

#NAF2015



# NATIONAL ADAPTATION FORUM PROGRAM

MAY 12-14, 2015 ST. LOUIS, MO



A searchable/sortable version of the program is available online at  
[www.nationaladaptationforum.org](http://www.nationaladaptationforum.org)





**OFFICE OF THE MAYOR  
CITY OF ST. LOUIS  
MISSOURI**

**FRANCIS G. SLAY**  
MAYOR

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**PROCLAMATION**

WHEREAS, the climate is changing and will impact both ecosystems and society in a variety of ways; and

WHEREAS, many state and local governments are already preparing for the impacts of climate change through adaptation planning; and

WHEREAS, we need to change the way we address these challenges in order to secure a sustainable future; and

WHEREAS, we need to coordinate our ideas and bring together a community of practice in order to innovate the solutions to this challenge; and

WHEREAS, during this 2nd week of May 2015, the National Adaptation Forum is being convened in St. Louis, MO to move from awareness of the challenge before us to action on the solutions we develop together; and

WHEREAS, the City of St. Louis is honored to be a part of this path to a sustainable future, promoting adaption throughout the country; and

WHEREAS, we eagerly anticipate and encourage all participants in the National Adaptation Forum to engage in creative discussions and solutions this week to promote climate adaptation nationwide.

Now, therefore, I, Francis G. Slay, Mayor of the City of St. Louis, do hereby proclaim the week of May 11 through May 15, 2015, as:

**“CLIMATE CHANGE ADAPTATION WEEK”  
IN THE CITY OF ST. LOUIS**

In witness whereof, I have hereunto set my hand and caused to be affixed the seal of the City of St. Louis, this 11th day of May, A.D. 2015.



# NATIONAL ADAPTATION FORUM

MAY 12-14, 2015  
ST. LOUIS, MO

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# Welcome to the 2015 National Adaptation Forum!

We are thrilled to have you be a part of the 2nd National Adaptation Forum! This event gathers the adaptation community to foster knowledge exchange, spark innovation and provide mutual support to help guide us all to a better future. The Steering and Program Committees have toiled diligently over the past 18 months to create an opportunity for each of us to meet and interact with colleagues from around the country who are also actively working on climate adaptation. We hope that you will take the time to help make the meeting a success, sharing your expertise and ideas with other attendees while working collaboratively to create a community of adaptation practice.

Thanks to a rich and diverse array of submissions, the Program Committee put together three fantastic days of symposia, training sessions, working groups, posters, and tools presentations that represent cutting-edge research and action around climate change adaptation. We are confident you will find things you always wanted to learn more about, as well as things you didn't know were happening.

We trust the program will provide opportunities for insightful exchanges and innovative new ideas. If you run into any of the dedicated committee members who made this event happen, please take a moment to share your experience and thoughts, and maybe even give them a nod of thanks. They've spent months providing input, ideas, and time into making this event happen.

Three cheers for their dedicated and tireless service!

We also hope you'll spend time in the Midway, meeting and greeting our sponsors and exhibitors. Without their support, this event would not be possible. While visiting the Midway, give them a word or two of appreciation for their partnership and support.

Over the course of this week, please start thinking about what the next National Adaptation Forum might look like and how you could be part of making that happen. This event is only valuable if it serves the needs of the burgeoning climate adaptation community, and it only happens when that community steps up and makes it happen. A survey will be e-mailed to you immediately after the Forum. Please take a moment to provide your feedback.

Have a great week in St. Louis! We look forward to meeting you all and learning more about how adaptation is helping you find your path to a climate-savvy future.

Sincerely,



Lara, on behalf of the Steering Committee

## STEERING COMMITTEE

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LARA HANSEN, EcoAdapt (Chair)

MARGARET DAVIDSON, National Oceanic and Atmospheric Administration

NAOMI EDELSON, National Wildlife Federation

GARRETT FITZGERALD, Urban Sustainability Directors Network

MIKE GOLDSTEIN, U.S. Forest Service

JOHN A. HALL, U.S. Department of Defense

SEAN HART, Bureau of Indian Affairs

NOAH MATSON, Defenders of Wildlife

MICHAEL MCCORMICK, California Governor's Office of Planning and Research

CYNTHIA MCHALE, Ceres

AMBER PAIRIS, California Department of Fish and Wildlife

LINDA RUDOLPH, Public Health Institute

JOEL SCHERAGA, U.S. Environmental Protection Agency

PAUL WAGNER, U.S. Army Corps of Engineers

CATHERINE WERNER, Office of the Mayor, St. Louis, Missouri

SUSAN WOTKYNS, Institute for Tribal Environmental

Professionals, Northern Arizona University

MIYA YOSHITANI, Asian Pacific Environmental Network

# SPONSORS & EXHIBITORS



The National Adaptation Forum's sponsors and exhibitors make the capacity building, professional development, and information sharing possible. Without them, the National Adaptation Forum could not present an innovative and comprehensive program featuring plenary sessions, symposia, working groups, training sessions, tools presentations, exhibit booths, poster sessions, and networking events.

*Please join us in thanking and supporting these sponsors and exhibitors who energize the adaptation community and make the National Adaptation Forum the place to move adaptation forward.*

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## ABOUT THE 2015 NATIONAL ADAPTATION FORUM PROGRAM

Adaptation is a small, rapidly growing field developing in response to urgent needs and challenges. The National Adaptation Forum provides opportunities for the professional adaptation community from across the United States to convene to share strategies, lessons, tools, and information through formal trainings, facilitated practitioner presentations, and informal exchange of information. This event affords participants the opportunity to learn more about how to make their work climate smart, share what they have learned with others, and develop a stronger network to be climate savvy in all that they do.

The 2015 National Adaptation Forum has drawn representatives from every state in the United States, territories, Canadian provinces and several other foreign countries. These participants are from the government (37 percent), non profit (30 percent), university research/teaching (15 percent), student (10 percent) and corporate (8 percent) sectors.

In support of these professionals, the program includes 71 engaging symposia, 21 innovative training sessions, and 24 cutting edge working groups to develop new areas of adaptation. There will also be 76 poster presentations and 18 emerging tools. Topics addressed in the program include agriculture and food security, architecture and design, city resilience planning, coalition building, community based adaptation, critical infrastructure, cultural heritage resources, disaster risk management, economic development, education and outreach, financing adaptation, international readiness, land use planning, marine and coastal impacts, monitoring and evaluation, natural resources, policy, public health, transportation, Tribal, and water resources.

We appreciated and acknowledge the hard work of the talented Program Committee for making this rich program possible.

### PROGRAM COMMITTEE

KIMBERLY HALL, The Nature Conservancy (Co-Chair)

ALEX SCORE, EcoAdapt (Co-Chair)

AMANDA BRENNAN, Carolinas Integrated Sciences and Assessments

CHRISTA DANIELS, Antioch University New England Center for Community Resilience and Climate Preparedness

AIMEE DELACH, Defenders of Wildlife

MIKE DURGLO, Confederated Salish and Kootenai Tribes

GARRETT FITZGERALD, Urban Sustainability Directors Network

PAUL FLEMING, Seattle Public Utilities

WENDYKAY GEWISS, EcoAdapt

ASHLEE GRACE, Graham Sustainability Institute, University of Michigan

JESSICA GRANNIS, Georgetown Climate Center

LARA HANSEN, EcoAdapt

MICHELLE HAYNES, U.S. Army Corps of Engineers

CHRIS HILKE, National Wildlife Federation

JESSICA HITT, EcoAdapt

MARGARET HIZA REDSTEER, U.S. Geological Survey

SARA HOVERTER, Harrison Institute for Public Law

KASEY JACOBS, Caribbean Landscape Conservation Cooperative

JENNIFER JURADO, Broward County, Florida

NILE MALLOY, Communities for a Better Environment

KRIS MAY, AECOM

MARK MCCAFFREY, National Center for Science Education

KATE MEIS, Local Government Commission

JOHN O'LEARY, Massachusetts Division of Fisheries and Wildlife

AMBER PAIRIS, California Department of Fish and Wildlife

KIM PENN, National Oceanic and Atmospheric Administration

SASCHA PETERSEN, American Society of Adaptation Professionals

KARA REEVE, RTI International

KIF SCHEUER, Local Government Commission

PARIN SHAH, Asian Pacific Environmental Network

KATIE SKAKEL, Tetra Tech

AMY SNOVER, University of Washington Climate Impacts Group

JASON VOGEL, Abt Associates

LARA WHITELY BINDER, University of Washington Climate Impacts Group

JOHN WIENER, University of Colorado Institute of Behavioral Science



7:00 am  
to 8:00 am

## BREAKFAST (FOYER A, B, AND C)

7:00 am  
to 5:30 pm

## REGISTRATION (THE DEPOT)

7:00 am  
to 5:30 pm

## ART EXHIBIT (FOYER C)

As part of our commitment to building a community of practice around climate adaptation, the National Adaptation Forum is fortunate to have on display the projects and art work of several St. Louis based artists who are exploring themes related to climate change and environmental stewardship. Their art will be on display in Foyer C for the duration of the meeting. You are encouraged to spend some time there and read about the artists' vision for using art to inspire community engagement on climate change and environmental stewardship. Join the conversation and find out if art might help support your efforts to advance climate change adaptation!

8:00 am  
to 10:00 am

## OPENING PLENARY SESSION (GRAND BALLROOM)

Welcome, Amber Pairis, Lead, San Diego Climate Science Alliance, California Department of Fish and Wildlife

About the 2015 National Adaptation Forum, Lara Hansen, Steering Committee Chair, National Adaptation Forum

Town Hall

Welcome to St. Louis, Catherine Werner, Sustainability Director, City of St. Louis Mayor's Office

10:00 am

## Exhibits Grand Opening (Midway)

1. American Society of Adaptation Professionals
2. National Oceanic and Atmospheric Administration
3. EcoAdapt
4. Defenders of Wildlife
5. ISET International
6. ICLEI/DOE Solar SunShot Program
7. Path for Positive Communities
8. Climate Adaptation Scholars
9. Buoyant Foundation Project
10. Regional Climate Partnerships: LCCs, CSCs, RISAs, Climate Hubs
11. Conservation Biology Institute
12. Cascadia Consulting Group
13. Union of Concerned Scientists
14. RAND Corporation
15. Climate Planning
16. Anheuser-Busch
17. Climate Change Art – Climate Change Action
18. United Nations Environmental Programme
19. The Nature Conservancy
20. Adaptation International

21. Abt Associates
22. Natural Hazard Mitigation Association
23. Notre Dame Global Adaptation Index
24. Local St. Louis Adaptation Partners
25. Anheuser-Busch
26. ICF International
27. Greenway Network
28. University of South Carolina / Carolinas Integrated Sciences and Assessments
29. Georgetown Climate Center
30. AECOM
31. ClimateWise
32. U.S. Environmental Protection Agency Office of Sustainable Communities
33. Model Forest Policy Program
34. Association of Climate Change Officers
35. City of St. Louis

10:00 am  
to 10:30 am

## BREAK (MIDWAY)

10:30 am  
to 12:00 pm

## SYMPOSIA, PARALLEL SESSIONS

### Answering the Call: The Rise of Art and Artists to Support Climate Adaptation Actions (Regency B)

Symposium Organizer: Amber Pairis

Speakers: Betsy Litton, Libby Reuter, Kristin Fleischmann-Brewer, Jennifer Bradford

Art in its varied forms can shape our perceptions of the world and plays a pivotal role in supporting social change. As the risks and impacts of our changing climate unfold, it is more important than ever to engage everyday citizens and leaders to inspire the kind of engagement and actions that will ensure future resilience. Art is a language that cuts across cultures, ages, education, and economics and can touch people emotionally to create an experience that infuses climate change with personal meaning. Artists and their work can be catalysts for helping to build community resilience, engagement, and action to support climate adaptation actions and create a future of resilience and adaptability.

### Building Resilience in the San Francisco Bay Area (New York Central)

Symposium Organizer: Kris May

Speakers: Ed Curtis, Rebecca Verity, Wendy Goodfriend

The Federal Emergency Management Agency (FEMA) is investing in new detailed coastal engineering analysis across 100 percent of the populated coast. In Region 9, these data are supporting more than the development of new Flood Insurance Rate Maps (FIRMs). The coastal flood hazard data has been leveraged by multiple studies, including Adapting to Rising Tides, the San Francisco Public Utilities Commission's Climate Adaptation Plan, and Silicon Valley 2.0 to enhance the region's understanding of shoreline vulnerabilities and sea level rise and storm surge flooding risks. FEMA also selected San Francisco for a pilot study on analyzing sea level rise and shoreline change associated with future conditions to assess the feasibility of including these elements on the FIRMs as non-regulatory information. FEMA's investments and partnerships in the region are focusing on the development of a regional resiliency plan that can serve as a model for other regions around the nation.

## **Climate Adaptation: National Policy Landscape (Regency C)**

Symposium Organizer: Noah Matson

Speakers: Kevin Bush, Margaret Davidson, Michael McCormick, Susi Moser, Josh Sawislak

Congress is gridlocked – or downright antagonistic to climate policies. The Obama Administration has pledged action, and has released major climate adaptation policy initiatives since the inaugural National Adaptation Forum in 2013. A facilitated panel discussion will focus on the current state of federal adaptation efforts. The panel will be modeled after The McLaughlin Group television program. It will be (mostly) unscripted and unrehearsed, and panelists (and audience participants) are invited to express their own opinions and analysis of what is working and what is missing and identify the policy steps needed to make the nation more resilient to climate change.

## **Climate Change Impacts and Potential Stormwater Responses: Barriers and Opportunities for Local-level Action (Midway IV)**

Symposium Organizer: Susan Asam

Speakers: Susan Julius, Tashya Allen

This session will highlight findings from a soon-to-be-released report (Climate Change Impacts and Potential Stormwater Responses in the Chesapeake and Great Lakes Regions) that is being developed as a technical input to the National Climate Assessment. The report is the product of a collaborative effort involving the Environmental Protection Agency, the Great Lakes Adaptation Assessment for Cities Project of the Graham Sustainability Institute at the University of Michigan, ICF International, Lake Superior National Estuarine Research Reserve, National Oceanic and Atmospheric Administration Office for Coastal Management, and Old Woman Creek National Estuarine Research Reserve. The report provides key takeaways from eight similar but locally-specific efforts to explore the potential impacts of changing precipitation patterns on stormwater management and consider options (e.g., green infrastructure, low impact development) to address those impacts. It will conclude with a discussion of ways to promote local-level implementation of alternative strategies to control stormwater (e.g., green infrastructure) in the face of climate change.

## **The Co-Production of Actionable Science for Assessment and Adaptation: Six Case Studies from the Water and Clean Water Communities (Jeffersonian/Knickerbocker)**

Symposium Organizer: David Behar

Speakers: Alison Adams, Paul Fleming, Kavita Heyn, Aavudai Anandhi, Alan Hamlet, Fred Buckenmeyer, John Phillips

Best practices in assessment and adaptation planning require partnerships between climate scientists and decision makers to produce what has become known as “actionable science.” The Water Utility Climate Alliance (WUCA) first defined this term in 2009 to help the scientific community understand the needs of adaptation planners under climate uncertainty. More recently the concept of “co-production” has been introduced to describe the dynamic in these partnerships. This symposium will feature on-the-ground examples of co-production of actionable science in assessment and adaptation from four WUCA members (New York, Tampa Bay, Seattle, Portland), the Washington state Anacortes drinking water utility, and the regional wastewater utility in King County, WA. While the climate variables of interest range widely from precipitation to sea level rise to extreme storms, we will explore the common dynamic between science and decision making leading to resilience planning at each location, the co-production process that occurred, and outcomes at various benchmarks on the path to resilience.

## **Connecting Faith and Community to Build Resilience (Illinois Central)**

Symposium Organizer: Ann Baughman

Speakers: Rachel Myslivy, Naomi Edeslon

Resilience to climate change requires adaptations at all system levels: city or community, neighborhood, and at the individual level. Recognizing that most faith traditions have statements on climate change, this session will highlight how to engage faith based groups to build resilience showcasing examples of on-the-ground projects, collaborative efforts, and how to combine adaptation and mitigation efforts. This session will feature short presentations combined with interactive discussions to dive deeper into the intersection of faith, community and resilience. Presentations will focus on the following: 1) National Wildlife Federation's Sacred Grounds program that is restoring wildlife and habitat and conserving water on faith community grounds; 2) The growth of a community-wide initiative alongside a small church initiative in Lawrence, Kansas that is pooling resources to turn ideas into reality; and 3) How the most vulnerable urban neighborhoods can build resilience, leadership and how cumulative impact of small projects can leverage larger actions. Join us to be inspired!

## **Conserving the Stage: Planning for the Resilience of Terrestrial Ecosystems (Midway III)**

Symposium Organizer: Mark Anderson

Speakers: Sarah Murdock, Amy Keister, Steve Buttrick, Kim Hall

One of the most promising strategies to help nature adapt to climate change is to conserve connected networks of resilient landscapes that capture the full range of abiotic site conditions. Networks in which resilient sites (e.g., intact sites with high internal microclimate variability) are linked by corridors that facilitate movement should maximize the ability of plants and animals to reach suitable climates. By supporting species adaptation in this way, odds are increased that the widest variety of ecosystem functions and services necessary for supporting both wild species and people will be sustained. An approach to identifying such a network called “conserving the stage” has been developed by The Nature Conservancy, and applied to ecoregions in the Northeast, Southeast, and Northwest U.S. In this symposium, we will overview of the theory behind this approach, and describe the underlying analyses and resulting data products. We will connect the approach to current federal recommendations for approaching land management under climate change and highlight the uses of data.

## **Disaster Risk Reduction and Planning for Tribes (Regency A)**

Symposium Organizer: Bob Gough

Speakers: M. Kalani Souza, James Burke, Bill Thomas

This session addresses Tribal and Indigenous training needs to develop the capacity and resources to meet the challenges of disaster preparedness, exploring several questions: 1) What are the existing training/capacity building missions of the federal agencies for Tribes and Indigenous Peoples? 2) What are the cultural, social-economic and governance modifications that could be made to better adapt existing training and preparedness programs and resources offered by federal agencies, in conjunction with the National Disaster Preparedness Training Center to better meet local needs? 3) How do we take these interfaces beyond the training moment to actual hands on planning by Tribes, Tribal networks and communities? 4) How do we populate these events with relevant, accessible information that honors the traditional predilections of the unique communities represented in the indigenous world?

## Lessons Learned from Planning and Implementing State Level Health-related Climate Adaptation Strategies (Midway II)

Symposium Organizer: Kristin Raab

Speaker: Aaron Ferguson

This session will review lessons learned from planning and implementing health adaptation strategies facilitated by state health departments. Strategies, successes, and challenges from implementing the Centers for Disease Control and Prevention Building Resilience Against Climate Effects (BRACE) framework in the Midwest will be described. A review of the public health impacts of climate change and of the BRACE framework will be provided. In addition, this session will address the ways in which the states of Michigan and Minnesota are implementing the framework to protect the public from the negative health impacts of climate change.

