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Summary of IDMH Conference "Preparing for the Health and Mental Health Consequences of Climate Change"

Research Brief: Potential Pitfalls in Scientific Communication

The DMH Responder is a quarterly production of...

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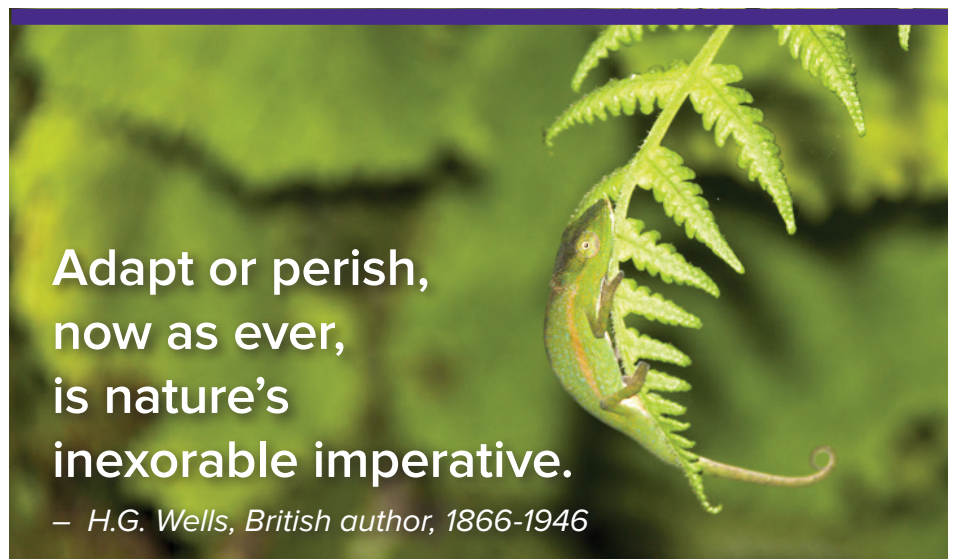
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Welcome

Welcome to the spring 2015 issue of the New York DMH Responder, our quarterly newsletter for the Disaster Mental Health community. This edition summarizes presentations at the recent Institute for Disaster Mental Health at SUNY New Paltz conference, "Preparing for the Health and Mental Health Consequences of Climate Change." Climate change-related risks are complex and include not only acute, extreme weather events like the hurricanes and floods that have recently struck New York state, but also chronic public health concerns like the drastic increase in Lyme Disease that has sickened and disabled so many in our community. New Yorkers face the loss of revenues and of many aspects of our way of life that will result in widespread stress, whether an individual is coping with an acute problem like illness or loss of employment, or is more generally trying to adapt to the changing environment. The IDMH conference brought together experts from fields including government, public health, and media to discuss a range of possible solutions to these daunting challenges.

Thanks to generous sponsorship by the New York State Division of Homeland Security and Emergency Services (DHSES) about 50 New York State Office of Mental Health (OMH) and Department of Health (DOH) personnel received full scholarships to the conference. We hope these summaries will be informative for readers who were not able to attend the event.

As always, your feedback and suggestions for topics to cover in future issues are welcome; please email any comments to Judith LeComb at DOH or Steve Moskowitz at OMH.



## Mental Health Consequences of Climate Change

Following opening remarks by SUNY New Paltz President Donald Christian; Kevin Wisely, Director, State Office of Emergency Management (SOEM); and Col. (Retired) Chris Gibson, Ph.D., Congressman, 19th District New York, the first keynote presentation was delivered by Dr. Nicole Lurie. Dr. Lurie is the Assistant Secretary for Preparedness and Response at the U.S. Department of Health and Human Services where she serves as the Secretary's principal advisor on matters related to bioterrorism and other public health emergencies. The mission of her office is to lead the nation in preventing, responding to and recovering from the adverse health effects of public health emergencies and disasters. As such, Dr. Lurie coordinates interagency activities between HHS other federal agencies and state and local officials responsible for emergency preparedness and the protection of the civilian population from acts of bioterrorism and other public health emergencies.

