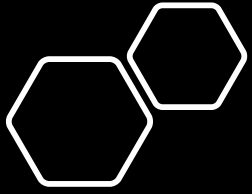


Fidelity First

A Plan to Increase the Credibility of USG Science-Based Communications

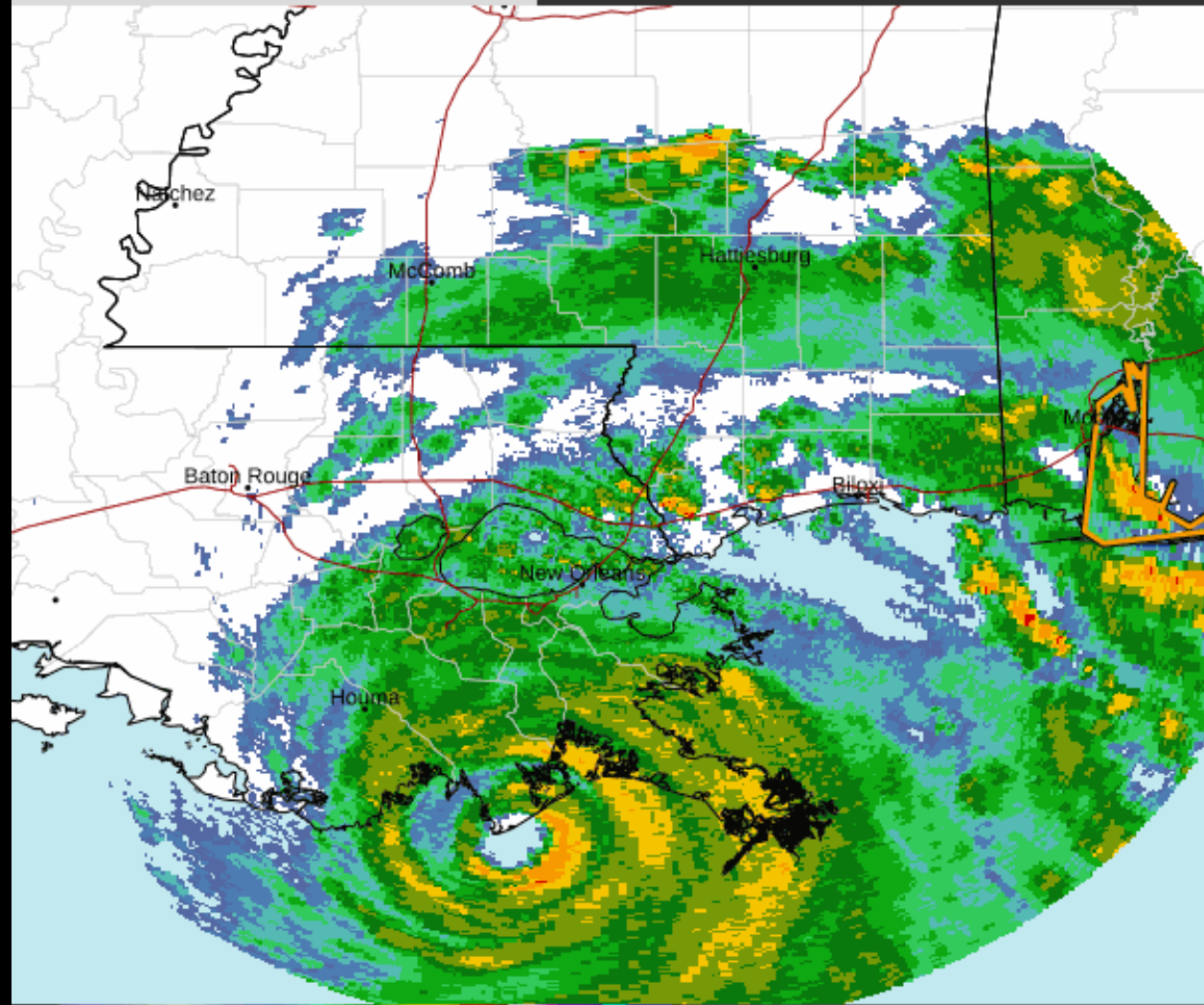


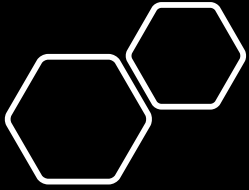
Arthur Lupia
Gerald R Ford Distinguished Professor
University of Michigan
for PCAST



American
science leads
the world.





