

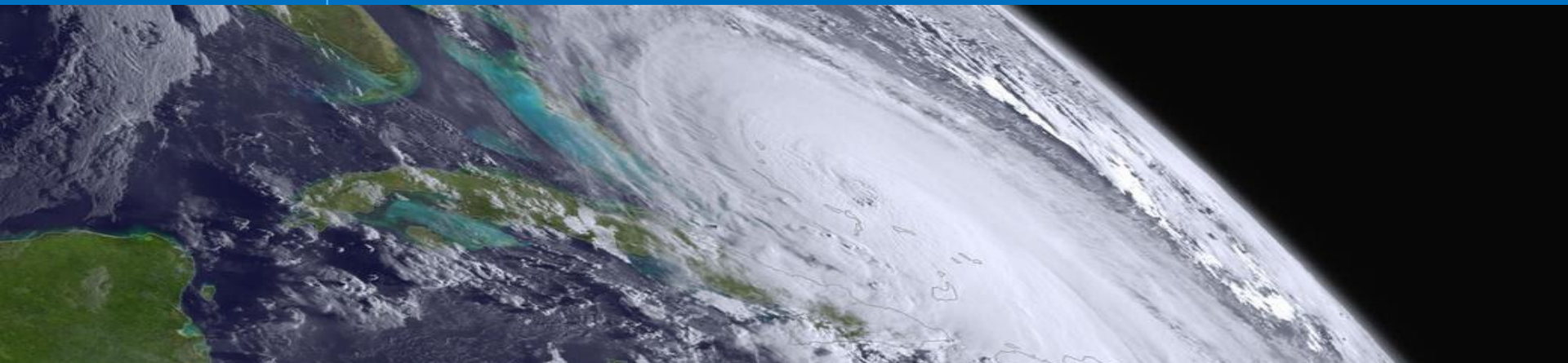


**NATIONAL  
WEATHER  
SERVICE**

# NWS Partner Engagement Event

**January 8, 2023**

Office of Organizational Excellence (OOE)



# Welcome!!

Remember when...



**NWS Partners Meeting  
Boston - January 2020**

Highlights of virtual Partner engagements since....

- Summer 2020 Webinar Series
- May 2021: NWS Academia Partners Roundtable
- July 2022: IDSS SDD Webinar
- NWS Services Webinars: Winter, Tropical, Radar, web, etc...
- WRN Ambassador Roundtables



## **NWS PARTNERSHIP STRATEGY**

Documenting strategies to support and develop partnerships throughout the NWS



**NATIONAL WEATHER SERVICE**



# NOAA

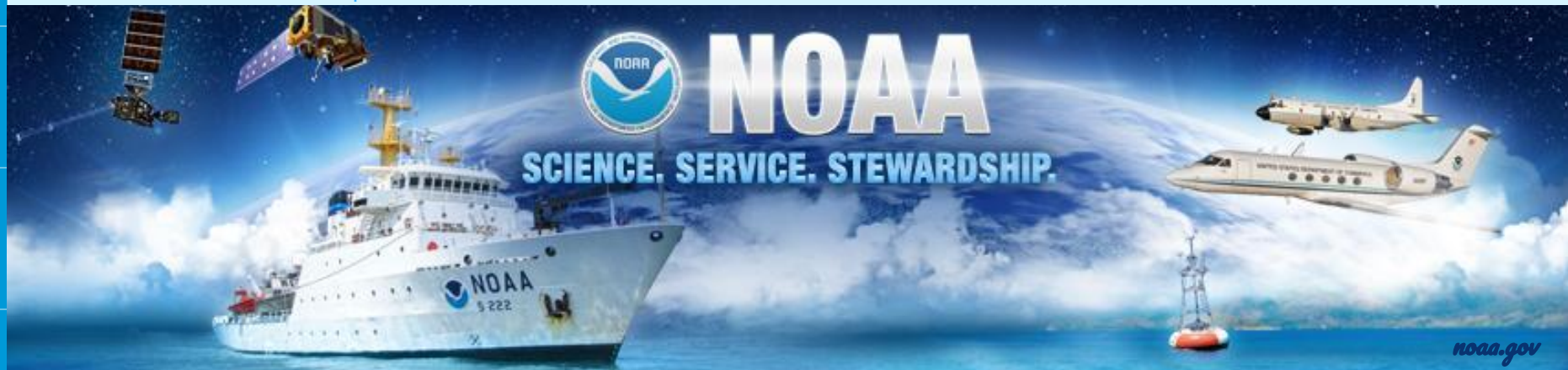
*National  
Oceanic and  
Atmospheric  
Administration*



## Dr. Rick Spinrad

Under Secretary of Commerce  
for Oceans and Atmosphere

NOAA Administrator



# Today's Agenda

- Welcome and Logistics
- Why are Weather-Ready Communities Important?
- IDSS Discussion
- Service Equity Education
- Harnessing the Weather, Water, and Climate Enterprise Roundtable Discussions
- Wrap-up