## Regional Learning Networks To Build Urban Resilience: The Case of the Western Adaptation Alliance (Midway II)

Symposium Organizer: Steve Adams

Speakers: Gregg Garfin, Aaron Ray, Vicki Bennett

The use of peer-learning networks organized around regionally similar climate change impacts is a highly effective strategy for building adaptive capacity, leveraging political will, and attracting additional resources to advance local initiatives. The Western Adaptation Alliance will share its experience as a three-year old network while presenting some of the work accomplished thus far.

**12:00 pm**      **LUNCH (MIDWAY)**  
**to 1:30 pm**

**1:30 pm**      **TRAINING SESSIONS AND WORKING GROUPS,**  
**to 3:30 pm**      **PARALLEL SESSIONS**

## Adapting to Acidified Waters: Communication, Management, and Action (Wabash Cannonball)

Working Group Organizer: Lindley Mease

Speakers: Jennifer Bennett-Mintz, Alex Score

As our oceans continue to acidify, marine stakeholders and decision-makers will need to plan for these direct and indirect effects by making management decisions that reduce vulnerability and increase species and ecosystem resilience. In this working group we will explore the potential impacts of and current responses to ocean acidification (OA); how practitioners may be able to respond and adapt to these impacts; and how these actions intersect with the management of other ocean stressors. We will frame our activities by introducing effective ways to inspire action on OA, in part by providing examples of groups already taking action. We will draw from participants' expertise across sectors, geographies, and disciplines to identify the most feasible and impactful strategies for adapting to OA, given socio-environmental tradeoffs and the potential co-benefits of various actions.

## Continuing the Momentum of the Climate Preparedness Task Force (Grand E)

Working Group Organizer: Jessica Grannis

Speakers: Deborah Markowitz, Louise Bedsworth, Heather Holsinger, Ed Curtis, Kevin Bush, Alex Barron, Shira Miller

This session will focus on federal initiatives to support and remove barriers to state and local adaptation through the President's State, Local, and Tribal Leaders Climate Preparedness Task Force. Task Force members and federal staff will report on the Task Force recommendations and key early actions. Participants of the working group will help chart a path forward for continuing the momentum of the Task Force and implementing Task Force recommendations. The discussion will be

aligned around three key questions: 1) What are the key opportunities for federal agencies to use existing authority to support state and local adaptation and to remove barriers; 2) What should be the focus of a next phase of executive action on resilience; and 3) What is the role of state and local governments, academia, non-governmental organizations, and the funding community in supporting and encouraging federal reforms?

## Developing a Guide of Coastal Community Resilience Indicators (Jeffersonian/Knickerbocker)

Working Group Organizer: Charles Goodhue

Speakers: Sandy Eslinger, Martina McPherson

The National Oceanic and Atmospheric Administration developed a draft guide for coastal communities focusing on coastal resilience from coastal hazards (e.g., storms, precipitation, coastal flooding, and sea-level rise). In this session, community, city, regional planners; adaptation experts; and others interested may provide feedback about how this guide of metrics and indicators of resilience can be improved to help communities benchmark and track their current resilience to coastal issues.

## Ecological Transformation: Is it Time for a New Conservation Ethic? (Midway III)

Working Group Organizer: Dawn Magness

Speakers: Nicholas Fisichelli, Jennifer Hoffman, John Morton,

Amanda Robertson, Erika Rowland

Climate change is ongoing and all indications are for continuing and accelerating change. Species, ecosystems, and other resources are already responding to changing conditions, and future patterns and processes on the landscape will look different from the past in many protected areas. However, much adaptation work is focused on resisting change and maintaining past conditions. We will structure the workshop around three themes: 1) Barriers to moving from resisting or passively accepting change to actively and consciously shaping the future; 2) How to move forward? What does it take to shape change?; and 3) What should be the new conservation ethics in a changing world? We will then build on the talks to engage in a discussion about ecological transformation and how such active management fits with our evolving conservation ethic.

## Identifying Decision-Focused Climate Adaptation Activities and Aligning Priorities Across Multiple Sectors and Scales in the Southeast United States (Grand C)

Working Group Organizer: Aranzazu Lascuiran

Speakers: Kirstin Dow, Lisa Fouladbash, Hilary Morris, Adrienne Wootten, Shelby Krantz, Cari Furiness, Dennis Figg, William Gould, Jessica Whitehead, Todd Jones, Rachel Gregg

The Southeastern United States (including the Caribbean) is a diverse landscape of natural and built systems, people, and organizations that faces a number of climate adaptation challenges and opportunities. This working group will convene organizations and partners in the Southeast to share existing and proposed adaptation projects that focus on decision-centered science to address climate impacts.

## Identifying Gaps in Federal Climate Change Adaptation Resources for State, Regional, and Local Transportation Practitioners (Midway IV)

Working Group Organizer: Kevin McCoy

Speakers: Benjamin Rasmussen, Kristin Baja

The U.S. Department of Transportation and other federal agencies continue to develop tools and resources to help state, regional, and local practitioners in their efforts to adapt transportation systems to climate change and make them more resilient in the face of extreme weather events. In this session, the Volpe National

Transportation Systems Center hopes to engage practitioners in a dialogue about existing tools and resources, to identify what has been helpful, what has not, if there are resource gaps, and what practitioners' highest priorities are for enhanced future support. Representatives from the Baltimore City Office of Sustainability will join us to share their experiences in climate adaptation and resilience planning and implementation. Attendees from state, regional, and local agencies will also be encouraged to share their experiences. The organizers seek perspectives from practitioners at all levels of experience in climate adaptation initiatives. Novices and experts alike are welcome!

## **Incorporating Equity Measures into Disaster Planning (Regency A)**

Training Session Organizer: Jacqui Patterson

Marginalized communities and populations suffer first and worst from disasters. People with low mobility, incarcerated persons, communities living next to toxic facilities, people with poor housing stock, women, people who are aging, and children, are examples of populations who are hit hardest by extreme weather events. In order to ensure that these communities and populations are adequately served by disaster planning there are process measures that must be employed by the emergency management system. Participants in this session will emerge equipped to be better planners/advocates for integration of equity measures in emergency management policies, protocols, and practices.

## **Individual Actions to Catalyze Climate Adaptation (Midway I)**

Working Group Organizer: Paul Moss

Speakers: Patrick Hamilton, Christie Manning

Most climate adaptation activities now occur at the organizational level, and there is less focus on adaptation actions that can be implemented by individuals and households. One consequence is that individuals are often unaware of the wide range of adaptation options available to them and how climate adaptation is relevant in their daily life. Individual actions are also key to larger multipronged efforts aimed at making structural changes towards community resilience. This session will draw on lessons learned in organizing and hosting community conversations around climate adaptation in St. Paul. Attendees will share and explore education and outreach approaches that can be effective with individuals. As a result of participating in this session, attendees will be better positioned to increase focus on adaptation activities that both connect individuals to their community, as well as lead to greater implementation of changes in households.

## **Integrating Climate-Smart Conservation into Marine Protected Area Management (New York Central)**

Training Session Organizer: Jessi Kershner

Speakers: Sara Hutto, Whitney Reynier

EcoAdapt and NOAA's Gulf of the Farallones National Marine Sanctuary (GNFMS) will demonstrate how to integrate climate-smart conservation into marine protected area (MPA) management. Specifically, this training will share the process, outcomes, and lessons learned from GNFMS' effort to incorporate climate change vulnerability assessments and nature-based adaptation planning into their existing management framework, and provide guidance to MPA managers on how they can apply a similar process to their own MPA. This training will also feature a series of activities for participants, including: identifying potential vulnerabilities to their marine resources of interest; designing adaptation strategies and actions to reduce vulnerabilities or increase resilience of those resources; and identifying where actions can feasibly be implemented. Participants will leave with an understanding of how to integrate climate-smart conservation into MPA management through a collaborative process to identify focal resources, assess vulnerability of those resources, and develop adaptation actions.

## **Is Half Done is Well Begun? Creatively Finding Funds to Adapt to a Changing Climate (Regency B)**

Training Session Organizer: Edward Thomas

Speaker: Katie Skakel

This session will discuss how use of better coordinated consideration of the long term impact of development coupled with much higher design standards for renovation/replacement of existing infrastructure, buildings, and other development can and will lead to a safer more resilient and just society. Building safely prior to devastation caused by foreseeable natural processes would be in stark contrast to current U.S. practice of allowing development that results in huge externalities whereby some folks are permitted to externalize their true costs of development to others resulting in huge waste of taxpayer funds, misery to those afflicted [especially traditionally underserved populations], and vast environmental devastation. This session will weave in an analysis of two 2013 U.S. Supreme Court Cases, *Arkansas Game and Fish v. U.S.* and *Koontz v. St. Johns River Water Management District*, which strongly support this concept.

## **Navigating How Online Decision Support Tools Coupled with Community Engagement Workshops Can Help Guide Communities Towards Resilience (Frisco Burlington)**

Training Session Organizer: Laura Flessner

Speakers: Adam Whelchel, Bridget Faust, Tashya Allen, Gwen Shaughnessy

This session combines the extensive expertise and approaches of the National Oceanic and Atmospheric Administration (NOAA), The Nature Conservancy (TNC), and Association of State Floodplain Managers (ASFPM) to present an array of web mapping tools alongside a recognized Hazard and Community Resilience Workshop process. This interactive training session walks attendees through the use of the latest decision support tools to better understand community vulnerability to coastal hazards, explore nature-based solutions, and transfer a hands-on, community-based, resilience building workshop process that will equip participants to advance lessons learned. Tools include ASFPM's Toledo Flood Hazard Visualizer and Great Lakes Coastal Resilience Planning Guide, NOAA's Coastal Flood Exposure Mapper, and TNC's Coastal Resilience tool and apps, which can all be found on Digital Coast. The Workshop process combines the NOAA Roadmap with TNC's Risk Matrix.

## **Organizing and Coordinating Regional Adaptation Forums (Midway II)**

Working Group Organizer: Ashlee Grace

Speakers: Kif Scheuer, Abigail Walton, Amanda Brennan, Lara Hansen, WendyKay Gewiss

Individuals interested in taking the National Adaptation Forum (NAF) to partners and stakeholders at the regional level are invited to join this working group session to discuss strategies for building on past regional forums and organizing events in new regions. The first half of the session will include brief report-outs from 2014 regional forum organizers followed by a facilitated group discussion of strengths and areas for improvement from those events. The group will then brainstorm shared goals for future regional forums and how to connect to and build on the NAF. The second half of the session will focus on tactics and strategies for organizing, funding, and executing future forums. The session will close with a facilitated group discussion of next steps, including how to best coordinate across forums and share resources and best practices along the way.

## **Practical Climate Communications: From Research to Implementation (Grand B)**

Training Session Organizer: Daniel Barry

Speaker: Meighen Speiser

Effective engagement must be informed by, and evolve with, the public attitudes that we aim to engage and influence. The tools commonly used to form the essential framing and messaging are well-established, and have been expertly deployed countless times by candidates, unions, issues campaigns, marketing campaigns, and public service message campaigns. These workshops feature experts with deep

experience in public opinion polling, psychographic and social science research, marketing research and analysis, and issues advocacy who show how these tools can be used to develop and deploy communications frames, messages and tools to move peoples thoughts, feelings, and values into positive action on the climate. Psychographic Research: measures social values related to attitudes on climate, personal, and public policy behaviors. Social Science Research: research on climate change and its social, political, psychological, and behavioral implications derives practical applications. Communications Research: gives tested narratives to inform and empower people to positive action.

## Successful Adaptation to Climate Change: Defining, Measuring and Tracking Effectiveness (Grand A)

Training Session Organizer: Susanne Moser

Speakers: Amy Snover, Hannah Gosnell, Steve Adams, Lara Whitley Binder

Where are we going and how do we know we are on the right track? This session will focus on what "success" in climate change adaptation means and how one can define and measure it. We will introduce a framework for evaluating adaptation success that reflects current state-of-the-art in climate change adaptation practice and science, developed through engagement of scientists with coastal managers and stakeholders on the West Coast. Attendees will be invited to work through their own (existing or potential future) adaptation strategies to evaluate how key dimensions of success could be considered. Participants will collaborate to identify indicators and possible metrics for measuring progress. The active engagement and collaborative approach to the session aims to exchange experiences (from examples from across the U.S.) and scales of governance (local, regional, state, federal, tribal), while considering multiple interests that need to be integrated in adaptation efforts (e.g., public safety, property rights, ecological integrity, economic activity, culture, and community resilience).

## Tribal Climate Adaptation: Working Together, Making Progress, and Charting the Course Forward (Regency C)

Working Group Organizer: Sue Wotkyns

Speakers: Garrit Voggeser, Sean Hart, Alicia Bell-Sheetter, Todd Hopkins, Gary Morishima, Robin O'Malley

Tribal adaptation issues at the national perspective will be discussed. Tribal practitioners will discuss technical challenges and identify issues, federal technical support options, and focus areas for Tribal communities to address. The session will begin with a short series of presentations from federal, non-governmental organizations (NGOs), Tribal, and other partners to outline the opportunities and challenges for Tribal climate adaptation efforts. Through a series of working group discussions, Tribes and partners will identify the technical support landscape and programs or solutions being addressed by existing federal working groups, NGOs, and other entities. Tribal advocates will describe the funding and program landscape and identify barriers, opportunities and possible strategies for collective Tribal engagement to address needs. The working group is a follow-on effort from the 2013 National Adaptation Forum Tribal workgroup.

## Using Games to Demystify Complexity (Illinois Central)

Training Session Organizer: Kanmani Venkateswaran

Speakers: Michelle Fox, Karen MacClune

This training session is designed to teach participants the value of games for communicating with and engaging stakeholders around urban issues, climate change, and resilience. Games are a powerful way to demystify and foster engagement around such complex issues as they are fun and engaging, encourage collaboration and learning, and simplify otherwise complex and abstract concepts in memorable ways. We will introduce quick, simple games to communicate complexity, the need for collaborative engagement in planning, and key characteristics of resilience. The objective is to allow participants to critically engage with the core ideas of resilience and open discourse about an issue that is normally perceived as too complex.

3:30 pm  
to 4:00 pm

**BREAK (MIDWAY)**

4:00 pm  
to 5:30 pm

**SYMPOSIA, PARALLEL SESSIONS**

## Building Resilient Communities in the U.S. through Natural Hazard Vulnerability Assessment (Midway III)

Symposium Organizer: Helen Cheng

Speakers: Elizabeth Fly, Jamie Mooney, Hilarie Sorensen

This Sea Grant session addresses community resilience, with this session focusing on community self-assessment tools. Speakers from a variety of Sea Grant programs will present examples of projects from within their state that have helped communities develop and conduct self-assessments to identify critical vulnerabilities to natural hazards. The session will highlight the following: 1) The Vulnerability, Consequences and Adaptation Planning Scenarios (VCAPS), a Self-Assessment Tool developed for the Great Lakes region; 2) The shoreline erosion and sea level rise vulnerability models used in Washington State; and 3) South Carolina's project which included interviews, the VCAPS process, sea level rise scenario building, and public workshops. This session showcases how University Sea Grant programs can link community needs with expertise in the field capable of addressing critical gaps in resilience. A facilitated discussion will allow participants to 1) learn about effective ways to engage local governments in vulnerability assessments; and 2) share their own experiences.

## Climate-Smart Conservation in Action (Midway IV)

Symposium Organizer: Bruce Stein

Speakers: Cat Hawkins-Hoffman, Jordan West, Britt Parker, Patty Glick, Genevieve Johnson

Climate-Smart Conservation is an adaptation planning and implementation framework developed collaboratively by federal, state, and private organizations. The principles and practices of Climate-Smart Conservation increasingly are being applied at a variety of geographic scales, and this session will highlight examples of how this framework is being put into practice at site, ecosystem, state, and regional scales.

## Did Anyone Call the Lawyers?: Utilizing the Sea Grant Legal Network to Assist You with Your Climate Adaptation Strategies on the Ground (Regency B)

Symposium Organizer: Niki Pace

Speakers: Melissa Daigle, Shana Jones, Thomas Ruppert, Lisa Schiavinato

This session will discuss some of the complex law and policy issues coastal communities face with climate change adaptation and how the Sea Grant Legal Network (SGLN) can assist communities with adaptation efforts. The SGLN is comprised of attorneys in numerous Sea Grant state programs, as well as the National Sea Grant Law Center, and provides planning assistance, workshops, legal trainings, and legal and policy analysis on legal and policy issues impacting coastal communities. By exploring several case studies throughout the nation, attendees will learn about some of the innovative ways the SGLN has assisted coastal communities with adaptation. Case studies will address floodplain management, sea level adaptation tools, and implementing law and policy changes on municipal and state levels. Attendees will have the opportunity to share some of their coastal adaptation challenges and will learn about the range of resources and assistance available to them through the SGLN.

## Guidelines for Considering Traditional Knowledge in Climate Change Initiatives (Grand B)

Symposium Organizer: Sue Wotkyns

Speakers: Joe Hostler, Preston Hardison, Gary Morishima

As Tribes begin to develop adaptation plans and contribute to state and federal adaptation efforts, interest in Indigenous Traditional Knowledge (TKs) is increasing. This symposium draws on Guidelines for Considering Traditional Knowledge in Climate Change Initiatives, initially developed for the Department of Interior Advisory Committee on Climate Change and Natural Resource Science in May 2014 by a group of indigenous persons, staff of indigenous governments and organizations, and experts working on issues related to traditional knowledge (TKs). The guidelines provide foundational information on the role of TKs in federal climate change initiatives, on the principles of engaging with Tribes on issues related to TKs, and actions for federal agencies and Tribes to consider in order to establish processes and protocols that govern the sharing and protection of TKs. This session will provide an overview of key elements and concepts that are presented in the document. It will also provide an example of a Tribe working to address TK in their climate change initiatives.

## Innovations in Urban Adaptation (Frisco Burlington)

Symposium Organizer: Sara Hoverter

Speakers: Maria Koetter, Evan Branosky, Kate Johnson, Latham Stack, Michael Simpson

This interactive panel will stimulate conversation about strategic action local communities are taking to move planning into action to reduce the effects of urban heat islands and to improve stormwater management. Maria Koetter from Louisville will discuss a long-term study the city is conducting to map the city's heat islands and to develop a comprehensive heat mitigation plan and to incorporate heat considerations into all policies. Latham Stack and Michael Simpson will share results from a ten-year program of stormwater adaptation research to provide stakeholders with practical, actionable information to support decision-making, manage uncertainty in data, and meaningfully engage stakeholders. Kate Johnson and Evan Branosky will share how the District of Columbia's strong stormwater retention standards, coupled with incentive programs and the innovative Stormwater Retention Credit trading system, are improving water quality and increasing the use of green infrastructure. A highly interactive discussion with the audience will follow to identify other innovative adaptation strategies.