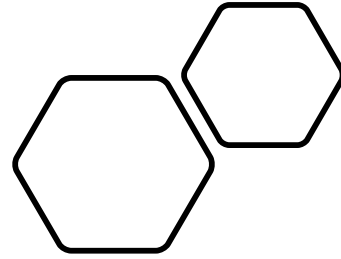


mRNA COVID Vaccine

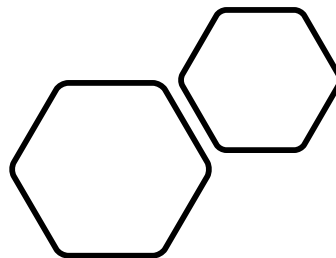


Image Credit: Wikipedia Commons

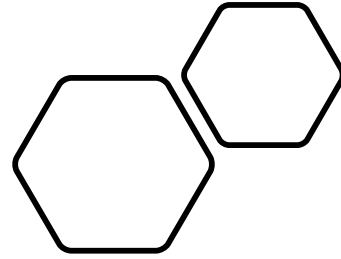
Can we do
better?

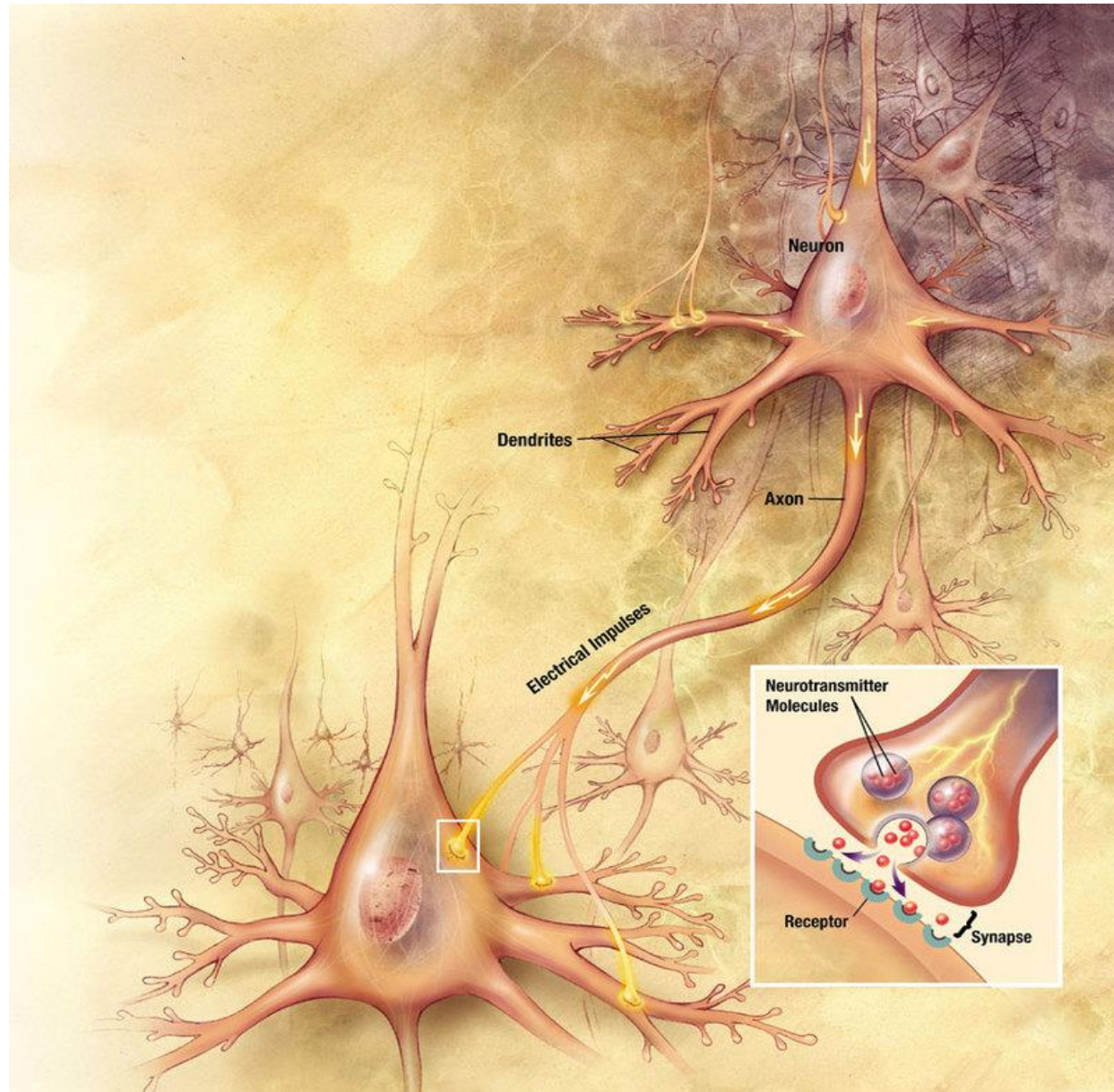


Fidelity First



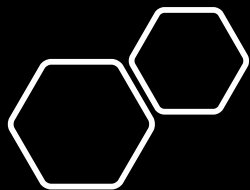
A Few Facts





Source: www.c2cinternet.org/index.php?id=185





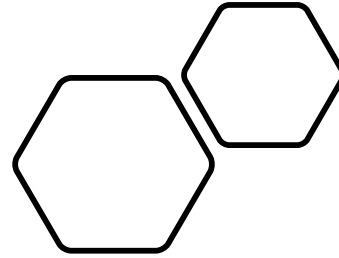
Attributes of Human Attentive Capacity

- WM has a very **limited capacity** (7 ± 2 chunks)
- WM has a **high decay** rate (for most stimuli, $< 1\text{ms}$).
- To win, the carrying utterance must:
 - **imply large Δ in prospective pleasure or pain**
 - prevail over proximate competition

For reviews see

