



NCST Investigation of the Champlain Towers Collapse

Judith Mitrani-Reiser, Lead Investigator

Glenn Bell, Associate Lead Investigator

David Goodwin, NCST Investigator

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Kamel Saidi, NCST Investigator

Chris Segura, NCST Investigator

Jonathan Weigand, NCST Investigator

Long History of Disaster Studies at NIST

Earthquakes	Hurricanes	Construction & Building	Tornadoes	Fires
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San Fernando, CA (1971)
 Mexico City, Mexico (1985)
 Loma Prieta, CA (1989)
 Northridge, CA (1994)
 Kobe, Japan (1995)
 Kocaeli, Turkey (1999)
 Maule, Chile (2010)
 Christchurch, NZ (2011)

***Ongoing Studies**
NCST Investigations

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Camille, MS/LA (1969)
 Alicia, Galveston, TX (1983)
 Hugo, SC (1989)
 Andrew, FL (1992)
 Fran, NC (1996)
 Mitch and Georges, LAC (1998)
 Katrina and Rita (2005)
***Matthew, NC (2016)**
 Harvey, TX (2017)
***Maria, PR (2017)**

Skyline Plaza Apartments, Bailey's Crossroads, VA (1973)
 Willow Island Cooling Tower, WV (1978)
 Kansas City Hyatt Regency, Kansas City, MO (1981)
 Riley Road Interchange, East Chicago, IN (1982)
 Harbor Cay Condominium, Cocoa Beach, FL (1981)
 L'Ambiance Plaza, Hartford, CT (1987)
 Ashland Oil Tank Collapse, Floreffe, PA (1988)
 U.S. Embassy, Moscow, USSR (1987)
 Murrah Federal Building, Oklahoma City, OK (1995)

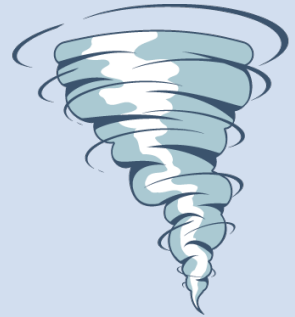
World Trade Center Disaster, New York, NY (2001)

Dallas Cowboys Indoor Practice Facility, May 2009

***Champlain Towers South, Surfside, FL (2021)**



Jarrell, TX (1997)
 Spencer, SD (1998)
 Oklahoma City, OK (1999)
Joplin, MO (2011)
 Moore OK (2013)



DuPont Plaza Hotel, San Juan, PR (1986)
 First Interstate Bank Building, Los Angeles, CA (1988)
 Loma Prieta Earthquake, CA (1989)
 Hillhaven Nursing Home (1989)
 Pulaski Building, Washington, DC (1990)
 Happyland Social Club, Bronx, NY (1990)
 Oakland Hills, CA (1991)
 Watts St, New York City (1994)
 Northridge Earthquake, CA (1994)
 Kobe, Japan (1995)
 Vandalia St, New York City (1998)
 Cherry Road, Washington, DC (1999)
 Keokuk, IA (1999)
 Houston, TX (2000)
 Phoenix, AZ (2001)
 Cook County Administration Building Fire (2003)
The Station Nightclub, RI (2003)
 Charleston, SC, Sofa Super Store Fire (2007)
 Witch Creek & Guejito, CA, WUI Fire (2007)
 Amarillo, TX, WUI Fire (2011)
 San Francisco, CA (2012)
 Gatlinburg, TN WUI (2016)
 Fuse-47, MD (2017)
***Camp Fire (2018)**

National Construction Safety Team (NCST) Act

- **Public Law 107-231, Oct. 01, 2002**
 - “...provides for the establishment of Teams to assess building performance and emergency response and evacuation procedures in the wake of any building failure that has resulted in substantial loss of life or that posed significant potential of substantial loss of life.”
- **Unique to NCST**
 - subpoena authority
 - NIST Investigator Credentials
 - Federal Advisory Committee (up to 12 appointed members)
 - Follow through on recommendations and report(s) to Congress



World Trade Center
(2001-2005)



Station Nightclub Fire
(2003 - 2005)



Joplin Tornado
(2011 - 2014)

