

Board on Atmospheric Sciences
and Climate
Fall Meeting 2022

November 30 – December 2, 2022
A Virtual Event

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Meeting Links

November 30th, 2022 (1 – 5 pm ET)

[Join Meeting](#)

Meeting ID: 160 804 1955

December 1, 2022 (1 – 5 pm ET)

[Join Meeting](#)

Meeting ID: 160 988 2119

Meeting ID
160 804 1955

Phone Only
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All times: Eastern time zone

Purpose

- Welcome new board members, conduct conflict of interest and balance discussion
- Consider current needs and gaps for connecting hurricane forecasting to decision-making for tropical cyclone events by individuals, governments, and emergency management
- Discuss opportunities related to atmospheric sciences and climate in recent legislation
- Identify BASC priorities for 2023, informed by topical and legislative panels and BASC activity updates

WEDNESDAY, NOVEMBER 30, 2022

OPEN SESSION– Hurricane Forecasting, Forecast Communication, and Decision-making

3:00 PM ET	Welcome - Session Overview	Mary Glackin
3:05 PM	Hurricane Ian Overview	Brad Colman
3:10 PM	Panel 1: Hurricane Forecasting and Communication [Hurricane Ian] Jon Martin (Moderator) <ul style="list-style-type: none">▪ Jamie Rhome, Acting Director, National Hurricane Center▪ Rebecca Morss, Deputy Director of the Mesoscale and Microscale Meteorology Laboratory at NCAR▪ Craig Fugate, Former Director of the Federal Emergency Management Agency	
4:00 PM	Panel 2: Research Priorities and Decision-Maker Needs Marshall Shepherd (Moderator) <ul style="list-style-type: none">▪ Kieran Bhatia, Vice President of Climate Change Perils Advisory at Guy Carpenter▪ Brian McNoldy, Senior Research Associate at The University of Miami▪ Bryan Norcross, Hurricane Specialist at Fox Weather	
4:45 PM	Discussion	David Titley, Moderator
5:00 PM	END OF DAY 1	

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THURSDAY, DECEMBER 1, 2022

SESSION 4 (OPEN) – Congressional Engagement

- | | | |
|----------------|--|---------------------------------|
| 3:30 PM | Session Overview and Introductions | Mary Glackin, BASC Chair |
| 3:40 PM | Congressional Engagement Panel <ul style="list-style-type: none">▪ Ana Unruh Cohen, House Select Committee on the Climate Crisis▪ Brent Blevins, House Committee on Science, Space, and Technology▪ Priyanka Hooghan, House Subcommittee on Environment; Committee on Science Space, and Technology | |
| 4:30 PM | Discussion | Mary Glackin |
| 5:00 PM | Adjourn | |

Statement of Task

The issues addressed by BASC are at the forefront of contemporary concerns. Climate change and impacts, global climate models and the implications of their results, air pollution, and severe weather are topics discussed not just by scientists, but in Congress and in headlines every day. Our understanding of these issues directly affects the nation's environmental policies, energy choices, manufacturing decisions, construction codes, and agricultural methods. In addition, there are implications for human health and emergency management. BASC's interests include:

- advancing methodologies and technologies for supporting weather and climate science;
- enhancing structure, operation, and optimization of weather and climate observing and forecasting systems and approaches;
- improving understanding and prediction of weather and climate variability and related impacts on society;
- understanding climate variability, change, impacts, and adaptation;
- understanding atmospheric composition and chemistry, including transport and impacts of air pollution;
- facilitating research on atmospheric/land interactions, atmospheric/ocean interactions, and atmosphere/cryosphere interactions;
- advancing methods to communicate uncertainty in weather and climate information;
- improving understanding of atmospheric and climate sciences (including supporting technologies and services) and helping make this understanding relevant to national needs.

Speaker Biographies

Ken Graham is the Director of NOAA's National Weather Service and is the Assistant Administrator for Weather Services at NOAA. In this role, he is responsible for the day-to-day civilian weather operations for the United States, its territories, adjacent waters, and ocean areas.

