

# Limiting global warming to 1.5 - 2.0° C: A necessary and unique role for health professionals.

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## Conflict of Interest Disclosure:

I'm "all in" on creating a clean energy economy:

- My home is 100% electric and powered by solar.
- My car is an EV.
- I am divested of fossil fuel stocks.

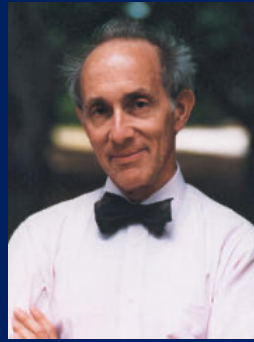
Other than that, I have no conflicts of interests.



Bernard Lown



James Muller



Eric Chivian



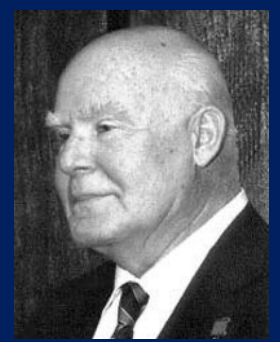
Herb Abrams



Evgeny Chazov



Mikahil Kuzin



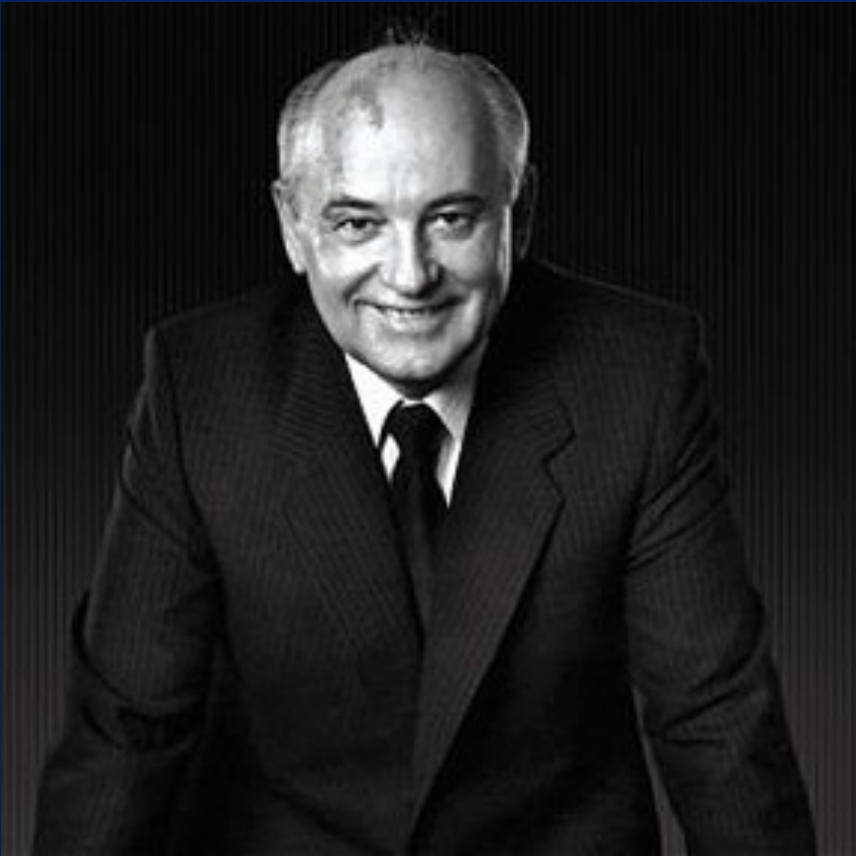
Leonid Illyin



In 1980, seven American and Soviet physicians established the *International Physicians for the Prevention of Nuclear War*.

**Their message: A nuclear war would destroy civilization and might extinguish human life.**

In 1985 IPPNW was awarded the Nobel Peace Prize for its central role in helping to open arms control discussions between the U.S. and the USSR.



"Their work commands great respect. For what they say and what they do is prompted by accurate knowledge and a passionate desire to warn humanity about the danger looming over it. In light of their arguments and the strictly scientific data they possess, there seems to be no room left for politicking. And no serious politician has the right to disregard their conclusions."

Mikhail Gorbachev (1987)

"I want to thank you [IPPNW] for your great contribution to preventing nuclear war. Without it and other effective antinuclear initiatives this [INF] Treaty would probably have been impossible."

Mikhail Gorbachev (1993)

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The most important public health goal of our era:

Limiting the warming of the planet  
to well below 2 degrees C  
above pre-industrial levels,  
ideally 1.5 degrees.



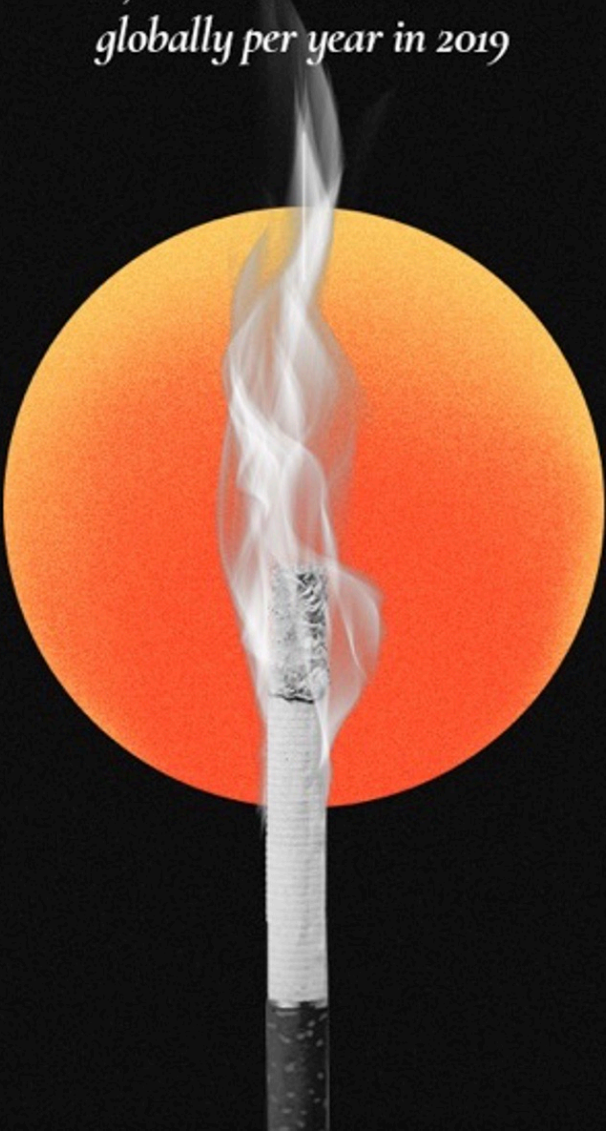
# IPCC Special Report on Global Warming of 1.5 °C (2018)

**Key finding:** A half degree of warming beyond 1.5 °C would mean substantially more poverty, extreme heat, sea level rise, habitat and coral reef loss, and drought. **Every tenth of a degree of warming has grave public health consequences.**

