WRITTEN STATEMENT

<div align="center">

The Future of Forecasting: Building a Weather-Ready Nation on All Fronts
United States House of Representatives Committee on Science, Space and Technology
October 14, 2021

</div>

Testimony by
Mr. Erik Salna, Associate Director for Education and Outreach, International Hurricane Research Center, Extreme Events Institute, Florida International University

Florida International University (FIU) thanks Chairwoman Eddie Bernice Johnson, Ranking Member Frank Lucas, and the Members of the House Science, Space, and Technology for examining recent reforms, successes, and modernization efforts at the National Weather Service (NWS); how they support the goal of building a "Weather-Ready Nation (WRN);" what these efforts mean for the NWS workforce; and advancements needed to support forecasting improvements.

We are honored to share our insights as a Weather-Ready Nation (WRN) Ambassador and a research partner of the National Oceanic and Atmospheric Administration (NOAA).

Florida International University and NOAA
Founded in 1965, FIU is Miami's public research university focused on student success and research excellence. Ranked as a top-tier, R-1 research university by Carnegie's Classification of Institutions of Higher Education with over $237 million in annual research activity, our faculty researchers and students are addressing some of the greatest challenges of our time. In particular, we are proud of our decades-long collaboration with NOAA to advance new understanding of the oceans and our atmosphere. We are particularly honored by having NOAA's National Hurricane Center and the Miami Office of the National Weather Service on the FIU Modesto A. Maidique campus.

The **Extreme Events Institute (EEI) at FIU** is at the forefront of disaster resilience and risk reduction. Our **International Hurricane Research Center (IHRC)** was designated the very first Weather-Ready Nation Ambassador in South Florida on March, 25th, 2014. Today there are 120 WRN Ambassadors in South Florida.

WRN Ambassadors Are NOAA's "Boots on the Ground"
IHRC is doing its part as a WRN Ambassador to prepare South Florida and beyond to be "ready, responsive and resilient" to weather events in particular because Florida is the hurricane capital of the United States. Florida is the third-most-populous state in the nation, with 76% of its population living near the coast. IHRC education and outreach takes science to people and hurricane mitigation and preparedness into the community through NOAA-NWS partnerships, projects and community events (see appendix for details), including:
- Eye of the Storm Public Hurricane Education Museum Event - this free admission public education annual event takes hurricane preparedness content and presents it in a family-friendly way featuring activities for parents and kids.
- Eye of the Storm Hurricane Education Video Series - the 12-episode video series teaches hurricane science, mitigation and preparedness along with interactive science demonstrations.
- NSF-NHERI Wall of Wind Museum Exhibit - the exhibit illustrates the effects of wind on different roof shapes, teaches the science of wind engineering, and shows the importance of mitigating wind damage to homes.
- Spanish-Language Hurricane Information Website – This website helps the Spanish-speaking community be better educated, informed and prepared for hurricanes, including how to safe-guard their families, homes and businesses.

- NOAA Hurricane Awareness Tour – IHRC partners with NOAA's National Hurricane Center and participates with interactive demonstrations teaching hurricane science and mitigation to the public and school groups in hurricane-prone areas of the Nation.
- Miami Marlins S.T.E.A.M. Day - IHRC participates in S.T.E.A.M. (science, technology, engineering, arts and mathematics) Day with the Miami Marlins, in partnership with Miami-Dade and Broward County Schools. Elementary and middle school students from across South Florida come to the ballpark for unique science demonstrations and then enjoy a Marlins baseball game.
- STEM-Weather Day at FIU – this event promotes weather education and STEM career fields through interactive, hands-on, fun activities and demonstrations to elementary and middle school students from Miami-Dade County Schools.