Active NCST Investigations

Hurricane Maria (Puerto Rico)
September 20, 2017



Source: NOAA

Champlain Towers South (Surfside, FL)
June 24, 2021



Source: NIST

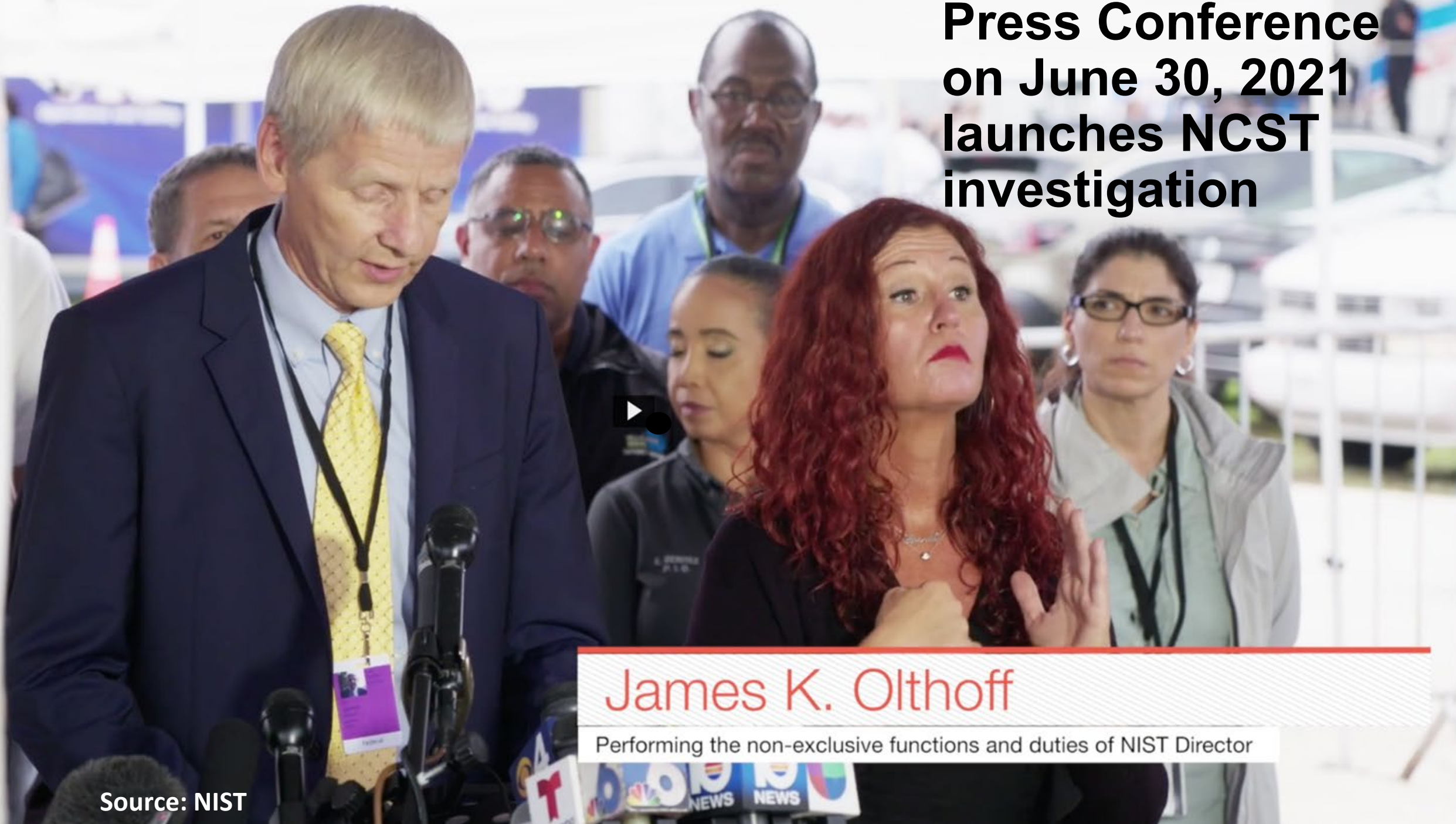


Response effort after building collapse

First specimens
of *building
evidentiary
debris* are
extracted days
after collapse



