



GEORGE MASON UNIVERSITY
**CENTER *for* CLIMATE CHANGE
COMMUNICATION**

From health communication understanding and promoting public engagement in climate change

PMAC, 2023

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Our actions are falling short of our ambitions...



Source: <https://www.thequint.com/videos/news-videos/blah-blah-blah-greta-thunberg-slams-global-leaders-for-inaction-on-climate-change>

Our key heuristics

A photograph of the Space Shuttle Columbia on the launch pad, ascending with a large plume of white smoke and fire. The shuttle is white with black and red markings, and the word "USA" is visible on the side. The launch pad structure is visible on the left.

**Spreading important
ideas**

(Achieving lift-off)

A photograph of the Space Shuttle Columbia in orbit above Earth. The shuttle is seen from a distance, with its nose pointing towards the right. The Earth's blue and white horizon is visible in the background.

**Changing people's
behavior**

(Achieving orbit)

The guiding heuristic:

A photograph of the Space Shuttle Columbia on the launch pad, ascending with a large plume of white smoke and fire. The shuttle is white with black and red markings, and the word "USA" is visible on the side of the orbiter. The launch pad structure is visible on the left.

**Spreading important
ideas**

(Achieving lift-off)

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

The guiding heuristic:

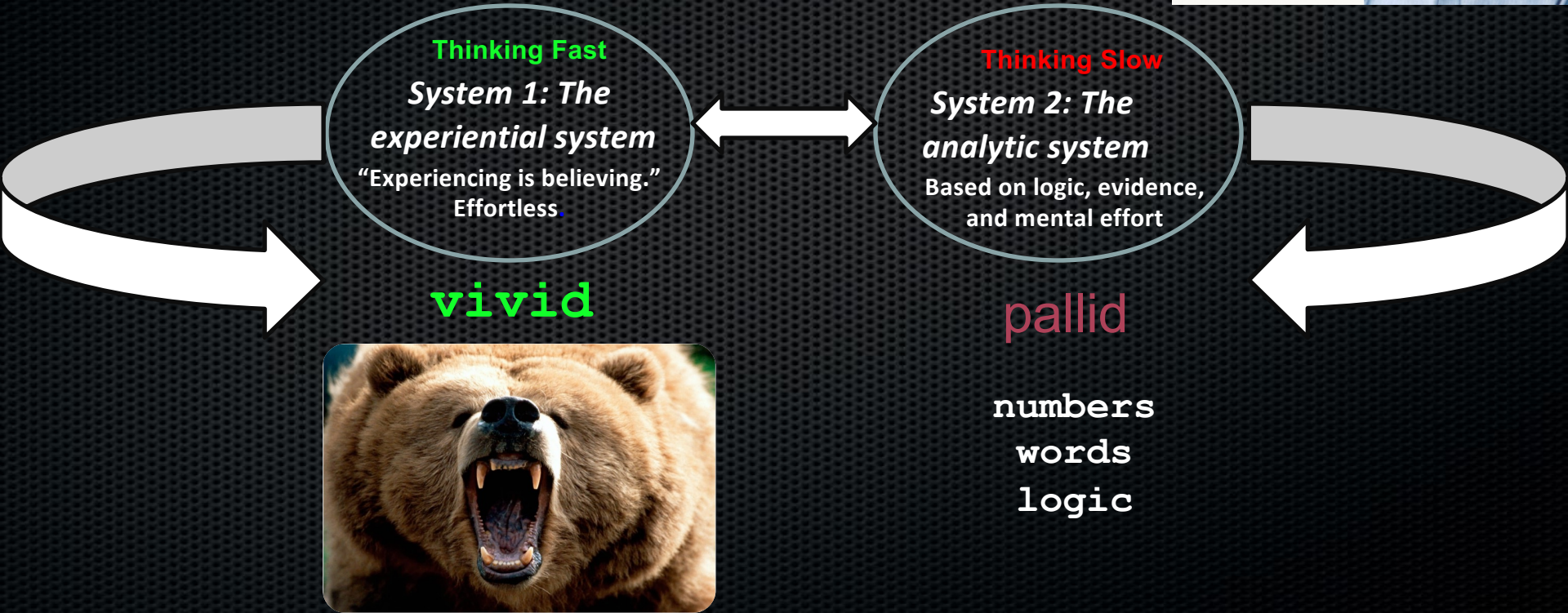
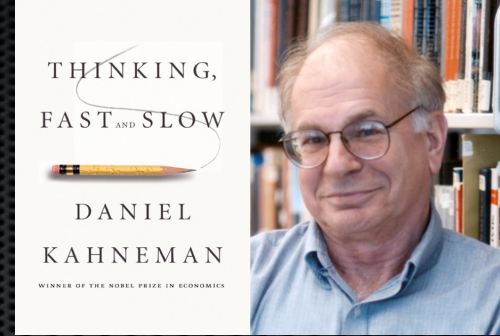
**Do everything possible to
make the behavior you
are promoting:**

- **Easy**
- **Fun &**
- **Popular**

**Changing people's
behavior**



Our brains process risk information in two ways



Heuristics or mental short cuts

20 COGNITIVE BIASES THAT SCREW UP YOUR DECISIONS

1. Anchoring bias.

People are **over-reliant** on the first piece of information they hear. In a salary negotiation, whoever makes the first offer establishes a range of reasonable possibilities in each person's mind.



2. Availability heuristic.

People **overestimate the importance** of information that is available to them. A person might argue that smoking is not unhealthy because they know someone who lived to 100 and smoked three packs a day.



3. Bandwagon effect.

The probability of one person adopting a belief increases based on the number of people who hold that belief. This is a powerful form of **groupthink** and is reason why meetings are often unproductive.



4. Blind-spot bias.

Failing to recognize your own cognitive biases is a bias in itself. People notice cognitive and motivational biases much more in others than in themselves.



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5. Choice-supportive bias.

When you choose something, you tend to feel positive about it, even if that **choice has flaws**. Like how you think your dog is awesome – even if it bites people every once in a while.



6. Clustering illusion.

This is the tendency to **see patterns in random events**. It is key to various gambling fallacies, like the idea that red is more or less likely to turn up on a roulette table after a string of reds.



7. Confirmation bias.

We tend to listen only to information that confirms our **preconceptions** – one of the many reasons it's so hard to have an intelligent conversation about climate change.



8. Conservatism bias.

Where people favor prior evidence over new evidence or information that has emerged. People were **slow to accept** that the Earth was round because they maintained their earlier understanding that the planet was flat.



9. Information bias.

The tendency to **seek information when it does not affect action**. More information is not always better. With less information, people can often make more accurate predictions.