**Peyton Robertson**

Director  
Office of Organizational Excellence  
National Weather Service



**Cindy Elsenheimer**

Partner Engagement Lead  
Office of Organizational Excellence  
National Weather Service



**Douglas Hilderbrand**

Preparedness and Resilience Program Lead  
Analyze, Forecast and Support Office  
National Weather Service



# Why are Weather-Ready Communities Important?



NATIONAL WEATHER SERVICE

# IDSS - It's About People

Service and the provision of IDSS is about people - together leveraging science to serve our partners and our communities through preparedness efforts ensuring “whole community” resilience through equitable service delivery.

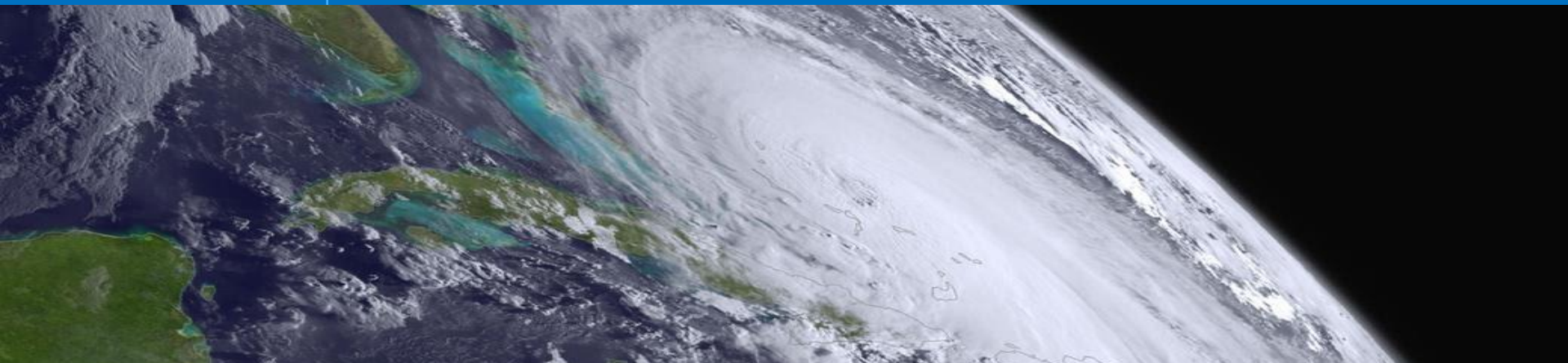


NATIONAL WEATHER SERVICE



**NATIONAL  
WEATHER  
SERVICE**

# 10 Minute Break





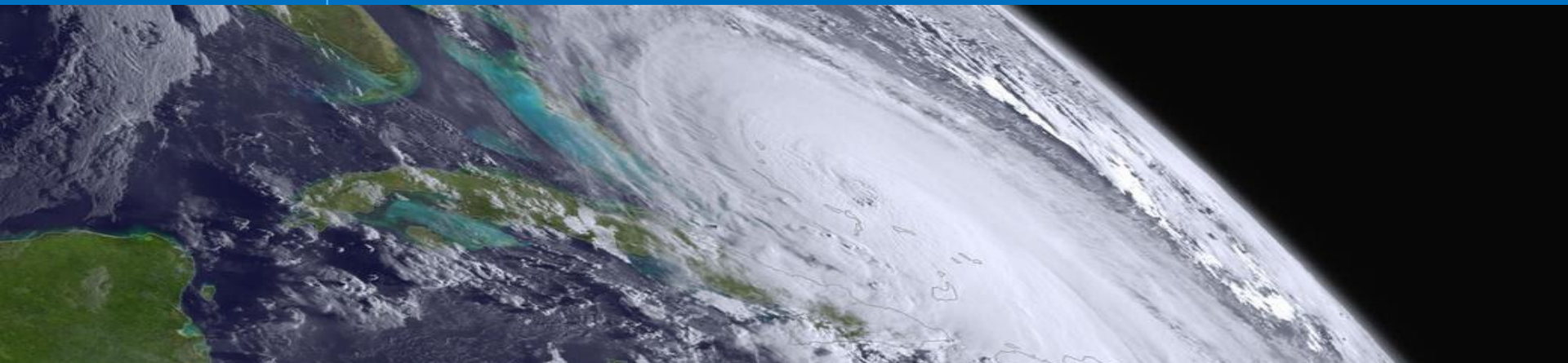


**NATIONAL  
WEATHER  
SERVICE**

# **Service Equity Discussion**

**Dr. Stephan Smith**

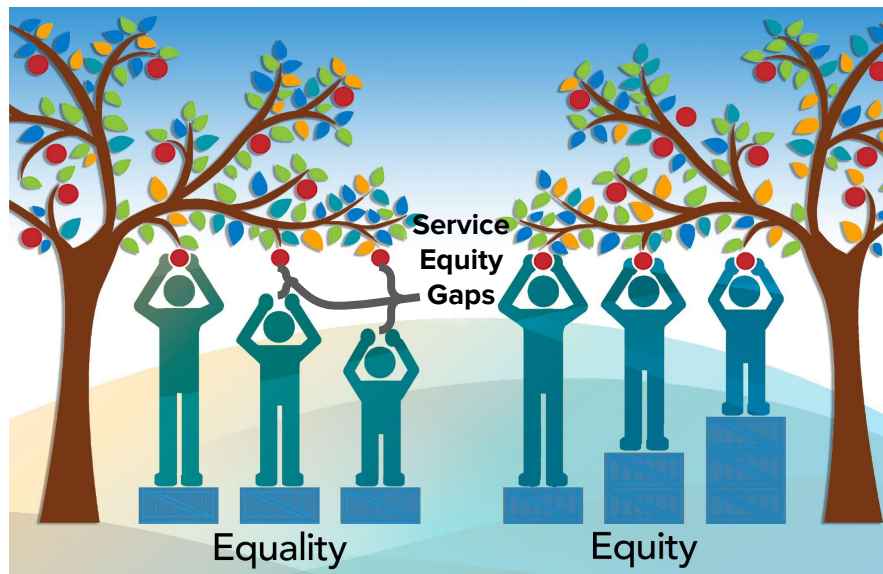
**Director, Office of Science and Technology Integration**





# Equitable Services for a Weather-Ready Nation

“Building a Weather-Ready Nation, One Community at a Time”



