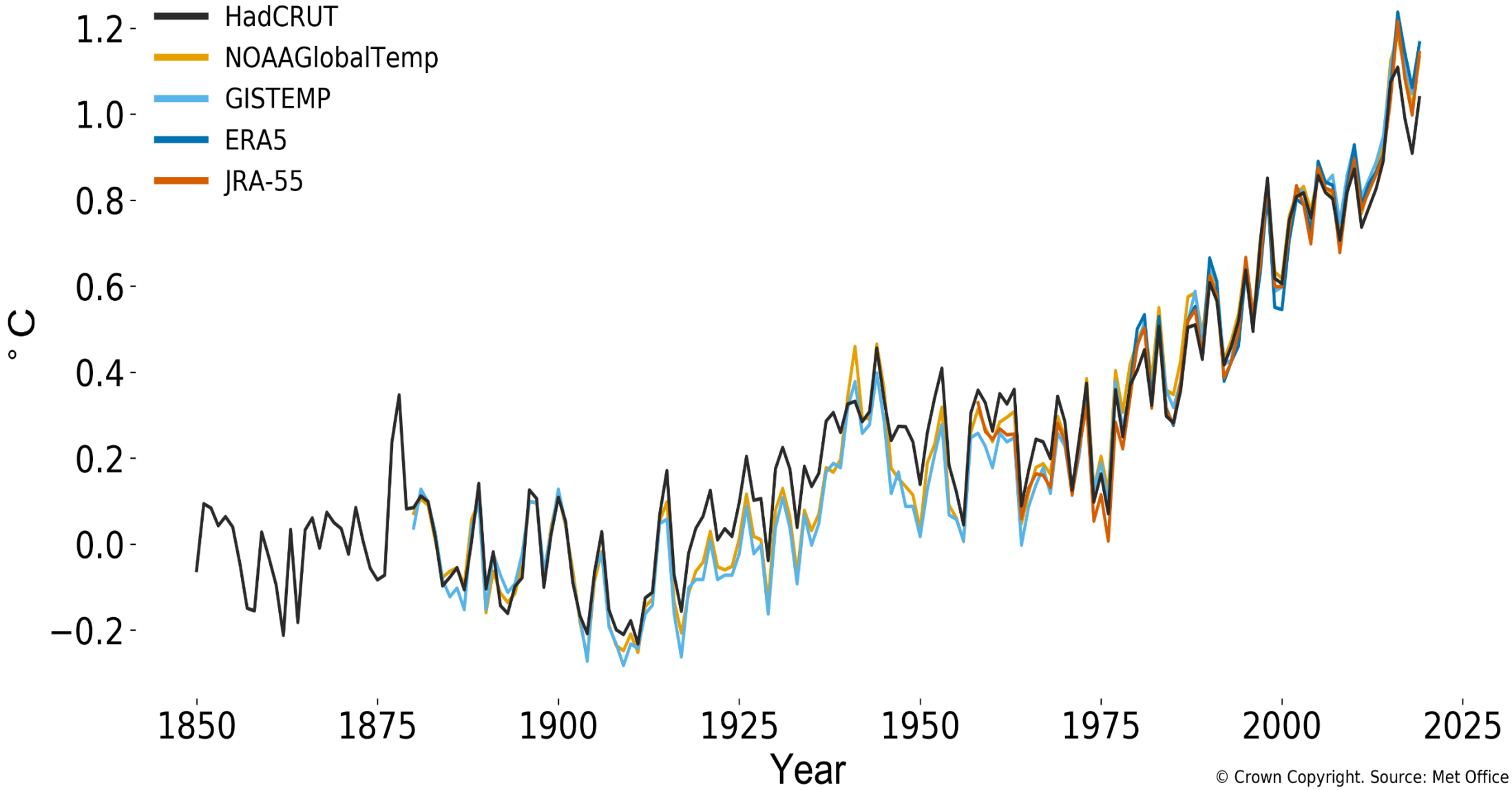
Climate Change and Public Health

Cheryl L. Holder, M.D.,FACP
Interim Executive Director
Florida Clinicians for Climate Action
08/03/2023
Broward County