10. Ostrich effect.

The decision to **ignore dangerous or negative information** by "burying" one's head in the sand, like an ostrich. Research suggests that investors check the value of their holdings significantly less often during bad markets.



11. Outcome bias.

Judging a decision based on the **outcome** – rather than how exactly the decision was made in the moment. Just because you won a lot in Vegas doesn't mean gambling your money was a smart decision.



12. Overconfidence.

Some of us are **too confident about our abilities**, and this causes us to take greater risks in our daily lives. Experts are more prone to this bias than laypeople, since they are more convinced that they are right.



13. Placebo effect.

When **simply believing** that something will have a certain effect on you causes it to have that effect. In medicine, people given fake pills often experience the same physiological effects as people given the real thing.



14. Pro-innovation bias.

When a proponent of an innovation tends to **overvalue its usefulness** and undervalue its limitations. Sound familiar, Silicon Valley?



15. Recency.

The tendency to weigh the **latest information** more heavily than older data. Investors often think the market will always look the way it looks today and make unwise decisions.



16. Saliency.

Our tendency to focus on the **most easily recognizable features** of a person or concept. When you think about dying, you might worry about being mauled by a lion, as opposed to what is statistically more likely, like dying in a car accident.



17. Selective perception.

Allowing our expectations to **influence how we perceive** the world. An experiment involving a football game between students from two universities showed that one team saw the opposing team commit more infractions.



18. Stereotyping.

Expecting a group or person to have certain qualities without having real information about the person. It allows us to quickly identify strangers as friends or enemies, but people tend to **overuse and abuse** it.



19. Survivorship bias.

An error that comes from focusing only on surviving examples, causing us to **misperceive a situation**. For instance, we might think that being an entrepreneur is easy because we haven't heard of all those who failed.



20. Zero-risk bias.

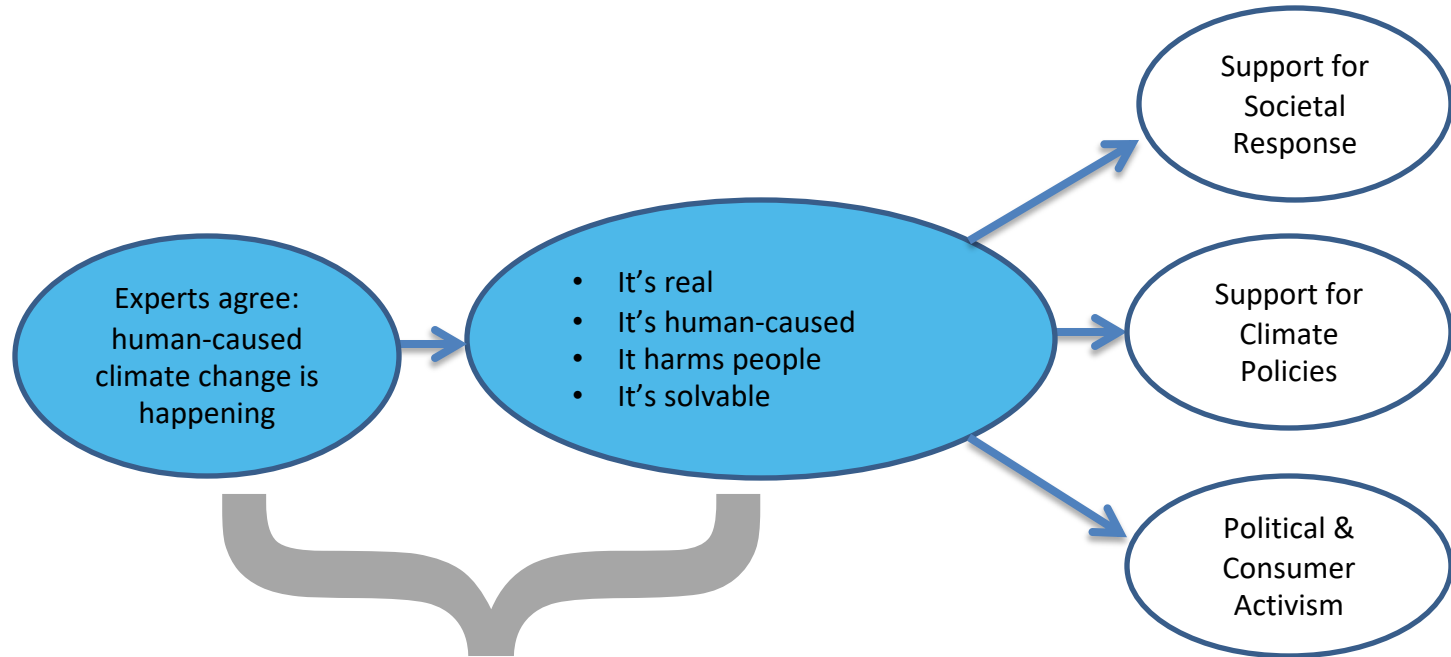
Sociologists have found that **we love certainty** – even if it's counterproductive. Eliminating risk entirely means there is no chance of harm being caused.



#1 Simple, clear messages

- 1. The less you say, the more you are heard**
- 2. Say the things that have the most value (in achieving your communication objective)**
- 3. Use audience research to determine which messages & which audiences have most value**

Five key beliefs about climate change contribute to a range of helpful attitudes and actions



The "big five" key beliefs

What should health professionals communicate?

To shape the “Big 5” beliefs, use the “Key 3” messages

Climate change:

- It's real
- It's us (human-caused)
- Experts agree
- It's bad (harmful to humans)
- There's hope (it's solvable)

More than 97% of climate scientists are convinced that human-caused climate change is happening.

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protect our health, and our climate:
reduce energy waste; use and/or
support clean energy

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The Essential Truth About Climate Change in Ten Words

While climate science is complex and interdisciplinary, the basic facts of climate change, established over decades of research, can be boiled down to five key points:

IT'S REAL

IT'S US

EXPERTS AGREE

IT'S BAD

THERE'S HOPE

Global warming is happening.

Human activity is the main cause.

There's scientific consensus on human-caused global warming.

The impacts are serious and affect people.

We have the technology needed to avoid the worst climate impacts.

#2 Repeat often, repeat often, repeat often....

...optimal frequency of repetition to be approximately 80 exposures per month (Marshall & Lu 2022).