K-12: Preparing the Next Generation of WRN Ambassadors

IHRC K-12 education takes the messages of hurricane science, mitigation and preparedness into the community through community education partnerships and events (see appendix for details), in particular:

- Wall of Wind Mitigation Challenge (WOW! Challenge) - This STEM education event features a competition between high school teams to develop innovative wind mitigation concepts and real-life human safety and property protection solutions. The mitigation concepts are then tested live at the NSF-NHERI Wall of Wind. The Challenge inspires students to pursue STEM education and step up as the next generation of leaders advancing resilience to natural hazards and extreme weather.
- Hurricane STEM Science, Mitigation and Preparedness Education Learning Modules - The learning modules for middle and high school students teach hurricane STEM science, mitigation, preparedness, and wind engineering. They also teach about emergency management and the role it plays in the community during a threatening hurricane.
- Hurricane Wind Engineering STEM Workshops - The IHRC hosts active-learning, hands-on, professional development workshops for middle and high school teachers from South Florida. Activities include building a fully functional classroom wind tunnel and an educational tour of the NSF-NHERI Wall of Wind.

FIU Collaborative Research: Either We Reduce Risk, or Risk Will Reduce Us

The Extreme Events Institute and the IHRC are at the forefront of reducing the impact of natural hazards through research and the advancement of technology that strengthens response, improves recovery, and mitigates our exposure to risk. EEI also strategically focuses on reducing societal vulnerabilities, improving understanding, and managing our exposure to extreme events including hurricanes and storm surge. For decades, the federal government and the State of Florida have invested in FIU research laboratories (see appendix for details):

- Through the NOAA's NHC Joint Hurricane Testbed (JHT) project, the FIU-based Coastal and Estuarine Storm Tide Model (CEST) transitioned into an operational model for forecasting storm surges as a research application to help improve the SLOSH model. In addition, the FIU research team is collaborating with NHC to develop an integrated coastal inundation forecast system in the Caribbean Region.
- FIU is collaborating with NOAA's Hurricane Research Division (HRD) and Environmental Modeling Center (EMC) on improving hurricane forecast models, specifically for hurricane rapid intensification. This research is part of NOAA's Hurricane Forecast Improvement Program (HFIP) with the goals of improving the accuracy and reliability of hurricane forecasts, extending lead time for hurricane forecasts with increased certainty, and accelerating the transition of products from the research stage to operational implementation.
- The Florida Public Hurricane Loss Model is the state's only certified and transparent method of determining annual expected insured and probable maximum losses due to hurricane damage.

- The National Science Foundation (NSF) has designated the Wall of Wind as one of the nation's eight major "Experimental Facilities" (and one of only two for wind) under the Natural Hazards Engineering Research Infrastructure (NHERI) program.
- Disaster Risk and Resilience in the Americas (DRRA) program focuses on disaster risk reduction in Latin America and the Caribbean, providing advanced training to help communities reduce existing risks. The program's goal is to help communities reduce vulnerabilities, better manage risk, and build long-term resilience.
- Public Opinion and the Politics of Risk Reduction (POPRR) program is collecting data in the United States and in 18 Latin American and Caribbean countries on experiences with extreme events, perceptions of future risk, support for risk reduction policies, and trust in the integrity of their enforcement. Findings from the POPRR program are being shared with policymakers, stakeholders, and the public at large, with the goal of improving how these vital public policies are actually enacted and experienced.

Collaboration to Address Future Workforce Needs
Important to the discussion of recruiting diverse top talent for the NWS is the national resource that exists within the country's urban, public, minority-serving institutions. At FIU, we are aware that our demography is our destiny—and that of the country. As the 4th largest university in the US with 58K students, we enjoy a student population that is **61% Hispanic, 13% Black**, **4% Asian or Pacific Islander** and **7% other minority groups.**

As we look towards the future workforce of the National Weather Service, NOAA has a great opportunity to collaborate with existing research university partners, in particular urban, public, minority-serving institutions like FIU, to identify, recruit and sustain a highly skilled and diverse workforce in more of a "just-in-time" fashion to reduce vacancy backlogs.