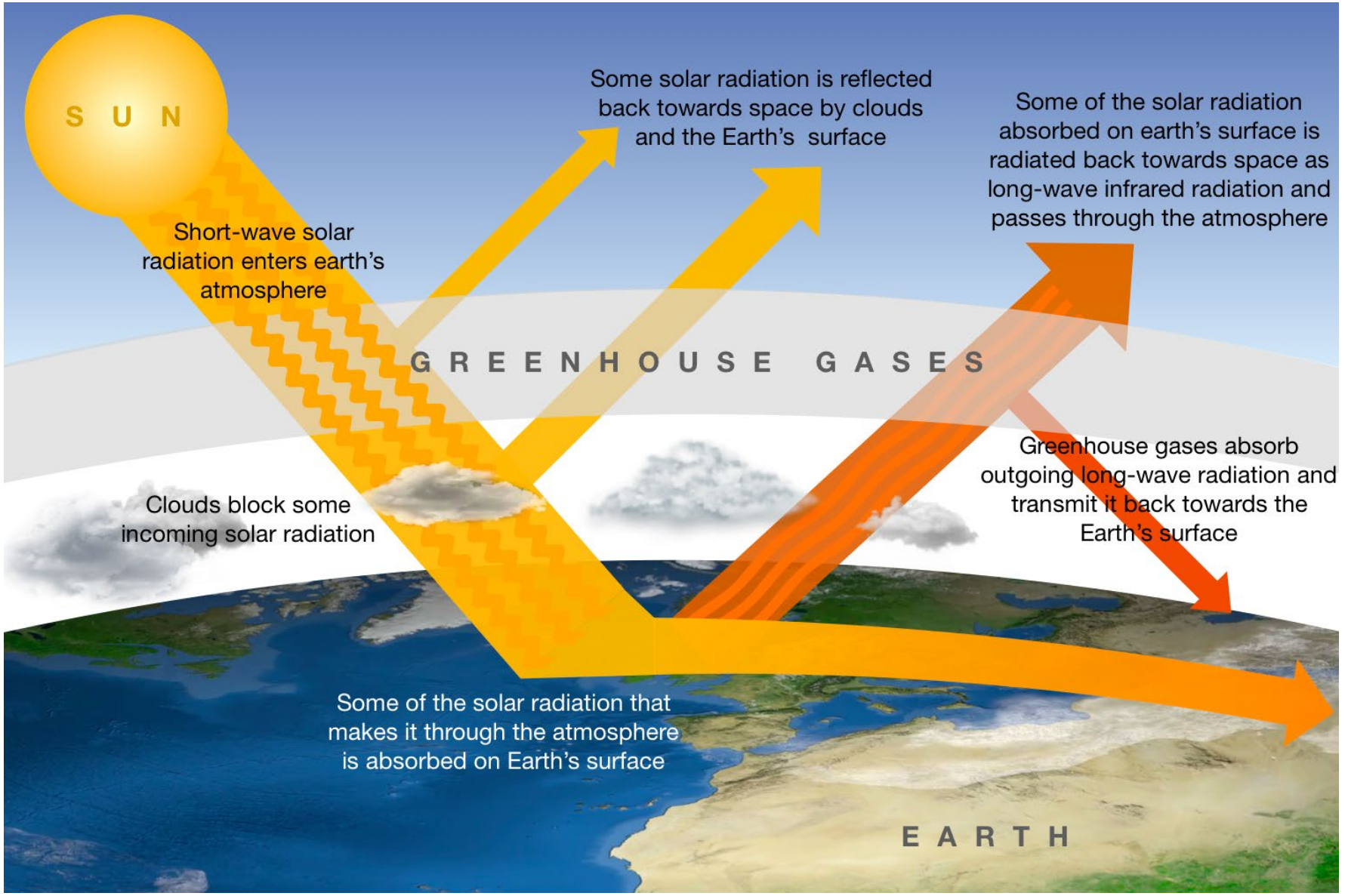
Met Office

Global mean temperature difference from 1850-1900 (°C)



The Earth's Atmosphere

- Carbon Dioxide (CO_2)
- Methane, nitrous oxide, and fluorinated gases are the other main GHG that retain heat
- Greenhouse gases (GHG) usually compared in potency of ability to trap heat to CO_2



Bernstein, Aaron. *The Health Effects of Climate Change.* HarvardX, https://pll.harvard.edu/course/health-effects-climate-change.

Earth's Warming

- We are already at 1.01 degree Celcius (2 degrees Fahrenheit) rise since preindustrial time (1880)" https://www.ipcc.ch/sr15/chapter/chapter-1/

- "2 degree Celcius warmer world still represents what scientists characterize as a profoundly disrupted climate with fiercer storms, higher seas, **animal and plant extinctions**, disappearing coral, **melting ice** and more people dying from heat, smog and infectious disease. Nature. Com 4/2022

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Some People Face Greater Risk

- **All people are at risk. Some face greater risk:**
  - Children
  - Student who play sports
  - Pregnant women
  - Elderly individuals
  - People with chronic illnesses and allergies
  - People with limited resources
  - People who work or play outdoors

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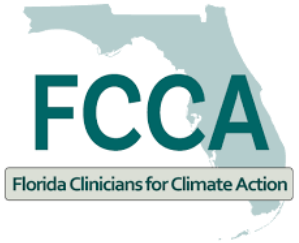
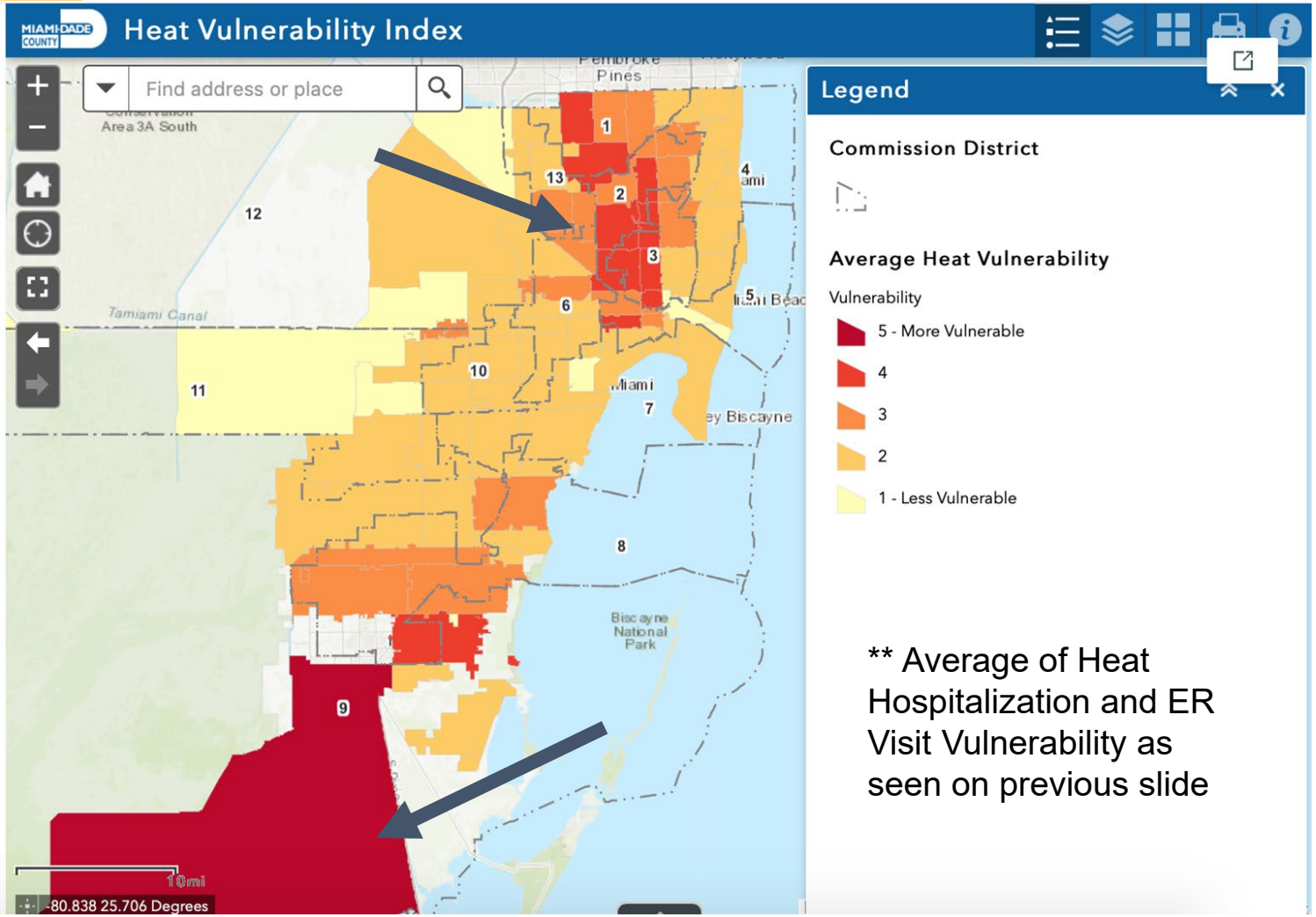