# Tobacco has long been seen as public health enemy #1

## TOBACCO

7,69 MILLION †  
*globally per year in 2019*

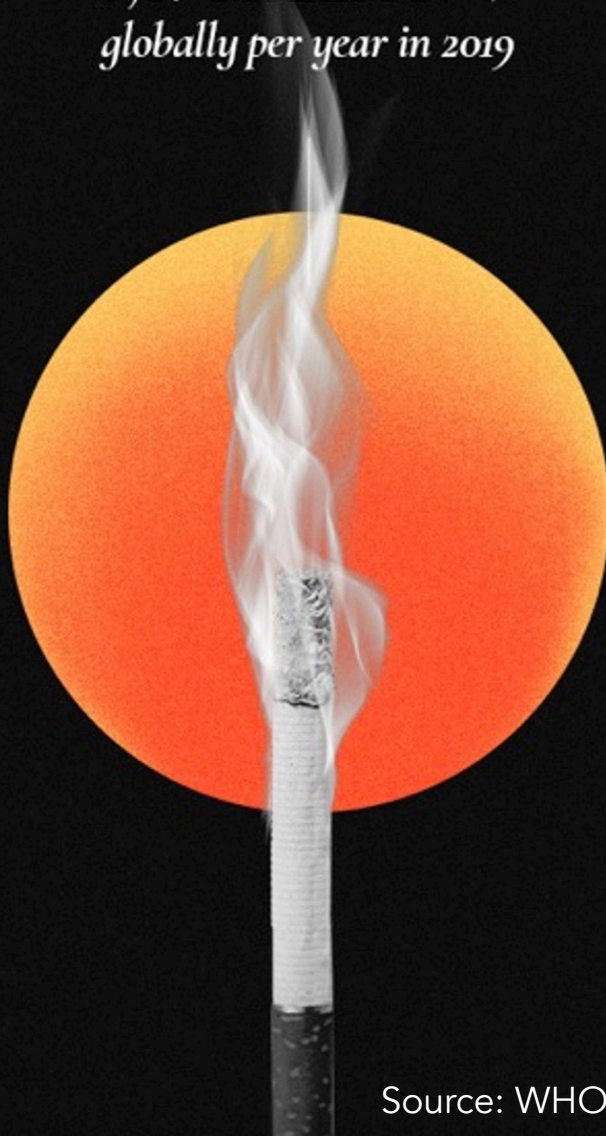




# Global mortality from tobacco use and fossil fuel air pollution (PM2.5)

## TOBACCO

**7,69 MILLION †**  
*globally per year in 2019*



Source: WHO 2021

## FOSSIL FUELS

**8,7 MILLION †**  
*globally per year in 2018*



Source: K. Vohra 2021 @ChristineArena

# Burning fossil fuels profoundly harms human health

## Mortality:

**FOSSIL FUELS**  
**8,7 MILLION †**  
*globally per year in 2018*



## Childhood Morbidity:

- Pregnancy: Low birth weight, HBP, stillbirth, preterm birth
- Neuro-development: ADHD, reduced IQ, autism
- Respiratory: asthma, chronic bronchitis

## Adult Morbidity:

- Respiratory: asthma, emphysema, COPD, chronic bronchitis
- Cardiovascular diseases: increased MI/stroke risk, reduced HDL
- Cancer: breast, lung
- Neuro-degeneration: Alzheimer's and other dementias, Parkinson's disease

# Climate change harms health through at least eight distinct pathways

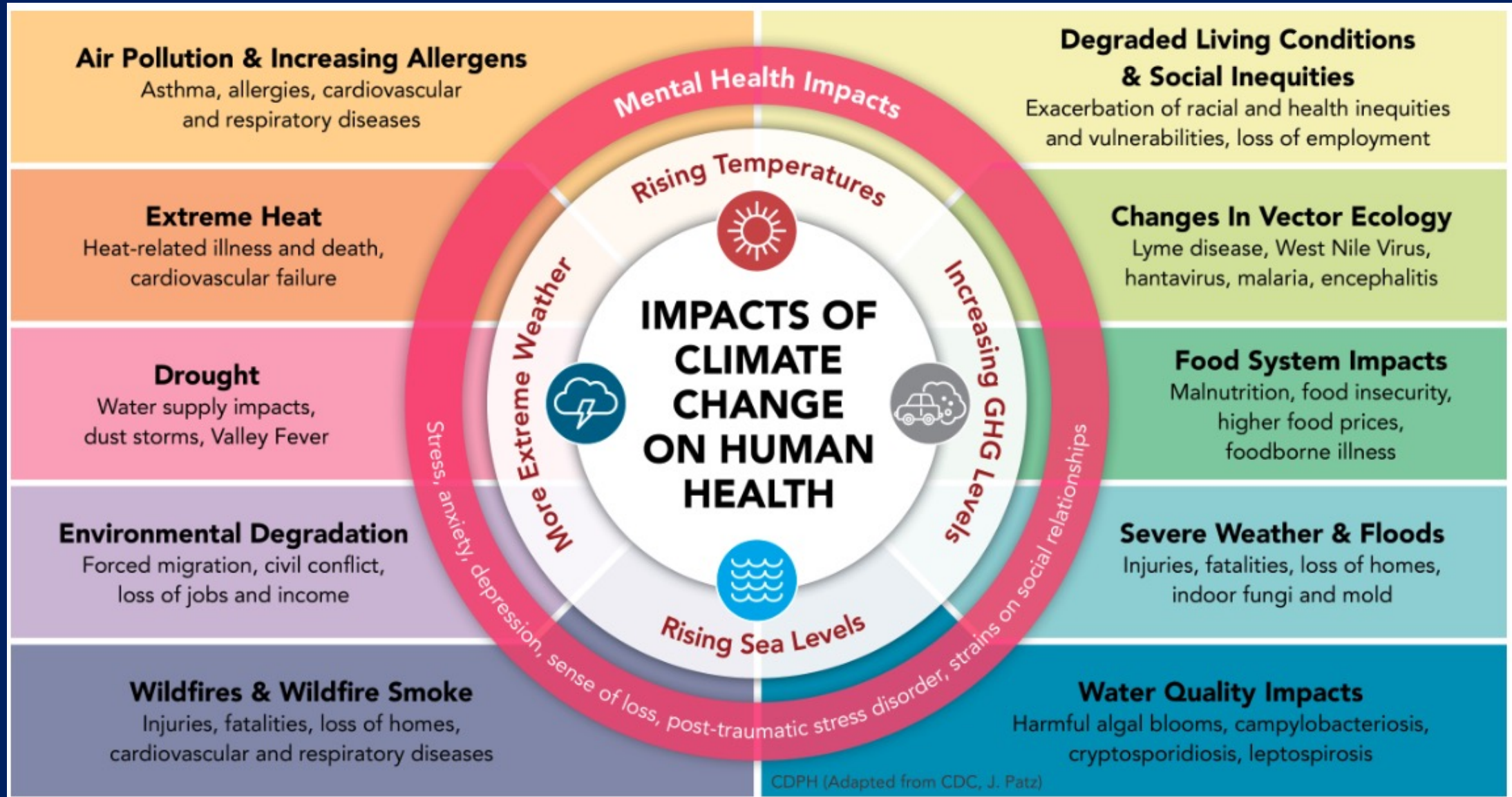
**FOSSIL FUELS**  
*8,7 MILLION †*  
*globally per year in 2018*



## Morbidity & Mortality:

- Air pollution
- Extreme heat
- Extreme weather
- Vector-borne illness
- Water-borne illness
- Food-borne illness
- Hunger and malnutrition
- Mental health harms

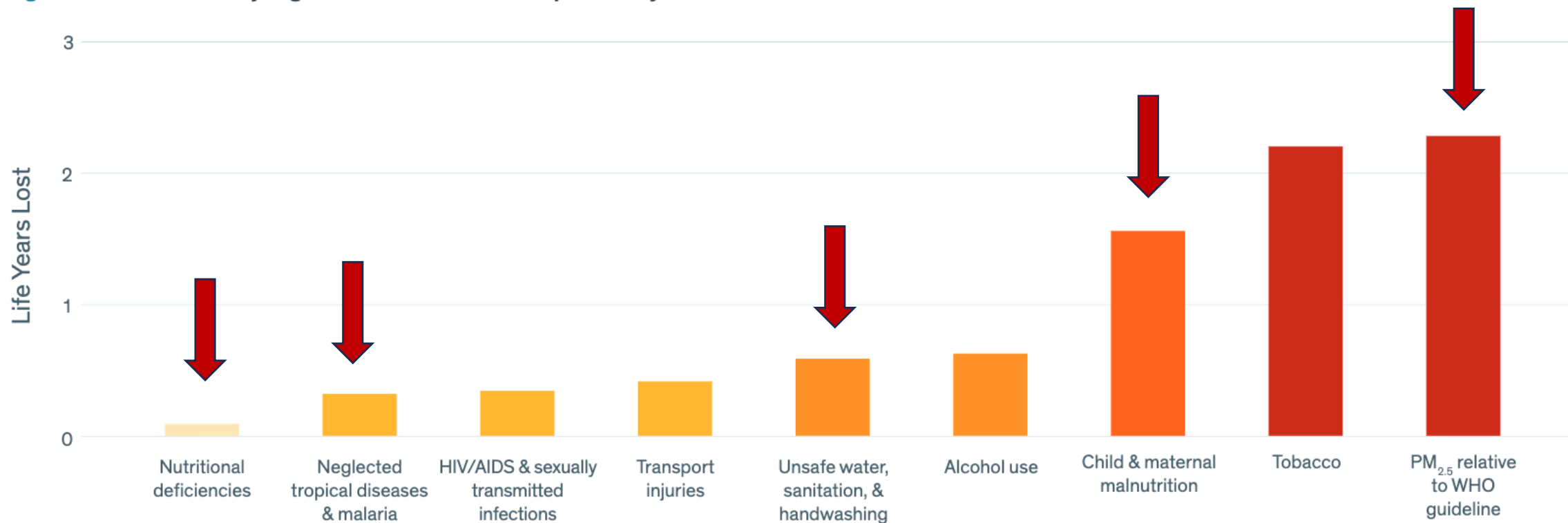
# The effects of climate change on exposures, and their subsequent public health harms