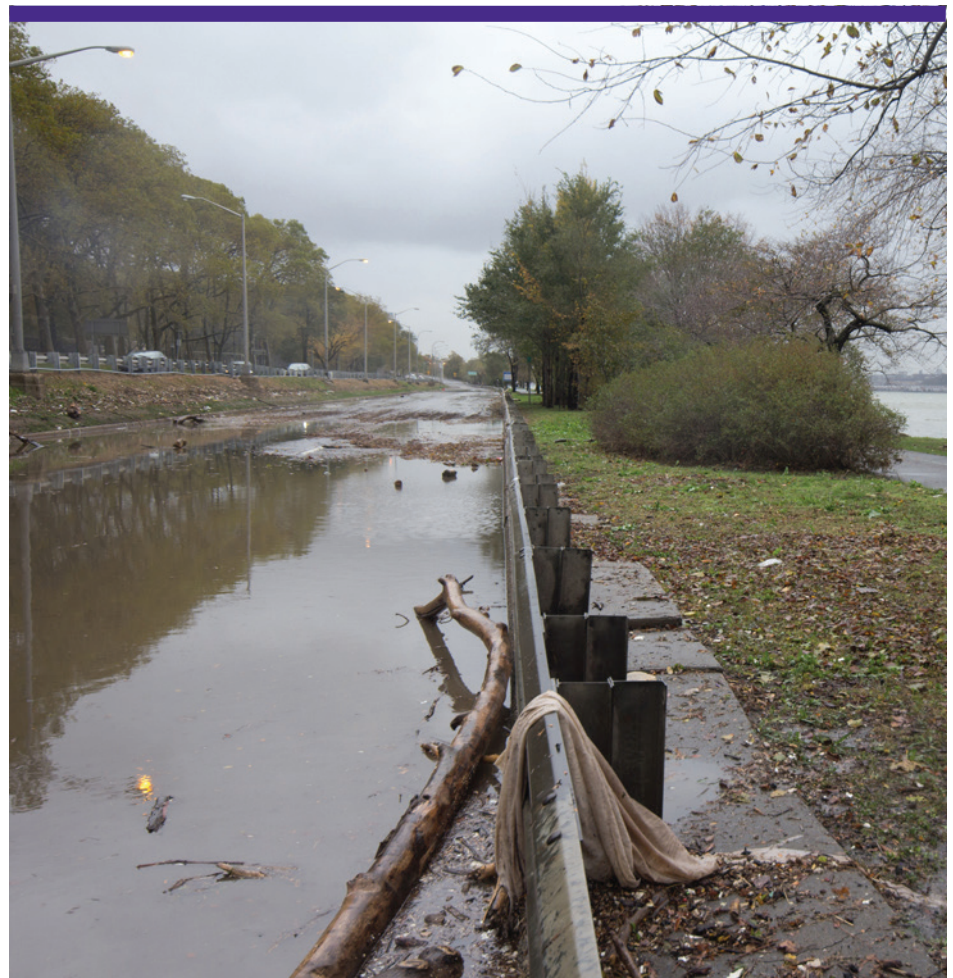
Dr. Lurie began by acknowledging that all scientific data point to a changing climate that is producing more extreme weather events and each disaster reveals new public health implications. In 2012 alone, extreme weather events in the US cost more than \$100 billion in damage and recovery expenses – and beyond the economic costs, each event impacts medical, physical, mental, and community health. In all of these realms people with more pre-disaster resilience tend to

have a better recovery but the reverse is also true: Those who were more vulnerable before the event tend to suffer more during and after it. As an example, Dr. Lurie described how the obesity epidemic in the US complicates disaster-related demands like evacuations and sheltering.

Another theme Dr. Lurie emphasized was the importance of social connectedness in disaster recovery. Communities with higher levels of neighborhood interactions tend to be more resilient so one goal of the National Recovery Framework is to rebuild disaster-

stricken communities in ways that increase opportunities for residents to connect with each other. Two other psychological effects of disaster Dr. Lurie addressed for the general public included:

- An “epidemic of fear” consisting of excessively prevalent and contagious worry and perception of danger, particularly around disease outbreaks.
- The new concept of “solastalgia,” which describes the anguish felt when one’s home environment is damaged or degraded.



Turning to the impact of disasters on professionals Dr. Lurie pointed out how often the psychosocial needs of first responders and healthcare workers are overlooked. Hospital personnel and other healthcare workers may struggle to fulfill their professional duties in the disrupted post-event environment while also dealing with their own losses. And in some cases, she noted, the actual first responders are not officially in that role. For example, much of the rescue and recovery work after the mudslide in Oso, WA, was performed by local loggers who had the needed skills but who did not have the training and preparation for dealing with the gruesome sights they encountered that professional first responders may receive, nor did they have the needed support structure afterward.