Adrienne **Arsht-**
Rockefeller Foundation
Resilience Center

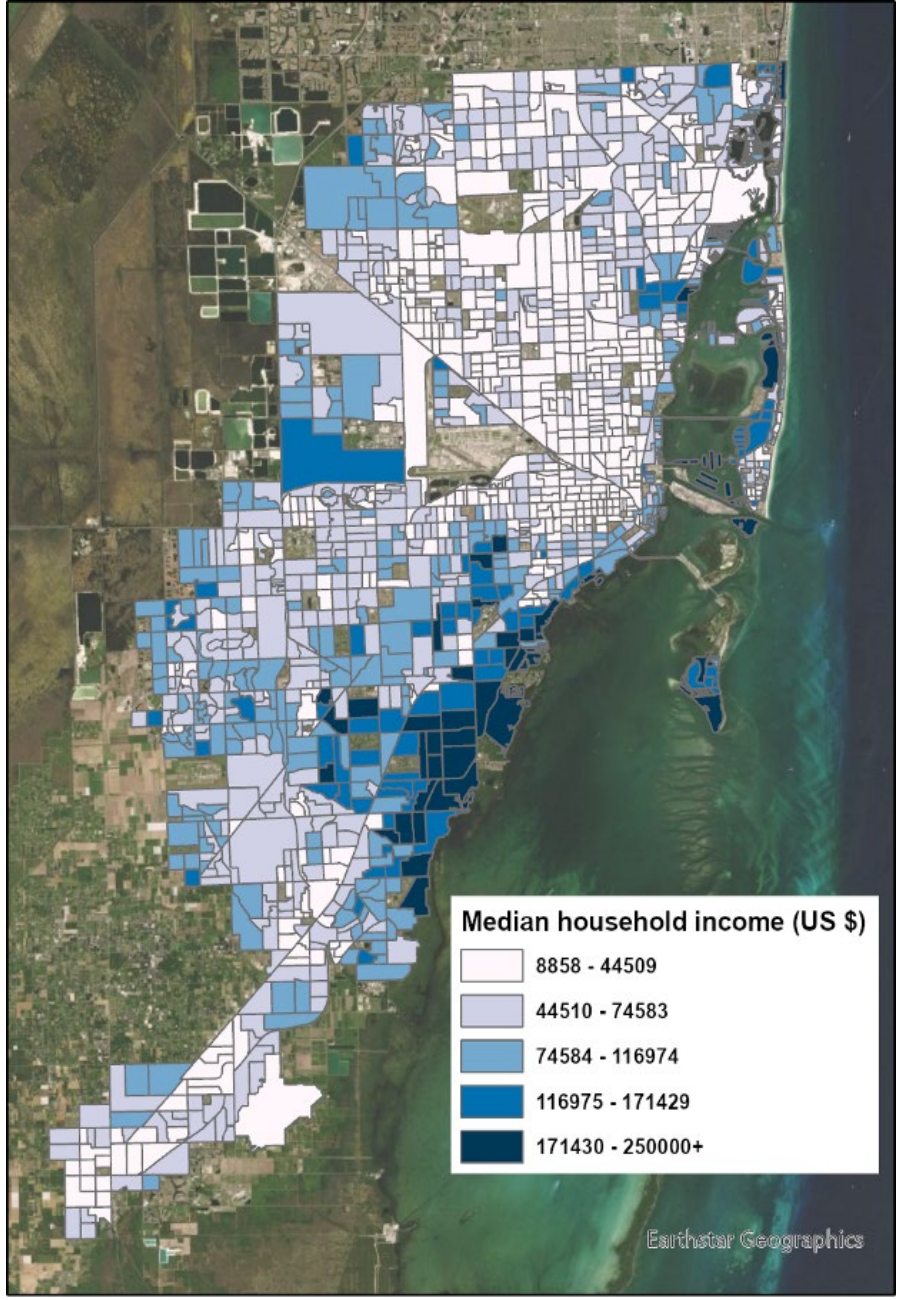
THE WOMEN'S FUND
MIAMI-DADE

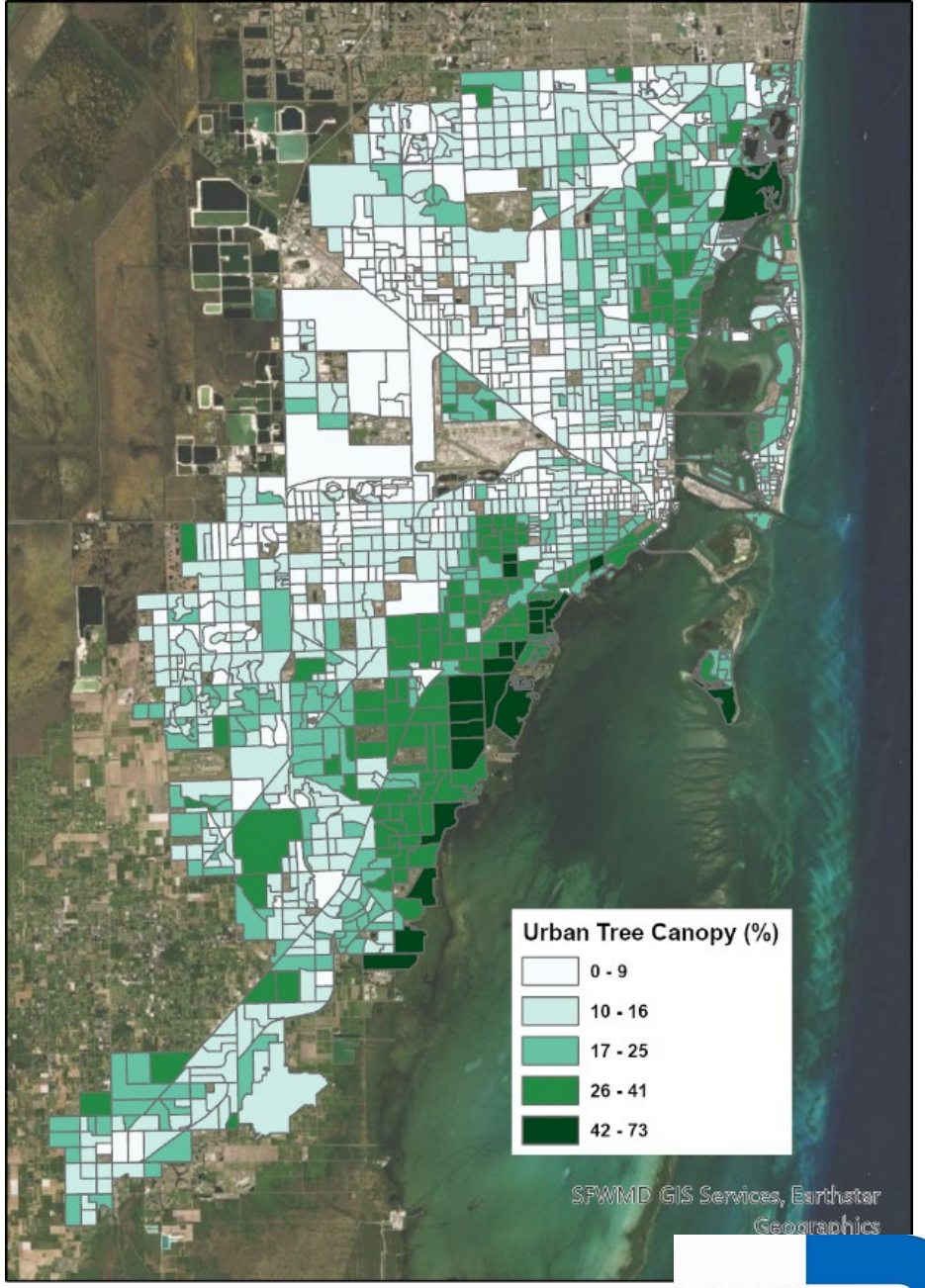
Collaboration is a critical asset

ArcGIS StoryMap: Vulnerability



- Interact with the Heat Vulnerability Index