# Annual Update

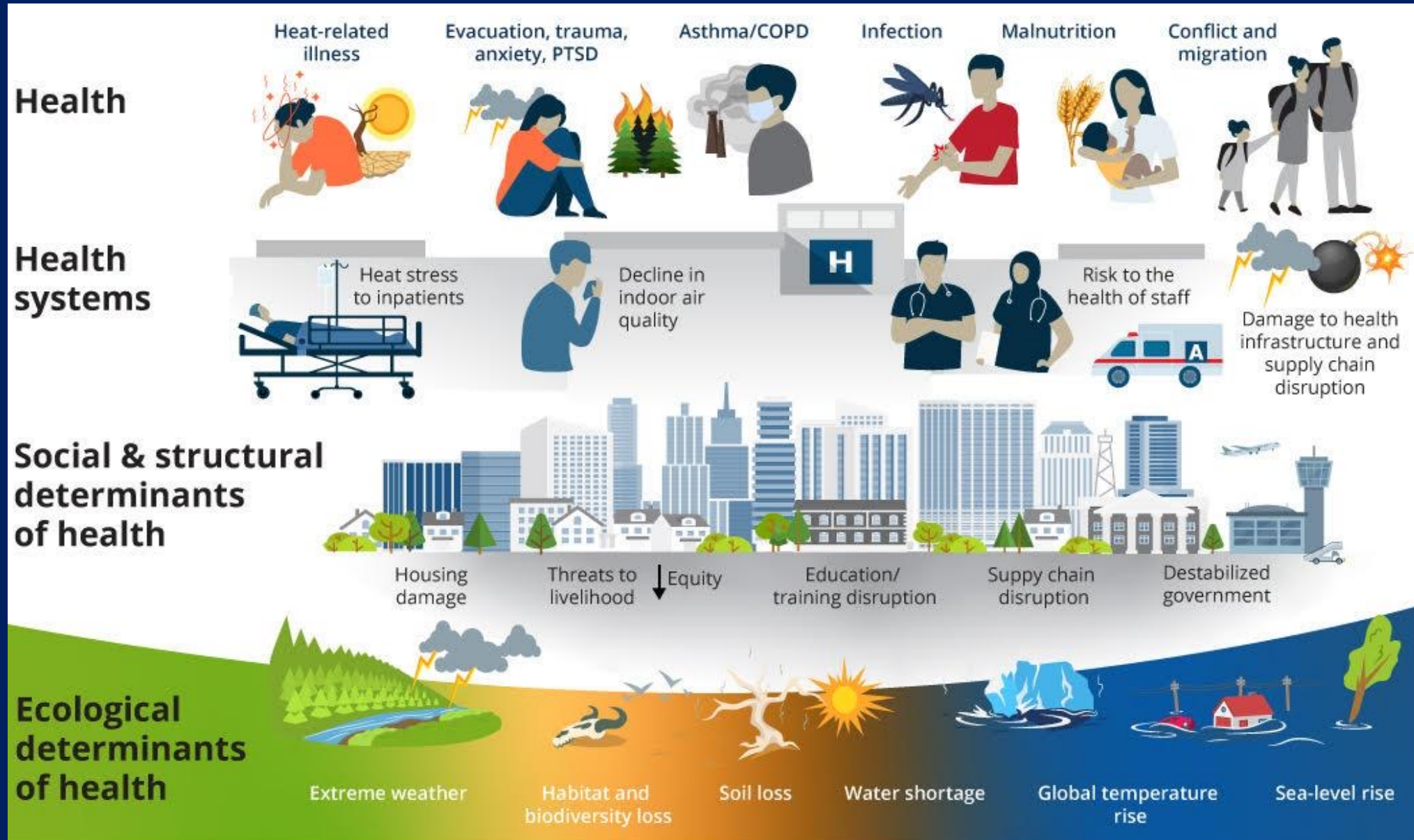
By Michael Greenstone and Christa Hasenkopf

Figure 1.1 · Select major global threats to life expectancy



Sources: Global Burden of Disease (<https://vizhub.healthdata.org/gbd-results/>) level-2 causes and risks data and WHO Life Tables (<https://apps.who.int/gho/data/node.main.LIFECOUNTRY?lang=en>) were combined with the Life table method to arrive at these results. “PM<sub>2.5</sub> relative to WHO Guideline” bar displays the reduction in life expectancy relative to the WHO guideline as calculated by latest AQLI (2021) data.

# Eroding the ecological determinants of health undermines social determinants of health, health system readiness, and human health



Our climate and our health have a common enemy: fossil fuels  
(the new public health enemy #1)



@ChristineArena

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# 15: Human Health: Impacts, Adaptation, and Co-Benefits \_\_\_\_\_

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“There is no kind way to put it: We are sleepwalking to climate catastrophe. The 1.5 degree C goal is on life support. It is in intensive care.”

United Nation's Secretary-General António Guterres responding to the IPCC AR6 Report, March 2022



“Nearly half of humanity is living in the danger zone—now.”

“Unchecked carbon pollution is forcing the world’s most vulnerable (people) on a frog march to destruction—now.”

**“Delay equals death.”**

United Nation's Secretary-General António Guterres responding to the IPCC AR6 Report, March 2022

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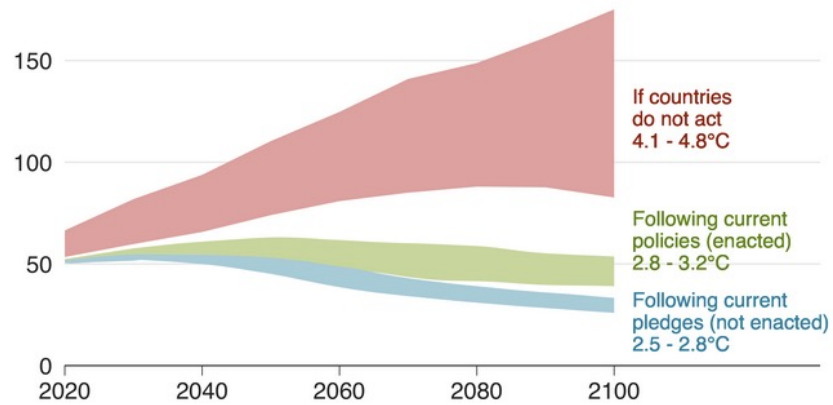
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# Most Americans understand that climate change is happening.

