iCAR PHASE IV:
REPORTS FROM THE FRONTIER II – LESSONS LEARNED FROM HURRICANES: PREPARATION, RECOVERY AND RESILIENCE

PRESENTED BY:

THANK YOU SPONSORS:

Unitarian Universalist Fellowship (UUUF)

Day 1: October 30

AGENDA
Thank You Sponsors!
There are NINE tropical storms wrapping around the world right now (Sep 11, 2018)
Florence and Michael

(upper left) https://radaronline.com/photos/hurricane-florence-photos/
Workshop Overall Goal

• Lessons Learned from Hurricanes: Preparation, Recovery and Resilience (2018)

Past workshops
• Coastal Adaptation and Resilience in Tampa Bay (2015)
• Solutions for Coastal Cities: Resilience and Adaptations in Tampa Bay (2016)
• Social Aspects of Resilience: identifying key areas of social vulnerability and enhancing resilience (2017)
Key Workshop Objectives

• Explore lessons learnt
• Explore strategies to increase information flow
• Explore neighborhood scale innovation and challenges in social resiliency
  • Structural berries
  • Resiliency hubs
• Exploring health resilience and emotional trauma
• Explore effective messaging and challenges
Key Workshop Topics

- Climate Science: Storm Predictions and Impacts
- Lessons learned from FEMA and the Red Cross, especially in regard to providing assistance to vulnerable populations
- Reports from other frontline responders about what Hurricane Irma taught them about what works, what needs to be improved, and how to advance our resiliency and recovery.
- Identifying structural barriers to recovery and resilience
- Building health resilience and addressing emotional trauma
- Building strength through social networks & innovative communication
Ideal Path for Policy Formulation and Decision Making

Economic & Technological Feasibility
Public Awareness and Knowledge
Decision Making Levels

(individual, Family, Community, Province/State, Country)

Actual Path & Complexity of Decision Making and Policy Formulation
Measured Data

Atmospheric CO₂ at Mauna Loa Observatory
Scripps Institution of Oceanography
NOAA Earth System Research Laboratory

Global Land-Ocean Temperature Index

Coastal Tide Gauge Data

Left: [https://www.esrl.noaa.gov/gmd/ccgg/trends/full.html](https://www.esrl.noaa.gov/gmd/ccgg/trends/full.html)
Center: Credit CSIRO. Coastal Tide gauge data
Right: Data source: NASA’s Goddard Institute for Space Studies (GISS). Credit: NASA/GISS
Heat Patterns

2017 experienced double the number of hot days!
What is at stake here!

Hurricane Florence damage estimated at $17 billion to $22 billion — Moody's Analytics

Published Mon, Sep 17 2018 - 4:40 PM EDT | Updated Mon, Sep 17 2018 - 7:30 PM EDT

What is at stake here!

The Damage Costs From Hurricane Michael Could Top $4.5 Billion

BRIEFING • HURRICANE MICHAEL

Irma may have caused $42.5 billion to $65 billion in property damage, report says

• varies widely for how much $65 billion to $80 billion in total impact to homes, according to Catastrophe Model
• between 3% to 3% of homes in Hurricane Katrina's path have sustained significant damage, according to data
• Floridians and people in the Carolinas are likely to see about $15 billion in damage, with much of that covered by flood insurance
• About 70% of homes in the Carolinas are likely to sustain significant damage, with much of that covered by flood insurance

Angelica Landino
CNBC Staff
cnbc.com
Social Vulnerability vs. Biophysical Vulnerability

Sources:
4. Bing images (left)
Generic Process to Increase Preparedness, Adaptation and Resilience

Level of information need varies depending on which level a decision is being made:
- Individual
- Family
- Neighborhood
- City
- County & State

Access to Information
- Access to Resources
- Social Capital and Social Network
- Post Disaster Comprehensive Recovery Plan

Leads to a Resilient Community
Generic Process for a Comprehensive Plan

- Pre-disaster Need Assessment & Action Plan
  - Understanding unique needs at neighborhood level

- During Disaster Action Plan
  - Neighborhood Level Leadership, Building Social Capital

- Post-disaster Need Assessment & Action Plan
Unique Needs and Asset Inventory

- Biophysical
- Socioeconomic
- Environmental Hazard & Chemical Exposure risks
- Protection of Environmental Assets
- Health related
- Resource and Information

Pre-Disaster Action Plans

- Comprehensive vulnerability assessment at neighborhood level
- Assessment of Alignments: Need, Resources and Policies for preparedness, recovery & resilience
- Neighborhood level Customized Information
- Neighborhood level leadership tree and capacity building
- Health related support: Special need, SNAP, Disability

Post-Disaster Action Plans

- A comprehensive regional redevelopment plan aimed to reduce impacts of disaster
- Workforce Development & Social Capital Development Plan
- Hazard and Chemical Spill Response Plan
- Ecological Asset Recovery Plan

Simplified possible implementation steps
iCAR Research Project (Tales of selected neighborhoods): B. Dixon and R. Johns

http://www.usfsp.edu/icar/files/2017/08/ICAR_Project.pdf
Food for Thought!

- How can we learn from Harvey, Irma, Maria, Florence and Michael to prepare and plan to ensure marginalized communities have access to resources
  - What are the effects of disaster related migration
  - Elderly care
- How we can plan to redevelop after a devastation
  - Urban landscape and storm surge protection
  - Job opportunities at neighborhood level
  - Restore environmental quality and ecological assets
- How we can fundamentally shift the Decision Making Process
  - Innate Engineering (Myer and Kunreuther, 2017)
    - Myopia, Amnesia, Optimism, Inertia, Simplification and Herding (following others)

All these require a proactive plan and forethoughts so we can respond and recover in minimum time possible. We must do all we can to avoid the mistakes of Katrina in this region.
Thank you!

Looking forward to a productive workshop