 | Tours (see tour schedule) |



TOURS AND

MONDAY JUNE 14TH

Tours will start at 1:30

Please meet your tour guide or shuttle bus at City Gallery

TOURS

Charleston's Historic Walled City
with Katherine Pemberton

Dealing with Water on College of Charleston's Historic Campus*
with Katie West and Laura Lee Worrell

Defending the Battery –Design and Reconstruction of Charleston's
Historic Seawall*
with Jim O'Connor

Designing with Water: Water Management and Waterfront Public
Space Design in the Battery
*with City of Charleston Planning, Preservation and Sustainability and Stormwater
Management*

Flood Mitigation in Charleston at the Macro and Micro Levels*
with Cashion Drolet

Historic Fill - The Battery, White Point Garden, and Murray Boulevard
with Christina Butler

The Lowcountry Lowline: A Complex Linear Park*
with Scott Parker

Sites of Black Resistance in Charleston
with Mills Pennebaker

Storm-related Measures at Fort Moultrie*
with Nathan Betcher

WORKSHOP

Flood Risk Assessment Training Workshop
with Vidya Samadi

* shuttle bus transportation from City Gallery

WORKSHOPS

TUESDAY JUNE 15TH



Tours will start at 1:30

Please meet your tour guide or shuttle bus at City Gallery

TOURS

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with Katherine Pemberton

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Elevated Buildings Tour*
with Erin Minnigan

Historic Fill - The Battery, White Point Garden, and Murray Boulevard
with Christina Butler

The Lowcountry Lowline: A Complex Linear Park*
with Scott Parker

Sites of Black Resistance in Charleston
with Mills Pennebaker

Storm-related Measures at Fort Moultrie*
with Nathan Betcher

WORKSHOP

USACE Coastal Storm Risk Management (CSRM) and Historic Cities
with Mark Wilbert and B.D. Wortham-Galvin
Convenes at the South Carolina Society Hall at 2:00

* shuttle bus transportation from City Gallery



TOUR DESCRIPTIONS

Charleston's Historic Walled City

with Katherine Pemberton, The National Society of the Colonial Dames of America in the State of South Carolina

In 1680, Carolina's settlers moved to the peninsula of present-day Charleston. Here, on 62 acres of high ground, town lots and streets were laid out and the area began to be fortified against myriad threats. From the 1690s to the 1720s, Charleston was the only English walled city in North America. As the need for defense waned in the second half of the 18th century and as commerce increased, the town grew beyond the walls and into low-lying areas. Even though the walls are no longer visible on the landscape, these fortifications and defensive infrastructure shaped the city for centuries. Join historian Katherine Pemberton for a walk around the early city.

Dealing with Water on College of Charleston's Historic Campus

with Katie West and Laura Lee Worrell, College of Charleston

With 144 buildings on its urban downtown campus, the College of Charleston is constantly dealing with water management, flooding, and drainage issues. The most recognizable example of water management on our campus is the cistern at Randolph Hall, but this is just one of many cisterns on campus. There are at least 10, and possibly as many as 50, old cisterns scattered across its grounds. The modern era of stormwater management is being addressed at new construction projects and existing sites, including a large-scale underground cistern planned for the Simons Center Renovation and a small 1,100 gallon above ground example at 26 Coming Street.

Defending the Battery –Design and Reconstruction of Charleston's Historic Seawall

with Jim O'Connor, Johnson, Mirmiran & Thompson, Inc.

Constructed in 1909, Charleston's historic Low Battery seawall is succumbing to environmental attack from storms, sea level rise and material deterioration. As much preservation effort as engineering challenge, this landmark is being reconstructed to create a revitalized public realm with underpinned foundations, strengthened seawall, upgraded drainage, and improved accessibility.

TOUR DESCRIPTIONS



Designing with Water: Water Management and Waterfront Public Space Design in the Battery

with City of Charleston Planning, Preservation and Sustainability and Stormwater Management

One of the myriad consequences of climate change is the increased amount of flooding that communities are encountering. This includes not only coastal communities flooding due to sea level rise and the resultant impacts of astronomical high tides, but also severe storm flooding happening along estuaries and even further inland along rivers and tributaries. Water is now one of the many contexts with which built environment professionals need to design. This tour will include members from both the Department of Planning, Preservation & Sustainability and the Department of Stormwater Management to discuss how water is managed on the Battery and the design process for rethinking public space alongside the rebuilding of the historic seawall.

Elevated Buildings Tour

with Erin Minnigan, Preservation Society of Charleston

Traditionally, the Charleston Board of Architectural Review (BAR) resisted requests to elevate historic buildings, due to adverse effects to historic materials, form, and relationship to streetscapes. However, with climate change considerations and expected sea-level rise, the preservation community decided it was time to reevaluate our approach to historic structures in flood-prone areas. Led by the BAR, two public workshops were held with a panel of local architects, engineers, contractors, and preservationists, to develop a set of design guidelines of preferred approaches to elevation, specific to Charleston's architecture and urban environment. This tour will give attendees a chance to view real-world elevation projects that have undergone a rigorous design review process within the oldest historic district in the nation. Attendees will also have the opportunity to engage with architects involved with the projects, to delve into the details of the design and elevation process on-site.