However, until recently they saw it as a distant threat...

in time

How much worse will the problem get?  
Emissions\* and expected warming by 2100



in space



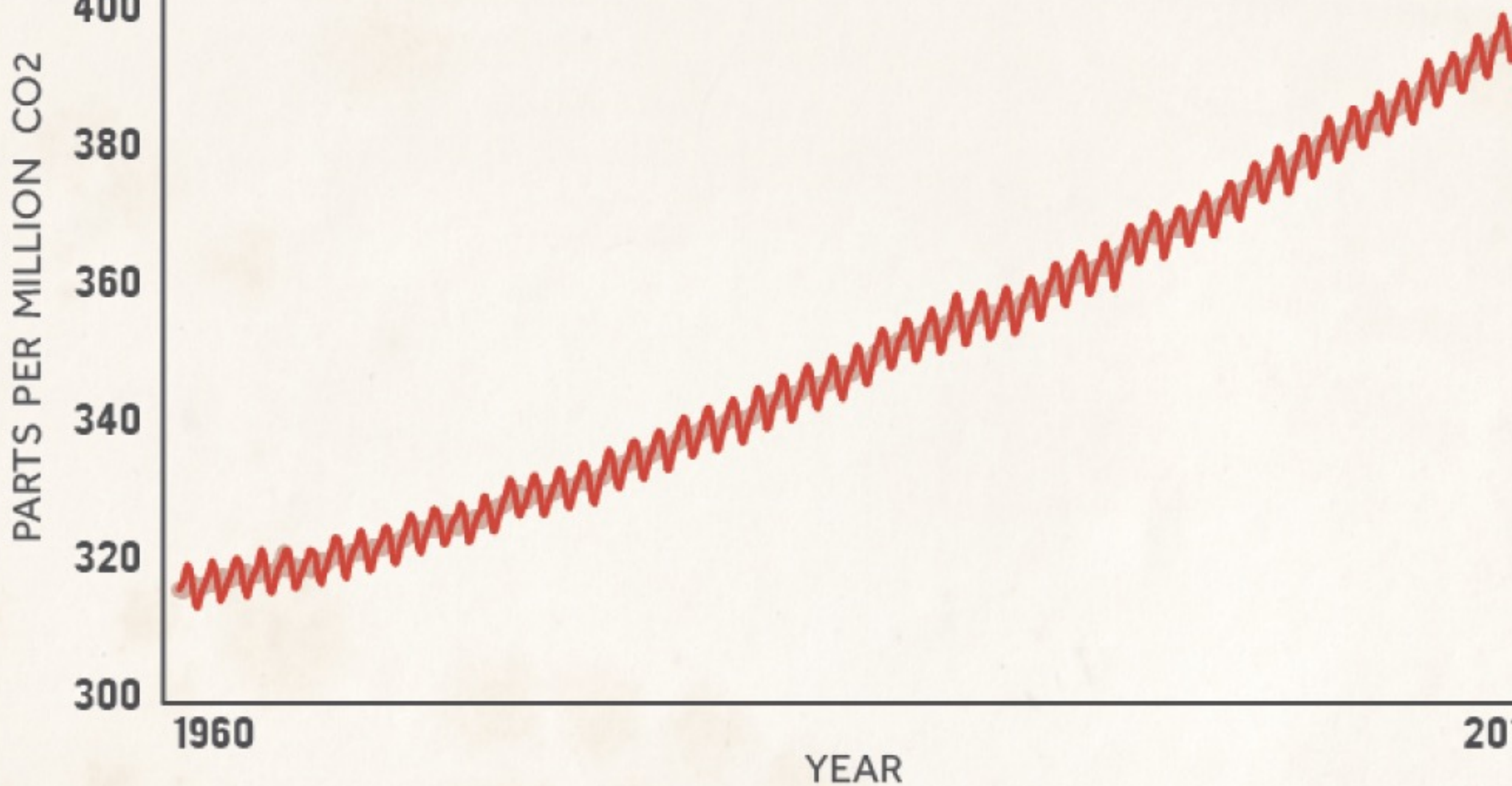
in species



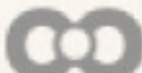
**What is the first thing  
that comes to mind when you hear  
global warming?**