Press Conference on June 30, 2021 launches NCST investigation



James K. Olthoff

Performing the non-exclusive functions and duties of NIST Director



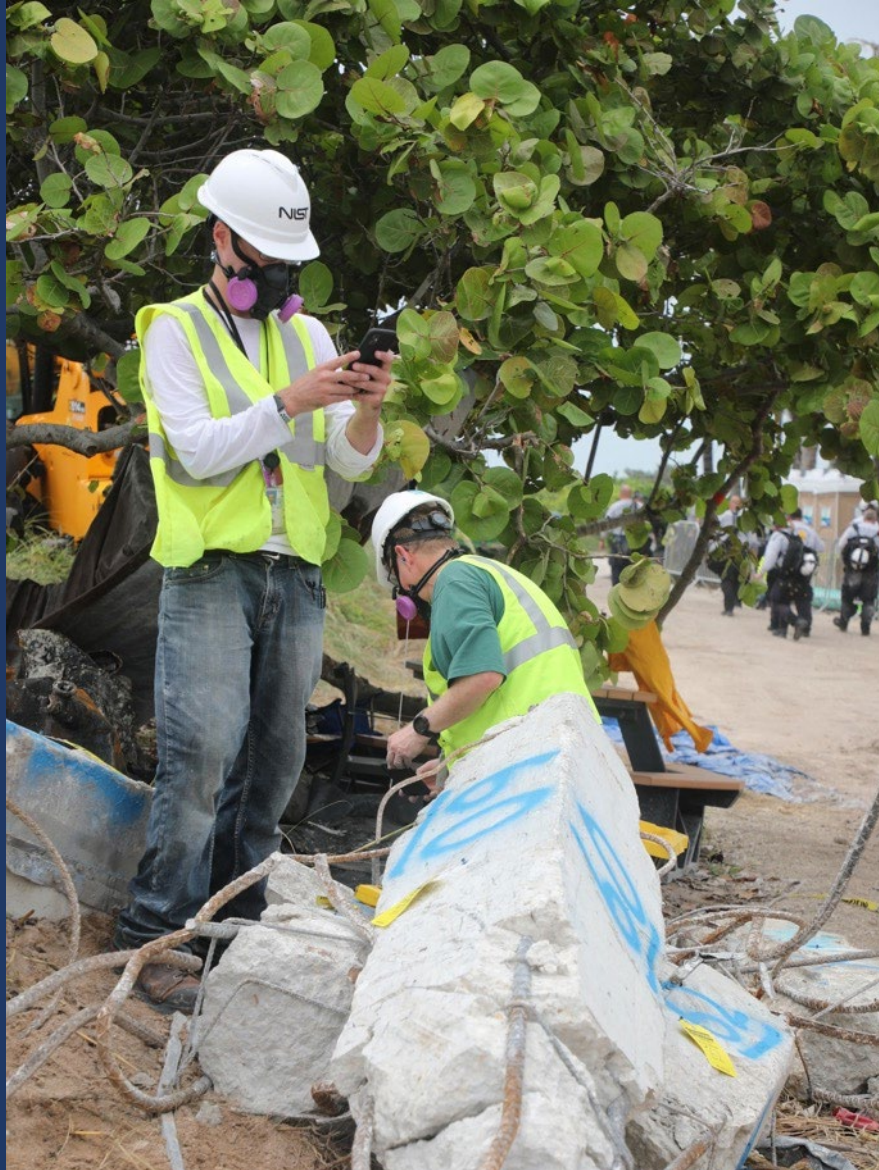
**NIST
engineers
help identify
evidence
from a safe
distance**

Source: NIST



Experts from FEMA, NSF, USGS, USACE, FSU, Miami-Dade Fire Rescue, and VA Beach Fire Dept. support remote sensing activities

NIST establishes evidence tagging protocols with the Miami-Dade Police Department and US&R Task Forces



DISASTER & FAILURE STUDIES

Champlain Towers South Collapse

News and Updates

Projects

National Construction
Safety Team

Champlain Towers South Collapse

NIST encourages members of the public to submit any information, including video, photos or other documentation, that might help the investigation via the [NIST Disaster Data Portal](#)

Data Portal for the NIST Disaster and Failure Studies Program

At this time NIST is only accepting information/data (including photos, videos, and other documentation) from authors, creators and/or copyright owners. If you want to submit information/data but did not yourself write or create the material (for example, you did not take a photograph yourself but got it from someone else) or are not the copyright owner, please contact the Disaster and Failure Studies Program at Disasters@nist.gov. Please submit a description of the information/data; do not submit information/data itself to this email address.



Source: WSVN



NIST waited for collapsed site to be fully cleared, dewatered, and safe before entering.

Source: NIST



NIST conducts visual inspection and non-destructive testing of slab, with USACE



NIST conducts a subsurface investigation, with the USACE

Source: NIST

NIST announces investigative team on Aug 25th



Champlain Tower NCST Investigation
Judith Mitrani-Reiser, Lead Investigator
Glenn Bell, Associate Lead Investigator

**Project One:
Building and
Code History**

Leads:
**Jonathan
Weigand (NIST)**

**James Harris
(Consultant)**

**Project Two:
Evidence
Preservation**

Leads:
**David Goodwin
(NIST)**

**Chris Segura
(NIST)**

**Project Three:
Remote Sensing
Analysis**

Leads:
**Kamel Saidi
(NIST)**

**Georgette Hlepas
(USACE)**

**Project Four:
Materials Science**

Leads:
**Scott Jones
(NIST)**

**Ken Hover
(Cornell)**

**Project Five:
Geotechnical
Engineering**

Leads:
**Sissy Nikolaou
(NIST)**

**Youssef Hashash
(Consultant)**

**Project Six:
Structural
Engineering**

Leads:
**Fahim Sadek
(NIST)**

**Jack Moehle
(UC Berkeley)**

Congress provides \$22M in funding supplemental on Oct 1st



TITLE II

DEPARTMENT OF COMMERCE

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

SCIENTIFIC AND TECHNICAL RESEARCH AND SERVICES

For an additional amount for “Scientific and Technical Research and Services” for necessary expenses to carry out investigations of building failures pursuant to the National Construction Safety Team Act of 2002 ([15 U.S.C. 7301](#)), \$22,000,000, to remain available until September 30, 2023.