## Innovative Models for Funding and Financing Adaptation (Regency A)

Symposium Organizer: Jessica Grannis

Speakers: Matthew Naud, Elle Hemen, Robert Sanders, Sean Williamson

As states and municipalities struggle to fund critical infrastructure needs and increase climate resilience, adaptation planners will benefit from exploring innovative public and private financing models, including models utilized for other types of projects (such as energy efficiency retrofits). This panel will bring together financing experts, climate adaptation practitioners, and local officials to discuss opportunities for funding and financing climate adaptation projects. Panelists, including experts from the City of Ann Arbor, the University of Maryland Environmental Finance Center, Clean Energy Group, and re:focus partners, will provide an introduction to funding and financing for environmental and resilience projects. They will also present innovative funding and financing mechanisms for certain types of projects, including green infrastructure, clean energy, and sustainable public infrastructure. The moderator will then engage participants in a discussion of opportunities and challenges for leveraging private financing to support climate adaptation projects.

## Is It Doing Any Good?: Monitoring and Evaluating Climate Adaptation Activities (Jeffersonian/Knickerbocker)

Symposium Organizer: Rachel Gregg

Speakers: Molly Cross, Anne Carlson, Andy Lipsky, Carolyn Enquist, Melissa Kenney, Julie Wormser, Mallory Morgan

This session will explore examples of monitoring and evaluation in management and planning, and create a space for practitioners to discuss and develop ideas to support the evaluation of climate adaptation strategies. Talks will include examples from natural landscapes and urban environments, along with decision-making processes to support adaptation monitoring and evaluation.

## Measuring Resilience: How Will We Know When We're There? (Grand C)

Symposium Organizer: Louis Blumberg

Speakers: Aleka Seville, Leah Flax, J.R. DeLaRosa, Mark Anderson, Jessica Hellman

Measuring, evaluating, and monitoring resiliency efforts pose an unprecedented challenge with many questions still unresolved. Panelists will speak to efforts to quantify ecosystem health as a measure of resilience as well as statewide efforts in California to develop and include resilience metrics in updated adaptation planning guidance. Speakers will discuss their use of indicators for infrastructure projects as well as how the use of vulnerability indicators can better position communities to accept investment in resilience building. We will also hear from the Rockefeller Resilient Cities Initiative (RC100) to learn more about how cities around the globe are developing resiliency plans complete with unique, localized metrics. Participants will be encouraged to ask questions and share their own experiences throughout the panel discussion.

## Resilience and Adaptation: Using Narrative and Art to Communicate Complex Concepts, Practical Strategies, and Catalyze Action (New York Central)

Symposium Organizer: Marcus Moench

Speakers: Andrea Caspari, Christopher Moench, Kirsten Howard, Allie Goldstein, Kirsten Howard, Allie Goldstein

This symposium will focus on the role that narratives and art can play in communicating adaptation and resilience concepts and inspiring action. Storytelling is a powerful mechanism for catalyzing change. The complex dynamics of climate change and range of adaptation strategies are often framed in terms that are hard to relate to and difficult for people to understand or agree on, leading to missed opportunities for action. This symposium involves a unique collaboration between researchers specializing in urban climate resilience, environmental journalists who have collected stories of adaptation, and mixed media artists who have used narratives to engage communities about environmental disasters. Participants will directly experience how narratives can communicate complex concepts and humanize options for action. They will also discuss the potential of mixed media storytelling for communicating their own work. The symposium will link fundamental concepts of climate science, adaptation, and resilience in complex systems to daily life through relatable examples.

## The Secret of Sea Level Success: Bi-coastal Best Practices and Lessons Learned from Assessment and Adaptation Projects (Grand A)

Symposium Organizer: Susan Love

Speakers: Brenda Dix, Kris May, Juliette Hart, Danielle Boudreau, Michael Mak, Stefanie Sekich-Quinn

Adaptation to sea level rise is happening in countless different ways across the country; sharing lessons learned at every level will strengthen future efforts at preparing the nation for the impacts of sea level rise. Using presentations of no more than five slides, adaptation experts from across the country will highlight the

results of seven very different sea level rise assessment and adaptation projects. Presenters will focus on sharing the choices that led to their biggest success, the challenges that nearly tanked the projects, and innovative approaches they used to move their projects forward. The short presentations will be followed by a facilitated discussion between presenters intended to dig deeper into strategies for successful adaptation projects. The projects to be discussed include: shoreline exposure at a critical bridge touchdown in northern California; scenario planning and adaptive management in southern California cities; mainstreaming of sea level rise and extreme heat into city planning; statewide adaptation planning in Delaware; and engaging communities in Florida.

## Social Cohesion: The Secret Weapon in the Fight for Equity and Resilience (Midway II)

Symposium Organizer: Danielle Baussan

Speakers: Kimberly Hill Knot, Cecelia Martinez, Garrett Fitzgerald, Robert Verchick

Low-income communities are often most at risk when extreme weather and other climate change effects take hold. Substandard housing, poor environmental conditions and economic instability put disadvantaged families on the front lines of flood waters, toxic-waste exposure, extreme heat, and other climate change risks without the means to cope. A growing number of city and community leaders are recognizing that strengthening the social fabric of communities is critical to building equitable, resilient, and climate-smart communities. Symposium speakers, including city leaders, community development advocates and resilience experts, will discuss innovative approaches to foster social cohesion and resilience in U.S. cities.

## Strategies and Priorities for Preserving Cultural Heritage Resources in a Changing Climate (Midway I)

Symposium Organizer: Adam Markham

Speakers: Jeana Wiser, Marcy Rockman, Lisa Craig, Adrienne Burke, Pieter Roos

Join us to discuss and advance priorities for preserving cultural heritage in a changing climate. The panel will provide practical examples of how national organizations, the National Park Service, and municipal planners in historic districts are working to reduce the vulnerability of cultural resources. We will communicate and build on the recommendations identified at a February 2015 strategic workshop co-hosted by the Union of Concerned Scientists, the National Trust for Historic Preservation, the Society for American Archaeology, and the J.M. Kaplan Fund. Climate impacts are affecting architectural landmarks, historic communities, cultural landscapes, and archaeological resources in the United States. Risk of damage and loss to cultural heritage is growing as the impacts of climate change—including coastal flooding and erosion, extreme weather events and larger wildfires—become manifest (see, for example, the Union of Concerned Scientists report: “National Landmarks at Risk: How Rising Seas, Floods and Wildfires are threatening the United States’ Most Cherished Historic Sites”).

## Why City Resilience Matters for Business (Illinois Central)

Symposium Organizer: Katie Walsh

Speakers: Sarah Wu, Alex Porteshawver, Jon Crowe

There is a significant opportunity for collaboration between city governments and businesses to improve climate resilience. The impacts of climate change could affect a wide range of business sectors, including ports, food production, and service industries. While many in the business community have for some time voluntarily taken steps to reduce greenhouse gas emissions, increasingly business is recognizing the need to incorporate the risks of climate change in their business planning. Cities have a number of ways to support increased community-wide resilience with benefits to both businesses and residents. Firstly, cities and business could both benefit from a greater understanding of one another’s climate change risks. Cities can better communicate what impacts business could face from climate change and companies can help reduce city-wide risks by embedding adaptation needs within their operations. This discussion will provide insights

into how city leaders are considering their interdependencies with businesses, suppliers, and third parties in their adaptation planning process.

## 5:30 pm to 6:30 pm Poster Presentation (Pegram)

### ALASKA

1. The Role of Climate Webinars in Supporting Boundary Organization Networks in Alaska (Kettle, Trainor)
2. Climate Change Implications in the Northern Coastal Temperate Rainforest of North America (Goldstein)

### GREAT PLAINS

3. Climate Adaptation and Mitigation Policy Guidance: Green Infrastructure and Urban Energy (Staley)
4. Scaling Climate Change Adaptation in the Northern Great Plains Through Regional Climate Summaries and Local Qualitative-Quantitative Scenario Planning Workshops (Koslow)

### INTERNATIONAL

5. Mainstreaming Climate Considerations into Urban Planning: A Decision-Support Tool Case Study in Vietnam (Martin)
6. Incorporating Uncertain Climate Assessment Data into the Planning and Decision Making Process: Case Study Insights (Raucher, Kaatz, Brown)
7. A Curated Dataset to Minimize the Practitioner’s Dilemma (Ammann, Yates, Guentchev)
8. Climate Change Adaptation Governance: Triggers for Change, Big Data and Multi-scale Impact (Burton)
9. Strategies to Foster Learning in Participatory Adaptation Processes (Dow, Tuler, Whitehead)
10. Vulnerable Populations and Adaptation—Lessons from Developing Countries (Durden)
11. Communicating about Climate Adaptation: Opportunities and Potential Pitfalls (Markowitz, Guckian)
12. Prioritizing Departmental Decision Making Needs under Future Climate (Nelitz)
13. Coastal Blue Carbon: Breaking Out of Silos to Create Durable Climate Mitigation and Adaptation Solutions and Increase Coastal Conservation (Sutton-Grier, Moore, McCarty, Muth)
14. Using Public-Private Partnerships (PPPs) to Advance Climate Adaptation Implementation (Feldman)

### MID-ATLANTIC

15. Virginia Sea Grant Climate Adaptation and Resilience Program at Old Dominion University: Engaging Community Stakeholders through Partnerships (Covi)
16. What Will Adaptation Cost? An Economic Framework for Coastal Community Infrastructure (Goodhue, Stiller)

### MIDWEST

17. Connecting Climate to Communities (Ask, Schwarz, Ballard, Hirsch, Larson, Leir)
18. Michigan Department of Transportation Climate Vulnerability Assessment (DeFlorio)
19. From the Fed to the Ground: Leveraging Federal Resources to Enable Local Action (Brown, Gibbons, Rood)
20. Enhancing Manager and Stakeholder Awareness of and Responses to Changing Climatic Conditions and Their Impacts on Lake Erie (Murray, Kirchhoff)
21. Reducing the Impacts of Extreme Precipitation Using Green Infrastructure: What’s the Cost? An Economic Assessment (Sorensen, Schomberg)
22. Climate Adaptation Outreach Highlights from Illinois-Indiana Sea Grant (Woloszyn)

23. Model for Building Strategic Partnership to Implement Sustainability and Community Development Principles (Taylor Williams, Fahadi)

## NATIONAL

24. Developing Web-Based Decision Support to “Stack” Multi-Benefit Green Infrastructure (Elwell, Daley, Lu, Szukalski, Stone)
25. Innovations in Geographic Information System for Urban Resilience Planning (Elwell, Robertson)
26. Climate-Smart Cities: Geographic Information Systems Decision Support Tools for Multi-Benefit Green Infrastructure (Elwell, Robertson)
27. Operationalizing Climate-Informed Coastal and Marine Planning (Gregg)
28. CAKE Dashboards: The Next Generation Adaptation Support Tools (Hitt)
29. Climate Registry for the Assessment of Vulnerability (CRAVe): A Tool to Track Climate Change Vulnerability Assessments (O’Malley, Thompson)
30. Moving Past the Awkward Disconnect between Climate and Social Sciences to Integrate and Create Adaptation Science (Seyller, McNeeley)
31. Smart Growth Code Fixes for Climate Adaptation (Susman)
32. Climate-Smart Agriculture with Agroforestry: Providing Adaptation Relief (Bentrup, Dosskey)
33. Resilience in the Utility Sector and Clean Energy as Climate Adaptation (Carnevale)
34. Providing Long-Term Data to Understand Continental-Scale Change (Dethloff)
35. Adaptation Storytelling: Communicating About Community Resilience (Goldstein, Howard)
36. Great Cities: A National Traveling Exhibit About the Past, Present and Future of Cities (Hamilton)
37. The Landscape of Local Government Adaptation Policy: Results From a National Survey of Climate Policies Across the United States (Kauneckis)
38. Psychological Tools for Ecological and Economic Adaptation (Leahy)
39. Preparing for a Hotter World: Saving Lives Now and in the Future with Extreme Temperature Notification and Response Programs (Mills)
40. Adaptation Lessons from National Aeronautics and Space Administration and National Renewable Energy Laboratory: Advancing Science to Conduct Site-level Vulnerability Assessments and Develop Resiliency Plans. (O’Grady, Myers, Daw, Bader)
41. Adaptation of Superfund Cleanup to Climate Change (Pachon, Dailey)
42. Alignment of Interests in Environmental Water Resources and Infrastructure Protection: Innovation in Intelligent Adaptive Control of Existing Infrastructure Interfacing with Volatile Natural Systems (Quigley)
43. Trends in U.S. Climate Adaptation Governance: Results from a Survey of 298 Cities (Shi, Chu, Carmin)
44. USDA Climate Hubs: Developing and Delivering Science-based, Region-specific Information and Technologies to Agricultural and Natural Resource Managers, and Communities (Steele, Hollinger, McNulty, Hatfield, Derner, Rango, Van Horne)

## NORTHEAST

45. Staying Connected: Science to Action Across Scales (Hilke)
46. Climate Adaptation Academy (Barrett, Hyde)
47. Linking Adaptation and Mitigation in Local Climate Change Planning (Goldwasser)
48. The New Hampshire Coastal Adaptation Workgroup: A Collaborative Model for Advancing Local Climate Preparedness (Howard)
49. Tool for Shoreline Adaptation Response Planning (TSARP) (Jones)
50. What Drives Climate Preparedness: An Assessment of State Climate Adaptation Planning in the United States (Miao)
51. Storm-resilient and Critter-friendly Culverts: Assessing the Vulnerability of Critical Transportation Infrastructure (Ocana, McArthur, Jackson, Mabee, Rees)

52. Adapting to Climate Change Impacts across the Northeast and Midwestern United States: Case studies from the Northeast Climate Science Center (Staudinger)
53. Leveraging Downscaled Global Circulation Model (GCM) Output to Inform the Development of Regional Climate Adaptation Strategies (Torres-Cooban)
54. Identifying Rural Character’s Climate Vulnerabilities (Wozniak-Brown)

## NORTHWEST

55. Role of the State in Coastal and Marine Adaptation: An Example from California (Kim, Kuhlman)
56. A Climate Change Risk Assessment for Water Quality and Salmon Recovery in the South Fork Nooksack River, WA (Klein)
57. Planning for Adaptation Resiliency: A case study of City of Palo Alto (Van Orsdol, Friend, Caton)
58. Lifting All Boats: Community Engagement and Climate Resilience (Yoshitani)

## SOUTHEAST

59. The State of Adaptation in the Southeast United States: Resilient Water Resources (Gregg)
60. Scorecards for Sustainable Success: An Analysis of the Climate Change Action Plan for the Florida Reef System 2010-2015 (Morgan, Score)
61. Facilitating Dialogue about Coastal Climate Risks in Hyde County, NC (Whitehead, Evans)
62. Preparing Plymouth, North Carolina for Future Flood Risks (Whitehead, Covi)
63. Stakeholder-Generated Climate Adaptation Recommendations for a Coastal County Comprehensive Plan (Bath)
64. Regional Sea Level Rise Adaptation Planning in Tampa Bay, Florida (Carnahan, Burke)
65. Regional Public-Private Partnerships that Are Working to Build Resilience: A Southeast Example (Fox, Nierengarten)
66. Beyond Early Warning and Monitoring for Coral Bleaching: Examining Emergency Response Policies and Actions (Courtney, Parker)

## SOUTHWEST

67. Developing Guidance for Climate Informed Spring Ecosystem Restoration (Misztal, Campbell)
68. Resilient Communities Starter Kit - Building Adaptive Capacity in the West (Oliver)
69. Rules of Engagement: Keys to Success at Science/Stakeholder Events (Pawlowski, Woodhouse)
70. Flagstaff Watershed Protection Project - A Multi-Agency Approach to Reducing Vulnerability to Wildfire and Flooding While Protecting Future Water Supply (Woodman, Brehl)
71. Keeping the Bay Area Moving as the Tides Rise (Qian, Goodfriend, Feng, Hom)
72. Santa Clara Climate-Smart Habitat Adaptation Strategies (Verity, Tremain, Donovan)
73. Bringing Clarity to Sea Level Rise and Shoreline Change Models and Tools: The Lifting the Fog Project (Nutters, Goodrich, Higgason, Rozum, Psaros, Boudreau, Newkirk)
74. Resilient Small Cities: Preparing for Climate Change Impacts by Leveraging Existing Programs and Integrating Adaptation Strategies in City Plans (Porteshawver)
75. Coastal Vulnerability Modeling to Support Climate Adaptation Planning (Wedding)
76. Quantifying the Role of Natural Habitat in Increasing Coastal Resilience and Protection (Wedding)



6:00 pm  
to 8:30 pm

## NETWORKING RECEPTION (MIDWAY)

ASAP Prize for Progress, Sascha Petersen,  
American Society of Adaptation Professionals (ASAP)

Environmental Offset Contribution Presentation to M-SLICE,  
Romona Taylor Williams, Metro St. Louis Coalition for  
Inclusion and Equity

Anheuser-Busch Endeavors, Shana Ruffus, Director,  
CSR-Environment and George Reisch, Anheuser-Busch  
Brand Ambassador

6:30 pm  
to 8:30 pm

## CAKE TOOLS CAFE (MIDWAY)

### A Data-Driven Assessment Tool of Vulnerability and Preparedness to Climate Change Adaptation

Organizer: Chen Chen

Notre Dame Global Adaptation Index (ND-GAIN) is a data-driven tool that measures a country or a region's vulnerability to climate change impacts, as well as the readiness to leverage investment for climate change adaptation. A leading index on climate change adaptation, ND-GAIN measures vulnerability and readiness in 175 countries using 45 indicators.

### A Guide to Tools For Landscape Level Climate Adaptation and Planning

Organizer: Patrick Crist

Integrating adaptation into natural resource management and land use planning requires the use of software tools that provide necessary functions to share data, model resource distributions now and in the future, characterize and assess scenarios, develop adaptation plans, monitor plan implementation, and conduct adaptive management. We evaluated established functional needs for tools; surveyed the Landscape Conservation Cooperative (LCC) partners for tool needs, interest, and challenges; and researched suitable tools. The result is a guide to 100 tools, an eleven tool integrated toolkit, and case studies of tool use. While the guide and tools are particularly geared to resource management agencies in the LCC region (the North American continent Pacific Northwest coastal region), most of the tools are also highly suitable for application in interior areas and globally. This session will present the interesting results of the practitioner survey, the tool guide, and efforts to establish an LCC-wide dynamic tool portal.

### CIAT: A Home for Climate Data, Peer Mapping, and Adaptation Strategies for Great Lakes Cities

Organizer: Ashlee Grace

The Cities Impacts & Adaptation Tool (CIAT) is an online climate adaptation planning support tool for decision makers at the municipal level in the Great Lakes region. The interface provides usable local-scale data for cities with populations of 20,000 or higher, such as demographic and socioeconomic data from the Canadian and U.S. Census, both current and projected climate trends, and adaptation strategies pulled from existing municipal planning documents. For cities in the Great Lakes region, the tool identifies a custom network of "climate peers" cities whose current climate reflects the selected city's projected climate, through an interactive map interface.