Prior to becoming the 17th NWS Director on June 7, 2022, he served as the director of NOAA's National Hurricane Center, leading the nation through numerous hurricanes, including 30 named storms during the record-breaking 2020 hurricane season. His tireless energy to build effective partnerships at all levels of government and his close work with emergency managers underpin the nation's preparedness ahead of hazardous weather.

Graham is the first NWS director with a vast amount of operational field experience. He worked his way up through the ranks at NWS, mostly in field offices, starting as an intern meteorologist in 1994 at the New Orleans/Baton Rouge weather forecast office.

Graham earned a bachelor's degree in atmospheric science from the University of Arizona and a master's degree in geoscience from Mississippi State University. He was named the 2022 Weatherperson of the Year by the Federal Alliance for Safe Homes and was a 2021 finalist for the Partnership for Public Service's Samuel J. Heyman Service to America Medal.

Graham, a licensed HAM Radio Operator, is a member of the American Meteorological Society, the National Weather Association, and the International Association of Emergency Managers.

Jamie Rhome is the Storm Surge Specialist and Team Lead at NOAA's National Hurricane Center (NHC) in Miami, Florida, and serves as a subject matter expert on storm surge and coastal inundation for the National Weather Service's hurricane program. He is also the NOAA representative for the tri-agency (NOAA, FEMA, Army Corp. of Engineers) National Hurricane Program (NHP). The NHP conducts Hurricane Evacuation Studies (HES) that guide the decision-making process for protecting the public when a hurricane threatens an area. Mr. Rhome oversees the National Hurricane Center's Storm Surge Unit, which produces official storm surge forecasts during tropical cyclone threats to the United States, supports the Nation's hurricane warning program, and facilitates post-storm response and recovery efforts. During the offseason, he leads storm surge research and development activities at the NHC including updates to the storm surge modeling system, development of new products, and post-storm analysis and validation studies. Mr. Rhome also serves as a subject matter expert on a World Meteorological Team aimed at improving storm surge predictive capabilities within other Nations, especially within the Caribbean and Central America. Mr. Rhome received both his Bachelor of Science degree and Master of Science degree in meteorology from North Carolina State University (1999, 2002).

Rebecca E. Morss is a Senior Scientist and Deputy Director of the Mesoscale and Microscale Meteorology (MMM) Laboratory at the National Center for Atmospheric Research in Boulder, Colorado. Dr. Morss is an expert in weather forecasting systems and risk communication, with an emphasis on high-impact weather including hurricanes, floods, and tornadoes. She has more than twenty years of experience in developing research programs, leading projects, and building teams that integrate knowledge and methods across fields to address problems that cross disciplinary and science-society boundaries. Her current research foci include the communication and interpretation of weather risks, the use of weather-related information in decision making, and weather hazard prediction and predictability. She has served in multiple national and international leadership roles, including on several U.S. National Academies committees and as an elected Councilor of the American Meteorological Society. In 2019, she co-chaired the 2020-2024 NCAR Strategic Planning Steering Committee and was Interim Director of NCAR's MMM Laboratory and Interim Associate Director of NCAR. She received a B.A. in chemistry from the University of Chicago and a Ph.D. in atmospheric science from the Massachusetts Institute of Technology.

Craig Fugate is the former administrator of the Federal Emergency Management Agency. As director for the Florida Emergency Management Division, he oversaw the "Big 4 of '04" and as the administrator for the Federal Emergency Management Agency, he organized recovery efforts for a record of eighty-seven disasters in 2011. He served as President Barack Obama's FEMA Administrator from May 2009 to January 2017. Previously, he served, as Florida Governor Jeb Bush's Emergency Management Director from 2001-2009. Fugate led FEMA through multiple record-breaking disaster years and oversaw the Federal Government's response to major events such as the Joplin and Moore Tornadoes, Hurricane Sandy, Hurricane Matthew, and the 2016 Louisiana flooding. Fugate set a clear and compelling vision, mission, and priorities for FEMA and relentlessly drove the Agency to achieve better outcomes for survivors. FEMA's effectiveness in dealing with more than 500 presidentially declared major disasters and emergencies under Fugate's leadership restored the faith of the American people in the Federal Government's ability to respond to disasters. Prior to his tenure at FEMA, Fugate was widely praised for his management, under Governor Jeb Bush, of the devastating effects of the 2004 and 2005 Florida hurricane seasons (Charley, Frances, Ivan, Jeanne, Dennis, Katrina, and Wilma).