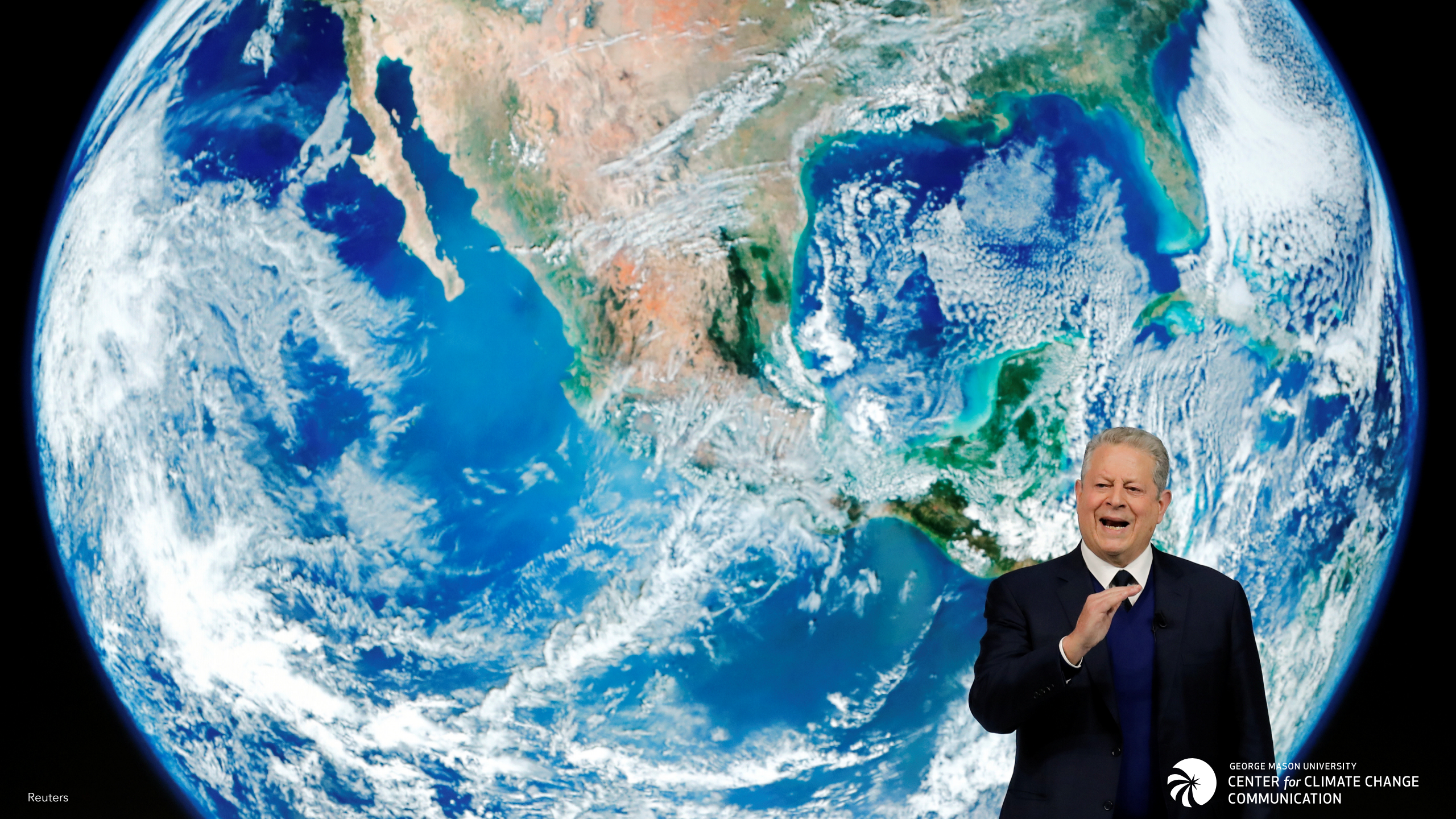


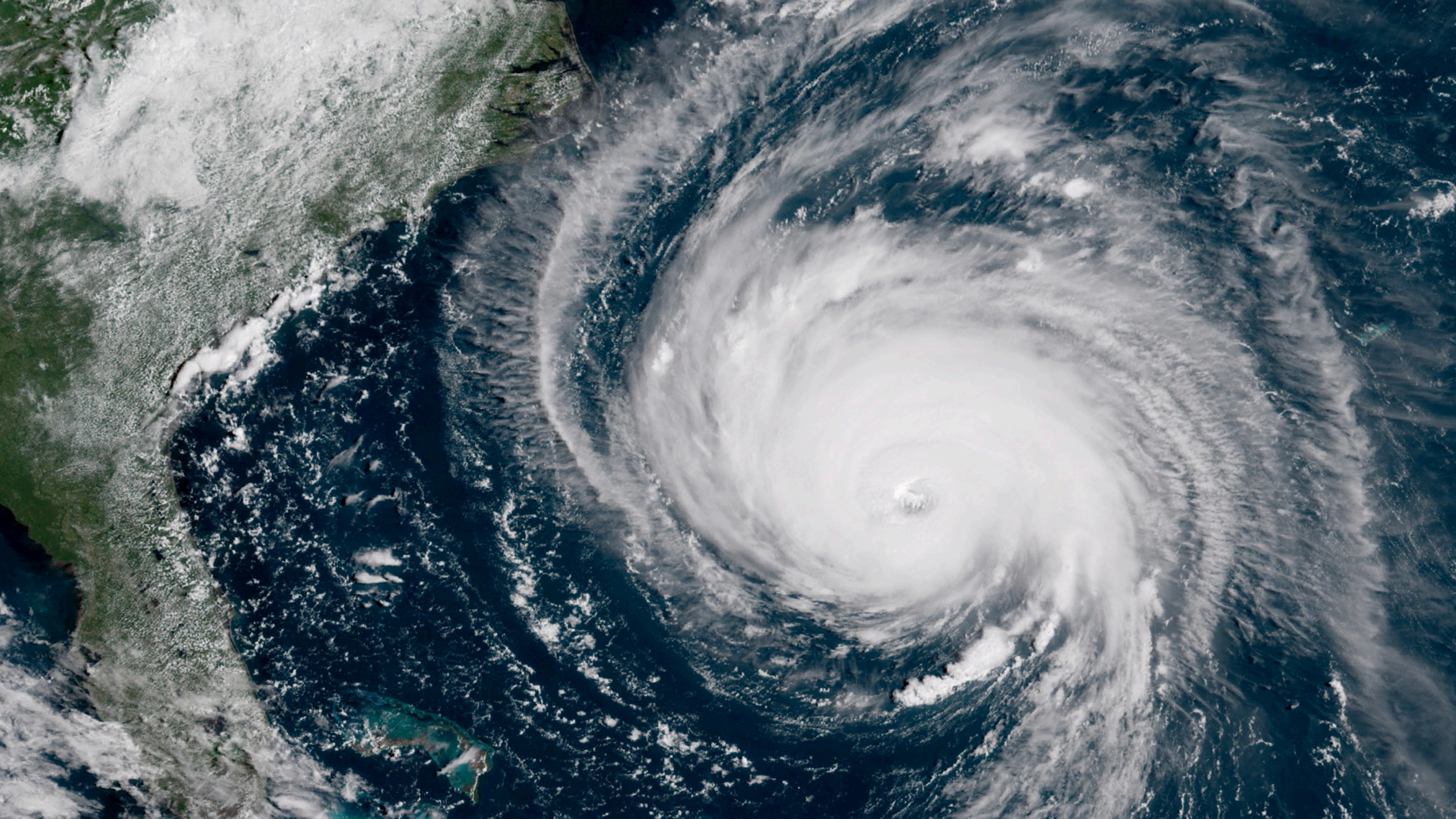


Data: Scripps Institute of Oceanography

CLIMATE  CENTRAL



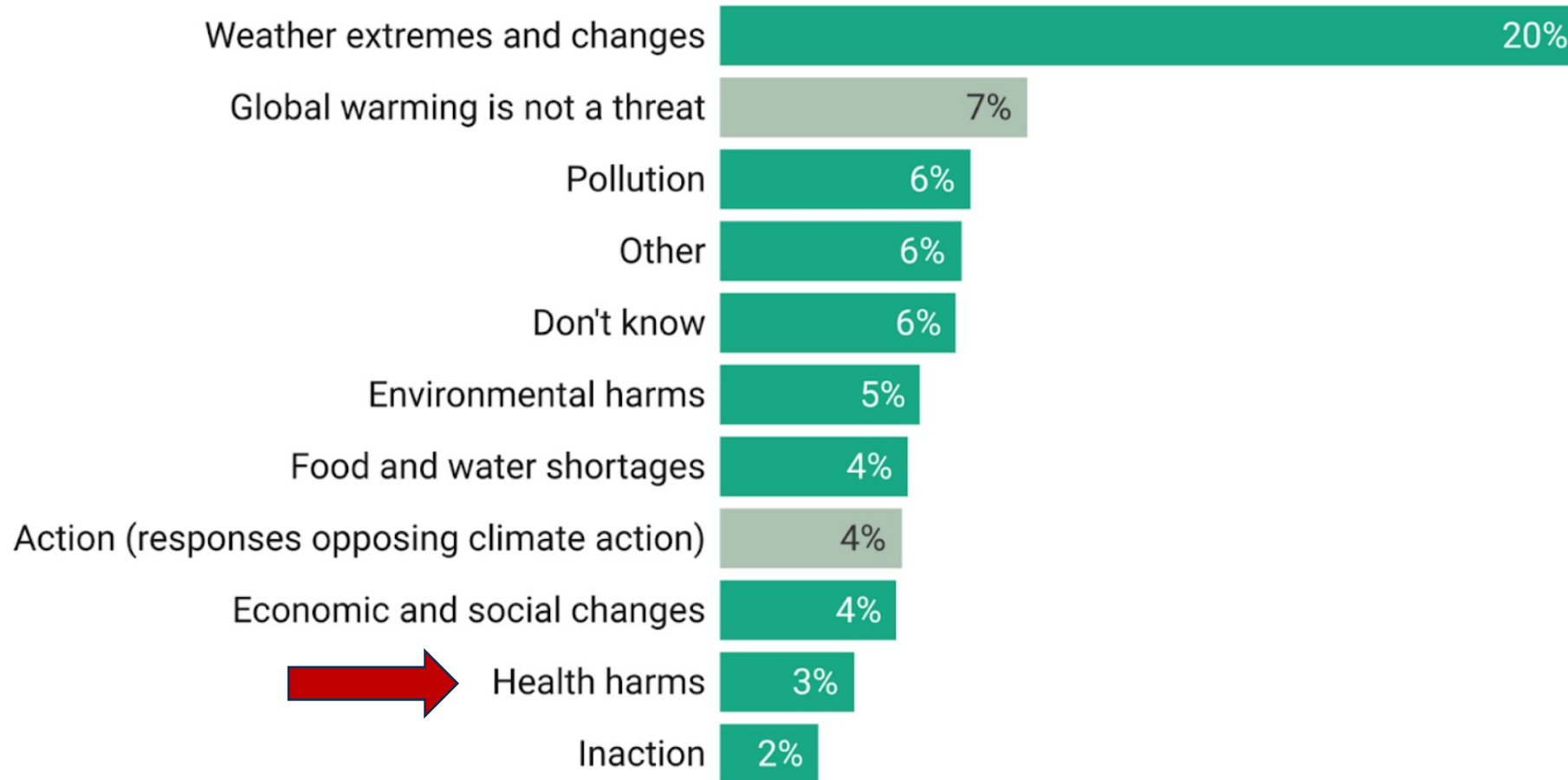






# What do you think is the greatest threat that global warming poses to the United States, if any?

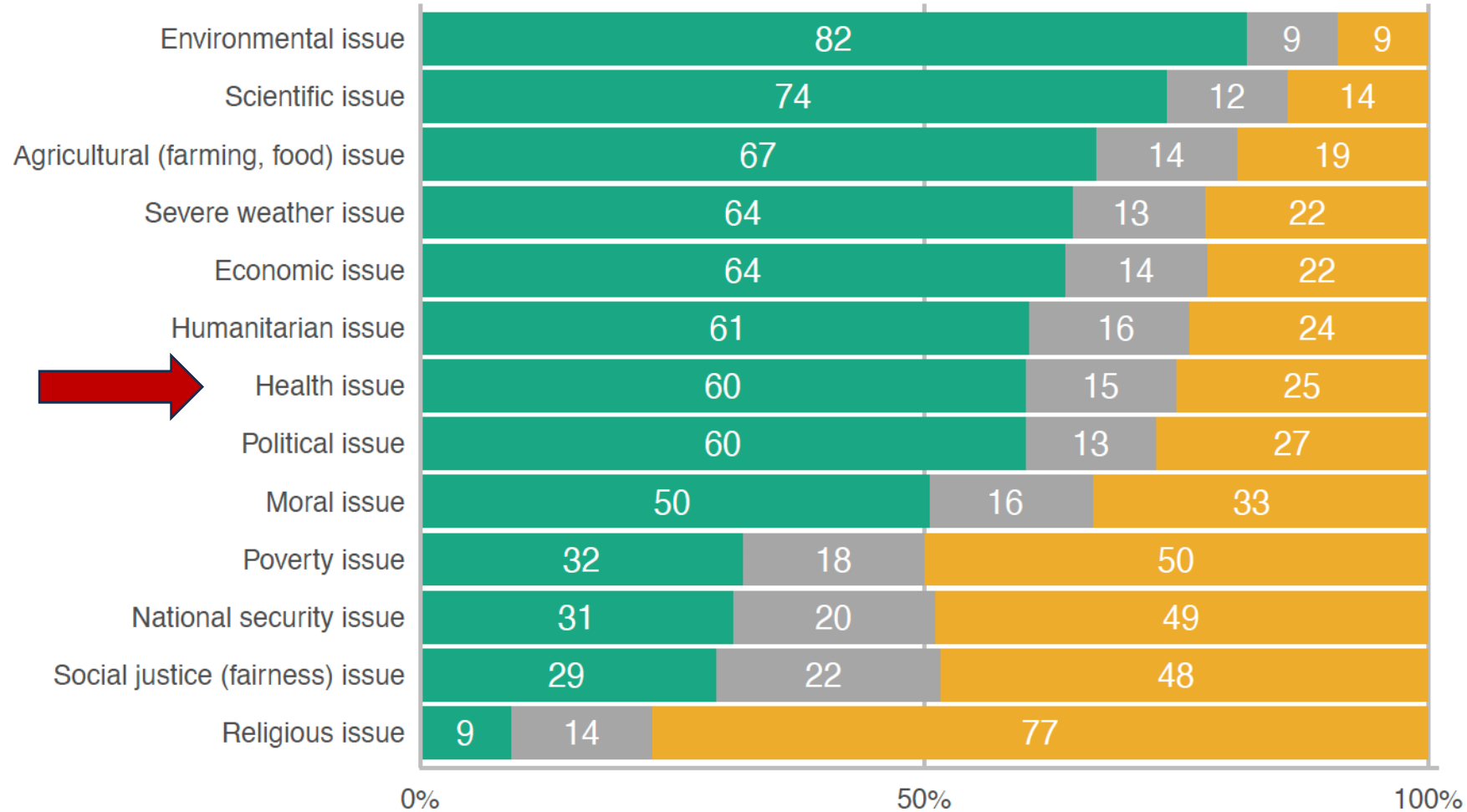
*% who mentioned...*



March 2021. Base: 1,037 U.S. adults. Responses to the open-ended question were categorized into 11 themes. Respondents (38%) who did not provide an answer are not shown.