web mapping application to identify vulnerable zip codes in Miami-Dade
- Homestead, Florida City, Hialeah, Miami, Opa-Locka, and Miami Gardens





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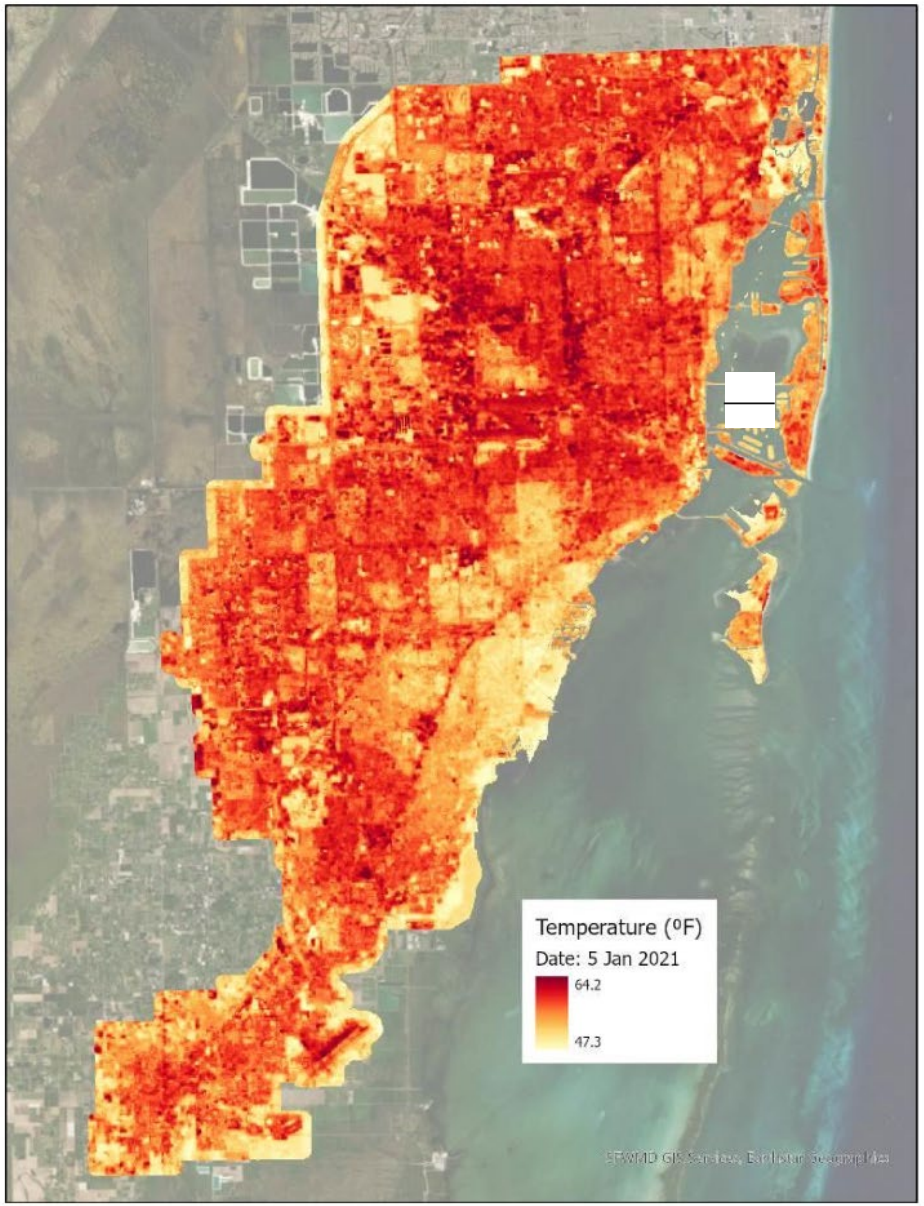
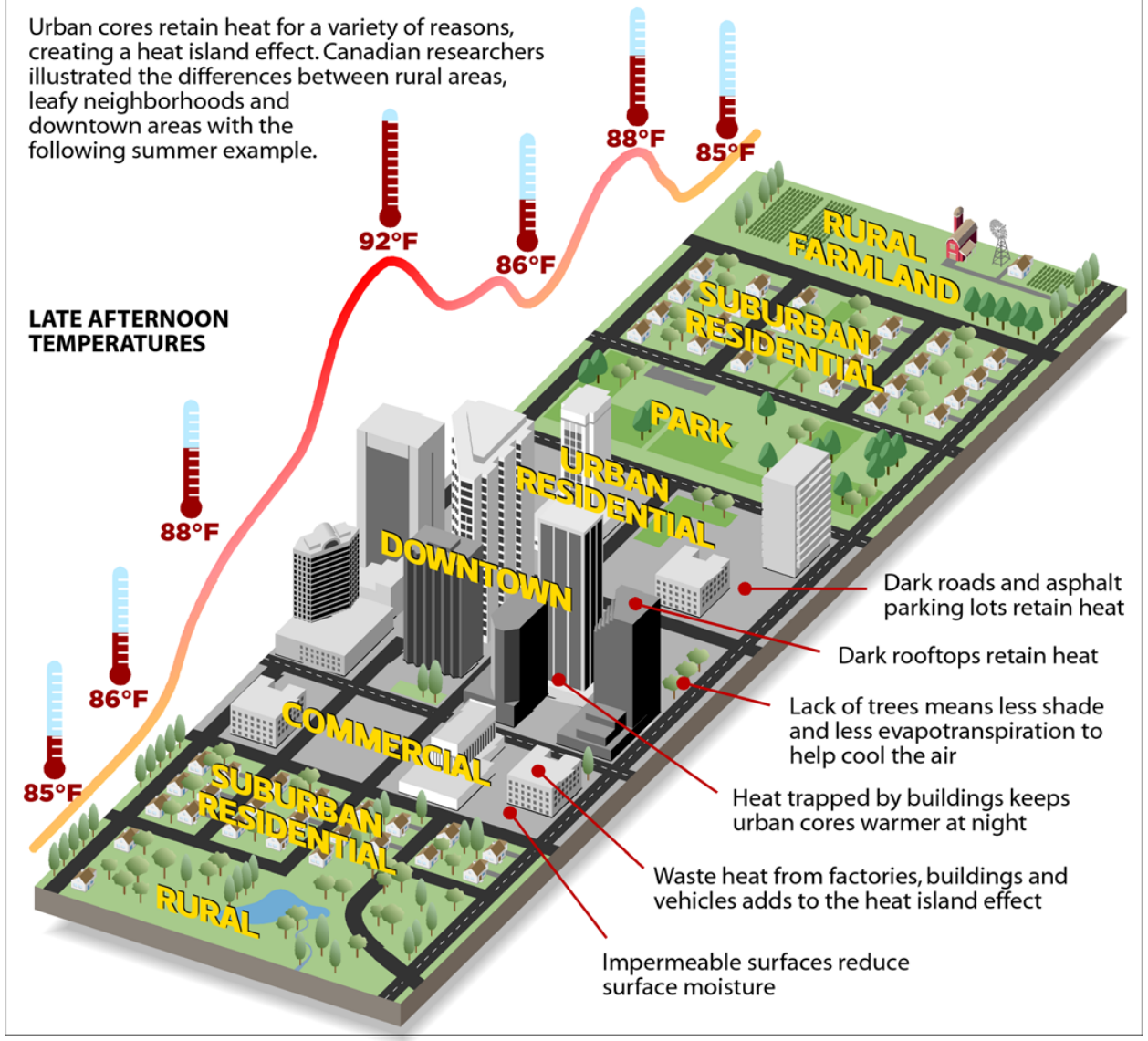