## Climate Adaptation Knowledge Exchange (CAKE)

Organizer: Jessica Hitt

Climate Adaptation Knowledge Exchange (CAKE) is an innovative community website for people working to manage natural and built environments in the face of climate change. CAKE includes case studies of on-the-ground adaptation efforts, a library of resources to support your work, a community forum with an expert advice column, a directory of individuals and organizations rich with adaptation knowledge, and a tools section full of useful online resources for adaptation planning and implementation. Whether you are actively engaged in adaptation or are new to the concept, you will find CAKE invaluable. It is your online adaptation destination! Find out more at [www.cakex.org](http://www.cakex.org).

## Climate Central's Surging Seas Risk Finder: A Coastal Flood and Sea Level Risk Web Tool for the U.S.

Organizer: Daniel Rizza

Climate Central built the Surging Seas Risk Finder, a screening-level public web tool, to help communities, planners, and leaders better understand sea level rise and coastal flood risks. The multi-part tool provides local sea level rise and flood risk projections, searchable interactive maps, "fast look" community reports, data downloads, and exposure tabulations by zip codes, municipalities, counties, and more. Exposure assessments cover over 100 demographic, economic, infrastructure and environmental variables using data drawn mainly from federal sources, including the National Oceanic and Atmospheric Administration (NOAA), the U.S. Geological Survey, the Federal Emergency Management Agency, the Department of Transportation, the Department of Energy, the Department of the Interior, the Environmental Protection Agency, the Federal Communications Commission, and the U.S. Census Bureau. Maps are based primarily on the same 5-meter horizontal grid digital elevation model (DEM) used by NOAA's Sea Level Rise Viewer and consider water levels up to 10 feet above mean higher high water (MHHW - VDatum for contiguous U.S.). Surging Seas is funded primarily by The Kresge Foundation, The Schmidt Family Foundation, and The Rockefeller Foundation. For more information visit <http://sealevel.climatecentral.org/> or email [drizza@climatecentral.org](mailto:drizza@climatecentral.org)

## Climate Data Initiative: Empowering America's Communities to Prepare for the Effects of Climate Change

Organizer: Ana Pinheiro Privette

The Climate Data Initiative is a broad effort to leverage the federal government's extensive, freely-available climate-relevant data resources to stimulate innovation and private-sector entrepreneurship in support of national climate-change preparedness.

## The Climate Impacts - Decision Support Tool (CIMPACT-DST): Facilitation of Cross-Sectoral Climate Mainstreaming and Action

Organizers: Andrea Martin and Nora Fern

The Climate Impacts Decision Support Tool (CIMPACT-DST) is an integrated platform for climate adaptation planning. Once fully customized for a jurisdiction, CIMPACT-DST efficiently filters available climate change information, existing vulnerability assessments, spatial data, and government-approved best-practice adaptation strategies to provide tool users with information that is germane to the task at hand. Climate impact summaries and adaptation recommendations are tailored to a project's timeframe, location, risk profile, and sector, which range from urban infrastructure sectors such as energy supply and transportation to natural resource management sectors such as forestry, agriculture, and water resources. A version of CIMPACT-DST customized for the city of Hue, Vietnam in 2013 has thus far influenced the development of four new climate-resilient urban master plans in flood-prone coastal communes. In the Tools Café, Cascadia will demo this Excel-based tool and describe its applicability to different kinds of decisions and planning processes to improve system-wide resilience.

## Climate Registry for the Assessment of Vulnerability (CRAVe): A Tool to Track Climate Change Vulnerability Assessments

Organizers: Robin O'Malley and Laura Thompson

Climate Registry for the Assessment of Vulnerability (CRAVe)-Climate Adaptation Knowledge Exchange (CAKE), a joint project administered by the National Climate Change and Wildlife Science Center (NCCWCS) and EcoAdapt, will provide users with a searchable, centralized public registry of climate change vulnerability assessments. The CRAVe-CAKE database, which was developed in partnership with the Interagency Land Management Adaptation Group (ILMAG), aims to make information about ongoing and completed vulnerability assessments more readily accessible and available so that resources devoted to such assessments can be most efficiently used. The database will be hosted by both CAKE and the U.S. Geological Survey.

## Floodplains by Design: A Tool to Support Multi-Objective Decision-Making in Floodplains

Organizer: Todd Strole

The Floodplain by Design decision tool identifies areas at risk from flooding with an assessment of their current and potential ecosystem function, which helps coordinate the actions of stakeholders as they develop multiple benefit floodplain restoration projects. We will show the regional application developed in collaboration with state and federal agencies to identify opportunity areas and inform program funding decisions. We will also describe the local application developed in partnership with Snohomish County, Washington which integrates data about flooding under future climate change scenarios with information related to salmon recovery, agriculture, and other objectives to inform local project development and support coordination.

## Introducing the U.S. Climate Resilience Toolkit: Helping Communities and Businesses Plan and Prepare for Climate-Related Impacts

Organizer: David Herring

This session will introduce participants to the new U.S. Climate Resilience Toolkit (or CRT, online at <http://toolkit.climate.gov>), a new online decision-support resource that provides easy access to scientific tools, information, and expertise to help people manage their climate-related risks and opportunities and improve their resilience to extreme events. The site is designed to serve interested citizens, communities, businesses, resources managers, planners, and policy leaders at all levels of government. Specifically, the site offers a five-step process that people can follow to help them plan and implement an adaptation plan, real-world case studies to inspire and inform, a compendium of freely available tools, an interactive geobrowser to explore climate stressors and people and assets potentially impacted, training courses, and maps to help users locate regional and local experts who may be able to provide decision-support services.

## Linking Climate Change Vulnerability Assessment to Adaptation Strategy for Species, Ecosystems, and Landscapes

Organizers: Bruce Young and Patrick Crist

Are there tools out there that can help assess the climate change vulnerability of habitats and species and then use the results to inform land use planning? Thankfully, the answer is yes! We will demonstrate NatureServe's Species and Habitat Climate Change Vulnerability Indices and NatureServe Vista, a decision support system that automates advanced spatial analyses for planners and managers. Together, these tools provide systematic, scientifically defensible, and transparent means for incorporating consideration for climate change into land use and other conservation planning exercises. Vista can seamlessly integrate output from the species and habitat indices, as well as a range of other planning tools to provide a robust toolkit that can address many assessment and planning problems. The tools have now undergone several generations of improvements inspired by feedback from hundreds of users, and we will be demonstrating the latest and greatest features.

## The South Atlantic LCC Conservation Blueprint: A Shared Vision for Conservation Action

Organizer: Hilary Morris

The South Atlantic Landscape Conservation Cooperative Conservation Blueprint is a spatially explicit, living plan describing the places and actions needed to achieve the Cooperative's shared vision of the future. The Blueprint measures the integrity of terrestrial, freshwater, and marine ecosystems using natural and cultural resource indicators, and explicitly models the threats of sea level rise and urbanization. Partners have already successfully used expert-driven Blueprint 1.0 to guide conservation action and investment across the geography in coastal wetlands protection, public lands planning, climate-smart wildlife management, and fish passage efforts. Data-driven Blueprint 2.0 is scheduled for release in June 2015. Through a transparent process, a science-based plan, and a user-friendly product, the Cooperative intends the Blueprint to eventually become a "gold standard" for large landscape conservation tools. Learn how you can shape the future of the South Atlantic region with the Conservation Blueprint!

## The SPACES Portal for Climatic Niche Modeling: Promoting Innovation by Deploying Multiple Algorithms in a Web-Based Collaborative Platform

Organizer: Jason Dzurisin

Models depicting the current and future ranges of species can be useful for informing investments in inventory and monitoring, and for identifying key weaknesses in conservation strategies focused on static distributions. Despite improvements, these tools are often poorly understood, improperly interpreted, and under-utilized by both researchers and practitioners, in part due to the number of approaches being applied and constant evolution in algorithms. The Spatial Portal for Analysis of Climatic Effects on Species (SPACES) provides researchers and practitioners with a collaborative, browser-based, cloud-computing platform from which to run suites of models, discuss results and their implications, and spark innovations in niche modeling. We illustrate the capability of SPACES to enable broad and collaborative use of species modeling tools, community building, and innovation.

## Tools and Methods for Assessing Climate Vulnerability of Transportation and Other Assets

Organizers: Robert Kafalenos and Cassandra Bhat

The Federal Highway Administration (FHWA) will present a suite of tools and methods to support agencies assessing vulnerability of specific assets (e.g., highways and bridges) or systems to climate change impacts. The tools and methods, designed for transportation organizations, are also relevant to other sectors. The session will include: 1) Presentation of FHWA's new online Vulnerability Assessment Framework, a website with information, tools, videos, resources, case studies of experiences related to conducting vulnerability/risk assessments; 2) Live demonstration of the Coupled Model Intercomparison Project Climate Data Processing Tool, which facilitates downloading and processing downscaled climate projections into detailed temperature and precipitation variables for user-selected regions across the United States; 3) Live demo of Vulnerability Assessment Scoring Tool (VAST), a spreadsheet tool that guides the user in assessing vulnerability based on indicators of exposure, sensitivity, adaptive capacity; and 4) Discussion of methods to develop projections for other climate effects, including storm surge and sea level rise inundation levels.

## Tracking the Progress of State Adaptation

Organizer: Aaron Ray

The State Adaptation Progress Tracker, one of the newest tools available in the Georgetown Climate Center's Adaptation Clearinghouse, enables users to track the implementation of state adaptation plans. As of February 2015, 14 states had statewide adaptation plans and an additional 9 states (including the District of Columbia) had statewide planning in progress. The Tracker provides the first

quantifiable assessment of state progress implementing the recommendations in these adaptation plans. Learn about this new tool and how you can use it in your work. You will also learn how to contribute to this research by submitting updates on state progress. We will also provide a sneak preview of some of the new developments and improvements to the Adaptation Clearinghouse that will be launched later this year.

## U2U: Split Nitrogen Feasibility and Economic Tool

Organizer: Ray Massey

Applying starter nitrogen followed by an in-season application of nitrogen has been shown to reduce nitrogen use and increase yields compared to applying all the nitrogen before planting. The U2U Split N Tool estimates the feasibility and profitability of using in-season N application. The tool is location specific, accessing relevant climate and U.S. Department of Agriculture (USDA) data. Users enter various management descriptions. Corn maturity rating and planting date are used to estimate dates when corn reaches various growth stages affecting in-season nitrogen application. Planted corn acres and equipment parameters are combined with USDA fieldwork days data to estimate the probability of successfully applying nitrogen before corn becomes too tall. The economic analysis reports the costs and benefits in the best year, average year, and worst years. The Split N Tool is one of several tools on the Useful to Usable Decision Dashboard available at [agclimate4U.org](http://agclimate4U.org).

## University of Michigan's Great Lakes Climate Atlas

Organizer: Beth Gibbons

This interactive map provides social, economic, and demographic statistics on 225 counties across the Great Lakes region. This demographic information is overlain with detailed data about municipal spending, land use change, and

climate change characteristics. Taken together, the interactive tool provides a wealth of information for local and regional decision makers to view how climate change intersects other conditions and concerns in the region. For each county, the tool describes how climate change relates to the: 1) Economy, by listing three sectors likely to be affected by climate change, and the industries that employ the most people; 2) Infrastructure, by describing expenditures on potential climate-related infrastructure, and showing land cover and residential growth; and 3) Vulnerable Populations, by showing an index of heat vulnerability and changes in summer temperature.

## Using the weTable to Engage Citizens in the Climate Conversation

Organizer: Vicky Carrasco

Leave the flipchart and posters at home! The weTable is an affordable, interactive participatory planning tool used to facilitate meaningful discussion and electronically capture notes with the click of a button. The weTable can help address a community's climate adaptation problem while facilitators engage an audience in a new, fun and unique way with the weTable. We will provide information with which an individual or organizations can build, construct, and engage with the weTable! Simply, the weTable is a computer screen projected onto a table surface. This surface becomes an interactive space using a "light" pen that functions as a computer mouse. The weTable set-up will have a projector, Bluetooth connection, tripod, and a Wii remote (get it?!). The cost and equipment will be explained too. We will instruct on the numerous potential applications of the weTable for land use planning, GIS, hazard resiliency, icebreakers, etc.

7:30 am  
to 8:30 am

## BREAKFAST (MIDWAY)

7:30 am  
to 5:30 pm

## REGISTRATION (THE DEPOT)

7:30am  
to 5:30pm

## ART EXHIBIT (FOYER C)

As part of our commitment to building a community of practice around climate adaptation, the National Adaptation Forum is fortunate to have on display the projects and art work of several St. Louis based artists who are exploring themes related to climate change and environmental stewardship. Their art will be on display in Foyer C for the duration of the meeting. You are encouraged to spend some time there and read about the artists' vision for using art to inspire community engagement on climate change and environmental stewardship. Join the conversation and find out if art might help support your efforts to advance climate change adaptation!

8:30 am  
to 10:00 am

## SYMPOSIA, PARALLEL SESSIONS

### A Conversation: Climate Change Adaptation and International Development (Jeffersonian/Knickerbocker)

Symposium Organizer: Colin Quinn

Speakers: Joyce Coffee, Jennifer Howard, Joel Smith, Britt Parker, Carlos Quintela

Recent reports from the Intergovernmental Panel on Climate Change suggest that the impacts of climate change most significantly affect marginalized communities. Developing countries are already feeling the brunt of the impacts of climate change. Lack of infrastructure and planning magnify the effects of sea level rise and the increase in extreme weather events occurring worldwide. Tackling the climate change adaptation challenges faced by developed countries is complex. An interdisciplinary approach incorporating quantitative measurement of exposure, adaptive capacity, and sensitivity to vulnerabilities, combined with an understanding of governance, social, and economic landscape, helps to inform good policy and successful adaptation implementation. This symposium will offer a fresh perspective on tackling global adaptation challenges and seizing emerging opportunities across sectors. This symposium will include brief presentations by leaders in the field of international adaptation with most of the time devoted to a panel discussion to increase audience participation.

## **A Few Good Ideas for On-the-Ground Wildlife and Ecosystem Adaptation (Regency B)**

Symposium Organizer: Molly Cross

Speakers: Nathan Korb, Louise Misztal, Neal Humke, Betsy Neely

We aim to catalyze further progress up the Adaptation Ladder of Engagement by sharing examples of how conservation practitioners are testing actions aimed at helping wildlife and ecosystems adapt to climate change. The session will include an analysis of 41 adaptation implementation projects supported by the Wildlife Conservation Society's Climate Adaptation Fund that span diverse geographies, ecosystems, and climate change issues within the United States. Drawing on these projects, we will pose a series of "good ideas" and innovative practices in climate adaptation assessment, planning, implementation, and monitoring. Additional presentations will showcase three projects, describing the adaptation actions being implemented, the projects' innovative approaches to adaptation planning and implementation, and ways they have dealt with hurdles to implementation. We will finish by soliciting feedback from the audience on the relevance of the "good ideas" that we observed for helping others advance adaptation implementation, and suggestions for ways to build further capacity for adaptation.

## **Addressing Mitigation and Adaptation Needs through Resilient Energy (New York Central)**

Symposium Organizer: Brett KenCairn

Speakers: Christina Becker-Birck, Karen MacClune, Chris Allan

Municipalities are being pulled in two, sometimes apparently opposite, directions. Many cities have committed to taking bold action to reduce greenhouse gas emissions in the service of a global effort to address climate change. Simultaneously, many face a growing ethical and legal responsibility to take substantial actions to prepare for the impacts of climate change that pose increasing threats to community well-being. In a context of limited resources, this may appear to be a zero sum game in which one or the other of these priorities will be diminished. This session examines real-world options that can maximize constructive impact on both sets of priorities with a specific focus on energy resilience. Presenters include city resilience and climate practitioners, energy experts, and strategists outlining practical and achievable strategies that create high leverage co-benefits in both sectors. Presentations will include living case studies in a domestic and international settings as well as leading edge technology and infrastructure solutions under development.

## **Analytical Techniques for Improving Community Resilience to Flooding in the Chicago Region (Grand C)**

Symposium Organizer: Louise Yeung

Speakers: Josh Ellis, Patrick Dunn

The Chicago Metropolitan Agency for Planning (CMAP), CDM Smith, and the Metropolitan Planning Council (MPC) will highlight joint efforts to develop analytical techniques for flood mitigation in the Chicago region. This unique collaboration brings partners from the public, private, and civic sectors together define technical and community-based solutions to for mitigating flooding. CDM Smith will present a flowpath modeling process that identifies land conditions affecting stormwater runoff volume and flow. CMAP will discuss how the agency combines flowpath modeling with social vulnerability indicators to inform land use planning for communities facing greatest vulnerabilities to flooding. MPC will focus on how these analytical methods are incorporated in the Calumet Stormwater Collaborative, a multi-jurisdictional forum for leaders in the Calumet watershed to collectively address flooding. Together, these efforts help to define a strategic regional approach to flood resilience and engage diverse stakeholders across the research, planning, and implementation rungs of the Adaptation Ladder.

## **Building Economic Resilience to Climate Change (Illinois Central)**

Symposium Organizer: Megan Susman

Speakers: Megan McConville, Caitlin Greeley, Will Brooks, Lauren Scott

Building economic resilience to climate change helps regional and local economies withstand natural disasters and other impacts, explore economic opportunities suited to the region's climate, and make the business case for adaptive measures. The session discusses two projects that help communities address economic vulnerability to climate change and natural hazards, and a step-by-step guide to inform cost-effective decisions for land use and stormwater management. The Environmental Protection Agency worked with Rhode Island to develop a tool to help communities assess how climate change might affect their economies and build resilience. The National Association of Development Organizations helped a council of governments in North Carolina integrate economic development and hazard mitigation planning and identify strategies for enduring economic growth. Eastern Research Group, Inc., with national and local partners, created a user-friendly guide that provides a process for assessing the economics of watershed-specific green infrastructure alternatives. Speakers will share findings and best practices and guide discussion of vulnerabilities, opportunities, and building economic resilience.

## **EcoDistricts in Action: Implementation of Equity Based Community Adaptation Planning (Grand A)**

Symposium Organizer: Jacqui Patterson

Speakers: Vik Verma, Ruth Story, Denise Abdul Rahman

Gulfport, Mississippi, Longview, Texas, Prichard, Alabama and Lovejoy/Sylvania Heights, Florida all made the commitment to implement plans to improve the local resilience and strengthen the local economies of their communities. Representatives of the National Association for the Advancement of Colored People branches in each respective city will share their experiences with executing EcoDistrict Projects. Components of their projects ranged from community gardens, community owned solar, local recycling, green schools, transportation collectives, equity-based disaster planning, storm water management, and more. Community education and engagement, educating and gaining commitments from local officials, designing and implementation are all areas speakers will cover in their descriptions of their efforts.

## **Moving From Planning to Action: Multi-Scale Examples of Resilient Coastal Planning (Frisco Burlington)**

Symposium Organizer: Claire Bonham-Carter

Speakers: Hilary Morris, Wendy Goodfriend, Molly Melius, Eric Hartge

This session examines approaches to responding to sea level rise across different scales and geographies. How does adaptation differ for urban, densifying locations compared to rural areas? Can we preserve built and natural spaces in urban and urbanizing areas? Will combining regional and local strategies cohesively establish resilient future communities? Hear about a San Francisco Bay area regional project that developed policies to ensure smart growth is also safe and then dive into specific place-based adaptation actions developed by the Adapting to Rising Tides Program for a Bay shoreline with an urban-natural interface. We will then broaden to highlight best practices for communities conducting planning updates to include ecosystem service solutions that resonate across different coastal California regions. Finally, we will move east and zoom out to a multi-state scale to review lessons from the South Atlantic Landscape Conservation Cooperative's Conservation Blueprint, a living spatial plan describing regional actions needed to sustain natural and cultural resources in the face of future change.