“There is a simple rule: You say it again, and you say it again, and you say it again, and you say it again, and you say it again, and then again and again and again and again, and about the time that you’re absolutely sick of saying it is about the time that your target audience **has heard it for the first time.**”

— Frank Luntz, GOP message strategist

About “...by a variety of trusted voices.”:

- 1. Determine who is most trusted (because it may not be you).**
- 2. Ask trusted messengers to convey your message, and make it easy for them to do so.**
- 3. Ideally, your message(s) should be so simple and clear that even members of your target audience will start repeating it to their friends, family members and colleagues. They are your audiences’ most-trusted sources.**

To enhance the odds of success, create a team.

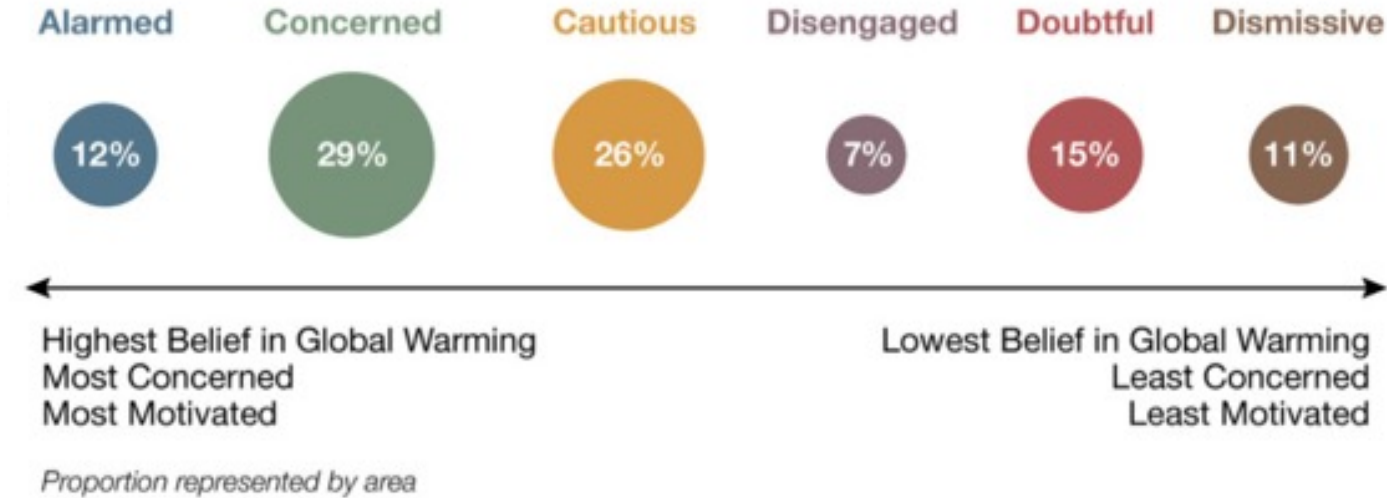
Effective public engagement is a team sport involving collaboration between:

- Content experts
- Social/decision science experts
- Communication experts

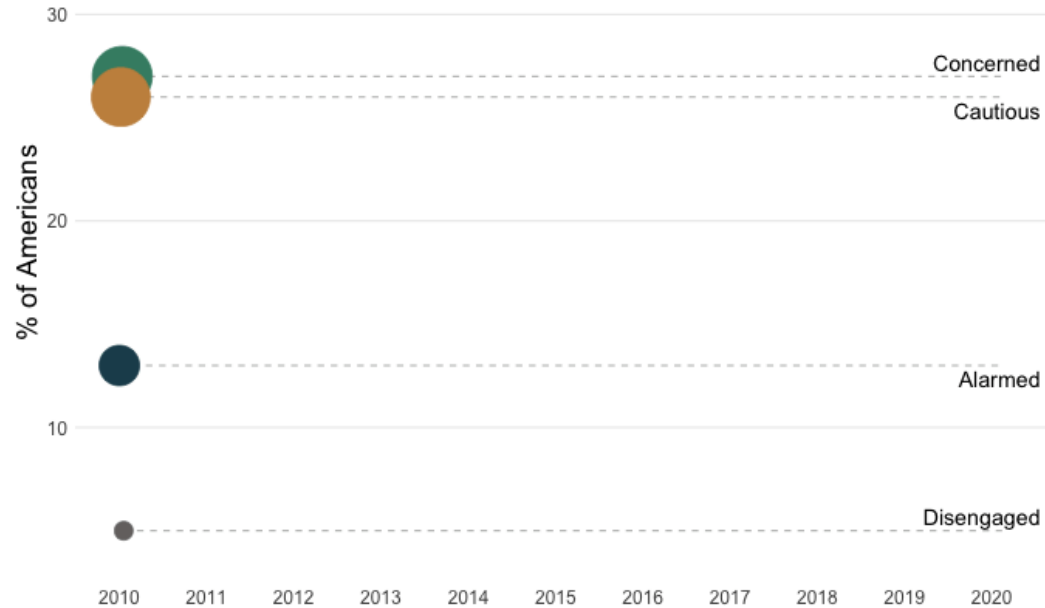


Remember: There is no such thing as “the public”