Kieran Bhatia is the Vice President of Climate Change Perils Advisory at Guy Carpenter. Previously, he was a postdoctoral Associate at Princeton University, working under the supervision of Dr. Gabe Vecchi at the Geophysical Fluid Dynamics Laboratory. He received a B.S. degree in Physics from the University of Maryland (College Park) in Spring 2010, and received my PhD at University of Miami in the fall of 2015. For his dissertation, he focused on improving tropical cyclone (TC) intensity forecasts by exploring the connection between intensity forecast error and parameters representing initial condition uncertainty, atmospheric flow stability, TC strength, and the large-scale environment surrounding a TC. As part of his dissertation, he developed the Prediction of Intensity Model Error (PRIME) model to forecast the absolute error and bias of four leading intensity models available for guidance in the Atlantic and East Pacific basin. The positive results and numerous applications of PRIME forecasts suggest they could be valuable to the hurricane forecasting community.

Brian McNoldy is a Senior Research Associate at the Rosenstiel School of Marine, Atmospheric, and Earth Science at the University of Miami. He was born and raised in Reading, PA, and has had a general interest in science since childhood. His passion for weather was sparked at age 7 by the big Nor'easter snowstorm of February 1983, and then further piqued by Hurricane Gloria in September 1985. He held an internship at NASA Goddard in Greenbelt, MD in the summer of 1997, earned his B.A. in physics and astronomy from Lycoming College in Williamsport, PA in 1998, then went on to graduate school where he completed his M.S. in atmospheric science at Colorado State University (CSU) in Fort Collins, CO in 2001. He spent the next ten years working at CSU's Department of Atmospheric Science conducting research on a variety of topics, specializing in tropical cyclones. Brian has maintained a blog on tropical Atlantic activity since 1996, then was selected as one of four hurricane experts for a New York Times blog from 2007-2010, and has been the tropical weather expert for the Washington Post's Capital Weather Gang blog since 2012. .

Bryan Norcross became nationally known as the man who "talked South Florida through" Hurricane Andrew in 1992, which led to his work on NBC and as the CBS News Hurricane Analyst from 1996 to 2008. He is currently Senior Hurricane Specialist at The Weather Channel. In appreciation for his work before, during, and after Hurricane Andrew, Bryan was publicly recognized with designations of Bryan Norcross Days in Miami, Miami Beach, and Fort Lauderdale, among other cities. In addition, he's the recipient of an Emmy Award from the southeast chapter of the National Academy of Television Arts and Sciences, and the DuPont and Peabody awards, among many other honors. After working on emergency management communications with America's Emergency Network, Bryan joined The Weather Channel as Senior Hurricane Specialist in 2010. In 2018, Bryan returned to WPLG in Miami as Hurricane Specialist, covering hurricanes and tropical storms that threaten South Florida. Bryan was profiled in the New York Times following his long hours of coverage of Hurricane Sandy on The Weather Channel, plus his blog and Facebook posts that provided detailed analysis of the storm threat and criticism of the government's communications systems. The Times article quotes a Twitter post that described Bryan as "the most trusted hurricane human on the planet."

Ana Unruh Cohen is staff director on the U.S. House of Representatives Select Committee on the Climate Crisis. Previously, she was managing director of government affairs for the Natural Resources Defense Council and the NRDC Action Fund. During nearly two decades of policy experience, including more than 14 years on Capitol Hill, she has served as the director of energy, climate, and natural resources for Senator Edward J. Markey; deputy staff director of the Natural Resource Committee Democratic staff; deputy staff director and chief scientist of the Select Committee on Energy Independence and Global Warming; and as a legislative assistant in then-Representative Markey's personal office. In addition to her time in Congress, Unruh Cohen was also the first director of environmental policy at the Center for American Progress.