One model of creative federal collaboration that can be instructive is the FIU-Department of Energy (DOE) Science and Technology Workforce Development Program. This is an innovative program between the DOE Office of Environmental Management (DOE-EM) and FIU's Applied Research Center designed to identify and mentor a "pipeline" of underrepresented student engineers early-on while providing first-hand experience with the deployment of new technologies addressing DOE's environmental cleanup challenges.

Throughout the course of the year, students are selected as DOE Fellows, and embedded into DOE grants awarded to FIU with paid research stipends to work side-by-side with faculty researchers. During summers, those same students receive mentorship from DOE personnel during 10-week internships at DOE national laboratories such as Oak Ridge, Pacific Northwest, Lawrence Livermore, Savannah River, Los Alamos, and DOE Headquarters. Upon graduation and completion of these fellowships, the students are encouraged to pursue a career at DOE National Labs or DOE contractors across the DOE landscape.

We can envision an approach that exists at NOAA and the NWS that integrates coursework, research, field work, and mentorship to address the NWS human capital plans.

We're All in This Together
Building a Weather-Ready Nation is a team effort. IHRC's success as a WRN Ambassador comes from the team approach of working with many partners. Universities, local government, emergency management, school districts, community non-profits, science museums, local media and the business community all working together with NOAA and NWS strengthens the WRN Team.

The goal of the WRN Team is to motivate the local community to take action to prepare, protect, mitigate and safeguard their families, homes and businesses. Preparedness behavior has to change. The result will be a Nation more resilient to natural hazards.

For the IHRC and South Florida, weather readiness has to become a way of life, something we just naturally do. We have to take personal responsibility and accountability to be prepared, have a disaster kit, and have a plan:
- If you live in a designated evacuation zone, where will you go when a hurricane threatens?
- Have you identified a safe room in your home?
- If you have a loved one in a senior care facility, do you have a way to make sure that she/he will be okay?
- If a family member has special needs, do you have a special and more detailed plan?
- Have you protected your home and business from damaging winds?
- Have you considered all aspects of flood insurance?
- Have you done a homeowner's insurance check-up?
- Have to be assured that portable generators operate only outside your home?

Moving Forward Together
As the WRN Initiative moves forward, here are some areas of focus that could be greater priorities:
- **Weather Forecasting Research:** High priority efforts are needed to support weather forecast modeling advancements, including hurricane track and intensity, to improve public warnings.
- **Storm Surge Research:** High priority efforts are needed to support storm surge modeling advancements to improve public evacuations.
- **Social Science Research:** High priority efforts are needed to support social science research on the disconnect with NWS products and the public's understanding. The best forecasts in the world may be useless if the public doesn't respond or hasn't taken the needed actions to protect themselves when extreme weather threatens.
- **Communicating Weather Readiness to Diverse Audiences:** As the demography of the country becomes much more dynamic, NOAA and its WRN Ambassadors must be more creative in reaching broader, more diverse audiences in ways that are culturally appropriate, and culturally effective.   The FIU Spanish language website, huracanes.fiu.edu, is just one example filling a community need.
- **Vulnerable Populations:** Embrace building "a Weather-Ready Nation for All" by addressing vulnerable populations' needs and resource inequities to prepare and safeguard themselves.
- **Future Workforce:** Collaborate in even more robust ways with the nation's urban, public, minority-serving institutions to identify and recruit a "just-in-time" pipeline that integrates coursework, research, fieldwork, and mentorship to address the NWS human capital plans.
- **Disinformation:** While public understanding of the impact of our changing climate has increased, a Weather-Ready Nation will need more communication vigilance to reduce the threat of disinformation.

Thank you for the opportunity to share our activities as a Weather-Ready Nation (WRN) Ambassador.