Example: Global Warming’s Six Americas



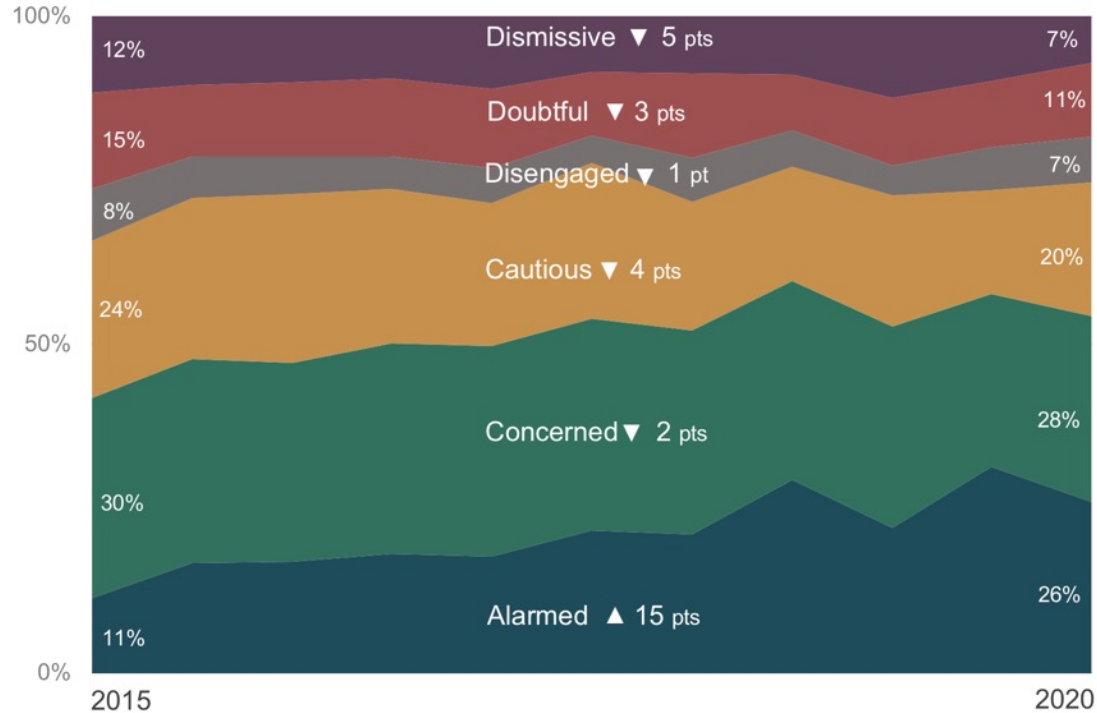
Global Warming's Six Americas



For more information, visit <http://bit.ly/gwsixam>



Global Warming's Six Americas: Five Year Trend



Data from 11 national surveys ($N = 13,609$) from March 2015 to April 2020.



YALE PROGRAM ON
Climate Change
Communication



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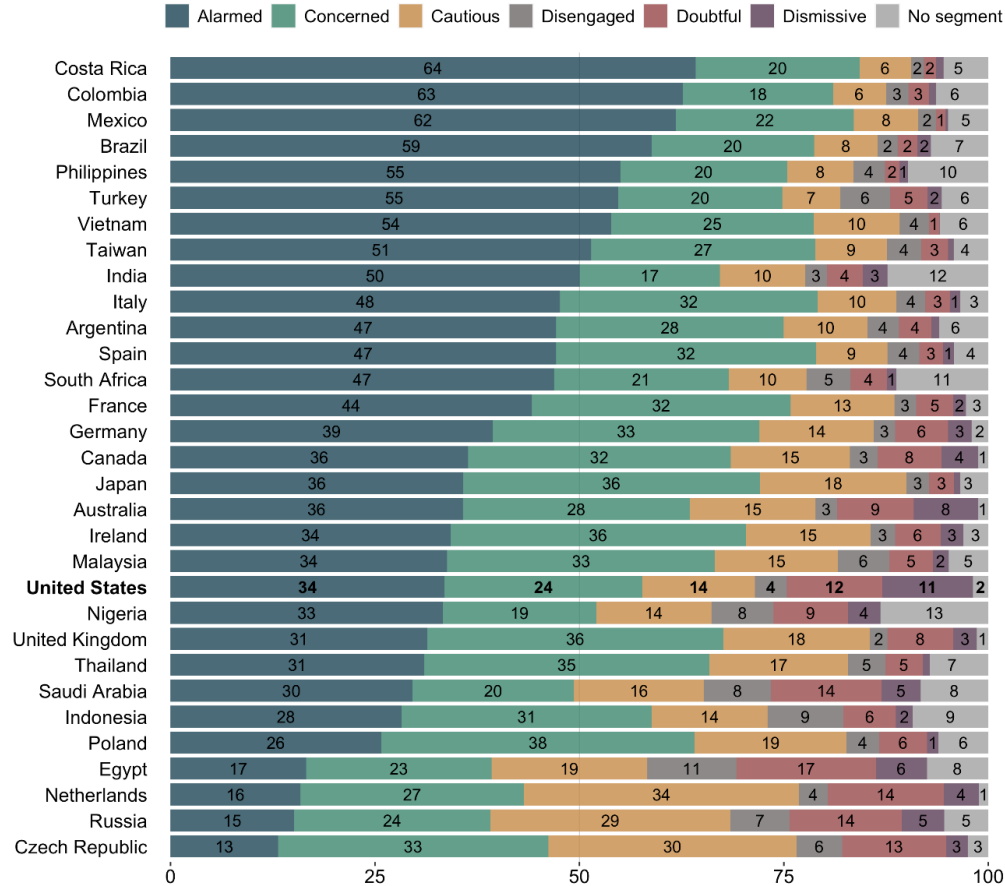


Communication



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Six Climate Change Audiences



Six Climate Change Audiences
Feb 2021



YALE PROGRAM ON
Climate Change
Communication

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The guiding heuristic:

**Do everything possible to
make the behavior you
are promoting:**

- **Easy**
- **Fun &**
- **Popular**

**Changing people's
behavior**



To make the behavior “easy”:

- 1. Identify the barriers that impede adoption of the behavior.** Do so by asking potential adopters what makes it hard for them to perform the behavior.
- 2. Create programs or resources that lower these barriers**
- 3. Create opportunities to publicly demonstrate (i.e., model) the behavior, and its positive outcomes.** This will increase potential adopter’s awareness, knowledge, sense of self-efficacy, expectations of benefits (i.e., fun).

To make the behavior “fun”:

- 1. Identify the benefits that potential adopters care most about (not the ones you care most about), and highlight those benefits when marketing the behavior.**
- 2. Do everything possible to deliver those benefits ASAP upon performance of the behavior. That is, provide immediate positive reinforcement for adopting the behavior.**
- 3. If possible, actually make the behavior fun. Seriously.**

To make the behavior “popular”:

- 1. Shine a light on the “bright spots” – i.e., notable people who are already embracing behavior.**
- 2. Identify “opinion leaders” in your target audience.**
Spend whatever time is necessary to win them over as your allies; their support is invaluable.
- 3. As the behavior becomes more normative, take every step possible to show members of your target audience how popular it is.**