In order to address the growing mental health needs generated by climate change-related disasters and other critical events Dr. Lurie outlined four key goals her organization is striving to pursue:

- Institutionalize disaster behavioral health considerations in the preparedness cycle so they are built in from the start, not an afterthought;
- Promote Psychological First Aid before as well as after disasters;
- Enhance social connectedness throughout communities; and
- Provide direct assistance by supporting programs like the SAMHSA Technical Assistance Center, which offers

training, consultation, disaster behavioral health resources, information exchange, and knowledge brokering, and the Disaster Distress Helpline, which provides crisis counseling and support to people experiencing emotional distress related to natural or human-caused disasters.

Finally, Dr. Lurie suggested four techniques that can be used to build community and individual resilience for the long term:

- Leverage strengths of everyday systems;
- Use children as resources;
- Build social capital, including both bonding among community members and bridging gaps between communities and helping institutions; and
- Innovate with social media

By pursuing these goals before disaster strikes a community, members will be better equipped to recover and adapt.

### Presenter's Resource Recommendations:

*Building Resilience: Social Capital in Post-Disaster Recovery*

Daniel P. Aldrich  
University of Chicago Press,  
2012

SAMHSA Technical Assistance Center  
<http://www.samhsa.gov/dtac>

Disaster Distress Helpline  
<http://www.samhsa.gov/find-help/disaster-distress-helpline>



### Did You Miss the IDMH Conference?

Many presentations are available for viewing at:  
[www.newpaltz.edu/idmh/conference.html](http://www.newpaltz.edu/idmh/conference.html)



## Climate Change, Communication and Our Inconvenient Minds

The second keynote address was presented by Andrew Revkin, the Senior Fellow for Environmental Understanding at Pace University and author of the New York Times Dot Earth blog. He focused on the current science of climate change, ways in which messaging has polarized the public and how to use messaging and communication to promote climate change comprehension and action. It's a significant challenge for the media, he noted, as there are many hurdles to making members of the public understand risk, especially regarding a topic where there are no quick fixes and the best scientific data is often too complex to present simply. In fact, he noted, more scientific data may make the picture more nuanced but it doesn't necessarily make it much clearer so the challenge of explaining the situation to the public remains problematic even in the face of overwhelming evidence.

In particular, Mr. Revkin pointed out that large-scale damage from disasters is often more directly attributable to demographic patterns (especially increased population densities) than to climate change itself, since population increases mean that more people are affected when an event does occur. But acknowledging that human factor certainly does not mean that people shouldn't try to take action to address climate change as well. As he summarized the need for action, "Don't wait for better science – risk reduction now, mitigation forever."

One of the reasons efforts to motivate action so often fail, Mr.

Revkin said, was that scientists and reporters often count on the "deficit model of change," the belief that the public simply has a deficit in understanding about the topic and if they're provided with the facts that will naturally lead to change. However, numerous studies demonstrate that this basic assumption is flawed. In fact, sometimes efforts actually have a boomerang effect as providing information makes people more resistant to altering their position. (See this issue's Research Brief for more on this phenomenon.)

Media also may contribute further to the problem by focusing on the divide between climate change believers and skeptics. Emphasizing disputes between the two camps, Mr. Revkin pointed out, tends to hide areas of agreement about energy and resilience issues. And this is exacerbated even further by the fracturing of the mainstream media into polarized positions: When consumers can so easily limit their exposure to media outlets that reinforce their existing beliefs, we risk becoming further isolated from each other and more unable to find common ground. However, to end on a positive note, he emphasized that this divisive trend is increasingly offset by the innovative ways of communicating directly with the public afforded by the development of social media and other forms of technology, allowing citizens to bypass both mainstream media and governments to spread the word about important issues like climate change.



Simathers | Dreamstime.com - People's Climate March New York City 2014 Photo

### Presenter's Resource Recommendation:

The Cultural Cognition Project: "A group of scholars interested in studying how cultural values shape public risk perceptions and related policy beliefs. Cultural cognition refers to the tendency of individuals to conform their beliefs about disputed matters of fact (e.g., whether global warming is a serious threat; whether the death penalty deters murder; whether gun control makes society more safe or less) to values that define their cultural identities. Project members are using the methods of various disciplines -- including social psychology, anthropology, communications, and political science -- to chart the impact of this phenomenon and to identify the mechanisms through which it operates."