TOUR DESCRIPTIONS

Flood Mitigation in Charleston at the Macro and Micro Levels

with Cashion Drolet, Historic Charleston Foundation Staff

Historic Charleston Foundation (HCF) is well aware of the impacts of sea level rise and flooding in Charleston's historic neighborhoods. The city has been shaped by water since its founding. The area within the original walled city was settled because of its location on high ground. As the city expanded, creeks and marshes were filled to provide more buildable area in the city. During heavy storm and tidal events these former wetland areas are the first to experience flooding. As Preservationists, we have had to adjust our perspective on how to best protect historic properties from flooding. For this tour, HCF will host a case study/walking tour to discuss Charleston flood mitigation, both permanent and temporary, at the macro and micro levels to share what we have learned through experience. HCF will discuss the Dutch Dialogues Charleston, the proposed Army Corps sea wall project, and individual flood adaptation methods at homes on the peninsula.

Historic Fill - The Battery, White Point Garden, and Murray Boulevard

with Christina Rae Butler, American College of Building Arts

As a coastal city, Charleston's is no stranger to flooding, and for the past 350 years its residents have reclaimed land and developed complex drainage infrastructure to create nearly fifty percent more buildable land than existed in 1680. Join historian, preservationist, and Lowcountry AT High Tide author Christina R. Butler for a walking tour of one of the city's historic (and man-made) waterfronts. Beginning in the original walled city and heading south, the route will highlight the engineering and filling efforts that created the Battery and White Point Garden, before turning onto Murray Boulevard, a 20th century reclamation. Along the way, Butler will discuss recent drainage upgrades and seawall repairs, and residents' responses to rising sea level while preserving the city's historic architectural character.

TOUR DESCRIPTIONS



The Lowcountry Lowline: A Complex Linear Park Project

with Scott Parker, DesignWorks, LC

What is the Lowline? The Lowline is a vision to reclaim 1.7 miles of abandoned railway track and neglected highway corridor along the backbone of the Charleston Peninsula. It is a vision to transform this forgotten stretch of urban space into a centralized regional green infrastructure. The Friends of the Lowcountry Lowline are working alongside the City of Charleston to create a green space that highlights the surrounding neighborhoods, addresses city-wide flooding, and gives pedestrians and bicyclists a safe, dedicated path. The Conceptual Master Plan is completed with the next stages including securing funding, design, community input, and construction. Walk the future Lowline to discuss issues of flooding and community culture.

Sites of Black Resistance in Charleston

with Mills Pennebaker, College of Charleston

The history of Charleston is a history of racial violence. From the formation of the city in the late 1600s to today, city officials have attempted to impose second-class citizenship upon Black residents using a variety of social, political, educational, and economic tools of oppression. Despite centuries of subjugation, Black Charlestonians have continuously resisted slavery and its legacies by creating and maintaining sites of collectivism, fellowship, education, and advocacy. Join public historian Mills Pennebaker for a walking exploration of Black opposition to local racial regimes.

Storm-Related Measures at Fort Moultrie

with Nathan Betcher, National Park Service

Fort Moultrie highlights over 170 continuous years of American seacoast defense, from the Revolutionary War to WW2. The present iteration of the Fort was built as part of the second system of fortifications in 1808. Despite upgrades and improvements – from brick and mortar, to the concrete of the Endicott Era batteries – water intrusion issues have never been solved. This tour will take you through areas of the Fort and the adjacent Battery Jasper to see the past and present challenges in addressing water intrusion. Closed toed shoes are required and if you have a flashlight, bring one along.



WORKSHOPS

Flood Risk Assessment Training Workshop

with Vidya Samadi, Clemson University

The aim of this workshop is to educate a wide range of users and professionals and use research-based information and technologies to support flood disaster risk reduction. We will provide training course and materials about Flood Analytics Information System (FAIS). FAIS is a flood analytics and risk assessment application that seamlessly identifies the areas at risk of floodwater in real time. This web-based training will be looking at USGS data gathering, exploring crowdsourced data interface, and discussing application of advanced techniques in flood risk assessment, and the broad spectrum of the software's capabilities. There will be a model demonstration relevant to the background of the attendees. This will be followed by an open session at the end for attendees to ask any additional questions. There is no need for users to install the software on the computer, to participate in the training. Training notes will be posted to users in advance of the training.

WORKSHOPS



USACE Coastal Storm Risk Management (CSRM) and Historic Cities

*with Mark Wilbert, City of Charleston, and
B.D. Wortham-Galvin, Clemson University*

A panel discussion to develop the best possible solutions to protect cities while preserving their historic and cultural identities. The panel includes the USACE, Waggoner and Ball consultants, and representatives from Miami, Norfolk, and Charleston. Many cities around the country are undertaking CSRM feasibility studies in order to protect against deadly and costly storm surge. Sea level rise projections are making this task even more urgent. This session will discuss the various steps involved in CSRM, specific issues with the National Historic Preservation Act (NHPA) and share important lessons learned from cities currently in the process. USACE representatives will help to un-pack the many policy and regulatory steps involved in the process. Ultimately the best CSRM projects will result when city and USACE teams work closely together towards an outcome that meets locally defined goals and federal process requirements.



MORE INFORMATION

COVID POLICY:

Masks are required indoors unless you are currently presenting.
Masks will be provided for your convenience.
We appreciate your cooperation.

To join us on social media, follow along by using the hashtag
#historyabovewater

For more information, please scan the provided QR codes
with your smartphone's camera



EVENT HOMEPAGE

MORE INFORMATION



SPEAKER BIOS



ABSTRACTS

KEEPING HISTORY ABOVE WATER:
COMMUNITIES IN ACTION WAS BROUGHT TO YOU
BY THE FOLLOWING GRADUATE PROGRAMS:



School of
ARCHITECTURE
Historic Preservation



School of
ARCHITECTURE
Resilient Urban Design