## **Multiple Ports in the Storm: Three Distinct Approaches to State Adaptation Planning and Action in Delaware, New Hampshire and Vermont (Grand B)**

Symposium Organizer: Chris Skoglund

Speakers: Sarah McKearnan, Jennifer de Mooy

While Delaware, New Hampshire, and Vermont are all deeply enmeshed in adaptation planning and implementation, each state's approach has been different. Delaware began with an executive order and a streamlined statewide planning process. New Hampshire's efforts began within agencies before expanding outward. Vermont's work on resilience received a huge boost from the experience of disaster, and has grown into a partnership across levels of government and with many non-profit and other stakeholders. The three approaches were shaped by different geographic vulnerabilities, internal resources, and governance factors. In this session, we will describe our three models of adaptation planning along with examples of implementation. By comparing our different motivations, planning approaches, tools, and types of stakeholder engagement, this session will demonstrate how there are multiple pathways to successfully adapt to climate change through land-use planning, regulatory reform, project funding, and infrastructure design, operation and maintenance.

## **Rising Seas: Tribal Coastal Communities at Risk (Regency A)**

Symposium Organizer: Sue Wotkyns

Speakers: Sean Hart, Denise Pollock, Scott Andrews, John Rozum

Many Tribal communities are coastal and face climate impacts or climate adaptation planning challenges. This session provides an overview of Tribal coastal management challenges including rising waters, erosion and the loss of cultural resources, and possible relocation. A specific Tribal case study will highlight resource needs and planning processes to address challenges. The session summary will further identify additional technical support needs that would support Tribal and similarly situated communities as they face these challenges.

## **Supporting Climate-Informed Decision-Making in Natural Resource Management: Innovative New Tools and Approaches from Western North America (Midway III)**

Symposium Organizer: Meade Krosby

Speakers: Carlos Carroll, Amy Snover, Rachel Gregg

Rising climate risks to natural resources present a pressing need to deliver climate-relevant information to natural resource managers and support their ability to apply it to their decision-making. We will describe a range of innovative new tools and approaches to support climate-informed natural resource management decisions: AdaptWest, a climate adaptation conservation planning database for Western North America; Time of Emergence, an online tool that supports prioritization of climate change adaptation efforts by identifying the time when local conditions in the Pacific Northwest are expected to significantly differ from the past; the Available Science Assessment Project, a science-based assessment of adaptation practices to determine the conditions, timeframes, and geographic areas where particular actions may be most effective; and the Washington-British Columbia Transboundary Climate-Connectivity Project, an international effort to inform the decision-making of land and wildlife managers tasked with maintaining connected, resilient ecosystems in the face of climate change.

## **Working Together: Tools, Approaches, and Frameworks for Collaborative Climate Adaptation (Midway I)**

Symposium Organizer: Molly Mowery

Speakers: Nick Goulette, Pamela Kertland, James McMahon, Kate Dean

Explore multiple approaches to collaborative climate resilience planning and action including: 1) Learn how the North Olympic Peninsula Resource Conservation and

Development Council (NOPRC), working in rural Jefferson and Clallam Counties in Washington State, are dealing with a large geographic area and balancing diverse interests; 2) Canada's Adaptation Platform brings together industry, government and other relevant organizations to address shared adaptation priorities. The Platform provides a forum to pool knowledge, capacity and financial resources needed to produce decision-useful information; 3) Explore a five-part multi-sector framework for partnerships based on the Asheville, North Carolina model. Understand how the framework can be tailored to meet the needs of diverse localities; 4) The Fire Adapted Communities Learning Network offers insights into climate adaptation and wildfire resilience and describes how a learning network approach spreads innovation and practice.

**10:00 am to 10:30 am** **BREAK (MIDWAY)**

**10:30 am to 12:00 pm** **SYMPOSIA, PARALLEL SESSIONS**

## **Adaptable Me: The Critical Role of Training in Adaptation Planning, Future Training Needs, and On-the-Ground Case Studies (Regency B)**

Symposium Organizer: Doug Parsons

Speakers: Ashley Fortune Isham, Chris Swanston, Abigail Derby Lewis

Climate adaptation is an exciting and essential field in conservation yet many conservation practitioners have yet to be exposed to even the basic fundamentals of adaptation planning. To fill this skills vacuum, states, non-governmental organizations and federal agencies are offering various adaptation courses. The U.S. Fish and Wildlife Service's National Conservation Training Center is a leader in adaptation training, offering courses in communication, climate science, vulnerability assessments, and climate-smart conservation. As an emerging field, are these the most relevant topics to be offered? In addition, this symposium will include case studies from the Midwest. As adaptation trainers, it is our goal to "build" the perfectly trained adaptation specialist. In addition to presentations, we also want to integrate audience feedback about where adaptation training should be in five, ten, or even twenty years. "We can train them. We have the technology. We can make them better trained than before. Better-stronger-adaptable."

## **The Adaptation Blind Spot: Distant Climate Change Risks that Matter Locally (Grand C)**

Symposium Organizer: Juliette Hart

Speakers: Susanne Moser, Joyce Coffee, Nik Steinberg, Lindene Patton

When El Niños form over the Eastern Tropical Pacific, coastal managers around the world start preparing locally for the ensuing impacts. El Niño is an example of a physical "teleconnection": a distant event that is of critical importance locally. "Societal teleconnections" are the social counterpart: human-created linkages that link activities, trends, and disruptions across large distances. Businesses, communities and other organizations are regionally and globally interconnected in ways that are important for their vulnerabilities to climate change, and therefore highly relevant to their adaptation planning. Such societal teleconnections add a layer of risk that is currently neither fully appreciated in most vulnerability assessments nor adaptation planning. In this session we will provide a brief overview on societal teleconnections, and then spend the majority of the symposium with provocative inputs from panelists and in facilitated discussion on how societal teleconnections matter and how they can be incorporated into vulnerability assessments and adaptation planning.

## **Climate Change Adaptation for Endangered Species Recovery (Grand B)**

Symposium Organizer: Aimee Delach

Speakers: Noah Matson, Angela Somma, Nancy Green, Gregor Schuurman

The Endangered Species Act (ESA) is the strongest and most important federal law protecting imperiled wildlife and plants. The task of preventing extinction of and recovering the nation's 1300 listed species, already daunting in the face of mounting development pressures and budgetary constraints, will likely be further complicated by the effects of climate change. This session will bring together conservation organization and federal agency perspectives on: 1) Prioritizing investments in vulnerability assessment using a simple sensitivity tool; 2) Integrating climate change information into how we understand and respond to threats to species and habitats; and 3) Moving from policy to practice in listing, recovery planning, critical habitat designations, and permitting decisions.

## **Community Adaptation: Practical Action from Across the Country (Midway I)**

Symposium Organizer: Chris Allan

Speakers: Jason Vogel, Christina Becker-Birck

Over the past ten years or so, communities have increasingly engaged in efforts explicitly or implicitly called "climate adaptation." Scores of communities have conducted climate change vulnerability assessments, commissioned state-of-the-science reports, and developed adaptation plans yet few concrete examples have been noted in the literature of decisions made differently or actions taken as a result. Other communities have responded to extreme events such as coastal storms, droughts, floods, and heat waves. In some cases, these responses have merely restored the status quo. In other cases, new and interesting approaches have increased community resilience to climate risks. This symposium will explore lessons learned from the experiences of Boulder, Colorado; Boston, Massachusetts; and a twenty community evaluation of community-driven efforts funded by the Kresge Foundation.

## **Developing and Applying Vulnerability Indicators: A Cost-effective Approach to Assess Vulnerability and Facilitate the Adaptation Planning Dialogue (Jeffersonian/Knickerbocker)**

Symposium Organizer: Susan Asam

Speakers: Aung Gye, Steve Suder, Susan Julius, Alan Jones, Leah Gregor

Several recent projects have piloted cost-effective methods of screening for highly vulnerable assets using qualitative and quantitative indicators that leverage available data sets and local expertise to support adaptation planning. Managers are presented with techniques that offer relatively low-cost starting points for understanding their systems' vulnerabilities and facilitate cross-scale dialogues necessary to plan for and implement adaptation strategies. This symposium will feature speakers describing different approaches and tools to develop and apply vulnerability indicators across different scales (unit, city, and state level), geographies (Southeastern, Mid-Atlantic, and Northeastern U.S.) and sectors (transportation as well as all sectors relevant to urban resilience). The audience will discuss: 1) Opportunities and challenges related to the transferability of these indicator-based approaches to other unit-, city-, county-, or state-level adaptation planning efforts; and 2) Ideas for expanding and enhancing these early efforts to make them more robust or decision-relevant.

## **Just Resilience (Regency A)**

Symposium Organizer: Alessandra Jerolleman

Speakers: Kelly Klima, Bob Gough

For the first time in human history, more than fifty percent of people live in urban centers. To protect our cities and communities from the dreadful toll exacted by natural hazards, we must both seize opportunities to minimize future climate change by reducing greenhouse gas emissions as well as implement strategies

that help us adapt to the climate change effects we are already experiencing. As such, many have begun to ask whether it is time to think about "resiliency ethics." We think this is asking the wrong question and using the wrong metaphor. It is not about resiliency ethics but about resiliency justice. JUST RESILIENCE is, as far as we know, a new way to address that concept RESILIENCE. These are not just economics, engineering, or social issues (Peter Park's representational knowledge; Habermas's instrumental knowledge) but also involve relational and reflective knowledge. Paul Riceour's *The Just* (2000) frames this well.

## **Planning for an Uncertain Future: Results and Lessons Learned from Four Regional Climate Change Adaptation Planning Projects (Illinois Central)**

Symposium Organizer: Marc Coudert

Speakers: Josh DeFlorio, Cathy Stephens, Benjamin Rasmussen

Planning for a growing region means addressing the challenges of congestion, access, sprawl, energy use, and vehicle emissions within a dynamic environment affected by climate change, which, depending on where you live, can exacerbate sea-level rise, water scarcity, and heat waves. This session will describe a multi-agency approaches applied in Austin, Texas; Cape Cod, Massachusetts; Central New Mexico; and Arizona to incorporate climate change adaptation and resiliency into regions' long-range transportation planning processes. Panelists will provide an overview of adaptation planning methods, impacts to infrastructure and land use, and the innovative steps underway in their regions to plan for climate change.

## **Principles, Legal Issues, and Other Considerations for Social Vulnerability Mapping (Frisco Burlington)**

Symposium Organizer: Lisa Schiavinato

Speakers: Molly Mitchell, Alex Renaud, Shana Jones

Over the past decade, a "Geospatial Revolution" has occurred. In the planning and adaptation arenas, anything that can be mapped will be mapped. From local inundation risks to sea level rise projections, the potential to inform decision-making is profound, as layers of information can be integrated to reveal new insights. Incorporating social vulnerability data—race, income, age, etc.—into geospatial modeling is one way to illustrate areas of increased risk and need so that appropriate planning and responses are developed. But how can we best ensure this information guides those planning decisions in ways that yield useful, equitable solutions to existing and foreseeable problems? Join Virginia and North Carolina scientists and legal experts for an interactive discussion designed to begin answering this question. The interactive session will showcase a mapping tool designed for coastal Virginia and discuss governance principles to guide adaptation policy when incorporating social vulnerability data.

## **The Roundtable on the Crown of the Continent's Adaptive Management Initiative, Looking at the Social and Ecological Impact of a Large Scale Collaborative (Illinois Central)**

Symposium Organizer: Melly Reuling

Speakers: Shawn Johnson, Mike Durglo, Patrick Bixler

This symposium will highlight the Adaptive Management Initiative, a community-wide climate adaptation collaboration carried out through the Roundtable on the Crown of the Continent. Linking a network of individuals, non-profit organizations, universities, and government agencies the Initiative is working to sustain the communities and landscapes in the eighteen million acre Crown of the Continent ecosystem spanning Montana, Alberta, and British Columbia and seven Tribal and First Nations. The symposium will feature brief presentations from, and interaction with two project coordinators, two adaptation practitioners, and a social scientist. Presenters will focus on sharing lessons learned along several fronts: 1) The role of the Roundtable in enhancing regional relationships and exploring opportunities to work together; 2) The role of the Adaptive Management Initiative in supporting on-the-ground climate adaptation projects and providing community education

about climate change; and 3) The development of a framework for social-ecological performance evaluation of broader collaborative.

**12:00 pm to 1:00 pm**      **LUNCH (MIDWAY)**

**1:00 pm to 3:00 pm**      **TRAINING SESSIONS AND WORKING GROUPS, PARALLEL SESSIONS**

## **Beyond Economics—How Can We Consider Social, Environmental, Legal, and Political Feasibility in Assessing Adaptation Options? (Missouri Pacific)**

Working Group Organizer: Gwen Shaughnessy  
Speakers: Stephanie Fauver

Wading through the vast array of adaptation options can be a daunting task for organizations undertaking adaptation planning. Weighing the pros and cons of options, beyond traditional cost-benefit ratios, in order to select and prioritize actions can be essential in defending decisions or garnering support. But, what makes one strategy more feasible or appealing than another? Is there a way to systematically and comprehensively assess the socio-economic, legal, and political aspects of options? This working group session will provide a platform from which participants can collectively discuss: 1) The factors impacting the feasibility of adaptation options; and 2) How to tackle the challenge of selecting and prioritizing options.

## **Building Drought Resilience Across Scales and Sectors (Midway I)**

Working Group Organizer: Kirsten Lackstrom  
Speakers: Deborah Bathke, Nicole Wall, Donald Wilhite, Veva Deheza, Taryn Finnessey

Reducing vulnerability to drought requires planning across sectors and scales, and across traditional disciplinary and institutional boundaries. We invite representatives from areas such as agriculture, urban water supply, land use planning, ecosystem management, public health, river navigation, energy, wildfire, tourism, recreation and others to join us for a discussion. Our goal is to build a framework of common understanding to support big-picture planning, and to enable drought adaptation planning to be incorporated into other processes, such as climate adaptation, community resilience, water resources, and multi-hazards planning. After a brief panel presentation, we will invite participants to talk about how they experience drought impacts and what they do in response and in preparation for drought. We would also like to hear success stories and/or what has been tried related to collaboration across sectors and scales. Objectives include identifying preliminary criteria for drought resilience practices.

## **CAKE Tools Café: Get Trained to Use Some of the Field's Leading and Emerging Tools and Resources (Grand D)**

Training Session Organizer: Jessica Hitt  
Speakers: Bruce Young, Dan Rizza, Jason Dzurisin, Andrea Martin, Esther Parish, Vicky Carrasco

Learn more about cutting edge, emerging adaptation tools and resources from around the field.

## **Climate Science Grant Writing Workshop for Tribes (Frisco Burlington)**

Training Session Organizer: April Taylor  
Speakers: Alicia Knoedler, Renee McPherson, Kim Winton

Are you starting your Tribe's climate adaptation plan and wondering how you will fund it? Are you interested in integrating cultural resources into your plan? This training will provide guidance and resources to Tribal staff that may write a climate science proposal.

## **Collaborating for Resilience: Reaching the Most Vulnerable Populations (Grand B)**

Training Session Organizer: Abigail Abrash Walton  
Speaker: Jacqui Patterson

The challenging impacts of climate change disproportionately affect those with the least resources to prepare, sustain and recover. How do adaptation planners, governmental and philanthropic decision makers, and civic leaders promote effective engagement with all community members, especially those that are likely to be most impacted? Participants in this workshop will learn about: 1) Concrete community engagement and climate change preparedness success stories; 2) Which approaches to engagement are effective in reaching vulnerable and/or marginalized populations; and 3) How adaptation planners and governmental and philanthropic decision makers can work effectively with community-based organizations.

## **Coordinating across Federal Agencies in the Great Lakes and Midwest Regions (Illinois Central)**

Working Group Organizer: Beth Gibbons  
Representatives from the Great Lakes and Midwest Climate Science Centers, Landscape Conservation Cooperatives, the Regional Integrated Sciences and Assessments program, Regional Climate Centers, U.S. Department of Agriculture Climate Hubs, and others have recognized a need to build stronger collaborations between our centers and also define roles and responsibilities to diminish redundancy and increase end-user confidence. Come and join us to network with your regional colleagues and brainstorm potential project or programs that we could institute to test and model collaboration between our climate agencies.

## **Don't Get Stuck in the Mud: Managing Wetlands in a Changing Climate (Jeffersonian/Knickerbocker)**

Working Group Organizer: Lara Hansen  
Speakers: Brenda Zollitsch, Naomi Edelson, Sam Veloz, Eric Mielbrecht, Grant Ballard, Whitney Reynier

Wetlands (freshwater and estuarine, natural and constructed) are being affected by climate change, but management decisions (including wetlands mitigation, stormwater management integration) continue without effectively incorporating these ramifications or future scenarios. Ignoring the potential impacts of climate change may lead to undesirable outcomes. Making climate-informed wetland management decisions requires understanding stakeholder needs, adequate capacity and training by key personnel, access to understandable and applicable data and tools, and clear guidance that can be used as a starting point for local innovation. This working group will explore what tools, methods, and other resources are already being applied, and what vulnerabilities and barriers exist for which these resources do not yet exist. The working group will outline how a coastal wetlands adaptation resource and training module would function, what it would contain, and its key target audiences (from community to state to federal wetland managers), partners, and potential funders.

## **Engaging Coastal Communities: Success and Lessons Learned from Sea Grant Climate Extension (Midway IV)**

Working Group Organizer: Jamie Mooney

Speakers: Jessica Whitehead, Juliette Hart, Esperanza Stancioff

Sea Grant climate extension staff from across the country will provide examples of effective coastal community engagement of a broad array of audiences, from climate “skeptics” to “believers,” from small towns and Tribes to urban megacities. We will address successes and challenges throughout the engagement process. Presentations will clearly specify the target audience, the message being communicated, and the framing utilized. After case study presentations, participants and presenters will identify trends and actions that allow for successful engagement as well as what situations make engagement more challenging. Participants will identify their own audiences, messaging and framing to form small working groups with the best-fitting Sea Grant presenters. The small group discussions will then focus on how to integrate the successful approaches into audience member’s engagement processes.

## **Green Infrastructure Working Group (New York Central)**

Working Group Organizer: Sara Hoverter

Speaker: Evan Branosky

Local governments across the country are facing serious challenges in managing stormwater; climate change will exacerbate those challenges for many of them. Many are experimenting with green infrastructure strategies to manage stormwater, reduce urban heat island effects, and improve air quality. While these communities are innovating, others are struggling to know where to begin. This working group will bring together representatives of leading jurisdictions such as Milwaukee and the District of Columbia with participants who are just beginning their work in green infrastructure. Small discussion groups will explore challenges such as funding, long-term maintenance, scaling up pilot projects, regionalization, and incentivizing private action. Each small group will have at least one “veteran” green infrastructure practitioner and participants will have the opportunity to switch discussion groups periodically throughout the session to be able to discuss more than one topic.