“One-Size” Services ☐  
Unequal Outcomes

Equitable Services ☐  
Equality of Outcomes



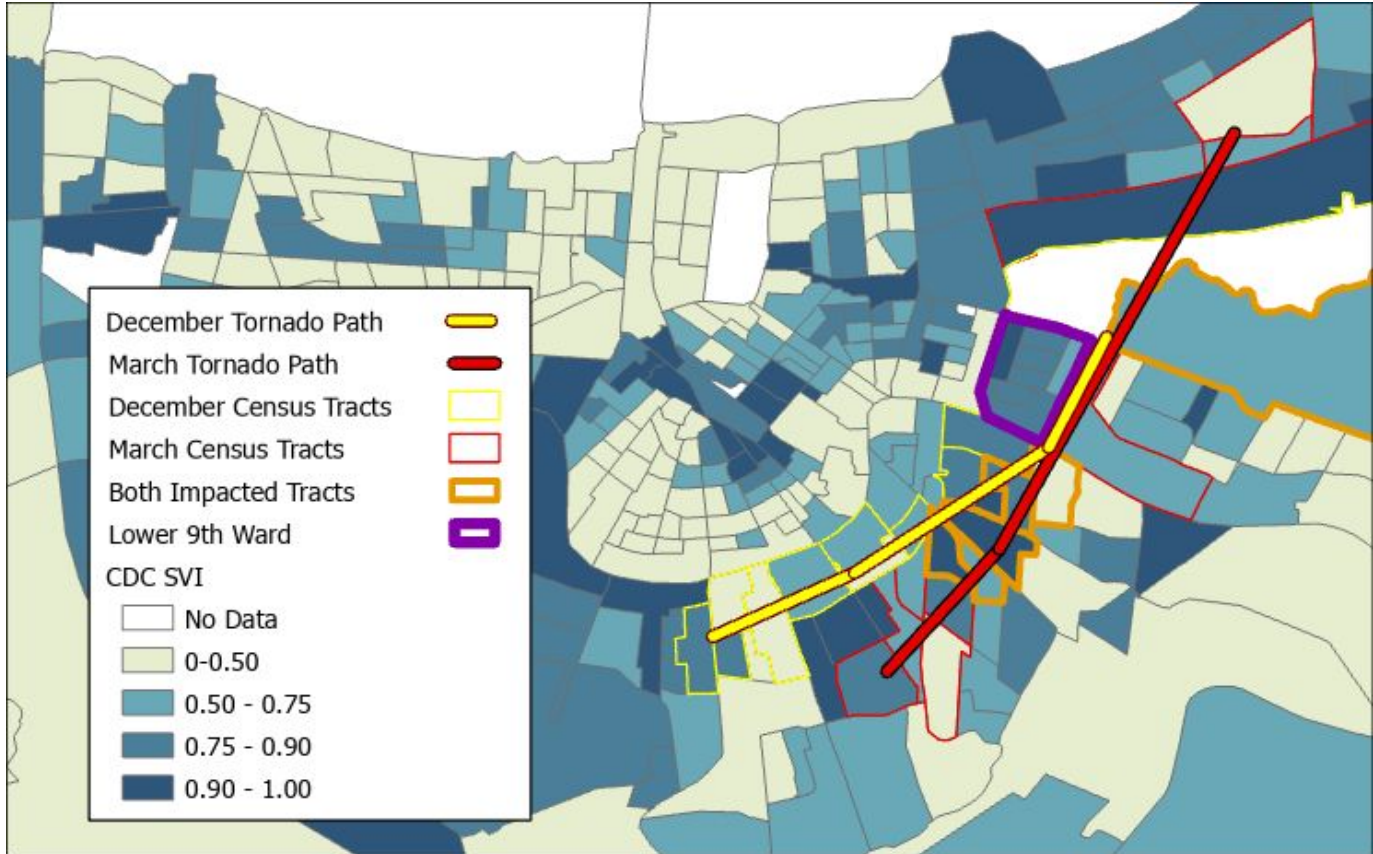
NATIONAL WEATHER SERVICE

# NWS Service Equity Framework

## *A Framework for Action*

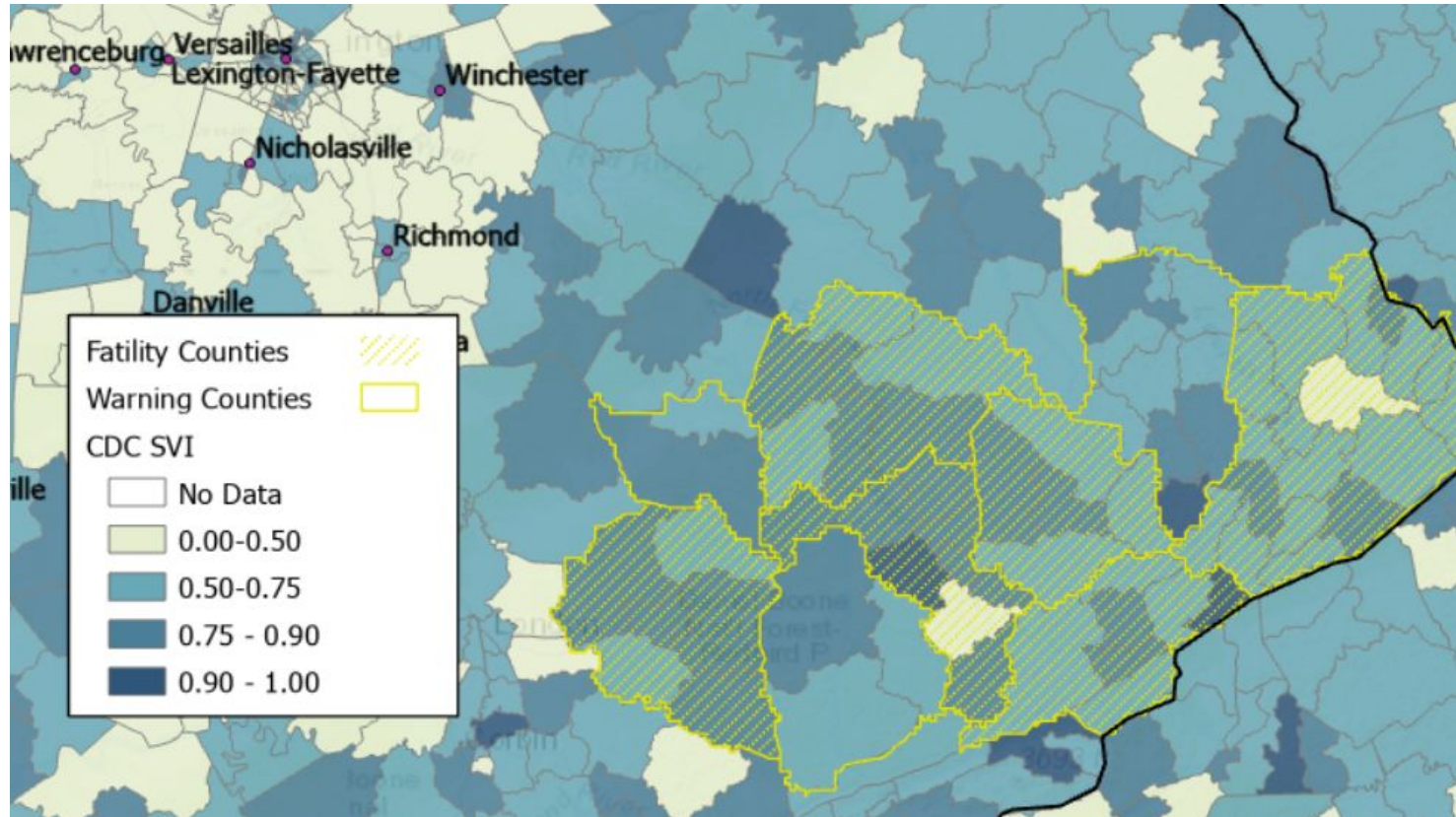


# Arabi Tornadoes: March 22 and December 14, 2022

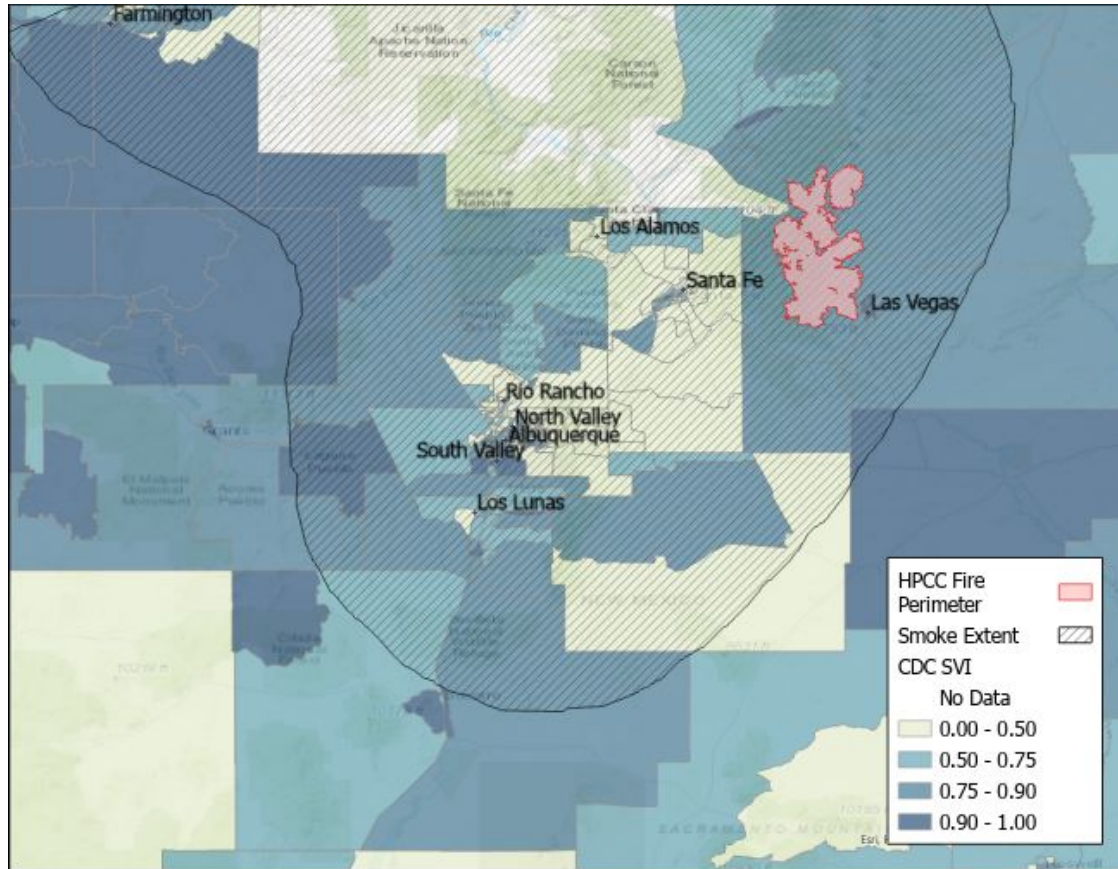




# Kentucky Floods: July 28 and August 1, 2022



# Hermit's Peak/Calf Canyon Fire: April-June 2022



# Building a Framework for Service Equity: An Ethical Warning and Forecast Communication System

Heather Lazrus, Terrific Colleagues and Community Leaders

Weather Risks and Decision in Society,  
Mesoscale and Microscale Meteorology Laboratory  