- A Baddeley. 2012. "**Working Memory: Theories, Models, and Controversies.**" *Annual Review of Psychology* 63: 1-29, and
- EK Miller, TJ Buschman. 2015. "**Working Memory Capacity: Limits on the Bandwidth of Cognition.**" *Daedalus: Journal of the American Academy of Arts and Sciences* 144: 112-122

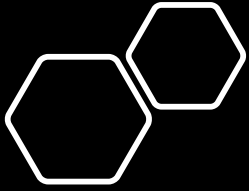
Competition is
Fierce





A	U	D	I	O
T	O	A	D	S
A	B	O	U	T
B	A	T	O	N

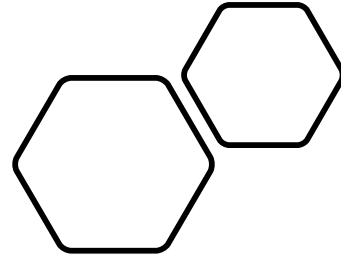


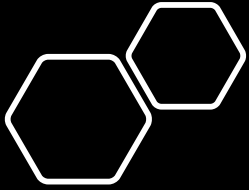


How to Increase the Likelihood of Attention

- Immediate relevance to core concerns
- Consistent with values
- Actionable

Credibility





Key Insights

- Credibility is not inherent.
- Credibility is bestowed by learners.
- Source credibility \approx
 - *perceived* common interests x
 - *perceived* relative expertise