# Americans are most likely to think of global warming as an environmental and/or scientific issue

■ Yes 
 ■ Not sure/No response 
 ■ No



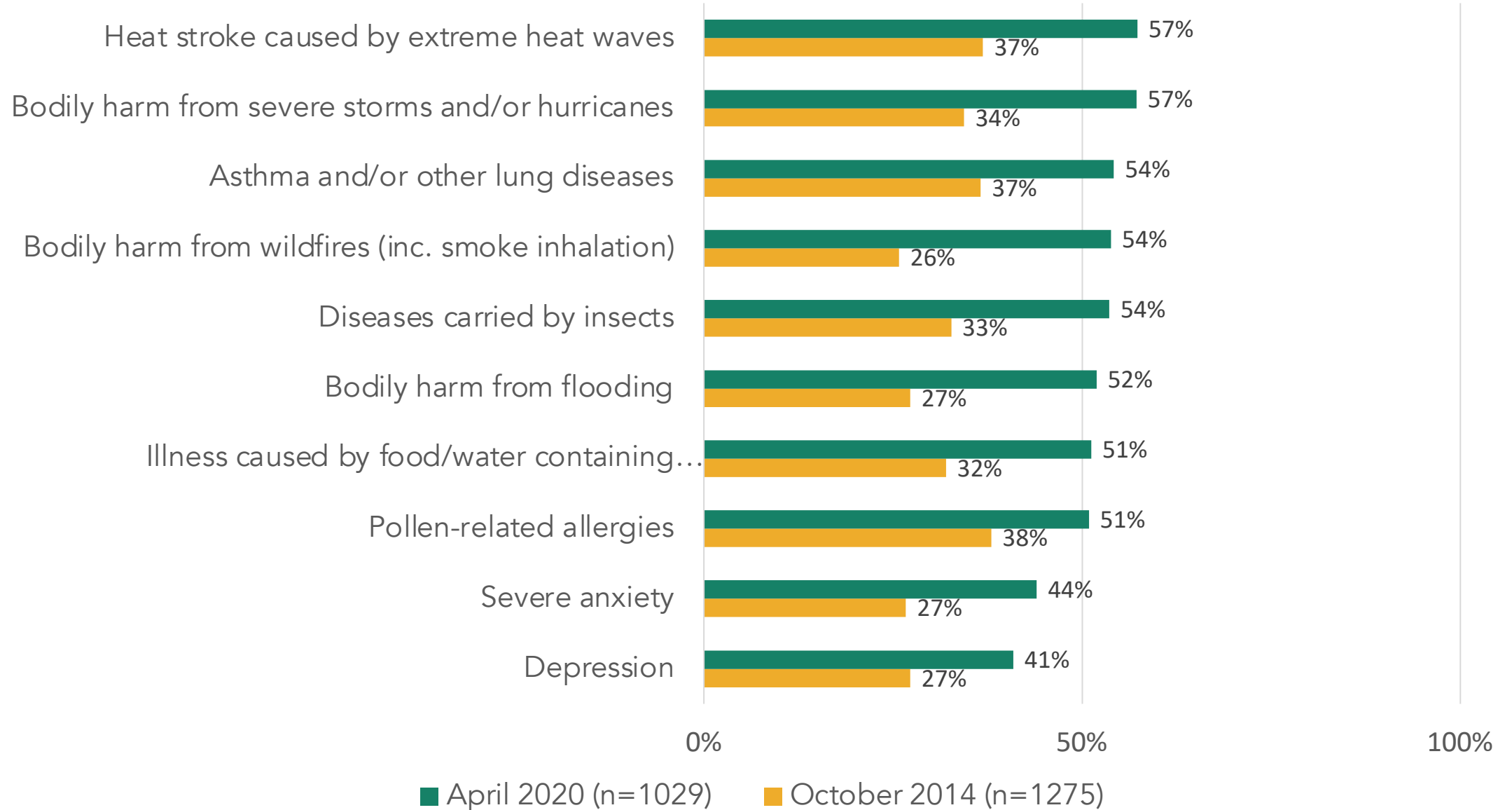
In your opinion, do you think global warming is a(n)...

April 2020



# Since 2014, there has been a large increase in the number of Americans who see climate change as growing health threat in their community

--% of Americans who think each condition will become more common in their community over the next 10 years as a result of global warming--