National Center for Atmospheric Research

2023 AMS NWS Partners Meeting  
8 January 2023



# Risk communication as a system and resource

- **A system** – designed to share information (e.g. forecasts and protective actions) with the mainstream
- **A resource** – lack of access to resources gives rise to vulnerability (e.g. those outside the mainstream)
- *Risk communication is necessary but not sufficient to reduce vulnerability*



# Vulnerability is...

- Perceived
  - Connected to perceptions of risk, justice, etc.
- Dynamic
  - May be different at different times
- Emergent
  - Emerges from other processes
- Political
  - Flows from differentials in power

# Many vulnerability and risk communication models/approaches, e.g.,

- Social Amplification of Risk (Kasperson et al. 1988)
- The Protective Action Decision Model (Lindell and Perry 2004)
- **Dialogue-based** weather forecasts (Sivle and Aamodt 2019)
- **Relational** Model of Risk Communication (Lejano et al. 2018):
  - As opposed to transactional
  - Face-to-face
  - Personalized and contextualized, thus increasing relevance
  - Vividness and plausibility through narrative-style communication
  - Tacit knowledge contribute to trust and empathy
- A Guide to **Communicating with Socially Vulnerable** Populations Across the Disaster Lifecycle (Campbell et al. 2020).
  - Adapt messages and message transmission pathways
- **Collaborative** Risk Communication (West et al. 2021)