H.R. 5305, Division B



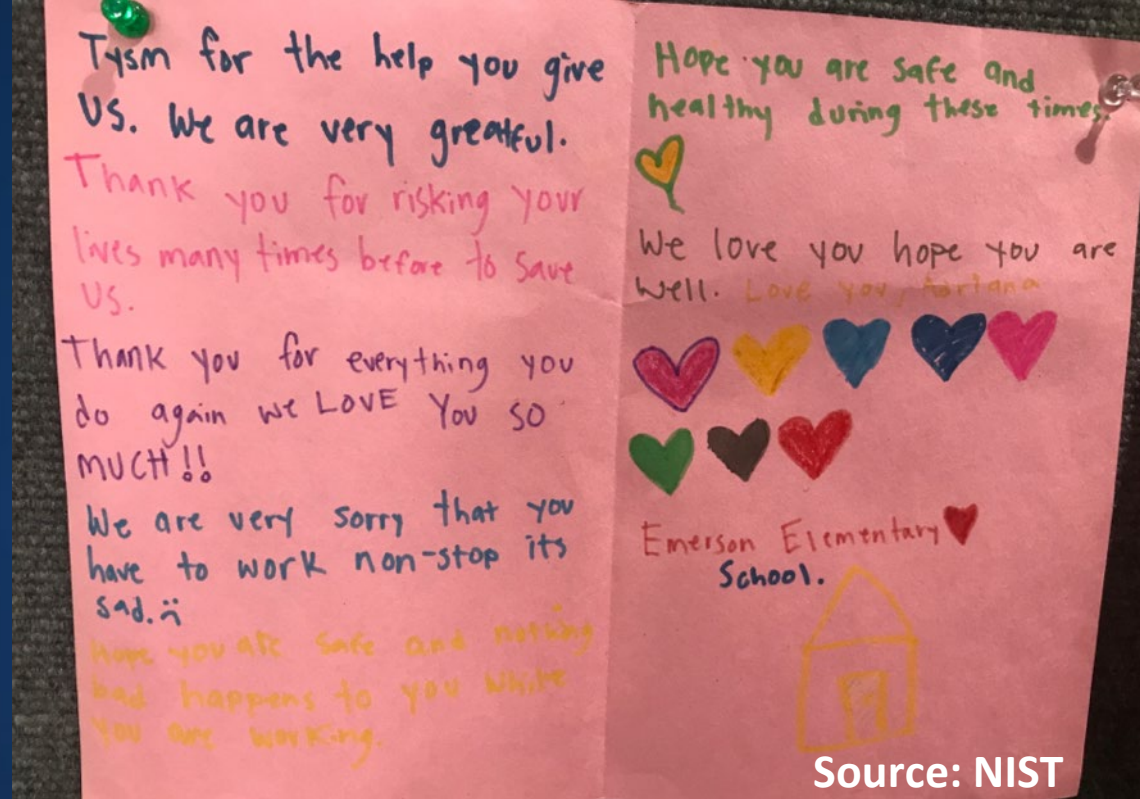
Surfside Wall of Hope & Memorial

STRONG FOR

NIST's investigation will include recommendations for improvements to our codes, standards and practices, so that a tragedy like this never happens again

AMD

Malcolm Ammons
Jason Averill
Regina Avila
Gwynaeth Broome
Tanya Brown-Giammanco
Jon Bray
Matt Bundy
Tony Chakalis
Tzong Hao Chen
Joannie Chin
Chris Clavin
Nicole Cooper
Ben Davis
Maria Dillard
Kevin Drake
FEMA
David Frost
John Furgerson
Peter Gale
LeeAnn Ginsburg
Millie Glick
GMD
Jenn Helgeson
Emina Herovic
Matt Hoehler
Jo Johnson
Vincent Lee
Eric Lin
Melissa Logan
Liz Mackey



Keith Martin
Carmen Martinez
Terri McAllister
Miami-Dade County (Miami Beach, Surfside)
Adrian Mitchell
Andrew Mundy
Cartier Murril
Aron Newman
NSF-RAPID Center
OCC
Jim Ohltoff
PAO
Jay Peterson
Long Phan
RACO
Liz Reinhart
Ami Reisinger
Christie Rice
Sharon Reinhart
Dan Sawyer
Joyce Scott
Matthew Speicher
USACE
USGS
VA Beach Fire Dept (Howie Stockhowe)
Laslo Varadi
Ann Virts
Emily Walpole
Al Wavering
Wing Wong
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