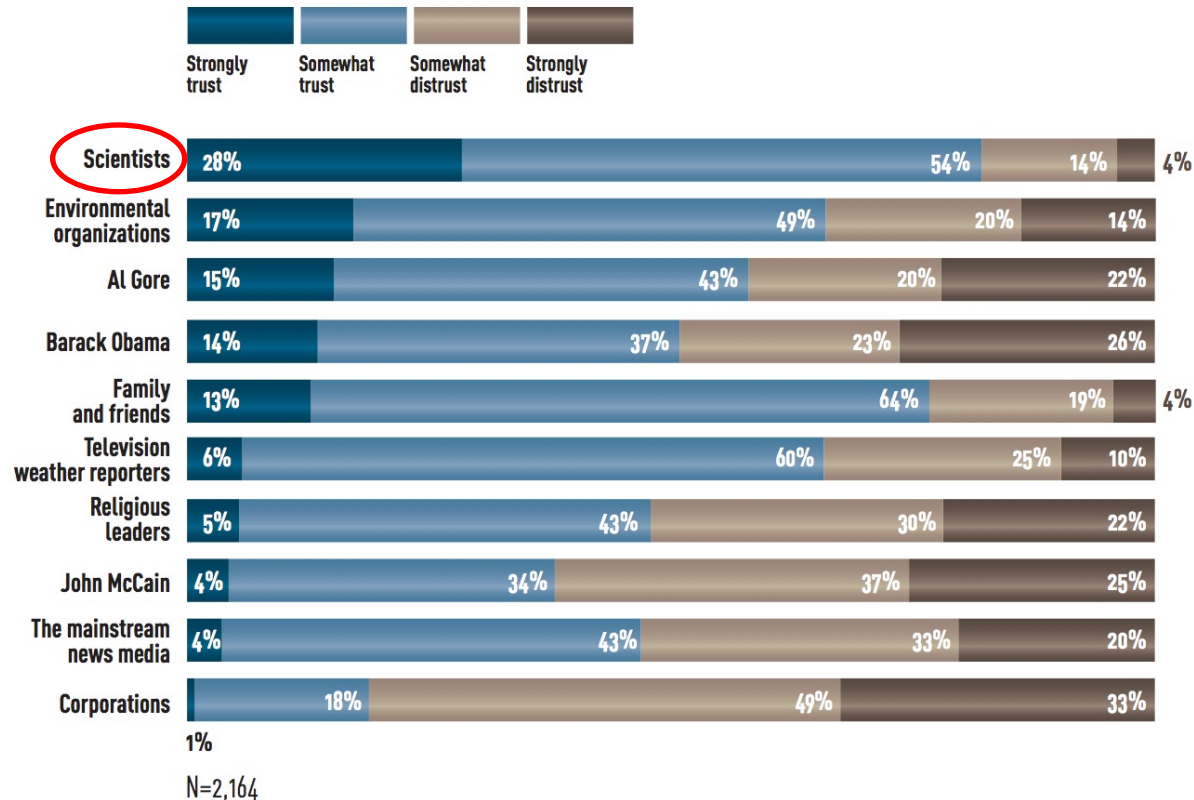
**An example of making the behavior
easy, fun and popular:**

Developing the *Climate Matters* program
to encourage and enable local TV weathercasters
to report on the local impacts of climate change.

Why weathercasters?

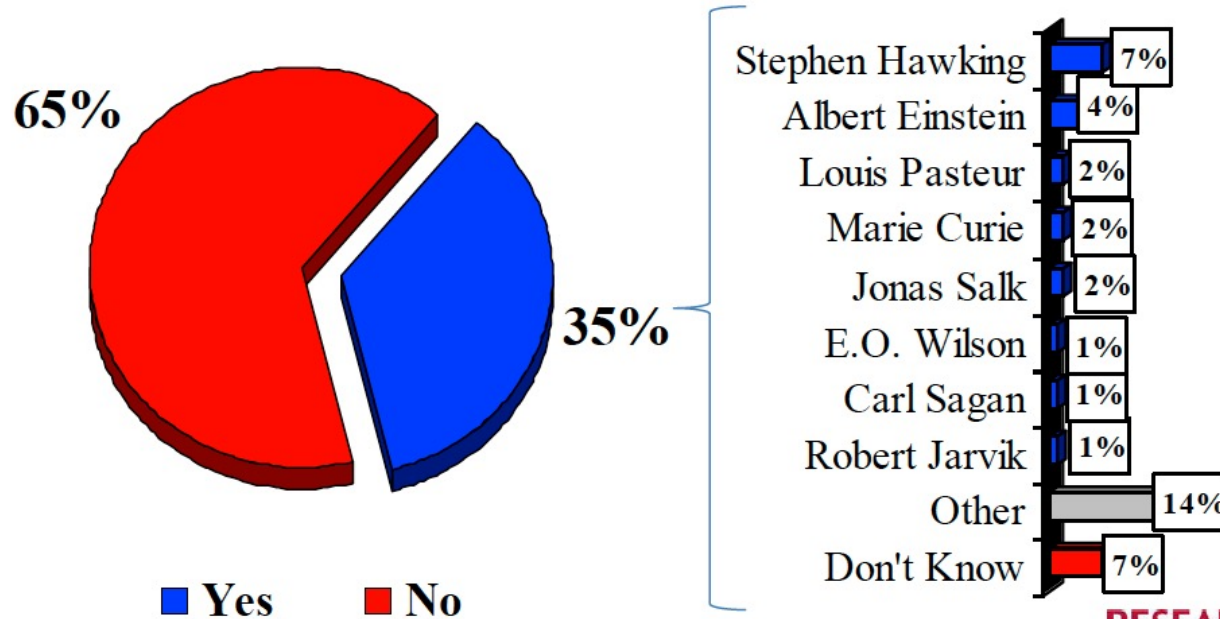
Figure 39: Trust

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



Most Americans Can't Name A Living Scientist

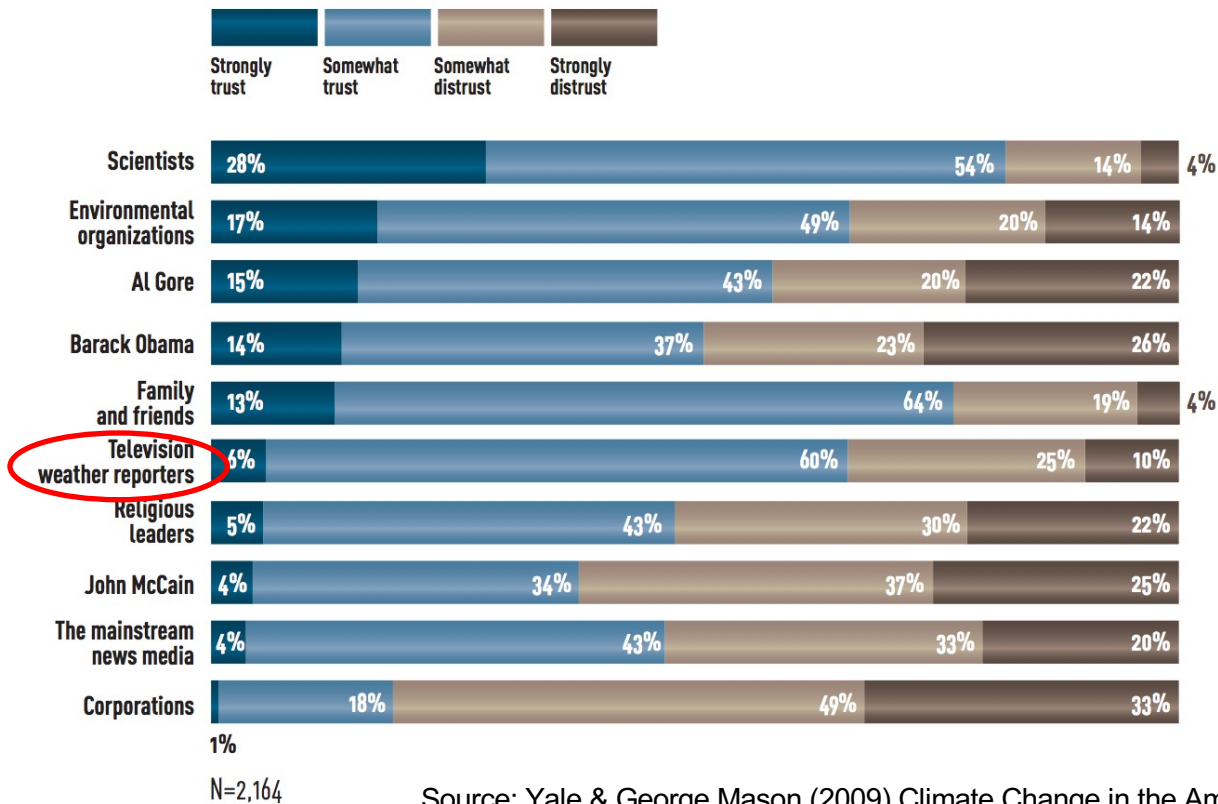
Can you name a living scientist? (*total mentions n=278*)