APPENDIX

FIU Community Education and Outreach

Eye of the Storm Public Hurricane Education Event
The IHRC and the Fort Lauderdale Museum of Discovery and Science (MODS) host this free admission public education annual event that takes hurricane preparedness content and presents it in a family-friendly way featuring activities for parents and kids. The goal: to inform and motivate

everyone to be ready for the new hurricane season. Special hands-on, interactive activities and demonstrations teach hurricane science, mitigation and preparedness:

- Live air cannon demonstrations showing debris impacting shutters and windows.
- Live weather education theater shows, featuring NWS's Owlie Skywarn.
- Live tropical weather briefings by NOAA's National Hurricane Center.
- Weather Jeopardy Game
- NSF-NHERI Wall of Wind Museum Exhibit

This collaborative community education outreach project partners the IHRC with the Florida Division of Emergency Management, Broward County Emergency Management, City of Fort Lauderdale Emergency Management, NOAA's National Hurricane Center, and NOAA's Miami Office of the National Weather Service. Great support is also provided by many community organizations, including Florida Power & Light, the International Hurricane Protection Association (IHPA), and local media.

FIU News Story: https://www.ihrc.fiu.edu/media/latest-media-coverage/university-helps-community-prepare-for-hurricane-season/

Event Video: https://www.ihrc.fiu.edu/outreach-education/2019-eye-of-the-storm-video-hurricane-science-mitigation-preparedness-event/

Eye of the Storm Hurricane Education Video Series (https://mods.org/?page_id=16093)
The IHRC worked together with MODS to produce the Eye of the Storm 12-episode video series teaching hurricane science, mitigation and preparedness along with interactive science demonstrations. Experts also discuss their educational backgrounds and interesting STEM careers. Video topics include hurricane supply kits, generator safety, insurance check-ups, pet and boat preparedness, shuttering windows, roofing, evacuations, storm surge, hurricane forecasting, and the importance of wind engineering research by the NSF-NHERI Wall of Wind. This collaborative community education outreach project partnered the IHRC with the Florida Division of Emergency Management, Broward County Emergency Management, City of Fort Lauderdale Emergency Management, NOAA's National Hurricane Center, NOAA's Atlantic Oceanographic and Meteorological Laboratory and Hurricane Research Division, and NOAA's Miami Office of the National Weather Service. The "evergreen" video series continues as a hugely successful digital marketing campaign and has expanded the reach and impact beyond South Florida to other states on the Gulf of Mexico and the U.S. eastern seaboard at risk of a hurricane landfall.

FIU News Story: https://news.fiu.edu/2020/video-series-helps-children,-families-learn-about-hurricanes?utm_source=newsletter&utm_medium=email&utm_campaign=FIU%2520News%2520newsletter

Wall of Wind Museum Exhibit
The IHRC worked together with MODS in developing the NSF-NHERI Wall of Wind museum exhibit. This hands-on, interactive exhibit provides an opportunity for the IHRC to showcase to the community the Wall of Wind and its hurricane mitigation research. Museum visitors, including area school children, assemble and test model home structures with wind produced by the Wall of Wind exhibit. The exhibit illustrates the effects of wind on different roof shapes, teaches the science of wind engineering, and shows the importance of mitigating wind damage to homes.

Spanish-Language Hurricane Information Website (https://huracanes.fiu.edu/)
IHRC in partnership with NOAA's National Hurricane Center (NHC) created a Spanish language website. Hosted by FIU, the website includes information on hurricane science, residential mitigation strategies, preparedness, and descriptions of NHC information products, including tropical cyclone advisories. The goal of the website is to help the Spanish-speaking community be better educated, informed and prepared for hurricanes, including safe-guarding their families, homes and businesses.