## **Health Impact Assessment: A Tool for Advancing Health, Equity, and Climate Adaptation Opportunities Related to Real-World Decisions (Regency B)**

Training Session Organizer: Brenda Hoppe

Speaker: Kristin Raab

Health Impact Assessment (HIA) is gaining popularity as an effective, evidence-based tool for engaging decision-makers and affected populations in addressing health impacts and inequities related to real-world decision events before they are implemented. HIA can also be used to emphasize how a proposed project or policy is linked to climate change and what relevant adaptation opportunities exist. This session will provide attendees with an in-depth overview of HIA methodology; discussion on using HIA to emphasize the links between specific aspects of a proposed policy or project and climate change; ideas on identifying and promoting adaptation opportunities; and group practice with applying information in real-life case scenarios. Attendees will come away from this session with the ability to be an effective part of an HIA team with skills and knowledge to promote climate adaptation as a major part of the HIA process.

## **Making Good Decisions in a Changing Climate: Serious Games, Hands-on Exercises, and Robust Plans (Grand A)**

Training Session Organizer: Robert Lempert

Speakers: Nidhi Kalra, Lurna Kaatz

Deep uncertainty, disagreement, and competing priorities can complicate good adaptation decisions. This highly interactive session equips participants with concepts and methods to make good decisions, despite these challenges. In

Part 1, participants will play “Decisions for the Decade,” a serious game that asks participants to pursue economic growth and manage disaster risk amidst changing climate conditions. In Part 2, participants will use hands-on exercises and analytical tools to learn how to employ Robust Decision Making (RDM). RDM combines scenario planning with powerful computing to help support good adaptation decisions in the face of uncertainty and disagreement. These exercises will draw upon real cases in which the approach has helped organizations to develop robust and adaptive climate risk management plans. Case studies draw on water management and coastal resilience in the American West and in cities around the world.

## **Moving From Awareness to Implementation: Integrating Climate Risk in the Built Environment (Regency A)**

Training Session Organizer: Heather Holsinger

Speakers: Joel Smith, Robert Kafalenos, Jeff Arnold, Claire Bonham-Carter, Josh DeFlorio

Climate change presents a significant risk to our systems nation’s infrastructure systems. Participants in this session will learn about the unique threats to the built environment and the innovative tools that engineers and planners are using to assess and address these risks. Representatives from the Federal Highway Administration (FHWA) will discuss FHWA’s adaptation framework and demonstrate the use of new climate data processing and vulnerability assessment scoring tools, as well as engineering approaches to adaptation and resiliency. Army Corps of Engineers staff will guide participants through the use of methods to assess storm surge on water resource infrastructure. Participants will then participate in interactive case study exercises led by scientists, engineers, and planners that have applied these methods and tools in real world examples to develop solutions sets of adaptation options. The approaches and findings from these case studies can be applied in other sectors and regions.

## **New Tools for New Problems: Using Design Thinking to Tackle Adaptation Challenges (Grand E)**

Training Session Organizer: Lindley Mease

How might we use design thinking—an iterative process of conceptualizing and solving applied problems—to approach seemingly intractable climate adaptation challenges? In this session we will explore the application of human-centered design strategies, the role of empathy in problem-solving, and systems analysis within the context of adaptation planning. We will employ design tools such as stakeholder relationship analysis, root cause analysis, and leverage point identification. We will deconstruct a case study of how these design tools have been applied to a project designing how government responders and the broader scientific community communicate and collaborate when responding to large, environmental disasters. Participants will work in teams to design behaviorally robust strategies to adaptation challenges of interest that consider the uniquely human dimensions of precautionary decision-making and motivation to act. Participants will leave with new resources and methods of thinking about scale, behavior, and impact within their work.

## **Public Private Partnerships to Build Resilience: Rules of Engagement, Models and Guidance (Midway II)**

Working Group Organizer: Aleka Seville

Speakers: Kathleen Ave, Jessica Hellmann, Elle Hempen, Craig Zamuda

Strategic collaboration and strong partnerships between the public and private sectors are needed for better adaptation planning and implementation. But the reality of setting the rules of engagement for public-private partnerships (PPP) can be challenging. Join us for an interactive working group to discuss challenges to cross sector collaboration and explore real-life models for PPP development including the Partnership for Energy Sector Climate Resilience—a national initiative led by the Department of Energy to enhance U.S. energy security by improving the resilience of energy infrastructure to extreme weather and climate change impacts.



## State and Local Hazard Mitigation Planning and Climate Change Adaptation (Midway III)

Working Group Organizer: Catherine Allen

Speakers: Missy Stults, Cathleen Carlisle, Karen Howard, Julie Tallman

Ideally, hazard mitigation planning forms the foundation for a long-term strategy to reduce disaster losses and break the cycle of disaster damage, reconstruction, and repeated damage in the next disaster. The planning process is as important as the plan itself, creating a framework for risk-based decision making to reduce damages to lives, property, and the economy in future disasters. Federal Emerging Management Agency representatives and partners will discuss recent changes to State Hazard Mitigation Planning requirements, particularly the emphasis on integrating climate change considerations into risk assessment and mitigation activities. The panel will also explore how local governments across the country are integrating climate change into their hazard mitigation planning. Iowa City representatives will share their cutting edge work to understand and mitigate one of the most common and costly natural hazards in communities—flooding. The panel and workgroup participants will explore how to best coordinate with adaptation networks to integrate critical resources and tools into the hazard mitigation planning process.

## Whole Community Adaptation in the Real World: A Framework for Creating Lasting Solutions (Grand C)

Training Session Organizer: Tonya Graham

Speakers: Marni Koopman, Chad Leister

Are you wondering how to move your community forward in adapting to climate change? In this interactive training, you will learn how to get started with adaptation, identify community vulnerabilities, integrate across diverse sectors, and make sure that implementation happens. Climate change is complex and an integrated, whole community approach is vital to long-term success. Our team has carried out ClimateWise adaptation processes in several states and will share lessons learned and tools to make your efforts more successful. This training involves short presentations by experienced adaptation practitioners, group and breakout discussions, and role playing: You might get to be a public health official, fisheries biologist, fire chief, or public works director! Join us for this fun and informative training to learn how to tackle climate change adaptation in ways that help your community create solutions that work across sectors, make the best use of your resources, and reduce community conflict.

**3:00 pm**      **BREAK (MIDWAY)**  
**to 3:30 pm**

**3:30 pm**      **SYMPOSIA, PARALLEL SESSIONS**  
**to 5:30 pm**

## Building Community Resilience to Climate Change: Insights from the Oakland Climate Action Coalition (Grand C)

Symposium Organizer: Catalina Garzon

Speakers: Nile Malloy, Margaret Gordon, Kirsten Andrews-Schwind, Alice Kostin

The Oakland Climate Action Coalition (OCAC) is a cross-sectoral coalition of over thirty community-based, faith, labor, and environmental organizations working to advance social equity in climate action, adaptation, and resilience planning in Oakland, California. Started in 2009, OCAC strives to ensure that those who stand to be impacted first and worst by climate change in Oakland lead the creation of climate solutions. This session will share OCAC's experiences with engaging impacted residents in advancing community resilience priorities within Oakland's Energy and Climate Action Plan (ECAP) process. OCAC members will also share insights from their work to build community resilience to climate change through

a coalition-based planning process that lifts up and strengthens community-led efforts underway in Oakland. These community-led efforts range from expanding local food production in city parks to greening neighborhood infrastructure such as energy and storm water management systems.

## CAKE Tools Café: Emerging Adaptation Tools and Resources From Around the Field (Midway IV)

Symposium Organizer: Jessica Hitt

Speakers: Robin O'Malley, David Herring, Chen Chen, Patrick Crist, Robert Kafalenos, Laura Thompson

Learn more about cutting edge, emerging adaptation tools and resources from around the field.

## Cross-Sector Climate Adaptation in Practice: Learning from Innovative Approaches (Regency A)

Symposium Organizer: David Groves

Speakers: Jordan Fischbach, Christopher Hilke, Kristin Baja, Laura Engeman, John Hoal

Communities addressing climate change face numerous planning challenges. Recently, planners have innovated and brought new tools, approaches, and procedures to successfully develop and implement adaptation plans. In this symposium, you will hear from researchers and practitioners from across the U.S. who have developed innovative approaches to planning and applied them in different regions, including Louisiana's coast, Massachusetts's Great Marsh, the Mississippi and Missouri River Basins, San Francisco Bay-Delta, and the Cities of Baltimore and San Diego. This session will begin with brief plenary talks on these case studies, and then divide into three breakout sessions in which topics of coastal resilience planning, planning by design, and cross-sector urban adaptation and hazard mitigation planning will be discussed. In each breakout session, participants will have a chance to engage directly with the practitioners and interact with hands-on exhibits and laptop-based decision support tools. A concluding group discussion will then highlight key themes across the breakout sessions.

## Ecosystem-based Adaptation (EbA): Investing in Natural Infrastructure as a Key Element of Our Adaptation Solutions (Midway III)

Symposium Organizer: Carla Friedrich

Speakers: Keith Alverson, Greg Guannel, Roger Griffis, Kim Penn, Patty Glick

The symposium will bring together practitioners from various geographical, sectoral, and demographic contexts to discuss the benefits and limitations of protecting and/or restoring ecosystems to achieve adaptation goals. Through interactive presentations by United Nations Environment Programme and National Wildlife Federation and joint analysis of case studies, this session aims to: 1) Increase understanding of the scientific and empirical evidence of the effectiveness and benefits of EbA; 2) Demonstrate the move from EbA principles to practice; 3) Provide evidence-based guidance on the design and implementation of EbA activities; and 4) Discuss the constraints and limitations of EbA in practice.

## Fort Lauderdale Women's Climate Club - Adapting to Man-Made Climate Change (Wabash Cannonball)

Symposium Organizer: Nancy Gassman

Speakers: Susanne Torriente, Jenni Morejon, Amy Knowles, Debbie Griner, Annalise Mannix

In talk show format, a panel of women "climateers" from the City of Fort Lauderdale will explore how the city has integrated adaptation into the core of municipal planning and operations. The panel members will include city management, comprehensive/strategic/development and transportation planners, public works engineers and sustainability staff. This diverse group will discuss the challenges and process to change the city internal and community culture to incorporate

climate adaptation into government operations and master planning. Real world examples of adaptation policy adoption, performance measures, demonstration projects, and infrastructure will be discussed. The panel will include a minimum of thirty minutes direct interaction with the audience on their questions on the City of Fort Lauderdale example of adaptation in action.

## Lessons from the Front Lines: Cities, Climate Thresholds, and Action (New York Central)

Symposium Organizer: Sascha Petersen

Speakers: Sarah Wu, Greg Guibert, Lisa Dickson, Timothy Burroughs, Zach Baumer

Hear from cities across the country about how they are dealing with the impacts of climate change, interpreting local climate science, identifying extreme weather thresholds, and preparing their infrastructure, communities, and economies to thrive in the face of the changing climate. Municipalities will tell the stories of what spurred their climate adaptation processes, how they used customized climate information and extreme weather thresholds, and the lessons they have learned. If you are just getting started on building resilience, benefit from their experiences and avoid some of their growing pains! This session will feature an interactive presentation and discussion format that will highlight real world examples of how climate risk are being translated into actual plans, designs, and engineering criteria in Austin, Berkeley, Boulder, Philadelphia, and at one of the nation's busiest airports. Join us in this discussion.

## Moving from Plans to Action: State Adaptation Progress (Illinois Central)

Symposium Organizer: Aaron Ray

Speakers: Deb Markowitz, Zoe Johnson, Laura Millberg, Louise Bedsworth, Paul Moss

States are using climate change adaptation plans to prepare for future impacts and to help localities plan for and implement responses to climate change. This interactive panel will stimulate conversation about state efforts to adapt to climate impacts. Panelists from a number of leading states (including California, Maryland, Minnesota, and Vermont) will provide specific examples of successes and challenges in developing and implementing adaptation plans and helping local governments implement adaptive policies. Attendees will interact with panelists to learn more about how to develop and implement plans and move from planning to action. In addition to better understanding how leading states are implementing their plans, attendees will learn about the Georgetown Climate Center's web-based tool that allows users to track state implementation of adaptation plans and contribute to ongoing tracking of that progress.

## Natural and Nature Based Features—Do They Work? (Grand B)

Symposium Organizer: Naomi Edelson

Speakers: Kelly Burks-Copes, Susan Taylor, Rick Bennett, Paul Wagner, Kim Penn  
Devastating storm events such as Hurricanes Katrina and Sandy demonstrated the power of extreme weather events to exacerbate rising sea levels and inflict major physical damages and economic costs to coastal communities and ecosystems. Anecdotal evidence from these events emphasizes the ability of natural ecosystems, including bordering wetlands and protective sand dune systems, to protect communities. These protective features, which may be created by natural forces or by human engineering, are referred to as natural and nature-based features (NNBF). But a lack of understanding has resulted in a lack of widespread implementation. A NNBF Workgroup was convened by the National Wildlife Federation and U.S. Fish and Wildlife Service to facilitate the role NNBF have in safeguarding people and wildlife, especially in an era of climate change, with an initial focus on developing metrics to measure the success of these projects. An overview of NNBF will be presented along with an initial report of this workgroup and Department of the Interior-, U.S. Army Corps of Engineers-, and the National Oceanic and Atmospheric Administration-proposed metrics and findings.

## The Roots of Agricultural Adaptation: U.S. Policy Issues Now (Midway I)

Symposium Organizer: John Wiener

Speakers: Jerry Hatfield, Wayne Honeycutt, Alan Franzluebbers, Linda Kruger, Clyde Fraisse, Michael Crimmins, Michael Wilson

What is happening at the national level now in U.S. agricultural adaptation? There are deep roots but also strong inertia. This panel will provide an overview of the critical roots of adaptation struggling to grow and progress towards it. This panel focuses on the U.S. Department of Agriculture (USDA) and allies and coordinates with "Transformational Change in Agriculture: Old and New Tribes." Watershed management is rapidly emerging as the primary unit of analysis and operations (e.g., integrated water resource management and watershed coalitions), but agricultural policy is still oriented to single operations. This fragmentation of the landscape—literally and metaphorically—respects property rights but not many of the needs for adaptation; the majority of U.S. farming adaptation depends on private willingness to innovate. This session includes USDA science and policy, progress and problems in applications, the new Climate Hubs, problems affecting responses, decision support, and related policy.

## Scenario Planning and Case Studies of Applications for Climate Change Adaptation (Regency B)

Symposium Organizer: Cat Hawkins Hoffman

Speakers: Erika Rowland, Gregg Garfin, Betsy Neely, Daniel Murphy

Tired of hearing uncertainty as an excuse for inaction? If so, this symposium is for you! Scenario planning is a tool that provides a way to reduce uncertainty by considering multiple futures, rather than trying to project or predict a single future. The tool is most commonly applied in business settings, but has applications in many disciplines, including natural resource management. Scenarios allow managers to test decisions or develop strategy in a context of uncontrollable and uncertain environmental, social, political, economic, or technical factors. How does scenario planning lead to more robust adaptation strategies and how are stakeholders engaged? Join a dialogue with federal, non-governmental, and academic representatives to examine interdisciplinary applications of scenario planning. Examples include: applications to National Parks, the Great Basin, Landscape Conservation Cooperatives, Appalachia, and southwest Colorado. Key ecosystem management concerns include phenological mismatches, cultural resources, fire behavior, invasive species, diminished snowpack, and increasing temperatures.

5:30 pm  
to 7:30 pm

WCS CLIMATE ADAPTATION FUND MEET-AND GREET (GRAND HALL BALCONY)

The Wildlife Conservation Society's Climate Adaptation Fund is hosting a small meet and greet reception by invitation only for all current and former grant recipients and applicants.

6:00 pm  
to 9:30 pm

ACTING ON CLIMATE TODAY  
COMMUNITY FORUM:  
ADAPTING COMMUNITIES OF COLOR (FRONT LINE COMMUNITIES), FOR CLIMATE CHANGE REALITIES (NEW NORTHSIDE CONVENTION CENTER) (located at 5939 Goodfellow Blvd, St. Louis; private transportation options only).

The Metro St. Louis Coalition for Inclusion and Equity (M-SLICE) is partnering with the National Adaptation Forum and EcoAdapt to assure front line communities of color are included in the discussion and all voices are heard. This event will feature a reception and networking, panel discussions, breakout sessions, and an opportunity to discuss visioning for preparedness and actions.

7:30 am  
to 8:30 am

## BREAKFAST (MIDWAY)

7:30 am  
to 5:30 pm

## REGISTRATION (THE DEPOT)

7:30am  
To 5:30pm

## ART EXHIBIT (FOYER C)

As part of our commitment to building a community of practice around climate adaptation, the National Adaptation Forum is fortunate to have on display the projects and art work of several St. Louis based artists who are exploring themes related to climate change and environmental stewardship. Their art will be on display in Foyer C for the duration of the meeting. You are encouraged to spend some time there and read about the artists' vision for using art to inspire community engagement on climate change and environmental stewardship. Join the conversation and find out if art might help support your efforts to advance climate change adaptation!

8:30 am  
to 10:00 am

## SYMPOSIA, PARALLEL SESSIONS

### **Building Regional Adaptation Capacity in Southeast Florida: The Compact as the Tide that Raises All Boats (Illinois Central)**

Symposium Organizer: Steve Adams

Speakers: Nichole Hefty, Jason Liechty, Chris Bergh, Jennifer Jurado

Over the past five years, Southeast Florida has coalesced the climate adaptation efforts of four counties and dozens of cities through a unique regional governance model. Learn more about this pioneering region's many efforts and lessons learned from multiple presenters working across the region.

### **Can't See the Coast/River for the Seawall/Levee? Adaptation Takes a Village of Science, Tools, Partnerships, and Policy (Midway I)**

Symposium Organizer: Sarah Murdock

Speakers: Jessica Levine, Kim Penn, Adrienne Antoine, John Rozum, Bhaskaran Subramanian, Laura Flessner

Come learn how The Nature Conservancy is promoting and working to mainstream the use of natural infrastructure in efforts to reduce flood risk to people and infrastructure. Natural infrastructure is a tool that reduces coastal and riverine flood risk and improves the triple bottom line of social, economic and environmental outcomes. Learn about our science, tools, partnerships, and policy work, and how The Nature Conservancy is combining these components to transform how society responds to this growing climate-amplified threat.