<http://www.culturalcognition.net>

## The Health Consequences of a Changing Climate

The next presentation turned specifically to health issues. Dr. George Luber is the Associate Director for Climate Change in the Division of Environmental Hazards and Health Effects at the National Center for Environmental Health, Centers for Disease Control and Prevention, where his recent work has focused on the epidemiology and prevention of heat-related illness and death, the application of remote sensing techniques to modeling vulnerability to heat stress in urban environments, and climate change adaptation planning.

After pointing out that climate change is altering both the average global temperature and the global frequency of extremely hot temperatures most of his talk emphasized not only the public health effects of climate change but the causal pathways through which those effects occur. Echoing a point made earlier in the conference, Dr. Luber noted that a great deal of the increased risk results from population increases, particularly in urban environments that act as “heat islands” which trap heat and increase the likelihood of deaths from hyperthermia, especially among the rapidly growing demographic group of older adults. This urban heat also increases air pollution, exacerbating asthma, while hotter temperatures and higher levels of carbon dioxide are spiking pollen counts from ragweed, increasing suffering from seasonal allergies. In more rural areas extreme heat often results in wildfires resulting in smoke-related respiratory illnesses.

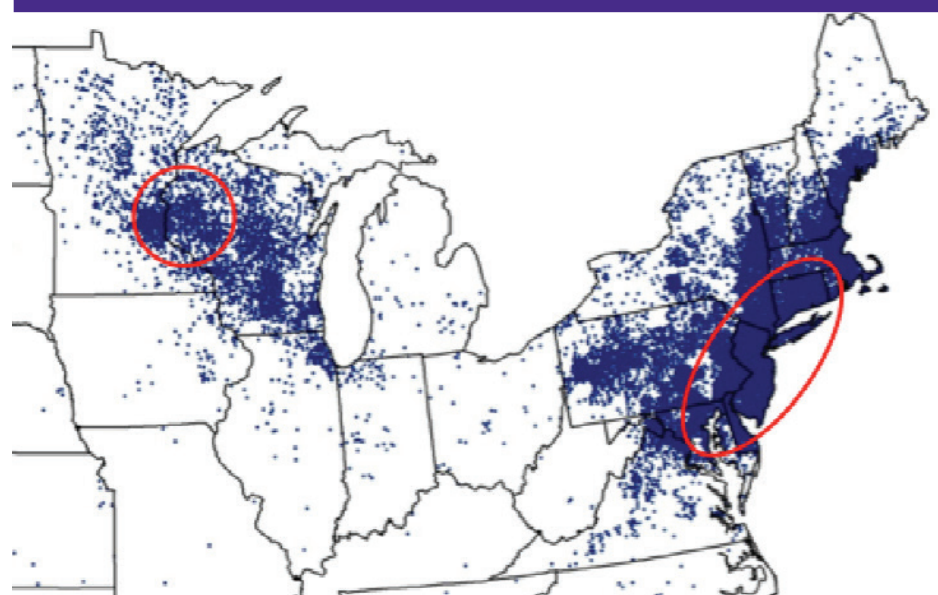
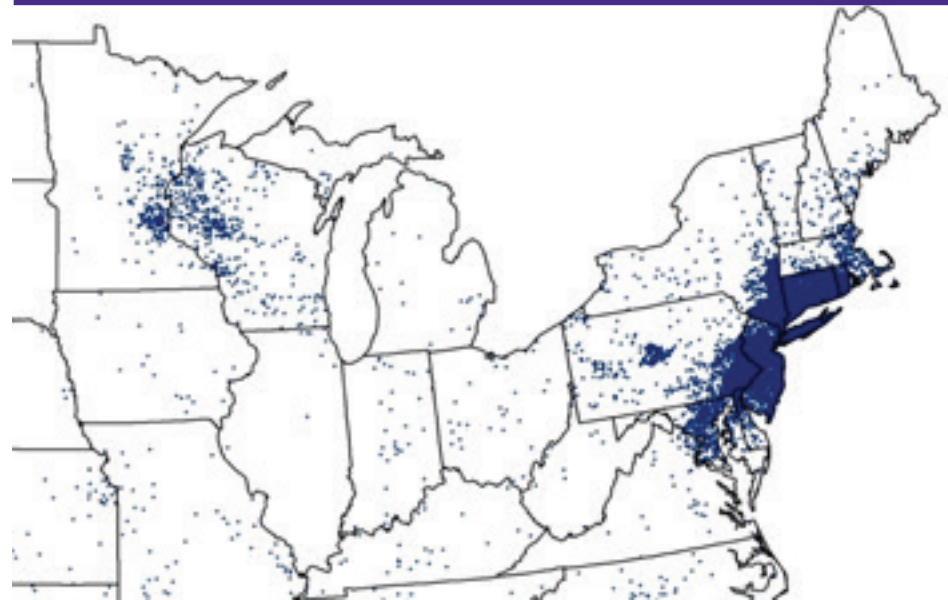
Turning to health concerns related to water, Dr. Luber