# Meteorological justice

“[I]f one accepts the foundational premise that hurricane forecast products and communications should be designed to reach the widest possible audience, it is necessary to engage with existing inequities in order to fulfill that goal” Millette et al. 2020

## Concepts of justice for service equity:

- **Environmental justice**

- As a dimension of environmental justice, meteorological justice is the idea that some people are more systematically harmed by extreme weather than others

- **Epistemic justice**

- The equitable access to and understanding of information

18

□ *Meteorological justice can be developed by understanding latent capacities in risk communication as a dynamic, malleable, and relational system accessed by people with agency in their information behaviors*

# Building a Framework for Service Equity through Meteorological Justice

**What:** Equity across services

**Why:** Meteorological justice may help reduce vulnerability

**How:** - build services for diversity and inclusion

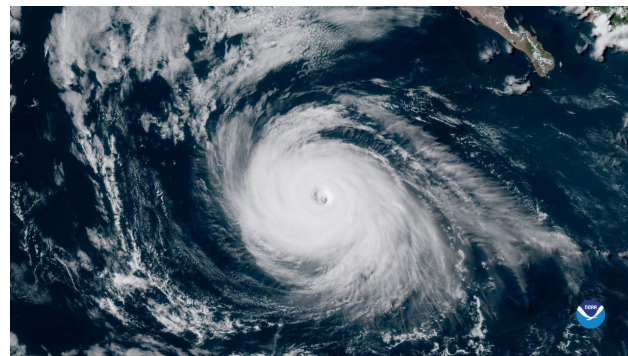
- reach out to/work with communities whose voices haven't been heard
- build trust and expand empathy
- support social networks including peer-to-peer<sup>19</sup> communication
- acknowledge tacit and local knowledge
- acknowledge history and context
- democratize access to and creation of information

# Thank you

Heather Lazrus: [hlazrus@ucar.edu](mailto:hlazrus@ucar.edu)

Weather Risks and Decisions in Society

(WRADS) website: [www.mmm.ucar.edu/wrads](http://www.mmm.ucar.edu/wrads)



## REFERENCES

- Campbell et al., 2020 Website: [https://hazards.colorado.edu/uploads/freeform/Risk%20Communication%20Guide\\_FINAL\\_508\\_Ed%20Feb%202021.pdf](https://hazards.colorado.edu/uploads/freeform/Risk%20Communication%20Guide_FINAL_508_Ed%20Feb%202021.pdf)
- Kasperson 1988 DOI: <https://doi.org/10.1111/j.1539-6924.1988.tb01168.x>
- Lejano et al. 2018 DOI: <https://doi.org/10.1175/WCAS-D-17-0050.1>
- Lindell and Perry 2004 DOI: <https://dx.doi.org/10.4135/9781452229188>
- Millette et al. 2019 DOI: [10.1175/WCAS-D-19-0011.1](https://doi.org/10.1175/WCAS-D-19-0011.1)
- Sivle and Aamodt 2019 DOI: <https://doi.org/10.1002/wea.3439>
- West et al. 2021 DOI: [10.5055/jem.0547](https://doi.org/10.5055/jem.0547)



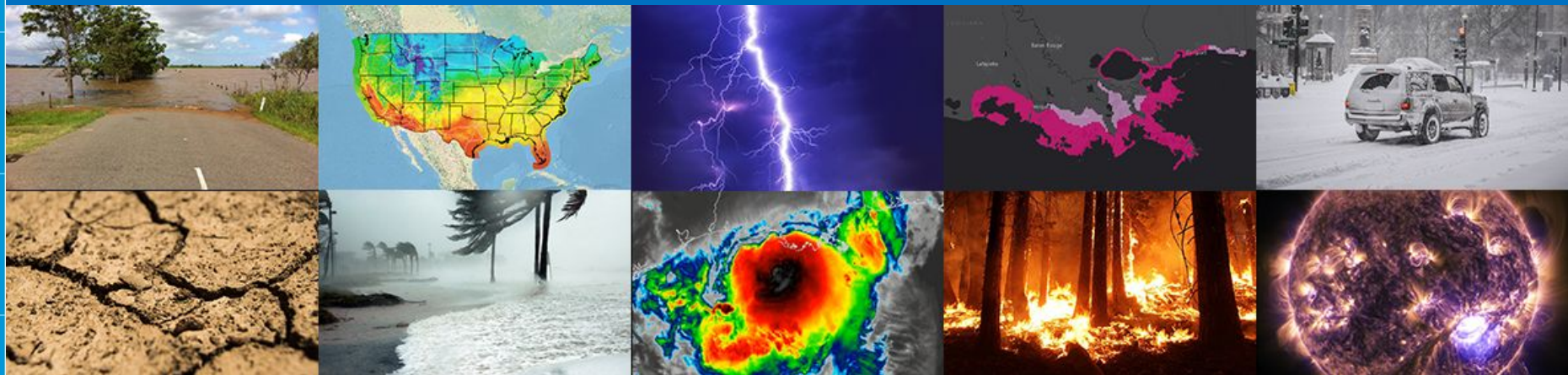


**NATIONAL  
WEATHER  
SERVICE**

# Beyond the Monolith: A Path Forward in Serving Multilingual Communities

Joseph E. Trujillo Falcón  
CIWRO/NOAA National Severe Storms Laboratory  
NWS Storm Prediction Center