### **Building Community Resiliency From The Ground Up: The San Diego Regional Climate Collaborative's Role as a Catalyst for Adaptation Actions (Grand C)**

Symposium Organizer: Laura Engeman

Speakers: Cody Hooven, Allison Wood, Danielle Boudreau, Amber Pairis

Successful climate adaptation crosses political boundaries, requiring exploration of how multiple agencies, sectors, and jurisdictions can come together and adapt to future challenges often at a regional scale. In San Diego, a network of public agencies, academic institutions, non-governmental organizations, and philanthropic entities, called the San Diego Regional Climate Collaborative, is helping to play a central role in facilitating and advancing climate adaptation. This session will explore the role of this regional network in building capacity, and strengthening the connection between local partners, as well as between local government and state decision-makers. Panelists will include various Climate Collaborative members who will provide insight into how the network: 1) Leveraged energy efficiency funds to expand efforts in climate adaptation; 2) Is building local government capacity for energy efficiency and climate adaptation; 3) Is offering professional trainings and technical assistance to network members; and 4) Is looking to link local governments and natural resource management goals.

### **How Does Climate Change Affect Urban Infrastructure in the Midwest? (New York Central)**

Symposium Organizer: John Posey

Speakers: Louise Yeung, Christopher Schmidt

Representatives from two Metropolitan Planning Organizations (MPOs) and the Illinois Department of Transportation (IDOT) present analyses of climate change impacts and adaptation options. The St. Louis case study uses statistically and dynamically downscaled climate projections to assess potential changes in temperature and precipitation. Adaptation efforts include green infrastructure and levee repair. The Chicago MPO has prepared an adaptation guide for municipalities in the region, with recommendations on stormwater management, electrical infrastructure, site design and planning, and public health. IDOT uses Transportation Asset Management to monitor conditions of roadways, waterways and railways. It is conducting a hazard mitigation study that will assess vulnerability of key infrastructure, as well as an action plan.

### **Keeping Cool (Regency B)**

Symposium Organizer: David Fink

Speakers: Kurt Shickman, Kate Johnson, Emma Zinsmeister, David Fink

The panel will highlight new research and local solutions that mitigate the urban heat island effect (UHI) while improving public health during extreme heat events. These strategies will provide several co-benefits including saving customers on their utility bills, reducing greenhouse gases, improving local air quality, reduction in heat-related illness all while helping the grid become more resilient. Participants will take away the following key points: 1) During warm months the UHI causes an elevation in outdoor urban air temperatures resulting in significant negative impacts especially during dangerous extreme heat events; 2) Measures to reduce UHI coupled with community-wide preparedness can help neighborhoods simultaneously achieve both climate change readiness and prevention goals; 3) Model efforts to aid resilience are being implemented by several local governments and can be replicated in other regions; and 4) Case studies will be provided on how urban cooling policies may be adopted.

## Learning Communities as Living Laboratories: Preparing the Next Generation Through Education and Engagement (Regency A)

Symposium Organizer: Bonnie Murray

Speakers: Mona Behl, Monica Barnes

The education sector plays a vital role in preparing societies for climate change impacts through teaching, research, operations, and community engagement. The U.S. has over 140,000 formal schools and thousands of informal learning communities that can serve as engaging, inspiring, living laboratories for climate change preparedness and response. Ironically, as the nation grapples to adapt to the changing climate, the education sector as a resource remains largely untapped. Some new initiatives to integrate climate change adaptation and education are already underway, but overall the educational enterprise is still under-recognized and under-utilized. The goal of this symposium is to explore the trends pertaining to the integration of climate change adaptation concerns in various aspects of education and engagement, including: development or re-orientation of curriculum; specialized training programs; innovations in teaching practices; learning goals and metrics; community engagement and collaboration; and emerging best practices in infrastructural and operational management.

## Making Progress with Water, Energy, and Soil Health (Midway III)

Symposium Organizer: Rachel Myslivy

Speakers: Craig Cox, Richard Cruse

Farmers and ranchers face major challenges with global climate change. The need for agricultural adaptation is great, but the potential for sound policy and on-the-ground innovation presents opportunities for promising solutions for food, water, and energy security. Local actions impact global realities. Agricultural practices have profound implications for natural resources, ecosystems, and public health. Simple conservation practices that improve soil health, water infiltration, and energy efficiency can dramatically increase the resilience of farming operations while protecting food security and reducing greenhouse gas emissions. While effective solutions are available, changes in policy are needed to encourage adaptation. Sound policy reforms could accelerate rather than impede adaptation in the agriculture sector. This presentation will provide an overview of local and global food security issues alongside policy implications and suggestions for improvement. Case studies of Kansas farmers and ranchers will demonstrate homegrown solutions for climate adaptation.

## Planning for Climate Change in Rural Coastal Communities (Grand B)

Symposium Organizer: Rich Engel

Speakers: Jessica Grannis, Zoe Johnson, John Englander, Megan McConville

Many climate change studies focus on threats to urbanized coastal areas, but rural coastal areas face similar risks. Coastal communities and their residents, businesses, and public infrastructure are subject to climate change factors such as sea level rise, salt water intrusion, and increasingly severe storms. Unlike major cities, these communities typically have small budgets and limited planning staffs, making it difficult to fund and create climate adaptation plans. However, state agencies, regional planning organizations, universities, and climate adaptation consultants are creating land use planning strategies to help rural coastal communities become more resilient to climate change impacts. In this session, representatives from the State of Maryland, the National Association of Development Organizations, the Georgetown Climate Center, and a nationally-known sea level rise consultant will describe programs and planning tools they use to help rural coastal communities adapt to climate change risks.

## Taking Action to Safeguard Fish, Wildlife, and Plants in a Changing Climate (Jeffersonian/Knickerbocker)

Symposium Organizer: Davia Palmeri

Speakers: Bob Glazer, Roger Griffis, Jessica Winnestaffer, Cal DuBrock

In this session, you will hear from state, federal, and Tribal natural resource agencies that are implementing collaborative climate adaptation projects and integrating future climate in to planning processes across government levels. Each presenter will share a case study of what collective climate adaptation looks like in their jurisdiction with emphasis on the partnerships necessary to design effective adaptation; how considering climate change modified the traditional goals or strategies used to complete conservation projects; and how new strategies came to be. This session is born out of the National Fish, Wildlife, and Plants Climate Adaptation Strategy: Taking Action report (<http://www.wildlifeadaptationstrategy.gov/takingaction.php>), which aims to provide examples of how the Strategy is being implemented through collaborative adaptation projects on the ground; to demonstrate to both conservation practitioners and public decision makers the strong role they can play in adaptation; and to inspire and encourage stakeholders, managers, and the public to join the effort.

## Translating Climate-Smart Conservation to Resource Managers: Case Studies from the California Landscape Conservation Cooperative (Frisco Burlington)

Symposium Organizer: Debra Schlafmann

Speakers: Jessi Kershner, Sara Hutto, Chrissy Howell

The California Landscape Conservation Cooperative (LCC) is demonstrating how lessons learned from development of climate-smart conservation strategies can be translated between geographies as distinctly different as alpine meadows of the Sierra Nevada Mountains, to chaparral systems of Southern California, to the productive marine habitats of the North-central California coast. This symposium will share the process, outcomes, and lessons learned from partnership-based efforts to integrate climate-smart conservation into existing management frameworks, and provide guidance to help ensure long-term viability of the habitats and resources that natural resource agencies are mandated to protect. These three projects were supported by the California LCC to convene partners to determine focal habitats, species, and ecosystem services for the landscape, assess vulnerability of those priorities, and develop climate-smart adaptation strategies for on-the-ground implementation.

10:00 am  
to 10:30 am

**BREAK (MIDWAY)**

10:30 am  
to 12:30 pm

**SYMPOSIA, PARALLEL SESSIONS**

## Challenges and Opportunities for Climate Adaptation in Marine Fisheries: Reflections on the Use of Tools and Processes to Facilitate Planning (Midway III)

Symposium Organizer: Seth Tuler

Speakers: Roger Griffis, Jessica Whitehead, Esperanza Stanicoff, Seth Tuler, Bob Glazer, Susie Arnold, Alex Score

Climate change and ocean acidification are affecting marine resources with major implications for marine food webs, viability of commercial and recreational fisheries, reproduction and development abilities of flora and fauna, and fundamental processes such as respiration, photosynthesis, and nitrogen fixation. Many marine fauna will suffer from a variety of climate impacts, from warming temperatures that will prompt species range shifts, to declines in coral reefs and shellfish production due to ocean acidification. These interlinked issues

of climate change and ocean acidification threaten the success of marine and coastal conservation management of marine resources including commercial and recreational fisheries. In this session we will explore how marine resource managers and fishermen are beginning to prepare for and make climate informed decisions. The session will be conducted as an interactive panel to discuss challenges and opportunities in identifying and implementing fisheries adaptation strategies.

## **Creating Adaptive Communities: Lessons in Planning and Communication (Midway I)**

Symposium Organizer: Michael Boswell

Speakers: Adrienne Greve, Thomas Herrod, Dave Erickson, Jessica Fischer, Cara Pike, Chris Read, Stephanie Fauver

Creating adaptive communities requires well-developed planning processes and effective communication strategies. This session starts by examining two case communities: Laguna Woods, California and Denver, Colorado. Laguna Woods has a large senior community particularly susceptible to health stressors associated with climate change. The case addresses the challenge of what local governments themselves can do to adapt. Denver, Colorado a major city that faces challenges of internal coordination and implementation. The case addresses communication with elected officials, enhancement of city management systems, and measures to ensure accountability. These cases are followed by a focus on two issues of risk communication: 1) How can community leaders improve dialogue and move towards action?; and 2) How can the abstract nature of climate change be brought closer to home using visualization tools, thereby making it more real and urgent for people?

## **Federal Climate Science and Adaptation Programs in the U.S.: Identifying Pathways for Synergistic Coordination and Collaboration (Frisco Burlington)**

Symposium Organizer: Carolyn Enquist

Speakers: Stephen Jackson, William Gould, Katherine Jacobs.

Panel 1: Greg Garfin, Genevieve Johnson, Debra Schlaffman, Caitriana Steele, Kathleen McGinley, Isabel Pares, Adam Terando.

Panel 2: Caitlin Simpson, Robin O'Malley, Ben Thatcher, Randy Johnson

Responding effectively to the challenges posed by climate change has become a primary goal for natural resource managers. Most federal agencies now require consideration of climate change in management plans and, increasingly, comprehensive adaptation plans must be developed. Regional federal climate science programs are available to facilitate efforts, including the National Oceanic and Atmospheric Administration's Regional Integrated Sciences and Assessments (RISA) programs, the Climate Science Centers (CSCs) led by the U.S. Geological Survey, the Landscape Conservation Cooperatives (LCCs) led primarily by the U.S. Fish & Wildlife Service, and the regional Climate Hubs led by the U.S. Department of Agriculture. Although coordination among these groups is essential, this can prove challenging in light of deep cultural and institutional barriers. Lack of coordination also has negative implications for stakeholder engagement and, ultimately, program sustainability. Our two-part session will explore these issues by convening representatives from federal entities to discuss emerging collaborations in the southwestern and southeastern U.S. that are relevant across regions.

## **From Vulnerable Populations to Resilient Communities: A Conversation about Enhancing Preparedness to Climate Impacts for All (Grand C)**

Symposium Organizer: Vicki Arroyo

Speakers: Bob Gough, Jalonne White-Newsome, Danielle Baussan, M. Kalani Souza, Paulette Blanchard

Members of communities affected by climate change and practitioners will discuss efforts to ensure that adaptation initiatives help build resilience for those who are most vulnerable, including low-income communities, the elderly, and communities of color. This panel includes representatives of affected communities and Tribes as

well as practitioners in law and policy, community organizing, and public health. The panel will tee up a broader conversation for the audience including: 1) How to identify and reach out to those particularly vulnerable to climate change impacts; 2) How to bring new voices into adaptation planning processes; 3) How to target adaptation efforts to protect communities from the impacts of long-term climate change, sea-level rise, and extreme weather; and 4) How to ensure that adaptation policies do not negatively impact vulnerable communities and populations but rather strengthen their resilience.

## **Redressing Resiliency in Buildings (Grand E)**

Symposium Organizer: Alison Kwok

Speakers: Nicholas Rajkovich, Seth Holmes, Ulrike Pässe, Elizabeth English, Spencer Roedel, John Hoal

Climate change presents a significant challenge for the built environment; buildings are both the largest single sector emitter of greenhouse gases and vulnerable to changing weather patterns. For example, shifts in temperature may disrupt the operation of building heating, ventilation and air-conditioning systems; changes in precipitation patterns may cause subsidence that disrupts foundations. While most of the focus in the United States has been on reducing the anthropogenic warming caused by our homes and businesses, adaptation strategies are beginning to be explored by industry, government, and researchers. In this session, architects, educators, and research/policy makers will offer a case studies and perspectives of how buildings and communities have responded to climate, how modeling can investigate scenarios for residential and commercial-scale buildings, and policy shifts needed for future green building buildings and urban landscapes. Resources will be provided to attendees at the conclusion of the session to help improve the climatic performance of their own buildings.

## **Transformational Change in Agriculture and Land Use: Old and New Tribes: Why and How (Illinois Central)**

Symposium Organizer: John Wiener

Speakers: Gretchen Sassenrath, Mike Dosskey, Bob Gough, Karletta Chief, M. Kalani Souza, Edward Thomas

This session addresses the motives and social elements missing to meet the critical need for long-term safe adaptation to diversified agroecology on the landscape scale. What should we be aiming for in the long term? Two illustrations of the near-term potential for agroecology and better farming systems and drainage/water quality management will show some of the potential for solving some very destructive problems. Then, Tribal and Indigenous leaders now active in transformation of cohesive groups will discuss aspects of keeping their peoples going through radical change. The purpose is to learn from impressive people about how "old" Tribes work, since we need "new Tribes" for place-based conservation, and how the law allows safer management. Perhaps ironically, the social adaptation challenges for U.S. agriculture may be greater than the agronomy and resource management questions. Scale issues are critical, but how do successful long-term resource management groups do it? Legal issues will be clarified.

## **Tribal & Community Colleges: Education, Equity, and Climate Change (Grand B)**

Symposium Organizer: Sue Wotkyns

Speakers: Al Kuslikis, Sarah White, Chris Caldwell, Adrian Leighton, Todd Cohen, David Ralston

Community and technical colleges and Tribal Colleges/Universities serve local regions through teaching, research, demonstration, and community outreach. Tribally-controlled land grant institutions continually grow the capacity for Tribes to address relevant climate change issues through the development of an educated workforce and research projects grounded in traditional knowledge and paired with western sciences. Community colleges can provide the technical training necessary to reimagine and rebuild our unsustainable infrastructure, the community leadership to insist on it, and the vision to begin in their own backyards. They

are transforming climate adaptation into a broader pursuit of climate resiliency, community health and economic inclusiveness. This session offers examples of work through the American Indian Higher Education Consortium and Tribal colleges/universities that helps equip Tribal communities for the shared challenges of climate change, and introduces community colleges as critical institutions transforming marginalized communities into resilient climate leaders.

## **Tribal Vulnerability Assessments and Adaptation Planning: A Variety of Approaches (Midway II)**

Symposium Organizer: Sue Wotkyns

Speakers: Karen Cozzetto, Kurt Johnson, Mike Durglo, Oliver Grah, Tyler Kaspar, Sean Hart

This session focuses on the importance of and methods for implementing climate change vulnerability assessments and adaptation planning for natural, cultural, and socio-economic resources of value to Tribes. Panelists will discuss: state-of-the-art approaches to adaptation planning (e.g., Climate Smart, Act); impact and vulnerability assessments; strategic versus programmatic plans; the use of Traditional or local knowledge in the assessment and planning process; prioritizing strategies; contracting out versus staff-driven planning; and resources available to assist vulnerability assessment and adaptation planning efforts. They will discuss challenges, such as progressing with limited staff participation, the value of mapping performance measures for adaptation strategies, and adjusting long-term monitoring to ensure that managers know management decision or reevaluation points, and more. The session will include examples from several Tribes and Tribal organizations that have been engaged in vulnerability assessment and adaptation planning.

**12:30 pm to 1:30 pm**      **LUNCH (MIDWAY)**

**1:30 pm to 3:30 pm**      **TRAINING SESSIONS AND WORKING GROUPS, PARALLEL SESSIONS**

## **Better Together: Building Regional Adaptation Networks to Accelerate Progress (Missouri Pacific)**

Working Group Organizer: Kif Scheuer

Speakers: Ashlee Grace, Krista Kline, Steve Adams, Jennifer Jurado

Adapting to climate change presents a long-term planning challenge for communities. While land-use planning authority is often localized, many climate change impacts are best addressed regionally. Responding at a regional scale requires cross-jurisdictional public and private sector coordination. Such coordination faces significant barriers including funding, governance, and institutional constraints. One approach to overcoming these barriers is seen in the emergence of regional adaptation collaboratives. If you are interested in helping to catalyze regional (and national) climate adaptation activities we encourage you to join this working group to: 1) Discuss the ways that regional collaboration can be a significant force in the climate adaptation movement; 2) Explore frameworks and tactics for building regional collaboratives from the ground up or out of existing networks; and 3) Collaborate on an agenda for growing a national community of practice so this movement can more strategically advance adaptation practices for individual regions and the country as a whole.

## **Breaking Down Sectoral and Disciplinary Divides: Whole-System Collaboration for Climate Adaptation (Midway II)**

Working Group Organizer: Karin Holland

Speakers: Kristin Baja, Missy Stults

Tired of feeling like you are working in a silo for your climate adaptation efforts? Frustrated with not getting enough traction for your work? Then join us for this facilitated working group session to co-create a strategic, whole-systems approach for coalition building. As part of the session, a process that successfully brings together groups from across the whole organizational system will be generated to develop a common, holistic vision for climate adaptation. The knowledge and experiences of participants will be harnessed to identify key stakeholders needs and drivers across different nodes (e.g., resource supply or transportation) and different climate impacts that might affect community wellbeing and business continuity. The group will analyze root causes of obstacles preventing effective collaboration. Solutions to remove these obstacles will be generated, based on stakeholder needs and drivers. The session will conclude with the group developing a high-level roadmap for structured, practical, system-wide collaboration for climate adaptation.

## **Building Adaptive Capacity into Buildings (Grand C)**

Training Session Organizer: Nicholas Rajkovich

Speaker: Alison Kwok

We now know that extreme weather events and sea level rise will continue for several centuries due to the inertia of climatic systems. To cope with these changing conditions, building professionals will need to build adaptive capacity into their buildings, defined as the ability to respond to climatic events through effective adaptation strategies. During this session, participants will be introduced to the climate variables relevant to building design and operation; how mechanical, electrical, and plumbing systems are expected to respond to changes in temperature and precipitation; and how we as designers, operators, and occupants can extend the range of adaptive opportunities in buildings to create resilient systems. All attendees will be introduced to a number of free resources available to help with building design and analysis; shown how to access climate and weather data for use in these programs; and pointed to additional resources to help with their building adaptation project.