Source: Your Congress—Your Health Survey, June 2009
Charlton Research Company for Research!America

Figure 39: Trust

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



Source: Yale & George Mason (2009) Climate Change in the American Mind



Weathercasters have high trust and unparalleled access as climate educators.



And they have great communication skills!

But, in 2009, few weathercasters were educating their viewers about climate change.



So, we developed a program to change their behavior, using the principles of “make it easy, fun & popular.”

We created a climate communication team.

- Climate change experts

THE CLIMATE 25
HEIDI CULLEN
CHIEF SCIENTIST, CLIMATE CENTRAL



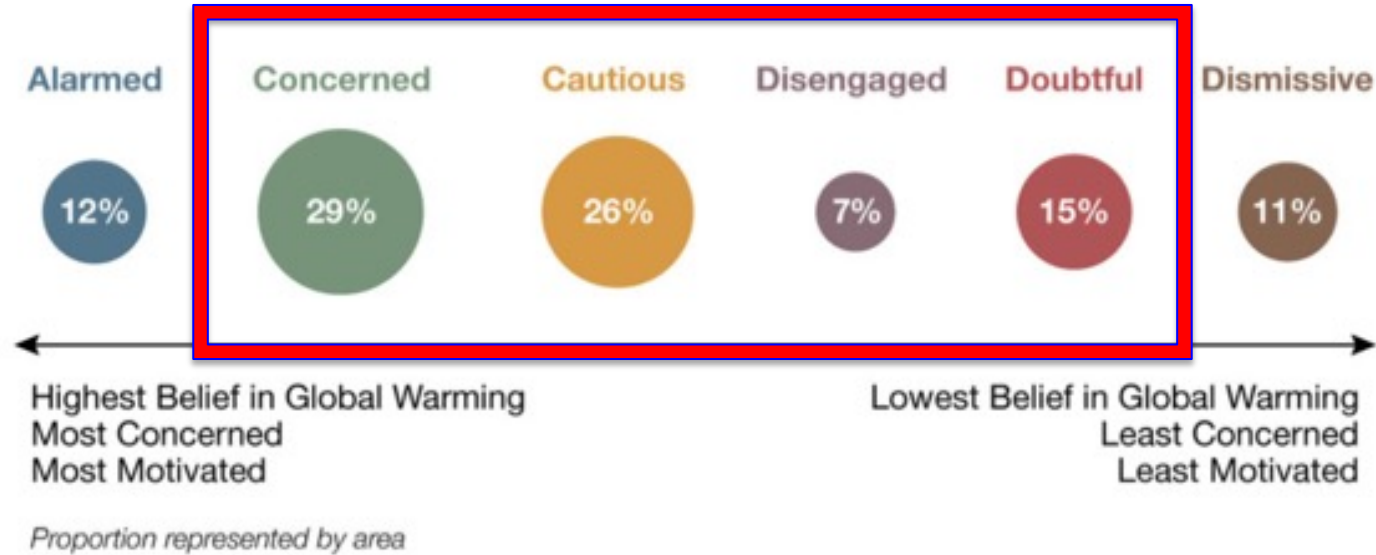
- Social/decision science experts



- TV weathercasters (i.e., communication experts)



From prior research, we knew our public target audience





We found a willing pilot-tester:
Jim Gandy, Chief Meteorologist,
WLTX (CBS), Columbia, SC

Climate Change Education through TV

Weathercasts: Results of a Field Experiment

Zhao, Maibach, Gandy, Witte, Cullen, Klinger, et al. (2013) DOI: 10.1175/BAMS-D-12-00144.1