Urban Heat Island Effect

Urban cores retain heat for a variety of reasons, creating a heat island effect. Canadian researchers illustrated the differences between rural areas, leafy neighborhoods and downtown areas with the following summer example.



SOURCE: D.S. Lemmen and F.J. Warren, Climate Change Impacts and Adaptation

PAUL HORN / InsideClimate News

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MIAMI-DADE COUNTY				
Heat Index above	Historical (1971-2000)	By midcentury (2036-2065)	By late century (2070-2099)	By late century, if we limit warming to 2℃ (2070-2099)
90℉ ------	154 days	187 days	200 days	183 days
100℉ ------	41 days	134 days	166 days	115 days
105℉ ------	7 days	88 days	138 days	60 days
Off the Charts	0 days	1 days	14 days	0 days

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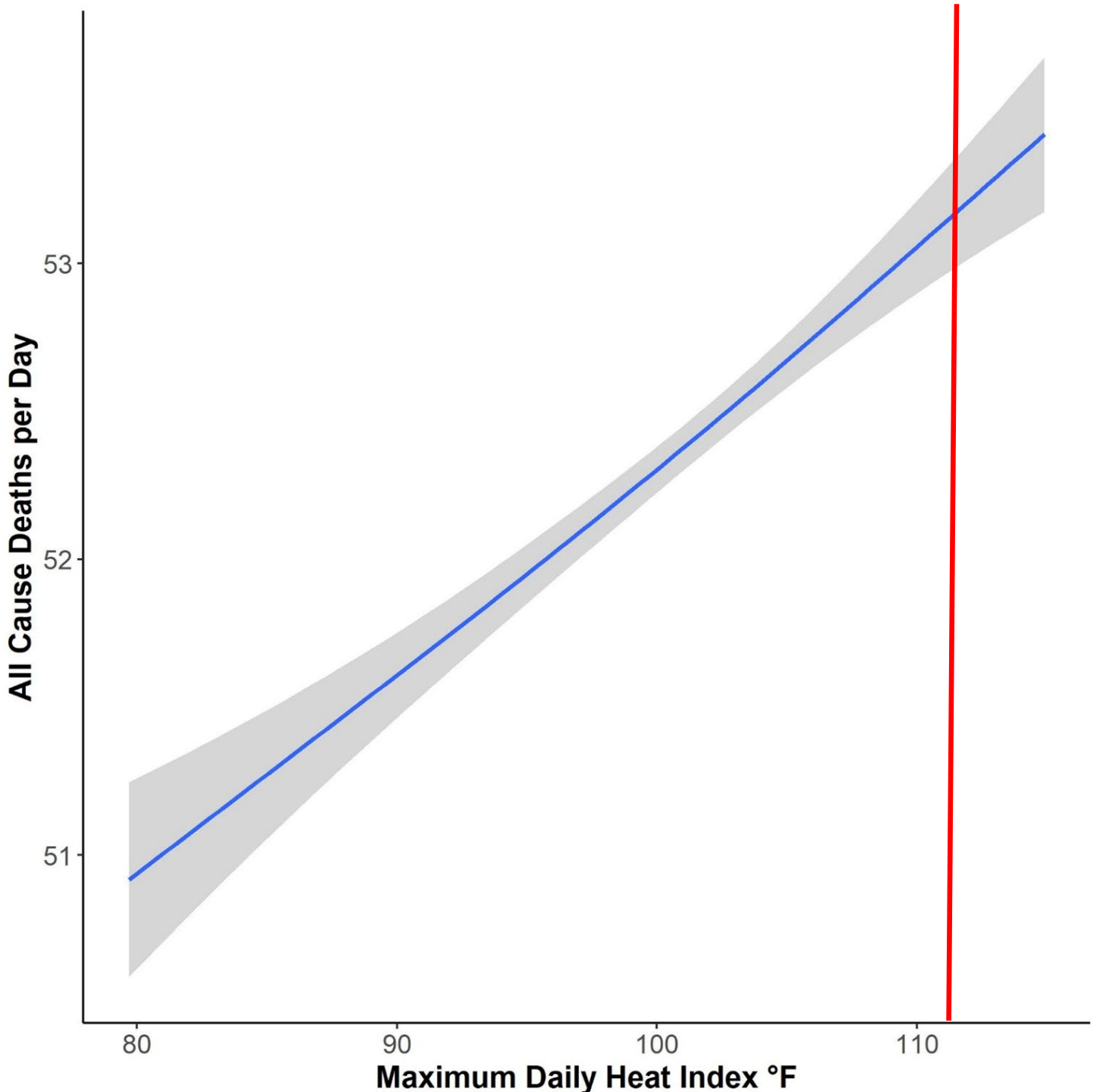