## **Community Engaged and Equity Rooted Adaptation Planning (Grand A)**

Training Session Organizer: Nile Malloy

Speakers: Bahram Fazeli, Kirsten Andrews-Schwind, Corrine Van Hook, Colin Miller, Carl Anthony, Paloma Pavel

Climate adaptation and mitigation discussions have been hesitant to embrace the diversity and leadership of the growing climate justice movement. Communities for a Better Environment (CBE), a leading environmental justice organization, and the Resilient Communities Initiative (RCI), a regional coalition of ten equity organizations in the Bay Area building resilience facilitated by Bay Localize, will share their collaborative approach to community-lead adaptation planning. CBE is leading the community-driven Climate Adaptation and Resiliency Enhancement (CARE) initiative in two highly vulnerable California communities, Wilmington and Richmond, to identify adaptation and mitigation solutions. The RCI scales up this type of process by shaping regional and state policy, and developing tools for agency staff to mainstream equity into their planning and funding. We will hear from community leaders and staff, try out new equity planning tools in small group discussions, and strategize on opportunities to further engage residents.

## Engaging Your Staff in Climate Action Planning and Building Workforce Capacity (New York Central)

Training Session Organizer: Elizabeth Rhoades

Speakers: Hilary Godwin, Elizabeth Rhoades

For local agencies and community groups that are working or intend to work on climate action planning and realize the significance of incorporating health in developing these strategies. Designed as a train-the-trainer workshop, the session will include an overview of the Climate and Health Workshop Series, developed collaboratively by the Los Angeles County Department of Public Health and the University of California - Los Angeles Fielding School of Public Health. Additionally, participants will actively engage in a brainstorming session that is designed to identify how the workshop series can be adapted to meet local needs. This session has specifically been designed to address the many requests we have received from local health departments to use our materials. As a method of addressing this need, this training session will provide participants with access to the materials and also training on how to use or adapt them, thus jump-starting the modification process. Participants will be able to return to their respective agencies and organizations with a plan of what they and their departments can potentially do.

## First, Do No Harm: Recognizing and Preventing Maladaptation (Midway III)

Working Group Organizer: Marni Koopman

Speakers: Juliet Christian-Smith, Davia Palmeri

Maladaptation is an unfortunate side effect as adaptation actions sweep the nation. Maladaptation occurs when adaptation strategies have negative consequences, sometimes outweighing any benefit, especially over longer time frames. Maladaptation can arise in a variety of ways: as a surprise when innovative approaches are tried; as a predictable “trade-off” to make gains in another area; or even due to mainstreaming, which relies on tools/frameworks already in place. Results from our survey will provide insights into common maladaptive practices, sector biases, and lessons learned. Panelists from diverse planning efforts will share case studies that highlight maladaptation as well as innovative cross-sector adaptation designed to avoid negative consequences. Participants will help define maladaptation, develop lists of “no regrets” and “regrets” strategies, and identify planning frameworks that minimize the likelihood of maladaptation. We hope to attract participants from across different sectors for a comprehensive look at the unintended impacts of adaptation.

## Getting Unstuck: Applying a Spatially Explicit Decision Support Framework to Climate Adaptation Planning (Illinois Central)

Training Session Organizer: Rebecca Shirer

Speaker: Kristin France

Learn about a new decision support tool being developed by The Nature Conservancy to help natural resource managers identify climate adaptation strategies. By synthesizing spatial data on resource conditions, non-climate threats, climate change exposure and sensitivity, the tool provides a structured framework for managers to select the most appropriate climate adaptation options for their particular area or target. Users will gain a greater understanding of their climate impacts, identify appropriate adaptation strategies, document their decision process, export custom maps, and access additional resources for implementing the chosen adaptation action. We will demonstrate how the tool works for various types of adaptation projects, highlighting several freshwater and terrestrial case studies from New York. Participants will have the opportunity to run their own projects through the framework and provide feedback on a beta version of the online toolkit.

## Learn How to Develop Long-Term Communication Strategies That Build Support for Adaptations Across Silos (Frisco Burlington)

Training Session Organizer: Karen Raucher

Speakers: Roger Stephenson, Cara Pike

Come prepared with a climate adaptation communication need and let us show you how to use communication to bring people together. A message mapping strategy, developed for the Water Research Foundation, will provide the framework for an interactive opportunity to build a long-term messaging strategy. The session will begin with a short summary of recent research findings (Raucher, Water Research Foundation, 2014) that describes how to identify audience attitudes, beliefs, and actions. You need to know about your audience’s attitudes, beliefs, and actions if you want to communicate with them effectively. The facilitators will then provide a working session that will help you maximize all communication channels in order to reach targeted audiences. With communication tools literally in everyone’s hands with smart phones, the need for and the challenges of communication are even more paramount, but, if done well, can position your organization as a trusted source with critical audiences.

## The Real Deal: Linking Urban and Rural Adaptation for Regional Climate Resilience (Midway I)

Working Group Organizer: Gwen Griffith

Speakers: Sara Kroopf, Deb Kleinman, Louis Blumberg, Leslie Bryan, Gwyneth Myer

Effective climate resilience requires a new positive vision and strategies that address both urban populations and upstream rural natural resources to provide the critical ecosystem services of clean water and nutritious food. While adaptation grows, progress lags in working across urban-rural linkages to achieve regional-scale resilience for vulnerable communities with forested watersheds, sustainable agriculture, and healthy communities. The Model Forest Policy Program’s Climate Solutions University (CSU) focuses on achieving regional resilience with healthy forests, watersheds, farms, people and economies. The Environmental Defense Fund (EDF) works with agricultural partners to increase community resilience, promote smarter land use and development, strengthen rural economics, and increase food security. CSU and EDF will facilitate a working group to get beyond “islands of planning” and jurisdictional barriers to achieve climate resilience across the urban-rural divide with a vision to engage and benefit vulnerable populations plus financial models that ensure implementation.

## Scenario Mashup: Using Mixed Methods in Scenario Planning for Effective Adaptation (Grand D)

Working Group Organizer: Gregg Garfin

Speakers: Erika Rowland, Molly Cross, Molly Hartmann, Daniel Murphy, Daniel Williams

Scenarios aid practitioners to understand the implications of multiple futures for resource decision making. Scenario planning activities can engender collaboration to gain mutual understanding of managed systems and change. This working group will assess experiments in combining scenario methods to achieve innovative adaptation solutions for dealing with uncertain, high-impact changes. Output: the basis of a white paper on multi-method scenario experiments. Structure: Before the National Adaptation Forum (NAF), we will gather data on scenario projects (see: <http://tinyurl.com/m9ac3vv>); at the NAF we will begin with a collaborative mapping exercise. In breakouts, we will discuss barriers, overcoming barriers, and innovations. Critical questions: What approaches for nesting scenario methods best prepare strategies for time-evolving changes? What guidance can we give about time-efficient practices to achieve comprehensive scenarios? We will end with and assessment of the current state of practice and recommendations for future practice. Resource: Considering Multiple Futures <http://tinyurl.com/qzsondm>.

## Speaking Truth to Power and Power to Truth: Building a Two-Way Street in Climate Change Assessments (Midway IV)

Working Group Organizer: Louise Bedsworth

Speakers: J.R. De La Rosa, Guido Franco, Michael McCormick,

Jonathan Parfrey, Renee McPherson, Derek Rosendahl, Adrienne Wootten

Governments are making significant research investments to understand the risks of climate change to populations, infrastructure, and natural resources. In addition, the research and development community is working to provide useable datasets and products for stakeholders. To start to prepare for climate change, local governments, resource managers, and others on-the-ground need to be able to incorporate this information into their decisions and planning. However, this translation can be tricky if climate data and products are not in a form that is relevant to planners and decision makers or does not provide assessment of risks in a manner that is meaningful at the scale or context of action. This workshop will explore specific examples of how to integrate practitioner and scientific input for responding to the risks of global climate change. Following a brief introduction, the session is designed around set of highly interactive table discussion. Taking on different roles, we will discuss varying information needs, management challenges, and scientific limitations.

## Strategies for the Future: Adaptation and the National Ocean Policy (Wabash Cannonball)

Working Group Organizer: Sarah Winter Whelan

Speakers: Jennifer Bennett-Mintz, Rachel Gregg

Our nation relies on healthy oceans, coasts, and Great Lakes. Climate change and ocean acidification (OA) clearly threaten the long-term health and resiliency of these ecosystems. To ensure they continue to provide the services we depend upon, we must develop and enact new adaptation strategies by working across government at all levels. The National Ocean Policy (NOP) is a crosscutting effort to protect, maintain, and restore our ocean, coasts, and Great Lakes that may provide us that opportunity. The NOP prioritizes the resiliency of coastal communities, our marine and freshwater environments and their abilities to adapt to climate change impacts and OA. This working group will look at the NOP's charge on adaptation, existing work across governments, stakeholders and identify where the NOP cuts across other climate change and OA efforts. The group will focus on identifying strategies and recommendations for how the NOP can better serve U.S. adaptation efforts.

## Utilizing a Geo-Economic Approach and Tools to Overcome Adaptation Engagement and Implementation Barriers (Grand B)

Training Session Organizer: Demetra McBride

Speakers: Alexander Quinn, Claire Bonham-Carter, Michael McCormick, Kara Ann Gross

A key barrier to advancing adaptation is that the cost of action has been calculated but the cost of inaction has not. Silicon Valley 2.0 is a local but scalable program that deploys a risk-management approach, supported by a Geo-Economic Tool, to link climate resilience with economic prosperity. The Session Panel will demonstrate the SV 2.0 Tool, and review strategies and stakeholder dynamics. Attendees will then breakout to "fire-starter" tables, which represent a menu of "city profiles," facilitated by a Panel member, as participants select climate stressor(s) and community assets, and conduct hands-on application of the Tool. Each group will proceed to scenario-planning: Identifying and ranking strategies; focusing challenges and opportunities; innovating messaging, approaches and collaborations; and what is still needed to deliver present benefits within the architecture of future resilience. Fire-starter groups will then report out to the full group, in summaries that will be gathered, recorded, and distributed to participants as well as National Adaptation Forum organizers.

**3:30 pm  
to 4:00 pm**

### **BREAK (MIDWAY)**

**4:00 pm  
to 5:30 pm**

### **CLOSING PLENARY SESSION (REGENCY BALLROOM)**

Highlights From the Week, Lara Hansen, Steering Committee Chair, National Adaptation Forum

The Honorable Tim Kabat, Mayor, La Crosse, Wisconsin and Mississippi River Cities and Towns Initiative (MRCTI) Executive Committee Member

Town Hall

Adjourn

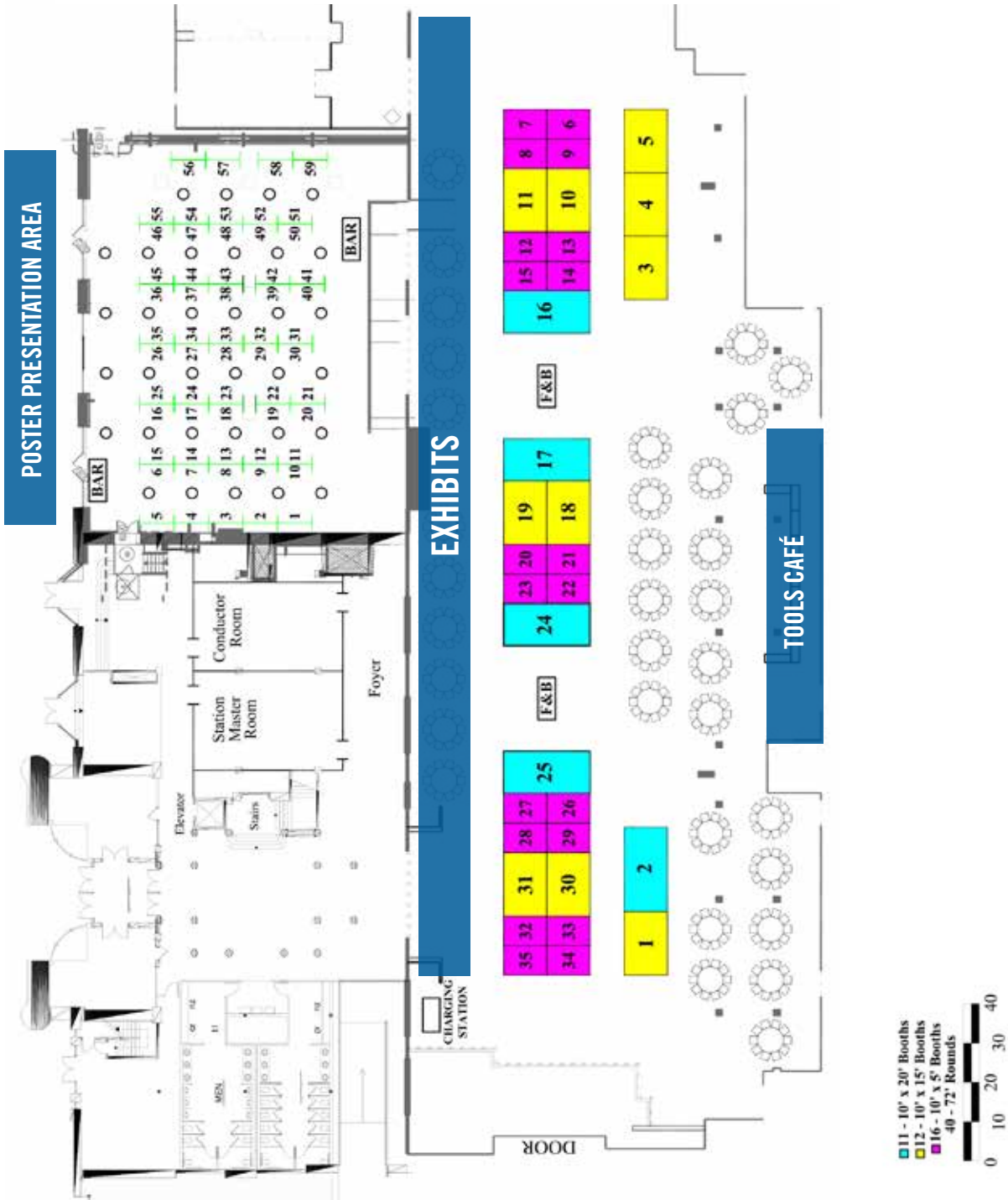




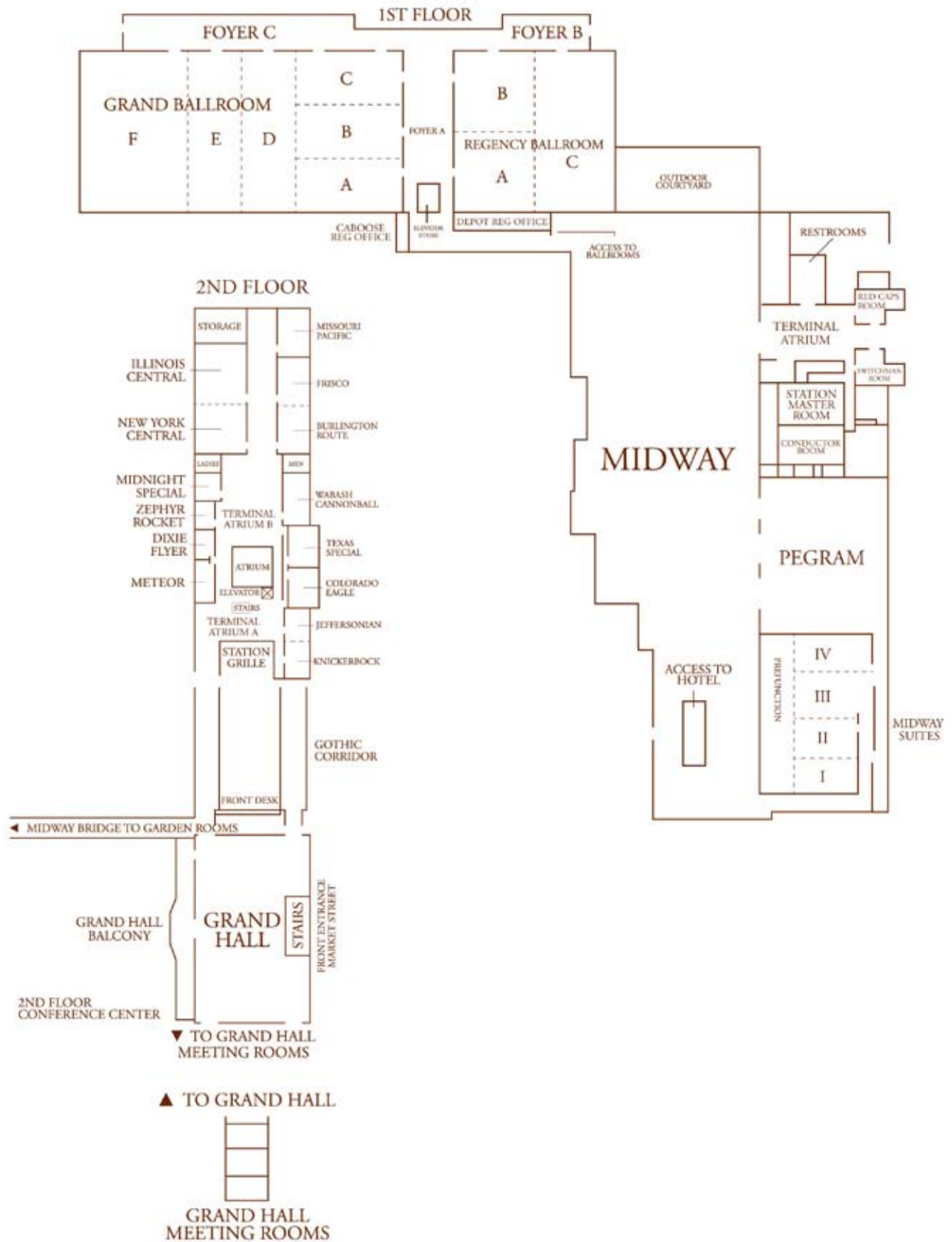
# MIDWAY FLOOR PLAN (ST. LOUIS UNION STATION HOTEL) AND EXHIBITOR LISTING

## EXHIBITORS

1. American Society of Adaptation Professionals
2. National Oceanic and Atmospheric Administration
3. EcoAdapt
4. Defenders of Wildlife
5. ISET International
6. ICLE/DOE Solar SunShot Program
7. Path for Positive Communities
8. Climate Adaptation Scholars
9. Buoyant Foundation Project
10. US Fish and Wildlife Service/Landscape Conservation Cooperatives
11. Conservation Biology Institute
12. Cascadia Consulting Group
13. Union of Concerned Scientists
14. RAND Corporation
15. Climate Planning
16. Anheuser-Busch
17. Climate Change Art – Climate Change Action
18. United Nations Environmental Programme
19. The Nature Conservancy
20. Adaptation International
21. Abt Associates
22. Natural Hazard Mitigation Association
23. Notre Dame Global Adaptation Index
24. Local St. Louis Adaptation Partners
25. Anheuser-Busch
26. ICF International
27. Greenway Network
28. University of South Carolina / Carolinas Integrated Sciences and Assessments
29. Georgetown Climate Center
30. AECOM
31. ClimateWise
32. U.S. EPA Office of Sustainable Communities
33. Model Forest Policy Program
34. Association of Climate Change Officers
35. City of St. Louis



# FACILITY MAP





**THANK YOU FOR JOINING US IN ST. LOUIS!**

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