January 8, 2023



# La Familia Ciefuentes y Sarat-Santos



(U.S. Department of Commerce 2013)

# El Mundo Habla Español

## Se Habla Español: # of Spanish Speakers Across the World as of 2019

1. México	125, 929,433
↑ 2. Colombia	49,834,914
3. Spain	46,698,569
4. USA	41,017,620
5. Argentina	44,938,712

(Instituto Cervantes 2019)



U.S. IN 2060:  
119,000,000  
HISPANOHABLANTES

(THAT'S NEARLY 1 IN EVERY 3  
AMERICANS)



Lima, PERÚ



Yabucoa, PR



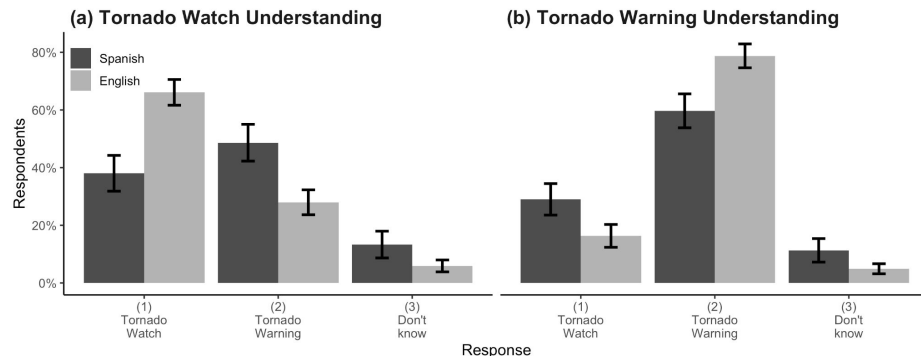
Córdoba, ARG



# Insights in Current Practices

## Tornado Watch & Warning Terminology

Agency/ Organization	Tornado Watch	Tornado Warning
NWS	Vigilancia de Tornados	Aviso de Tornado
FEMA	Amenaza de Tornado	Advertencia de Tornado
WMO	Aviso de Tornado	Alerta de Tornado



*“Where 66% of English speakers correctly identified a tornado watch with the given descriptions, only 38% of Spanish speakers were able to do so” – Trujillo-Falcón et al. (2022)*

# When Challenges Become Opportunities

- ❑ Translation efforts have been grassroot and volunteer-based across NOAA/NWS
- ❑ Educational campaigns and outreach events are critical in reaching the most underserved
- ❑ Without collaboration and integration from partners across the WWCE, efforts will continue to be inconsistent

**A Weather-Ready Nation Para  
*Todos***





"10 minutes before the tornado, we received the last warning notification in Spanish since the previous ones were all in English. [If I did not receive the notification in Spanish], I would have stayed upstairs. I was not looking at [an information source] that told me it was going to get ugly [so I was not taking protective action]."

– Rosa, Guatemalan Immigrant in Mayfield



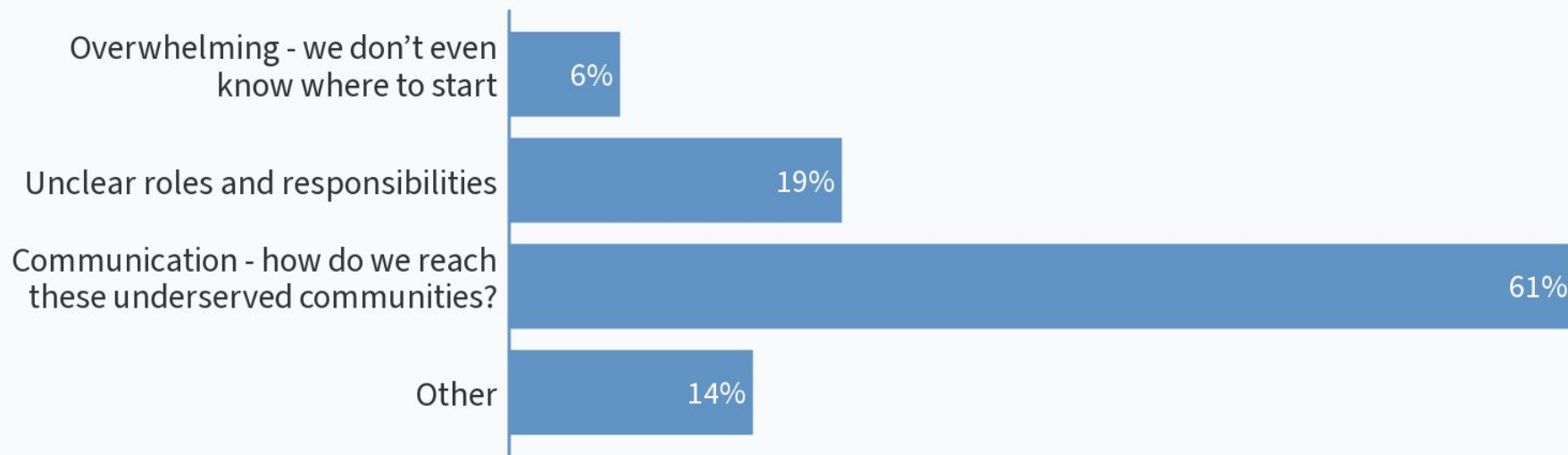
# Harnessing the Weather, Water, and Climate Enterprise Roundtable Discussions