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Heat Related Illness Costs

If no action is taken

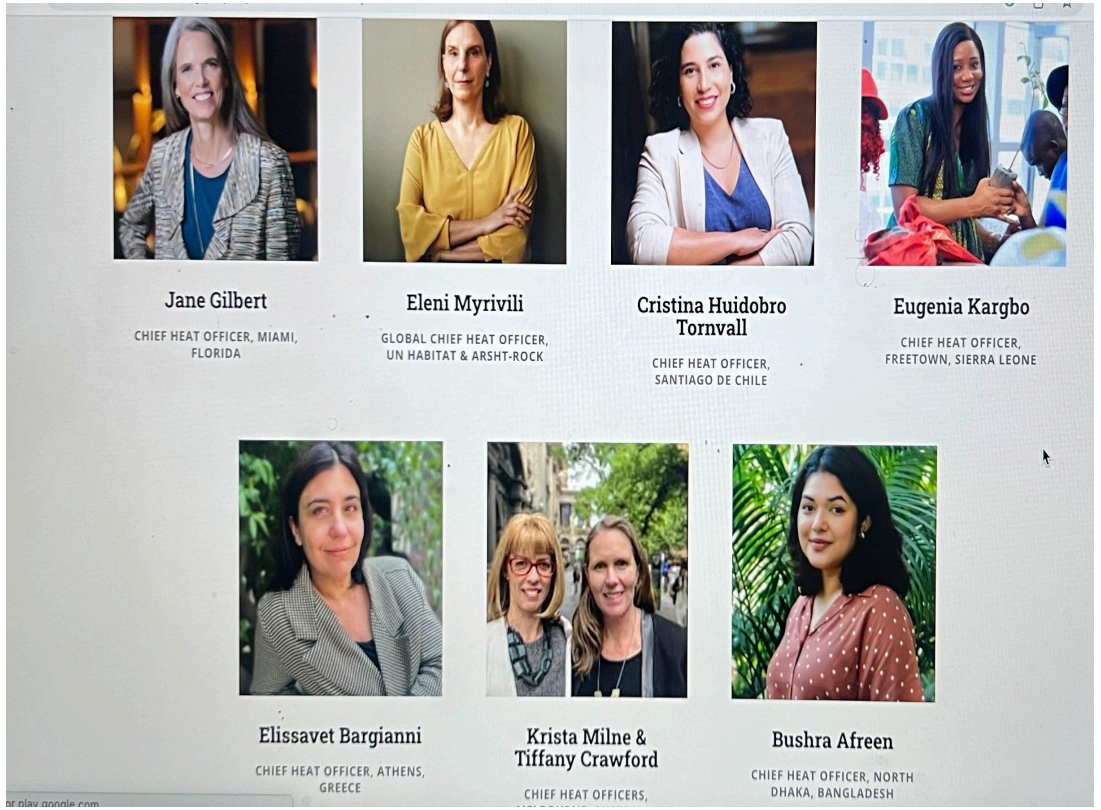
Hospitalization

- $5,017 to $17,047

Emergency Department

- $3624 to $5800

Heat Officers



Climate & Heat Health Task Force

Goals reached:

- Created workshops to gather info from different stakeholders, community priorities and opportunities

The Task Force will be made up of appointed members representing policy makers, scientific experts, and health care professionals as well as two citizen members who will ensure community voices are heard and lifted up in the formation of the heat plan.

Workshops available at:

https://miamifoundation.org/extremeheat/

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Extreme Heat Action Plan

Goal 1: Inform, Prepare and Protect People

Goal 2: Cool our Homes and Emergency Facilities

Goal 3: Cool our Neighborhoods

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Goal 1: Inform, Prepare and Protect People

Foster healthy and resilient communities by bolstering outreach and education efforts, improving extreme heat warning systems and emergency protocols, protecting outdoor workers and building the capacity of healthcare practitioners to identify and respond to heat vulnerability and illness in their patients.

1. **Build on the Success of the Heat Season Campaign**
2. **Enhance Messaging and Protocols**
3. **Engage and Support Employers of Outdoor Workers**
4. **Seek Worker Protections at all Levels of Government**
5. **Engage and Prepare Healthcare Practitioners**
6. **Leverage Urban Heat Research Group for Continued Learning**

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Goal 2: Cool our Homes and Emergency Facilities

Improve access to efficient and reliable cooling in homes and to a place to cool off in the event of a power outage.

7. Seek Increased Support for Efficiency and Cooling Upgrades
8. Advocate for Heat Safe and Affordable Housing Policies
9. Improve Coordination and Expand Outreach on Energy Efficiency
10. Invest in Energy Resilience at Evacuation Shelters
11. Ensure Compliance with Assisted Living/Nursing Home Generator Rule
12. Incorporate Extreme Heat in Countywide Resilience Hub Plan

Goal 3: Cool our Neighborhoods

Reduce the excessive heat burden in urban areas by expanding the tree canopy and vegetation, improving access to water features and shade structures, and cooling our surfaces.

13. Create a Bold Tree Plan
14. Cool our Commutes
15. Cool Our Schools
16. Expand Access to Water and Shade
17. Plant and Protect Trees on County Land
18. Pilot and Scale Cool Pavements
19. Ramp up Engagement and Citizen Science

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Florida Clinicians for Climate Action (FCCA) Climate Health Outreach Team (C-HOT)

- $33 K + Virtual Education Platform Access
- Miami Dade County Mayor and Heat Officer Support
- Educate Clinicians in high vulnerability communities- Project C-HOT
  - Virtual for all MDC Clinicians
  - In-person and virtual at community health centers and hospitals
  - Medical School Practicum (FIU) and Interest Group (UM)
  - Virtual Volunteer training program