pointed out that warmer air is capable of holding higher levels of water vapor which means that climate change is leading to more “extreme precipitation events.” These downpours often overwhelm sewage systems sometimes resulting in contaminated drinking water that leads to waterborne disease

outbreaks. Climate change also appears to be spreading mosquitos, ticks, and other disease vectors to new latitudes and altitudes. A map showing the spread of Lyme Disease cases throughout the Northeast and parts of the Midwest from 1996 to 2011 literally drew gasps from the audience.

### Lyme Disease Case Distribution Change, 1996 to 2011

<http://www.cdc.gov/lyme/stats/maps/interactiveMaps.html>



## Envisioning a Feasible, Scalable, Effective, and Engaging Post-Disaster Response

The final keynote presentation at the IDMH conference was delivered by Dr. Josef Ruzek, Director of the Dissemination and Training Division of the National Center for PTSD in the U.S. Veterans Health Administration. Dr. Ruzek specializes in early intervention to prevent the development of PTSD and co-authored the *Psychological First Aid and Skills for Psychological Recovery* field guides created jointly by the National Center for PTSD and the National Child Traumatic Stress Network, which many readers may be familiar with. Dr. Ruzek discussed the challenges of developing interventions to address the mental health consequences of climate change, given the enormous scale of the populations effected. One key: Technology.

Dr. Ruzek began by acknowledging the limited evidence basis for current post-trauma interventions, as well as challenges in monitoring outcomes, engaging clients in interventions and scaling up responses to meet demand due to inadequate numbers of well-trained mental health practitioners. While he believes that Psychological First Aid and the natural healing process are sufficient to assist the majority of disaster survivors with their typical post-trauma reactions there is always some minority who need more support in order to prevent or treat more serious responses. For this group, in addition to basic services like providing accurate information, supporting self-efficacy, and providing positive expectations of recovery, more

formal evidence-based change methods may be needed, including cognitive-behavioral interventions, therapeutic exposure, and cognitive restructuring to correct distorted perceptions. Other beneficial elements of many evidence-supported interventions include goal-setting, self-monitoring of symptoms, coping skills training, social reinforcement, and activity scheduling.

Many of these elements, Dr. Ruzek suggests can be implemented via technology. Among technology's strengths, he enumerated the following abilities:

- Increase survivors' self-management capabilities;
- Enable services globally in areas lacking significant mental health service infrastructure;

### *The Health Consequences of a Changing Climate, continued from page 5*

Global food security is also facing the threat of climate change. While some people argue that elevated carbon dioxide levels may increase crop yields, Dr. Lubner countered that any increases are offset by a reduction in protein in staple crops like rice and wheat, as well as decreased concentrations of iron and zinc in many crops, making them less nutritious overall. Not surprisingly, between all of these documented effects of climate change and people's anticipatory fear about the future, the mental health consequences are also significant.

What are the Centers for Disease Control and Prevention doing to

address these multiple threats? Dr. Lubner outlined a number of ways CDC is trying to help states and cities prepare for health challenges of climate change including:

- Providing scientific guidance;
- Developing decision support tools;
- Ensuring public health concerns are considered in climate change adaptation and mitigation strategies; and
- Creating partnerships between public health and other sectors.

Finally, Dr. Lubner discussed the concept of "shifting the coping range" to adapt to the changes

ahead. This includes a constant, iterative process of reducing hazard probability, reducing hazard exposure, and reducing vulnerability that involves a cycle of five steps:

1. Forecasting climate impacts and assessing vulnerabilities;
2. Projecting the disease burden;
3. Assessing public health interventions;
4. Developing and implementing a climate and health adaptation plan; and
5. Evaluating the impact and improving quality of activities.