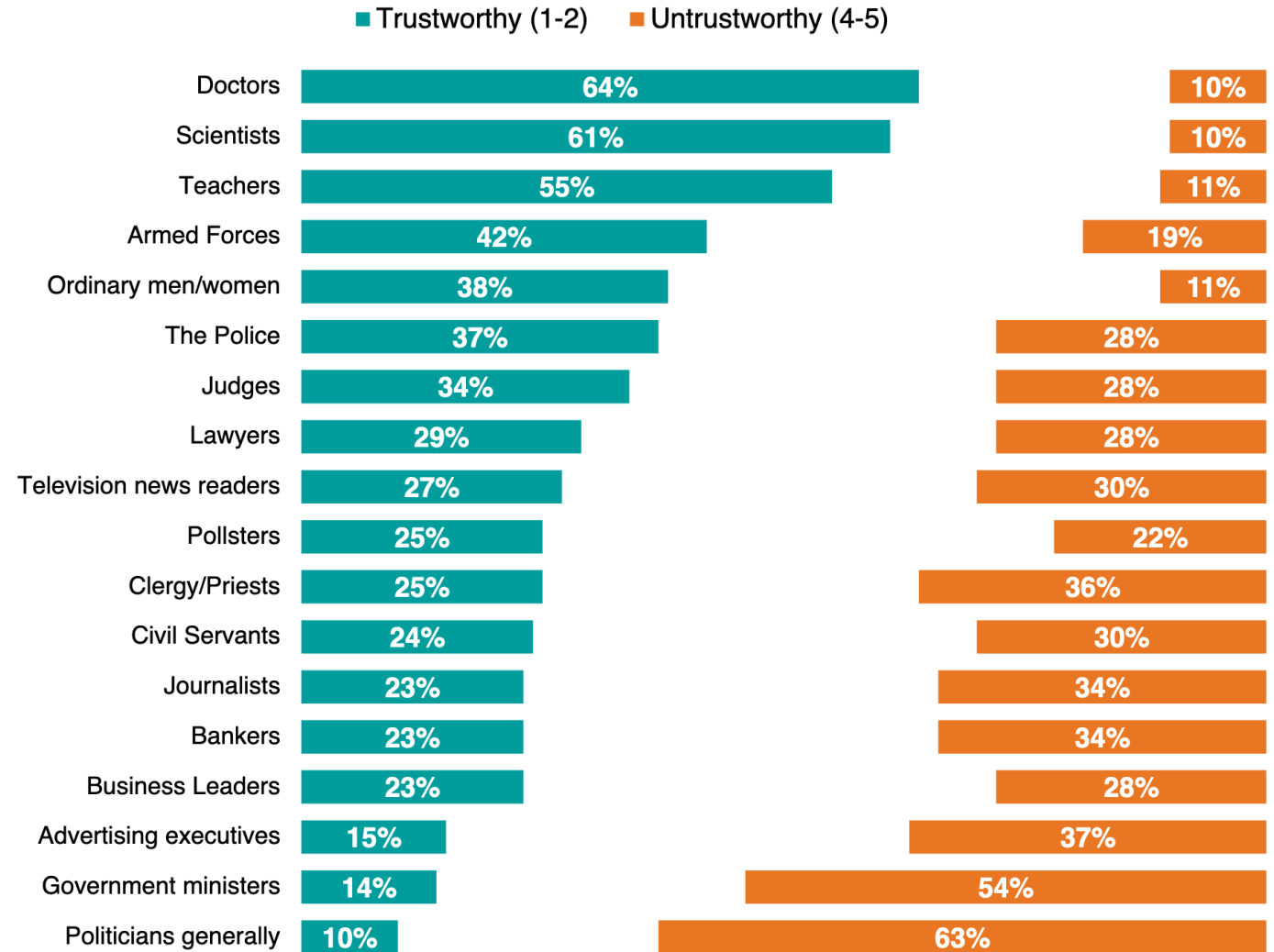
Evidence-based guidance for  
effective communication campaigns:

**Simple clear messages,  
repeated often,  
by a variety of trusted and caring voices.**

# GLOBAL TRUSTWORTHINESS RANKING 2021

Please look at this list of different types of people. In general, do you think each is trustworthy or untrustworthy in your country?

Please use a scale of 1 to 5, where 1 is very trustworthy and 5 is very untrustworthy



Ipsos Global Trustworthiness Index 2021 – 19,570 participants across 28 countries, interviewed online 23 April – 7 May 2021

Online samples in Brazil, Chile, mainland China, Colombia, India, Malaysia, Mexico, Peru, Romania, Russia, Saudi Arabia, South Africa, and Turkey tend to be more urban, educated, and/or affluent than the general population

This "Global Country Average" reflects the average result for all the countries where the survey was conducted. It has not been adjusted to the population size of each country or market and is not intended to suggest a total result.



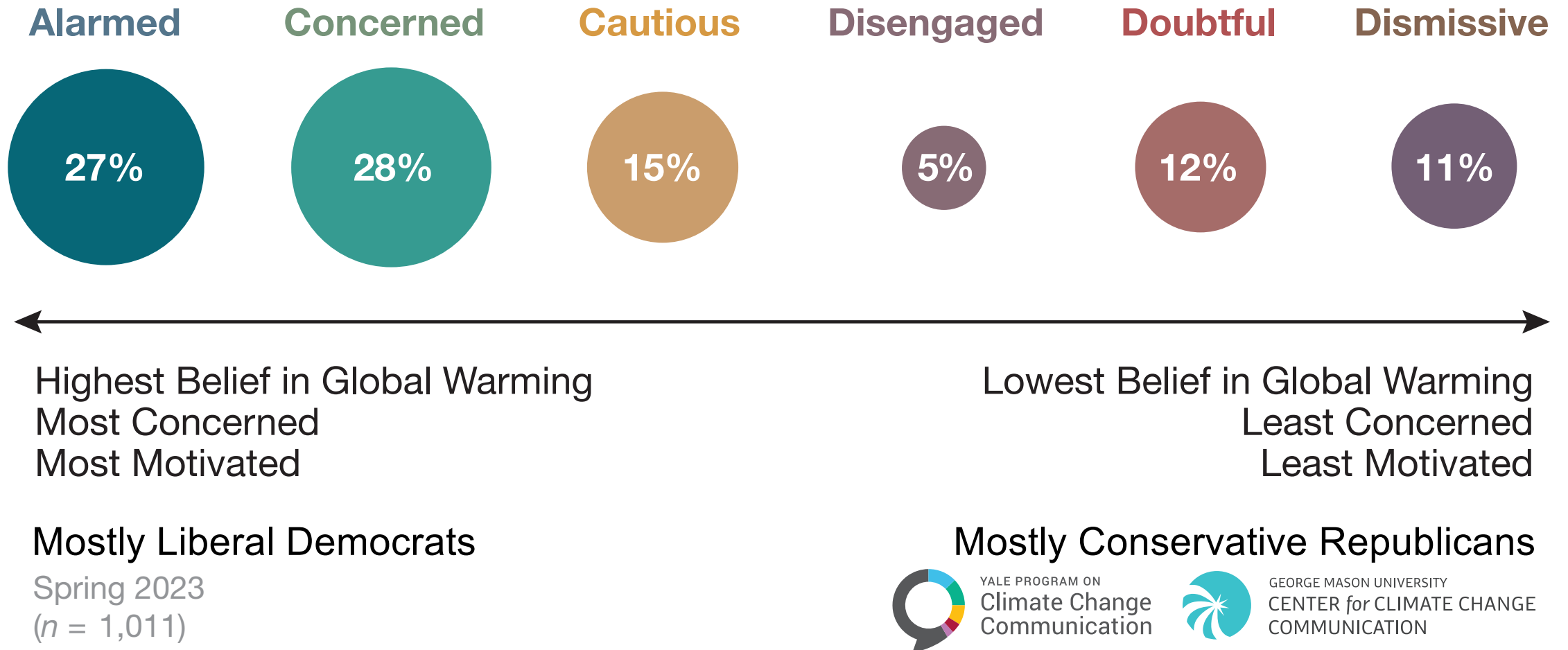
# Americans, especially conservative Americans, trust their primary care doctors as a source of information about global warming

Rank by trust	All Registered Voters	Liberal Democrats	Moderate/Conservative Democrats	Liberal/Moderate Republicans	Conservative Republicans
1	NASA	Climate scientists	Climate scientists	NASA	Family & friends
2	Family & friends	Environmental organizations	EPA	Family & friends	Your primary care doctor
3	Climate scientists	EPA	Environmental organizations	Your primary care doctor	NASA
4	Your primary care doctor	NASA	NASA	Climate scientists	The Fox News Channel
5	EPA	Teachers	Television weather reporters	EPA	Leaders in your religious faith
6	Television weather reporters	President Biden	American Medical Association	Television weather reporters	Television weather reporters
7	Environmental organizations	National Public Radio (NPR)	President Biden	U.S. military leaders	Climate scientists
8	Teachers	Television weather reporters	Your primary care doctor	Teachers	U.S. military leaders
9	American Medical Association	Family & friends	National network news	American Medical Association	American Medical Association
10	Your local newspaper	National network news	National Public Radio (NPR)	Environmental organizations	Teachers
11	National Public Radio (NPR)	American Medical Association	Your local newspaper	Your local newspaper	Oil, gas, and coal companies
12	Local TV news	Your local newspaper	Family & friends	Local TV news	EPA
13	National network news	CNN	Local TV news	National Public Radio (NPR)	Your local newspaper
14	President Biden	Your primary care doctor	Teachers	National network news	Environmental organizations
15	U.S. military leaders	MSNBC	CNN	The Fox News Channel	Your Congressperson
16	CNN	Local TV news	MSNBC	Leaders in your religious faith	Local TV news
17	MSNBC	Your Congressperson	U.S. military leaders	Your Congressperson	National Public Radio (NPR)
18	Your Congressperson	U.S. military leaders	Your Congressperson	CNN	National network news
19	Leaders in your religious faith	Leaders in your religious faith	Leaders in your religious faith	MSNBC	CNN
20	The Fox News Channel	The Fox News Channel	Oil, gas, and coal companies	Oil, gas, and coal companies	MSNBC
21	Oil, gas, and coal companies	Oil, gas, and coal companies	The Fox News Channel	President Biden	President Biden

How much do you trust or distrust the following as a source of information about global warming?