**NATIONAL WEATHER SERVICE**



# What do you think is the biggest challenge to improving our service in underserved communities?



**Choose one word to describe what you believe to be a gap to improving services to underserved communities.**



# Challenge Statement: “I wish we could...”

Take 15 minutes and, as a table, come up with your challenge statement.

Don't focus on individual roles, but what you wish we could accomplish TOGETHER. Dream big!

Your table facilitator may help find answers to any specific questions you may have about policy, ongoing efforts, etc.

At the end of time, submit your statement through PollEv.



- *"I wish the NOAA weather radio network was more robust in terms of funding and infrastructure, and provided receivers at no cost (refreshed periodically)."*
- *"I wish we could identify and address challenges aligned with the national level "community life lines" in the face of a hazardous weather, water and/or climate."*
- *"I wish we could enable and empower each employer, each housing communities, HOA, landlord with the most time and space appropriate action and communication to convey to their workers , tenants, residents etc. Not just evacuate or shelter."*
- *"I wish we could be more nimble in our methods of communication."*





- *"I wish we could better understand human behavior."*
- *"I wish we could be more agile with social science by better leveraging weather enterprise."*
- *"I wish we had a national program that is well funded, regulated, consistent, and trusted to communicate and provide access to NWS information and data to communities."*
- *"I wish we could build a trusted and consistent feed of weather info that resonates with all global citizens."*
- *"I wish we could all work together to build trust, create relationships, communicate with everyone, to make sure everyone is safe, ready and prepared."*



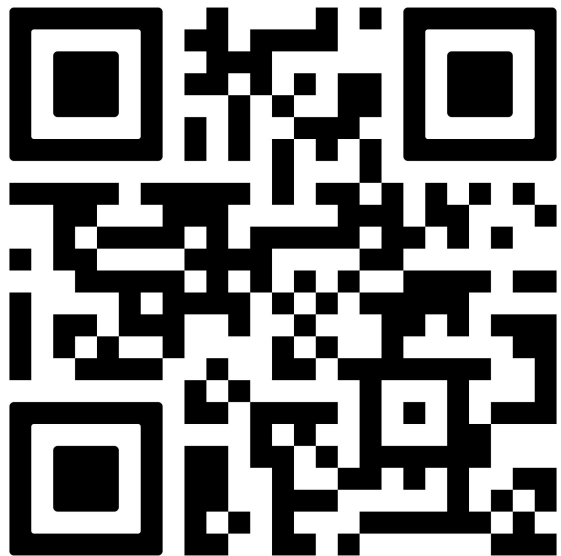
- *"I wish we could achieve unification of terminology and risk dissemination methods."*
- *"I wish we could have a centralized plan and vision developed in collaboration with WRN Ambassadors, run through the WRN program."*
- *"I wish we could easily collaborate and build trust across the enterprise and partners to empower every American to have the opportunity to be safe through persona based outreach for climate and weather events."*
- *"I wish we could break down the existing barriers to effective public/private/academic partnerships."*
- *"I wish we could measure response to messaging around weather events real time."*



- *"I wish we could allocate funding and focus that best serves the most impacted communities to create equity."*
- *"I wish we could have a consistent system to disseminate warnings and alerts."*
- *"Inter agency collaboration"*
- *"I wish we could allocate funding and focus that best serves the most impacted communities to create equity."*
- *"I wish we could provide/receive consistent products, services, support, and outreach initiatives across all regions and offices."*
- *"I wish we had a shared official list of local trusted champions whose message is heard by the public."*



# THANK YOU!!



**Key NWS Presentations**



**weather.gov survey**



**NATIONAL WEATHER SERVICE**