For reviews, see

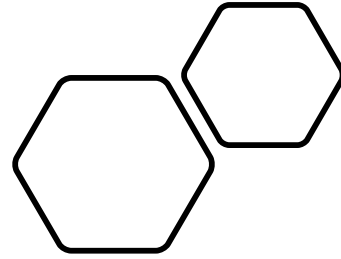
- A Lupia. 2013. “**Communicating Science in Politicized Environments.**” *Proceedings of the National Academy of Science* 110: 14048-14054, and,
- A Lupia. 2016. **Uninformed: Why People Know so Little about Politics and What We Can do About It.**



Hurricane Dorian Forecast Track and Intensity



Can we do
better?



Evidence-based Policy

Evidence

Based

Policy

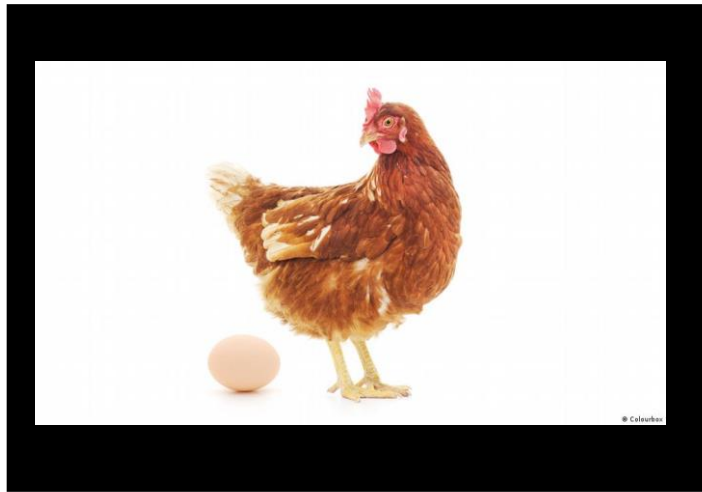
Evidence-based Policy



What the Farmer Wanted



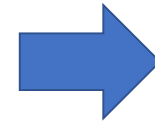
Evidence-based recommendations & claims



A scientific finding

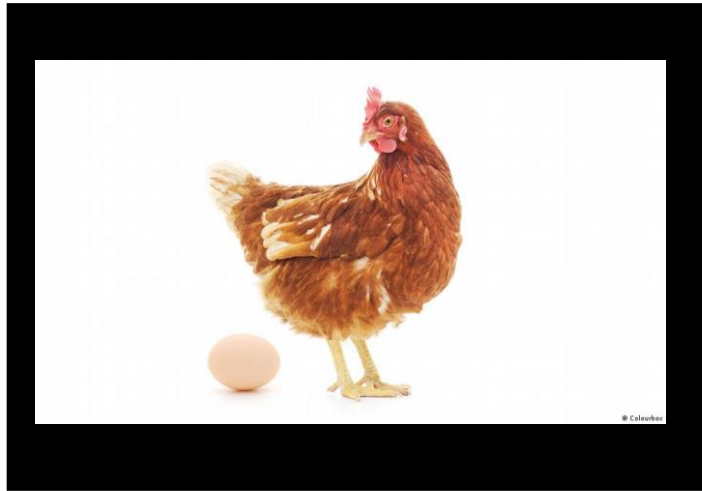


value diversity,
positionality,
politics
& more



A behavioral/policy
recommendation/claim

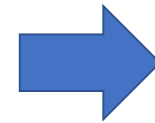
Follow the science?