# Global Warming's Six Americas



# Six key facts about global warming in 12 words

<b>IT'S REAL</b>	<b>Global warming is happening.</b>
<b>IT'S US</b>	<b>Human activity is the main cause.</b>
<b>EXPERTS AGREE</b>	<b>More than 97% of the world's climate experts are convinced, based on the data, that human activity is warming the planet.</b>
<b>IT'S BAD</b>	<b>The impacts are serious, and they affect people, especially our children and grandchildren.</b>
<b>OTHERS CARE</b>	<b>You're not alone. Most people are worried about global warming, and they support climate action.</b>
<b>THERE'S HOPE</b>	<b>There are actions we can take that will make a big difference.</b>

# Reading brief statements about the eight health-harming pathways of climate change...

- Air pollution
- Extreme heat
- Extreme weather
- Vector-borne illness
- Water-borne illness
- Food-borne illness
- Hunger and malnutrition
- Mental health harms

## ...and who is most likely to be harmed...

- Babies, children, pregnant women
- Seniors, people with certain chronic illnesses
- People in low-income & communities of color
- Outdoor workers

...increases people's cognitive and affective engagement with the issue, **especially moderates and moderate conservatives.**



# Five policy solution pathways to improve our climate and our health:

- #1: Use clean, **renewable energy** and reduce energy waste
- #2: Favor **climate-smart foods**, farms, and food systems
- #3: Support clean and **active transportation** options
- #4: Improve our **buildings** and homes
- #5: Improve our **community environments**

The **climate benefits** of these policies **take years to accrue**, in small measures **worldwide**.

But the **health benefits accrue almost immediately** and primarily **locally** in the communities that take the actions.



# The most effective climate/health messages:

## 1. Show health impacts

Top three: air pollution; food-borne diseases; extreme weather

## 2. Identify policy solutions

Top two: clean energy; and improved community design

## 3. Affirm helpful social norms

"Most Americans agree that we want healthy communities and a healthy climate, [and many of us/but not enough of us] are taking action"

All three types of information increase engagement, but **solutions** information has the most impact.

This is equally true for **conservatives** as for liberals.

# Calling out opponents to climate action further strengthens the climate/health narrative

## Which opponents?

Fossil fuel CEOs and their lobbyists

Some politicians

Fossil fuel CEOs and their lobbyists, and the politicians who are in their pockets\*

## What it accomplishes, and with whom?

It significantly strengthens policy support and the intention to advocate

It is most effective with Republicans and Independents, thus providing further evidence of **the depolarizing effect of the climate/health narrative**

\* Most effective treatment condition

Our role is unique because the climate/health narrative:

Makes the problem personal.

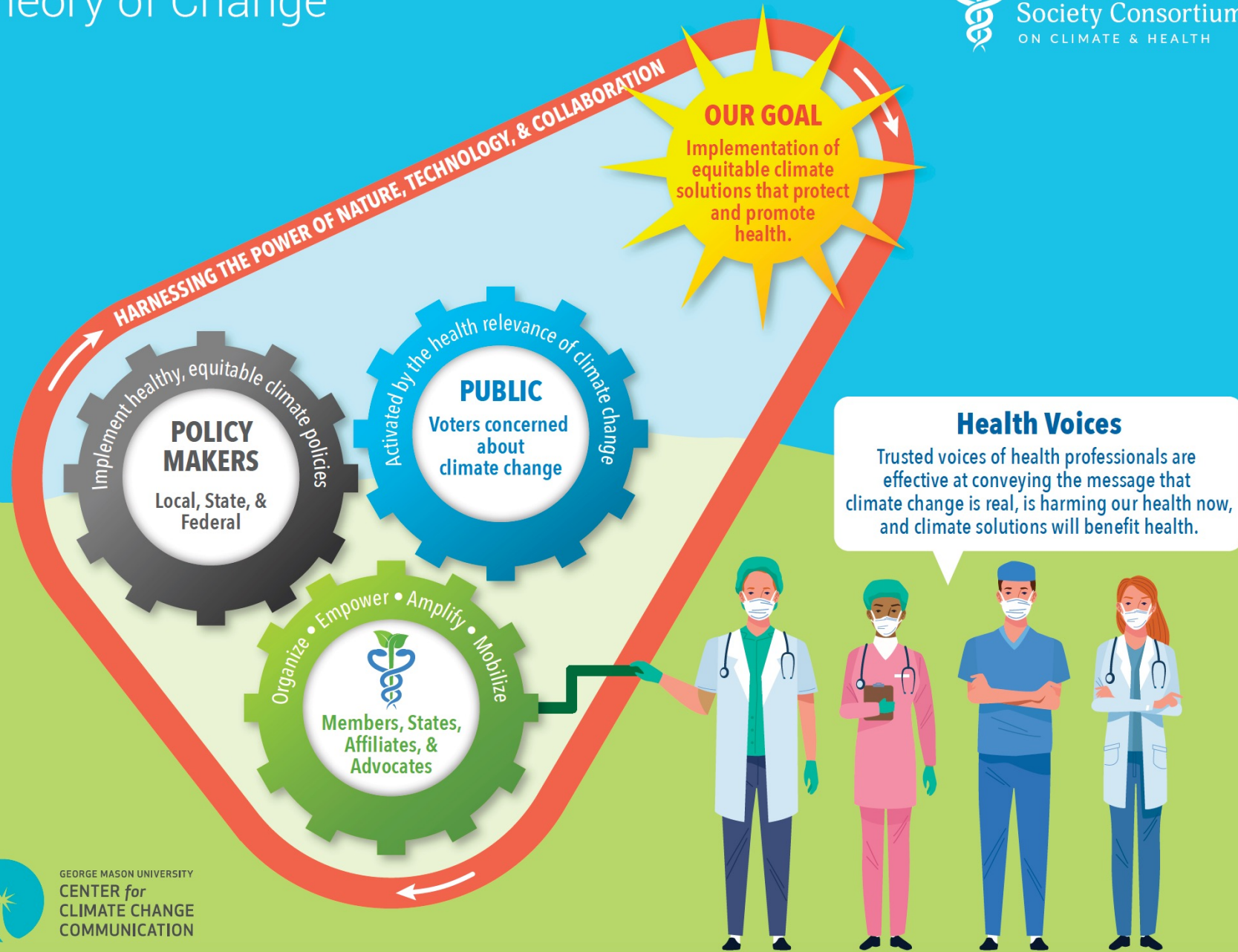
Brings the benefits of solutions into the present,  
and into our communities.

Depolarizes the issue.





# Theory of Change



# How can you help, as a health professional?

1. Join the **climate/health movement**.
2. Engage the public to **build public will** for equitable policy solutions in government and the corporate sector that protect our health and our climate.
3. Engage policymakers to **build political, corporate and institutional will** for necessary policies.
4. Conduct **research of consequence**.
5. Lead **by example** (in our private lives and our professional lives).

Let's use our trusted voices to help make fossil fuels history



Join the Medical Society Consortium on Climate & Health