Project C-HOT

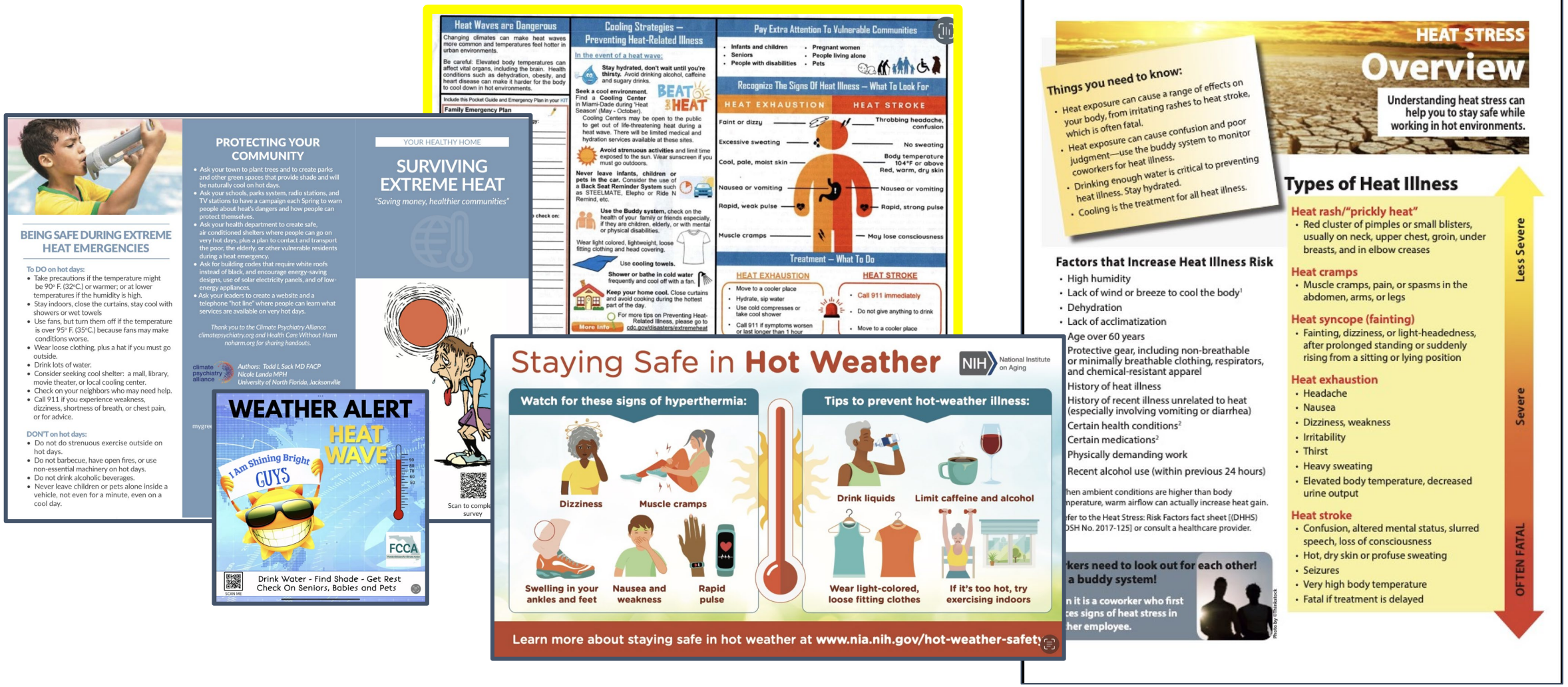
- Virtual Education- All MDC
  - Continuous Medical Education – nine webinars

ssion	Date	Physicians	Nurses	Nurse Pracitioners	Pharmacists	Occupational Therapists	Other	Total Participants				
limate, Heat & Health	13-Sep-22	23	10	7	4	9	9	62	Online Course			
imate Change & Exertional Heat Illness	18-Oct-22	23	7	3	0	0	8	41	Online Course			
imate Pollution, Heat Stress & Birth Outcomes	1-Dec-22	8	0	4	2	0	7	21	Online Course			
The Health pacts of Heat & Ambient Air Pollution	13-Dec-22	21	1	5	5	0	10	42				
Climate, Heat tress & Mental Health	23-Jan-23	25	10	6	4	0	10	55				
limate Change, Heat, and Dermatological Health	23-Mar-23	23	1	6	2	0	11	43				
Vector Borne Illness and Climate Change	13-Apr-23	22	2	4	2	0	8	38				
imate, Heat, and harmacological Impacts	24-Apr-23	12	2	2	3	0	3	22				
limate Change, eat, and How to Incorporate stainability Into Healthcare Practices	25-May-23	19	3	0	2	3	5	32				
								356				

Health Center Training

- 14 Virtual Provider Meetings
- On-site Education for clinicians and patients
  - Brief climate change and heat update
  - Distribute educational materials for clinicians and patients
  - Demonstrate cooling towel use
  - Provide evaluation survey for patients
  - Provide ICD 10 and SDOH Codes

Phase II: Distribute educational brochures in English, Spanish & Creole and survey cards to fifty medical offices and conduct surveys.



ICD-10 AND Z CODES

New and Revised SDoH Z Codes for Fiscal Year 2022

ICD-10	Description
Z55.5	Less than a high school diploma
Z58	Problems related to physical environment
Z58.6	Inadequate drinking water supply
Z59.00	Homelessness unspecified
Z59.01	Sheltered homelessness
Z59.02	Unsheltered homelessness
Z59.4	Revised from "Lack of adequate food and safe drinking water" to Z559.4 "Lack of adequate food"
Z59.41	Food insecurity
Z59.48	Other specific lack of adequate food
Z59.81	Housing instability, housed
Z59.811	Housing instability, housed with risk of homelessness
Z59.812	Housing instability, housed, homelessness in past 12 months
Z59.819	Housing instability, housing unspecified
Z59.89	Other problems related to housing and economic circumstances.

HEAT EFFECTIVINESS ICD-10 CODES

Category	Code	Title	Description	Billable	Non Billable
Heat	S00-T67	Effects of Heat and Light	Includes heatsroke and suntroke	X	
	X30-X39	Exposure to Forces of Nature	Excessive exposure to natural heat and classifies as external cause of morbidity.	X	
	V00-Y99	External Causes of Morbidity	Drowning and submersion in natural water, undetermined intent		
	X14.0XXA	Inhalation of Hot Air and Gases	Inital Ecounter	X	
	X14.0XXD	Inhalation of Hot Air and Gases	Subsequent Encounter	X	
	X14.0XXS	Inhalation of Hot Air and Gases	Sequela	X	
	T67.7XXA	Heat Edema	Inital Ecounter	X	
	T67.7XXA	Heat Edema	Subsequent Encounter	X	
	T67.7XXS	Heat Edema	Sequela	X	
	L50.2	Uritical Due to Cold and Heat	Verbatim	X	
	X16	Contact With Hot Heating Appliance, Radiators and Pipes	Inital Encounter	X	
	X16	Contact With Hot Heating Appliance, Radiators and Pipes	Subsequent Encounter	X	

Other Successes

VOLUME 120, No. 244 | STAY CONNECTED MIAMIHERALD.COM | FACEBOOK.COM/MIAMIHERALD TWITTER.COM/MIAMIHERALD | WINNER OF 24 PULITZER PRIZES | TUESDAY MAY 16 2023 | $3.00

Miami Herald

PHOTOS BY MATIAS J. OCNER mocner@miamiherald.com

Miami-Dade County Mayor Daniella Levine Cava speaks during a press conference outside of Government Center on Monday in downtown Miami. The event was held to announce the start of the heat season throughout Miami-Dade, and officials with the National Weather Service announced they would lower the threshold for heat warnings and advisories in the county.

Weather Service lowers heat warning threshholds for Dade

BY NICOLAS RIVERO
nrivero@miamiherald.com

At the urging of Miami-Dade County leaders, the National Weather Service has lowered the bar for extreme heat warnings and advisories in the county. The hope is that the new standards will better protect residents from the rising risks of heat, which the county estimates kills about 34 people and hospitalizes hundreds more each year.