A climate science finding

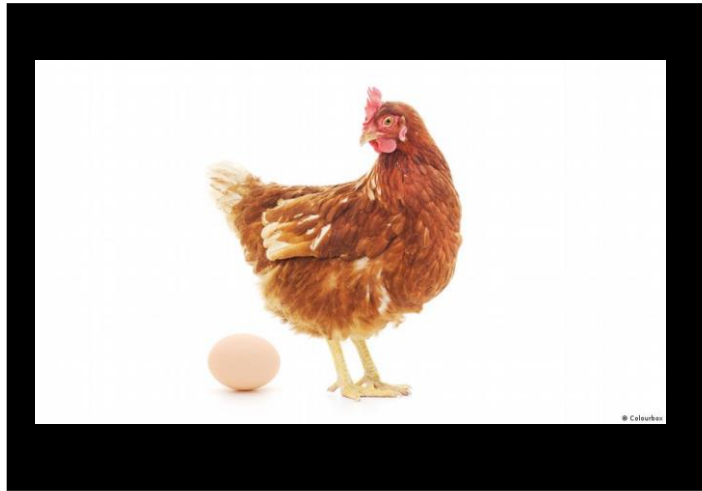


ethical
considerations
& more



“Follow the science”: a climate
behavior/policy recommendation/claim

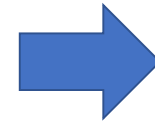
Follow the science?



Results of Clinical Trials

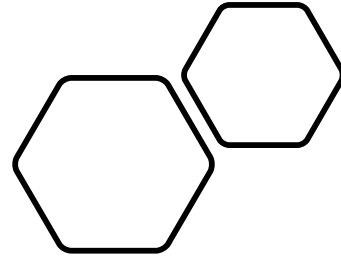


ethical
considerations
& more

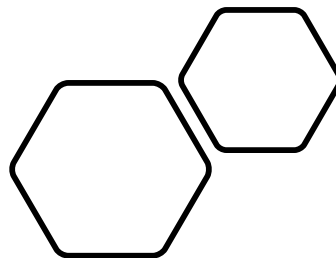


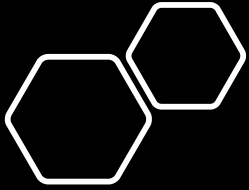
“Follow the science”: a vaccine
behavior/policy recommendation/claim

Can we do
better?



Fidelity First



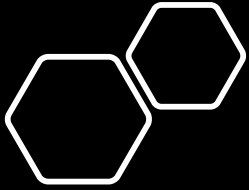


Fidelity First

“All science-related USG communications

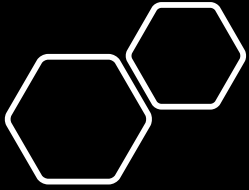
must meet the highest possible standards of fidelity

to the underlying empirical and theoretical corpus.”



USG Template (1/2)

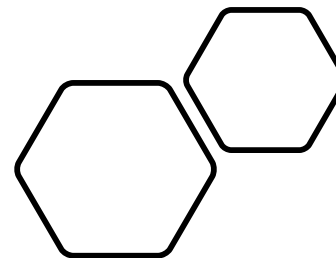
- For claims that are about scientific research and not its policy implications, statements should be of the form:
- “Study A produced Finding B.”
- Example: “mRNA COVID vaccine clinical trials showed B.”



USG Template (2/2)

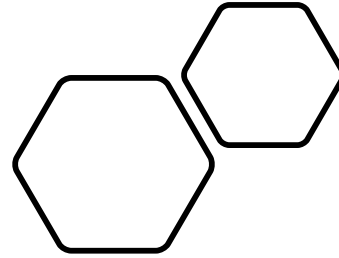
- For claims that include scientific content but are not solely about scientific research, statements should be of the form:
- “Our values are X. Research shows Y. Based on X and Y, we recommend Z.”
- Example: “If you share these values, taking the vaccine is the most effective way to achieve your goals.”

Fidelity First



Make science more meaningful,
and more valuable,
for every American.

Thank you



Arthur Lupia
Gerald R Ford Distinguished Professor
University of Michigan
for PCAST