Brent Blevins serves as senior policy advisor for the U.S. House Committee on Science, Space, and Technology where he works on issues involving NASA and NOAA. Prior to his current role, he served as a policy advisor for U.S. Senate Majority Whip John Cornyn and as senior professional staff and subcommittee staff director for the U.S. House Committees on Agriculture and Natural Resources.

A lifelong Hokie, Brent received a bachelor's of arts in history and a bachelor's of arts in political science from Virginia Tech in 2003 and also received a master's of public administration in 2005. He was an active student on campus, serving as student manager for the men's basketball team, opinions editor of the Collegiate Times, president of his residential hall council, and as a senator in the Student Government Association.

After college, Brent became an active member of the Virginia Tech Alumni Association, serving as president of the DC Metro Hokies and as a member of the board of directors for the alumni association. He is active in his community. He was appointed to serve on the Virginia Land Conservation Foundation Board of Trustees and the Alexandria Historical Restoration and Preservation Commission.

Brent resides in Alexandria, Virginia and is a native of Wythe County, Virginia.

Priyanka K. Hooghan is the Staff Director for the Subcommittee on Environment of the House Committee on Science, Space, and Technology. She is an environmental engineer with a passion for environmental and climate policy. She is a former Asian Pacific American Institute for Congressional Studies (APAICS) STEM legislative fellow. Priyanka has received numerous prestigious awards, including the NAAPPPA 40 Under 40 List (2019), the Mark Takai Award (2020), and the APAICS Alumni Trailblazer Award in 2021. She received her Bachelor of Science in Environmental Engineering from Southern Methodist University in 2010, and continued on to receive a Master of Science degree in Environmental Engineering from Stanford University in 2011.

PREVENTING DISCRIMINATION, HARASSMENT, AND BULLYING: POLICY FOR PARTICIPANTS IN NASEM ACTIVITIES

The National Academies of Sciences, Engineering, and Medicine (NASEM) are committed to the principles of diversity, inclusion, integrity, civility, and respect in all of our activities. We look to you to be a partner in this commitment by helping us to maintain a professional and cordial environment. **All forms of discrimination, harassment, and bullying are prohibited in any NASEM activity.** This policy applies to all participants in all settings and locations in which NASEM work and activities are conducted, including committee meetings, workshops, conferences, and other work and social functions where employees, volunteers, sponsors, vendors, or guests are present.

Discrimination is prejudicial treatment of individuals or groups of people based on their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws.

Sexual harassment is unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature that creates an intimidating, hostile, or offensive environment.

Other types of harassment include any verbal or physical conduct directed at individuals or groups of people because of their race, ethnicity, color, national origin, sex, sexual orientation, gender identity, age, religion, disability, veteran status, or any other characteristic protected by applicable laws, that creates an intimidating, hostile, or offensive environment.

Bullying is unwelcome, aggressive behavior involving the use of influence, threat, intimidation, or coercion to dominate others in the professional environment.

REPORTING AND RESOLUTION

Any violation of this policy should be reported. If you experience or witness discrimination, harassment, or bullying, you are encouraged to make your unease or disapproval known to the individual at the time the incident occurs, if you are comfortable doing so. You are also urged to report any incident by:

- Filing a complaint with the Office of Human Resources at 202-334-3400 or hrrservicecenter@nas.edu , or
- Reporting the incident to an employee involved in the activity in which the member or volunteer is participating, who will then file a complaint with the Office of Human Resources.

Complaints should be filed as soon as possible after an incident. To ensure the prompt and thorough investigation of the complaint, the complainant should provide as much information as is possible, such as names, dates, locations, and steps taken. The Office of Human Resources will investigate the alleged violation in consultation with the Office of the General Counsel.

If an investigation results in a finding that an individual has committed a violation, NASEM will take the actions necessary to protect those involved in its activities from any future discrimination, harassment, or bullying, including in appropriate circumstances **the removal of an individual from current NASEM activities and a ban on participation in future activities.**

CONFIDENTIALITY

Information contained in a complaint is kept confidential, and information is revealed only on a need-to-know basis. NASEM will not retaliate or tolerate retaliation against anyone who makes a good faith report of discrimination, harassment, or bullying.