FIU News Story: https://newsarchives.fiu.edu/2015/06/new-spanish-language-website-for-hurricane-preparation

STEM-Weather Day at FIU
The IHRC partners with the FIU College of Engineering and Computing, the Institute of Environment/Sea Level Solutions Center, College of Arts, Sciences & Education, and FIU Athletics for STEM-Weather Day at FIU with elementary and middle school students from Miami-Dade County Schools. The event promotes weather education and STEM career fields through interactive, hands-on, fun activities and demonstrations, which included the NSF-NHERI Wall of Wind team and mobile wind tunnel exhibit. Participating community partners include Miami-Dade County Emergency Management, Miami-Dade Fire Rescue, the American Red Cross and NOAA's National Weather Service Miami Office, the Atlantic Oceanographic and Meteorological Laboratory and the National Hurricane Center.
FIU News Story: https://news.fiu.edu/2020/see-it,-hear-it,-touch-it-stem-weather-day-welcomed-2,300-local-students-to-mmc

NOAA Hurricane Awareness Tour
IHRC participates with NOAA's National Hurricane Center (NHC) on the annual Hurricane Hunter Awareness Tour in conjunction with NOAA's National Hurricane Preparedness Week. As part of its efforts to build a Weather-Ready Nation, the IHRC and other hurricane experts raised awareness about the importance for preparing for the upcoming hurricane season with public officials, school groups, local residents and media. The IHRC showcased special interactive activities and demonstrations teaching hurricane science, mitigation and preparedness.

Miami Marlins S.T.E.A.M. Day
IHRC participates in S.T.E.A.M. (science, technology, engineering, arts and mathematics) Day with the Miami Marlins, in partnership with Miami-Dade and Broward County Schools. Elementary and middle school students from across South Florida come to the ball park for unique science demonstrations and then enjoy a Marlins baseball game.

K-12 Education

Wall of Wind Mitigation Challenge (WOW! Challenge)
The Wall of Wind Mitigation Challenge is a judged competition for South Florida high school students. This STEM education event features a competition between high school teams to develop innovative wind mitigation concepts and real-life human safety and property protection solutions. The mitigation concepts are tested live at the NSF-NHERI Wall of Wind. Through the challenge, students develop problem solving and teambuilding skills while engaging in science, technology, engineering, mathematics, architectural design and business entrepreneurship. The challenge inspires students to pursue STEM education and step up as the next generation of leaders advancing resilience to natural hazards and extreme weather.
FIU News Story: https://news.fiu.edu/2021/virtual-wall-of-wind-challenge-inspires-high-school-students-to-tackle-real-world-problems?utm_source=Newsletter&utm_medium=Email&utm_campaign=FIU%20Newsletter

Hurricane STEM Science, Mitigation and Preparedness Education Learning Modules (https://www.ihrc.fiu.edu/outreach-education/teachers/education-learning-module/):
The learning modules for 6th and high school teach students about hurricane STEM science, mitigation, preparedness, and wind engineering. They also teach about emergency management and the role it plays in the community during a threatening hurricane. The learning modules are available as an educational resource for teachers and developed with the guidance of Miami-Dade County Public Schools (M-DCPS). The modules are located on a new teacher resources web page on the

IHRC website and are also located on the M-DCPS Department of Science web page under the outreach tab.

Hurricane Engineering for STEM Teachers
The IHRC hosts the Hurricane Engineering for STEM Teachers, a two-day professional development workshop to Miami-Dade County 6-12th grade STEM teachers. The workshop focuses on introducing the Scientific Writing Heuristic lesson approach with hurricane science and wind mitigation content. Interrelated disciplines such as meteorology, engineering and physical science are included and the teachers also learn about the NHERI-NSF Wall of Wind.

Wind Engineering for STEM Teachers
The IHRC hosts the Wind Engineering for STEM Teachers active-learning, hands-on, professional development three-day workshop for middle and high school STEM teachers form South Florida. Topics hurricane science, mitigation, and wind engineering. Activities including building a fully functional classroom wind tunnel and an educational tour of the NSF-NHERI Wall of Wind.