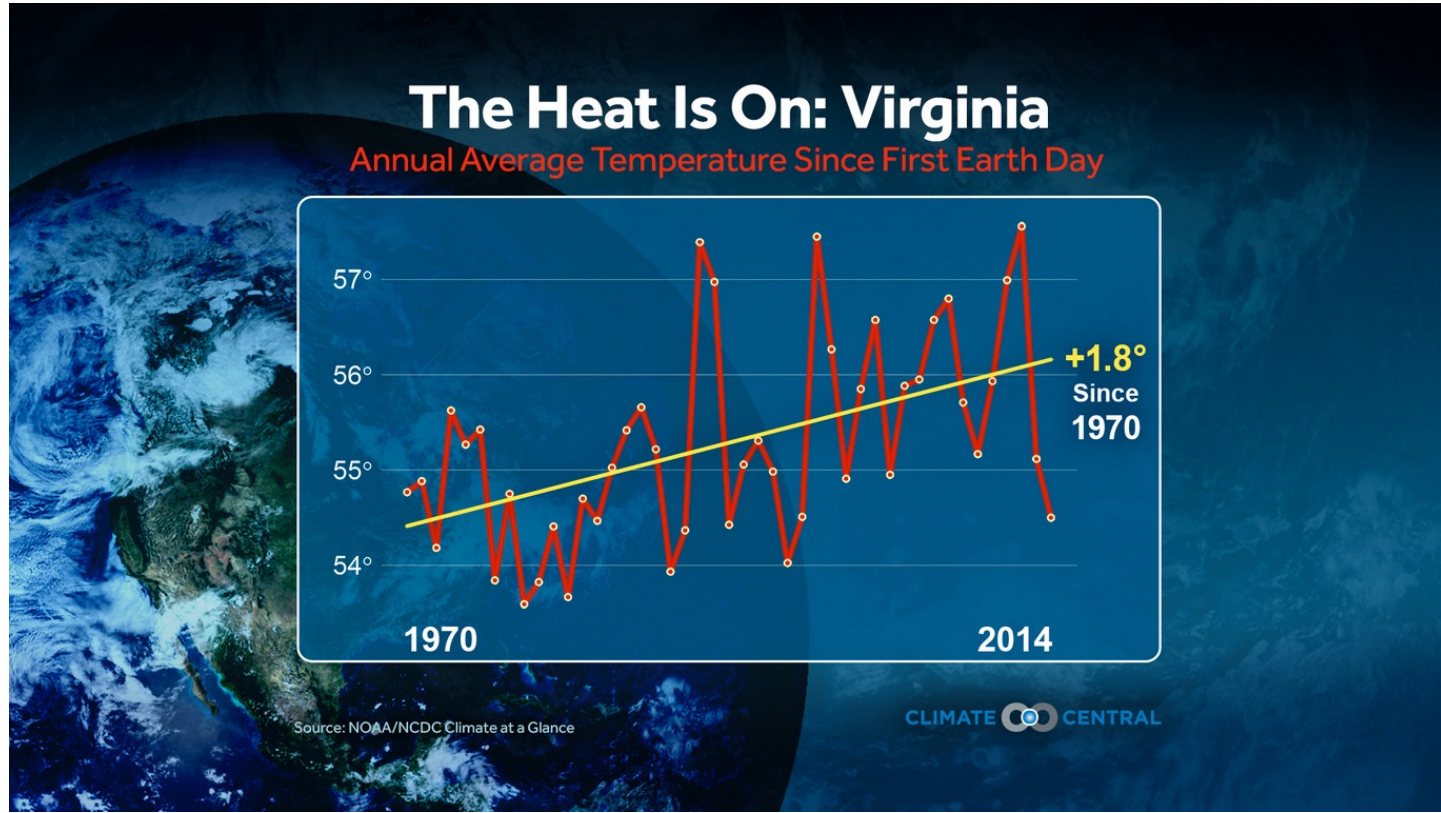
Note: This is not the real journal cover.

“The results of this field experiment suggest that when TV weathercasters educate their viewers about climate change, viewers gain a more science-based understanding of the issue.”

To make the behavior “easy” for other weathercasters:

1. **We asked weathercasters what inhibited them from reporting on climate change.** Answer: Lack of time (to develop stories), local data, and access to graphics.
2. **We developed Climate Matters to lower these barriers.** Weekly, localized data, graphics and talking points.
3. **We created opportunities to publicly demonstrate the behavior, and its positive outcomes.** Showing Jim Gandy (and eventually others) reporting on climate on-air, and reaping benefits from doing so.

Climate Matters: Localized, broadcast-ready materials that arrive participating weathercasters' email inbox.



CLIMATE MATTERS

WASHINGTON, D.C.

SPECIAL GUEST

Look who stopped by this week...Greg Fishel, Chief Meteorologist at WRAL in Raleigh.



He visited with our Climate Matters team, discussing life as a broadcast meteorologist and letting us know how we can help his climate change education efforts.

Climate Matters Mets In Action

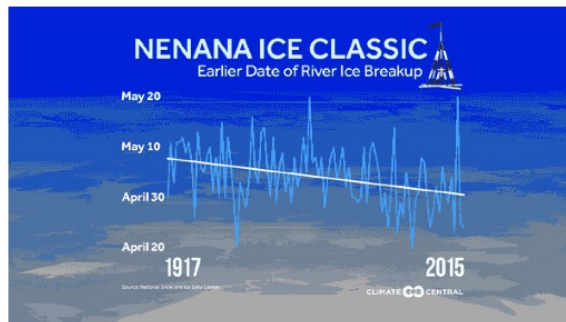


Mike Augustyniak (WCCO) in the Twin Cities shows the swing in temperatures each baseball season.

Story Highlights

- This is the 100th year of the Nenana Ice Classic, a contest to determine when the ice breaks up each spring on Alaska's Tanana River.
- There is a long-term trend toward earlier ice breakups, with 7 of the 8 earliest coming since 1990.
- The rapidly warming Arctic is already impacting Alaska in numerous ways and earlier ice breakups on the Tanana River are more likely.

...



Animated Versions

Title: [MOV](#) • [MP4](#)

No Title: [MOV](#) • [MP4](#)

Stills

Title: [JPG](#) • [Transparent PNG](#)

No Title: [JPG](#) • [Transparent PNG](#)

4 ON
Change
ication



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Dan Satterfield (WBOC) reminds us that despite a local cold snap, the world is still warming.

Social Media Facts

100 yrs of Alaska's Nenana #IceClassic shows clear trend to earlier ice breakups in a warming world <http://bit.ly/23rTdIW> via @climatecentral



Tip for the Nenana Ice Classic:
On average, ice breaks up 5 days earlier than a century ago
<http://bit.ly/1qNNGFh> via @climatecentral



Animated Versions

Title: MOV • MP4

No Title: MOV • MP4

Stills

Title: JPG • Transparent PNG

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This year marks the 100th occurrence of a special annual event in the central Alaska town of Nenana. About 50 miles southwest of Fairbanks, the **Nenana Ice Classic** is a contest to determine what time the ice on the adjacent Tanana River breaks up each spring.

In 1917, railroad engineers got together and wagered a combined \$800 on when the ice on the river would break up. In the decades that

From NASA



A new NASA tool looks deeper into global sea levels and how melting ice from Greenland and Antarctica contribute to the rise.

From NOAA



A Maine lobster fishing community **confronts** their changing climate.

...



In case you **missed it**, this was the 4th warmest March on record nationally with above normal temps for every state. This was the 3rd warmest 1st Quarter (Jan-Mar) on record as well.

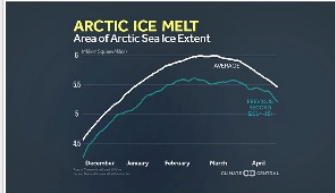
As the climate continues to warm, the shift to earlier ice breakups on the Tanana River are more likely. By the way, it's too late to get into the contest this year as entries closed on April 5.