NWS meteorologist Robert Molleda announced the change Monday at a county event marking the start of Miami-Dade County's heat season, which officially runs from May 1 to Oct. 31 each year. The decision has implications beyond Miami-Dade. The county will serve as a test case for the new warning levels, Molleda said. If they work well, the weather service may make them permanent and export them to other South Florida counties.

"The most important thing is that advisories and warnings go out when there is an increased threat to the general population," said Molleda, the warning coordination meteorologist at the NWS Miami office. "It's about making sure people have the information they need and are receiving weather alerts and notifications that can enable them to take action."

Jane Gilbert, the county's chief heat officer, said the change will help shape the response of emergency managers and public health agencies.

"We'll be able to galvanize our emergency response resources when we get to those truly excessive heat temperatures and address

SEE HEAT, 3A

MORE INSIDE

South Florida's rainy season is starting right on time. What's ahead? 2A

Miami-Dade County Mayor Daniella Levine Cava, left, and Vice Chairman of the Miami-Dade County Commission Oliver G. Gilbert III hold an informational pamphlet at the press conference.

DeSantis signs 3 bills that bring big change to higher ed in Florida

BY DIVYA KUMAR
Tampa Bay Times

SARASOTA

Gov. Ron DeSantis on Monday signed into law three controversial bills poised to bring major changes to Florida's college and university systems.

In a ceremony at New College of Florida, he was flanked by a group of supporters including university system Chancellor Ray Rodrigues and Christopher Rufo, an activist known for his opposition to critical race theory and one of six trustees DeSantis appointed to the New College board in January.

DeSantis signed a measure, SB 266, that restricts certain topics from being taught in general education courses, the lower-level classes that all students must take for their degrees. It also expands the hiring and firing powers of university boards and presidents, further limits tenure protections and prohibits spending related to diversity, equity and inclusion programs beyond what is required by accreditors.

Regarding the restricted topics, the measure borrows language from last year's Individual Freedom Act, also known as the Stop Woke Act. It targets "theories that systemic racism, sexism,

SEE BILLS, 2A

MORE INSIDE

- DeSantis courts donors at secret dinners — using one major line. 2A
- DeSantis' political operation makes more moves ahead of expected 2024 campaign launch. 2A
- Miami Herald | Opinion: Florida's war on 'woke' in state colleges rewards a DeSantis crony who has measly credentials. 10A

Gillum can resume 'life and public service' after prosecutors move to drop charges

BY LAWRENCE MOWER
Miami Herald/Tampa Bay Times

Making History! Heat Standard Passes First Vote

☀️

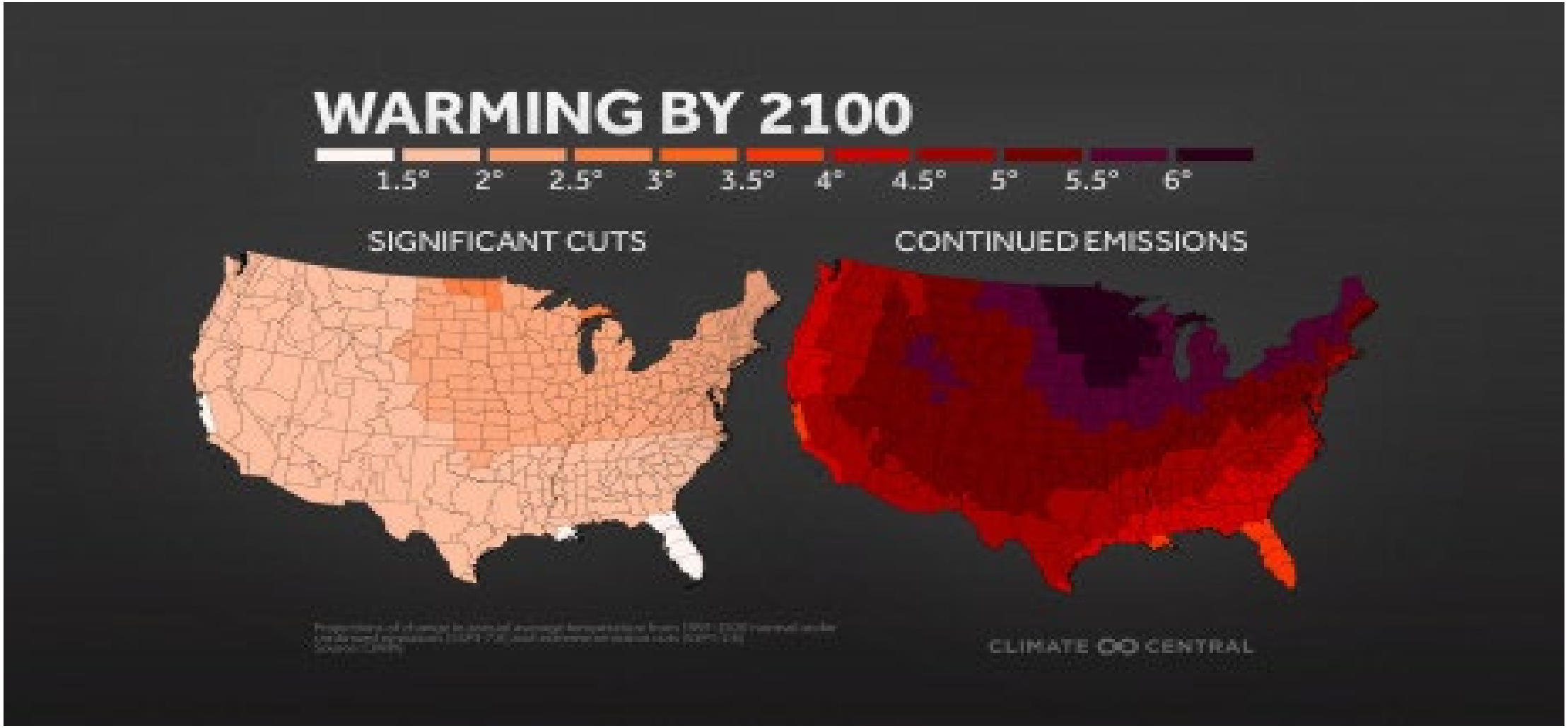
Note: This message originated from outside the FIU Faculty/Staff email system.

View this email in your browser

WeCount!

Jorge -Thank You

Act Now!


WARMING BY 2100
1.5°
2°
2.5°
3°
3.5°
4°
4.5°
5°
5.5°
6°
SIGNIFICANT CUTS
CONTINUED EMISSIONS
CLIMATE CENTRAL

Please follow us on Instagram @flclinicians
Please follow us on Facebook @Florida Clinicians for Climate Action

Follow me on IG and Tik Tok : @drcherylholder

Thank You

www.floridaclincians.org

Volunteer Training Program

- Four training sessions
  - Virtual mandatory –one hour climate change 101
  - Self-directed- Three – one hour virtual webinars –heat physiology, MDC specific data
    - Mock site visit video for approval