Through this process CDC hopes to stay in front of climate change's evolving health consequences.



- Increase the effectiveness of care by bringing it into the world of the survivor and providing just-in-time support;
- Enable routine gathering of outcome data to establish evidence of effectiveness; and
- Reach large numbers of individuals via behavior change methods such as self-monitoring, video and audio modeling, and scheduling reminders

Given these strengths he suggests that a future model of disaster mental health response could incorporate apps and web tools into face-to-face services. The technological tools would enhance and support the professional counseling, while collecting outcome data that would allow practitioners to refine their services.

Dr. Ruzek acknowledged that many in the audience might feel horrified at the idea of bringing technology into the mental health sphere, but the reality is that within another decade or so, virtually everyone in the world will have a smartphone. And the capabilities they offer can be capitalized on to support behavior change: Calendar notifications to remind a client to complete a specific assignment, video to watch breathing techniques or other modeling, GPS to warn a client in recovery from substance abuse when they're too close to triggering locations or to reward someone for going to the gym, and so on.

Dr. Ruzek then described an application he and colleagues at the National Center for PTSD



developed in collaboration with clients (specifically, veterans with PTSD) called PTSD Coach. It includes tools for self-assessments that are tracked over time, symptom management, finding support (both personal contacts and services like the Veteran's Crisis Line), and relaxation videos. The application has been well received, he said, and the organization subsequently developed a number of other apps including Prolonged Exposure Coach, which is meant to help clients engaged in the treatment complete assignments between sessions. Comparable applications could certainly be developed to assist disaster survivors as they work with crisis counselors.

Summarizing his vision for the future Dr. Ruzek described a scenario in which public health messaging would include links to websites and downloads of apps capable of reaching a large number of survivors. These tools would not replace face-to-face services but would be incorporated into them,

including both individual and group support. This would allow individuals to be triaged into levels of care with outcomes monitored to help change levels as appropriate. Counselors would be able to treat more survivors, the power of brief interventions would be enhanced and program outcomes would be collected to routinely to increase understanding of intervention efficacy. In short, just as technology is responsible for some aspects of climate change and other sources of stress in modern life, it can also be used to help address resulting mental health needs.

### Presenter's Resource Recommendations:

#### National Center for PTSD Apps

##### For Providers:

<http://www.ptsd.va.gov/professional/materials/apps/>

##### For Patients and Families:

<http://www.ptsd.va.gov/public/materials/apps/index.asp>

## Research Brief: Potential Pitfalls in Scientific Communication

In his IDMH keynote address New York Times Dot Earth blogger Andrew Revkin referred to the failure of the “deficit model” of science communication, which assumes that increasing public awareness about an issue will sway public opinion toward support for the scientific evidence. Given the tenacity of climate change skepticism among some groups, it’s clear that simply presenting data is insufficient to convince certain individuals that significant shifts are occurring – and in fact, being confronted with evidence of climate change sometimes strengthens people’s rejection of the concept. What accounts for this irrational boomerang effect?

Communications researchers Hart and Nisbet (2012) examined some of the processes behind message acceptance or rejection and found the following:

- People tend to practice “selective exposure,” only paying attention to media sources and messages that they are already inclined to agree with. Therefore, if someone is currently skeptical about climate change, they will tend to limit information-seeking to sources that are likely to support that position.
- If they’re exposed to an incongruent message from a trusted source (for example, a television channel that normally ignores or derides climate change issues broadcasts an item suggesting it’s real) they’re likely to practice “motivated reasoning” that leads them to either reject the information or reinterpret

it in line with their preexisting beliefs.

- The degree of social identification with those depicted as potential victims can further boost message rejection, so a story describing rising sea level’s effects on people on distant continents is seen as having little personal relevance, making it easy to dismiss.

Given this extensive bag of mental tricks people can use to disregard the evidence, it’s

clear that government officials and members of the media face an uphill battle in convincing a portion of the public that the need for action is real.

Source: Hart, P.S., & Nisbet, E.C. (2012). Boomerang effects in science communication: How motivated reasoning and identity cues amplify opinion polarization about climate mitigation policies. *Communication Research*, 39, 701-723.