IHRC Research Programs:

Florida Public Hurricane Loss Model (FPHLM)
The Florida Public Hurricane Loss Model is the state's only certified and transparent method of determining annual expected insured and probable maximum losses. The model is the State of Florida's benchmark for evaluating the financial risks faced by insurance companies that write windstorm policies, and, in turn, set the premiums paid by their customers. The model assesses hurricane risk and projects annual expected insured losses and probable maximum loss for specific properties or portfolio of policies by coverage, construction type, zip code, county, and region in Florida. The FPHLM's computer programs simulate and predict how, where and when hurricanes form, their intensity and track, how they will interact with different types of structures and how much damage they will cause to roofs, windows, doors and interiors, and contents. The model also estimates how much it will cost to rebuild from the damage and how much of the loss will be paid by insurers.
FIU News Story: https://news.fiu.edu/2021/fiu-led-hurricane-loss-model-recertified-by-the-state-of-florida#utm_source=newsletter&utm_medium=email&utm_campaign=FIU%252520News%252520newsletter

NSF-NHERI Wall of Wind (WOW)
The National Science Foundation (NSF) has designated the Wall of Wind as one of the nation's major "Experimental Facilities" under the Natural Hazards Engineering Research Infrastructure (NHERI) program as a distributed, multi-user national facility that provides the natural hazards research community with access to research infrastructure. The WOW is the largest and most powerful university research facility of its kind and is capable of simulating a Category 5 hurricane. WOW testing is making a significant impact on mitigating hurricane damage and influencing enhanced building codes. NSF-supported researchers can better understand wind effects on buildings and prevent wind hazards from becoming community disasters, thereby enhancing the disaster resilience of our communities and nation.
WOW Overview Video: https://youtu.be/xK_WfgrbKGs
WOW Mitigation Demonstration: https://youtu.be/d5qjZO7dVDg

Coastal and Estuarine Storm Tide (CEST)
The Coastal and Estuarine Storm Tide (CEST) model is used to estimate coastal storm surge from hurricanes and tropical storms. The model takes into account the expected tide at landfall and the atmospheric pressure and wind characteristics of the tropical system. It also takes into consideration major coastal topographic features such as coastal ridges and barrier islands. FIU's research in

partnership with the National Hurricane Center is used to enhance storm surge modeling for future operational forecasts.

Rapid Intensification of Hurricanes
IHRC research is also focused on the processes directly involved in the intensification of hurricanes. The research has made progress on advancing our understanding of the role of these processes in the eyewall of a hurricane and the resultant intensification of hurricanes and developing improved parameters to better represent these processes in operational models used for hurricane prediction. Collaborating with NOAA's Hurricane Research Division (HRD) and Environmental Modeling Center (EMC), the research team has been working on improving the Hurricane Weather Research & Forecasting (HWRF) model, one of the operational models used at EMC for hurricane prediction; and the Hurricane Analysis and Forecast System (HAFS), a new multi-scale model and data assimilation package capable of providing operational forecasts of hurricane track, intensity, and inner-core structure out to 7 days. The research has resulted in reducing errors of storm track, intensity, and structure, and enhanced skill in predicting rapid intensification of hurricanes. This research is part of NOAA's Hurricane Forecast Improvement Program (HFIP) with the goals of improving the accuracy and reliability of hurricane forecasts, extending lead time for hurricane forecasts with increased certainty, and accelerating the transition of products from the research stage to operational implementation.

EEI Research Programs

Disaster Risk and Resilience in the Americas (DRRA)
The DRRA program focuses on disaster risk reduction in Latin America and the Caribbean, providing advanced training to higher education faculty and practitioners that will prepare them to help their communities by reducing existing risks, as well as identifying and confronting the driving forces that are creating new risks on an almost daily basis. The training teaches participants about numerical risk modeling and its practical applications. The program addresses risks from multiple hazards, including earthquakes, tropical cyclones, landslides, floods, and droughts. The program's goal is to help communities reduce vulnerabilities, better manage risk, and build long-term resilience – taking at least some pressures off emergency response, relief, and recovery organizations, which are often overburdened and highly stressed.