From **WXshift.com**

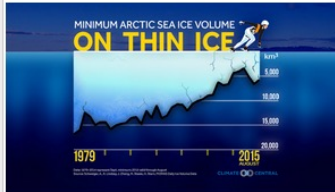
[Why melting sea ice is important >>](#)

Supporting Multimedia from the **Archive**



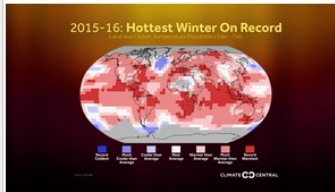
Ice on the decline

[grab from the archive >>](#)



Arctic Sea Ice Minimum

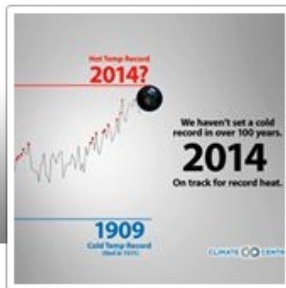
[grab from the archive >>](#)



Hottest winter on record

[grab from the archive >>](#)

CLIMATE CO CENTRAL



Climate Matters
Media/News/Publishing

Like

Following

Message



Timeline

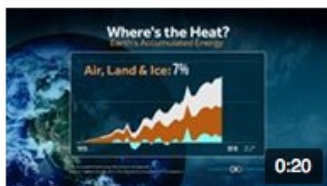
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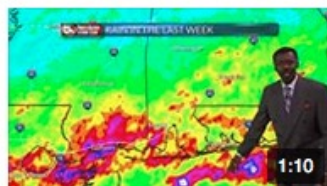
More

All Videos



This Earth Day, take a look at the climate system:...

2 Likes · 400 views



Heavy downpours are increasing across the...

1 Like · 38 views



Just how bad has this drought been for the...

3 Likes · 580 views



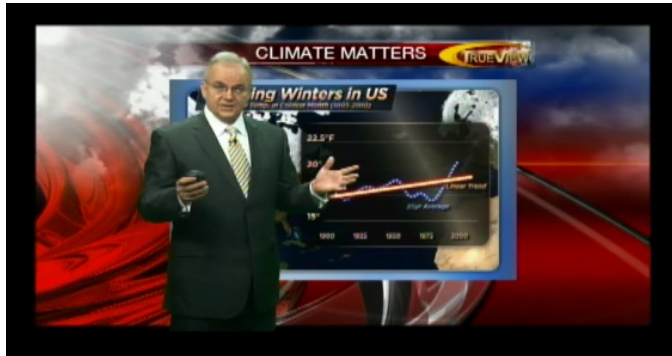
Denise Isaac takes a look at how Miami's 2014/15...

33 views



To make the behavior “fun” for other weathercasters:

- 1. We show them that reporting on climate change will advance their careers.**
- 2. We highlight positive feedback by viewers, by the news media, and by their peers.**
- 3. In our trainings, we make the behavior fun. Seriously.**



Jim Gandy, Senior Meteorologist
WLTX, Columbia, SC

“Chief Meteorologist Jim Gandy ... is the 2013 recipient of the AMS Award For Excellence in Science Reporting by a Broadcast Meteorologist.”

“Mr. Gandy received the award and recognition for pioneering efforts to educate viewers about climate change and explaining how it already affects them.”





Release of the 3rd National Climate Assessment

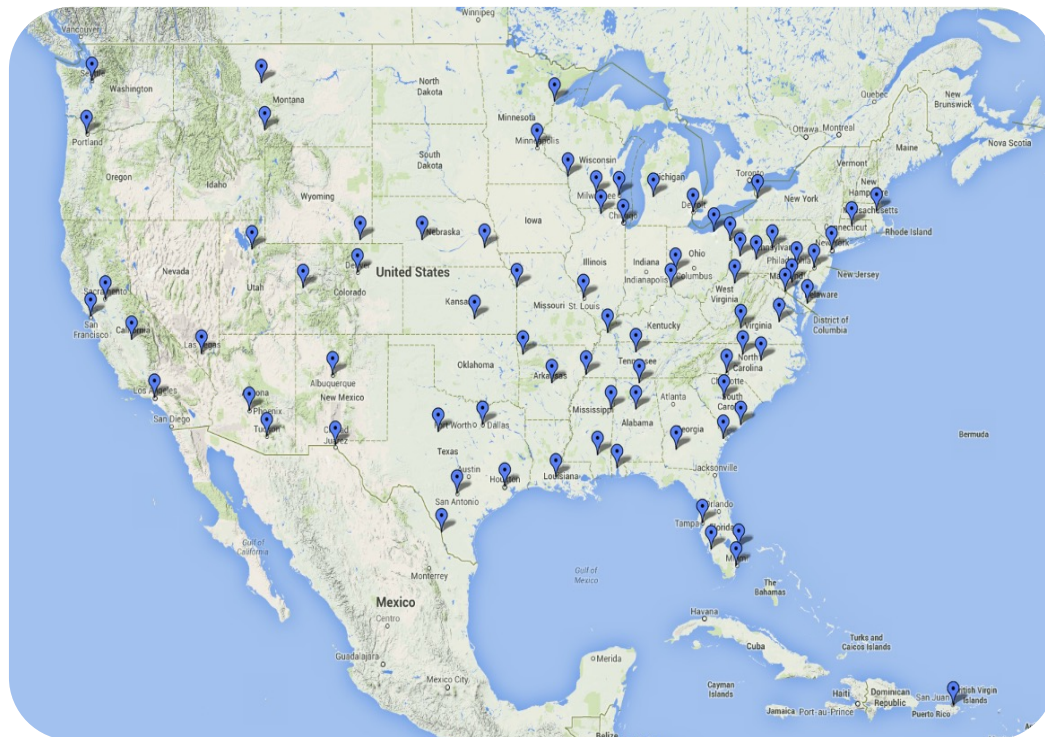
White House Rose Garden, May 6th 2014

To make the behavior “popular” with weathercasters:

- 1. We shine a light on the “bright spots” – weathercasters who are already reporting on climate.**
- 2. We identified “opinion leaders” in the broadcast meteorology community, and focus on bringing them aboard.**
- 3. Because of Climate Matters, the behavior is becoming normative, and we take every opportunity to make that clear.**



Status report



Remember, and use, these two guiding heuristics

A photograph of a space shuttle launching from a launchpad, with large plumes of white smoke and fire at its base. The shuttle is white with black and orange accents.

**To spread
important ideas:**

Simple clear messages,
repeated often,
by a variety of
trusted voices

A photograph of a space shuttle in orbit above Earth's blue and white horizon. The shuttle is white with black and orange accents, and its solar panels are deployed.

**To change people's
behavior:**

Make the behavior
easy, fun & popular