Public Opinion and the Politics of Risk Reduction (POPRR)
Core disaster risk reduction (DRR) policies, such as building codes and construction regulations, crucially save lives and protect property. The success of these policies relies not only on engineers and civil servants but also on stakeholder participation and public support. Researchers at FIU's Extreme Events Institute are modeling the dynamics of public support for disaster risk reduction policies and their effective enforcement. The POPRR program is collecting data in the United States and in 18 Latin American and Caribbean countries on experiences with extreme events, perceptions of future risk, support for risk reduction policies and trust in the integrity of their enforcement. The program has a particular focus on (a) whether, why and for whom experiencing a disaster alters perceptions of risk and support for risk reduction policies; (b) the duration of any such changes in public support; and (c) the impact of public opinion on policymaking. Findings from the POPRR program are being shared with policymakers, stakeholders, and the public at large, with the goal of improving how these vital public policies are actually enacted and experienced. What is more, the data collected by this program serves as an open-access resource for practitioners and researchers around the world.
FIU News Story: https://news.fiu.edu/2020/fiu-researchers-to-study-public-support-for-reducing-disaster-risk-in-latin-america-and-the-caribbean#utm_source=newsletter&utm_medium=email&utm_campaign=FIU%2520News%2520newsletter

Erik Salna's Biography

Erik is a Meteorologist and currently Associate Director of Education and Outreach for the Extreme Events Institute (EEI) and the International Hurricane Research Center (IHRC) at Florida International University (FIU) in Miami (http://eei.fiu.edu/). EEI and the IHRC are at the forefront of reducing the impact of natural hazard events through research on storm surge, economic loss modeling and wind engineering, including the NSF-NHERI Wall of Wind (http://www.ihrc.fiu.edu/).

"Being a part of the Project Team for the assembly and construction of the Wall of Wind (WOW) was an amazing experience. To see Category 5 Hurricane conditions created by the WOW is incredible." (https://fiu.designsafe-ci.org/)

Education outreach has been a career focus for Erik, including the annual NOAA Hurricane Hunter Awareness Tour, the Wall of Wind Mitigation Challenge High School Competition, Wall of Wind Museum Exhibit, NOAA P-3 Hurricane Hunter Museum Exhibit, Hurricane Andrew Museum Exhibit, and Eye of the Storm Museum Event. These successful projects involved many public-private-corporate partnerships, and local, state, and national partners, including NOAA's National Weather Service, NOAA's National Hurricane Center, NOAA's Office of Oceanic and Atmospheric Research, International Hurricane Protection Association, American Red Cross, Federal Alliance for Safe Homes, Resilience Action Fund, Florida Division of Emergency Management, Miami-Dade and Broward Emergency Management, CNN, and The Weather Channel.

Before FIU, Erik worked at Miami based America's Emergency Network (AEN) and the non-profit Hurricane Warning at the Disaster Survival House, in Deerfield Beach, Florida.

Erik also has over 25 years of experience as a broadcast meteorologist, providing live continuous coverage for hurricanes, tornadoes and flooding.

"One of my most exciting career experiences was cloud seeding thunderstorms in Greece."

Erik served on the AMS Board for Broadcast Meteorology which developed the AMS Certified Broadcast Meteorologist Seal for television. Erik also spearheaded the *Save Our Weather Office Campaign* in Fort Wayne, IN, which resulted in Congressional response to fund operations of local National Weather Service Offices across the country.

Erik was inducted into the Meteorologist Hall of Fame in 2020 by the Punxsutawney Weather Discovery Center. In addition, he was recognized in 2016 as an exemplary NOAA Weather-Ready Nation Ambassador, nominated for 2016 National Weatherperson of the Year, received an Excellence in Media Award from the Press Club of Southeast Texas in 2004, a Bronze Telly Award in 1998, the Florida Governor's Hurricane Conference Media Award in 1994 and TV Broadcaster of the Year by the National Weather Association in 1989.

Erik is a Full Member of the American Meteorological Society and the National Weather Association and earned a MS in Meteorology from Northern Illinois University and a BS in Physical Geography with an emphasis in Meteorology from the University of Illinois.