

"Poor Jim. He was a climate change denier and refused to see his iceberg melt."

Class 23: Climate Denial

- An overview of denial tactics
- 10 popular denialist claims
- Organized climate denial

Learning Objectives

- Be able to debunk on the basis of science you have learned in this class at least two of the most often repeated denialist claims
- Explain the influence that media can have on opinions/understanding of climate change
- Identify and explain one purposeful disinformation campaign targeted at climate change science

Boris Johnson urged to challenge Trump on climate denial

350 experts call on PM to address president's 'dangerous' and 'irresponsible' claims



▲ Boris Johnson and Donald Trump in New York in September. The US president will visit the UK this week. Photograph: Saul Loeb/AFP via Getty Images

Boris Johnson is being urged by 350 leading climate researchers to robustly challenge Donald Trump on his “dangerous” and “irresponsible” denial of the risks of climate change during the US president’s visit to the UK this week.

Climate in the News

“We urge you to challenge President Trump about his irresponsible approach to climate change, and seek to persuade him to take strong domestic action to reduce greenhouse gas emissions and to join coordinated international action including the Paris agreement,” they wrote.

The UK is due to host the a major UN climate summit next year – a meeting which is absolutely vital to international efforts to avoid dangerous climate change

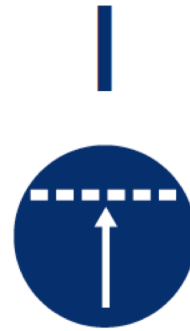
Analyzing Climate Denialism



Fake
Experts



Logical
Fallacies



Impossible
Expectations



Cherry
Picking



Conspiracy
Theories

- 1. An overview of denial tactics**
2. 10 popular denialist claims
3. Organized climate denial

Common Fallacies



Fake Experts

Promoting dissenting non-experts as highly qualified while not having published any actual climate research and/or received any relevant education.



Logical Fallacies

Logically flawed arguments that lead to false conclusions. Common logical fallacies are red herrings, non sequiturs, and false dichotomies.



Impossible Expectations

Demanding unrealistic standards of certainty before acting on the science. A technique practised by the tobacco industry.



Cherry Picking

Selectively choosing data that supports a desired conclusion that differs from the conclusion arising from all the available data³².



Conspiracy Theories

Proposing a secret plan among a number of people, generally to implement a nefarious scheme such as conspiring to hide a truth or perpetuate misinformation. Climate deniers are more likely to be conspiracy theorists³³.

Critical to examine the logic behind denialist approaches.

MYTH

"Climate has always changed."

Premise 1 Climate changed naturally in the past.

Premise 2 Climate is changing now.

Conclusion Current climate change is natural.



Jumping to Conclusions:

Just because nature caused climate change in the past doesn't mean it has to be the cause now.

Climate denial contradictions

Trend denial

Snowfall disproves global warming.

Extreme events cannot be attributed to global warming.

Attribution denial

Greenhouse effect has been falsified.

Water vapour is the most powerful greenhouse gas.

Impacts denial

https://www.youtube.com/watch?time_continue=37&v=pEb49c7YnsE&feature=emb_logo
CO₂ is plant food.

CO₂ is just a minuscule trace gas that has no effect.

Solutions denial

Global warming is a socialist plot.

The Nazis invented global warming.

Science denial

Temperature record is unreliable.

Temperature record says it's cooling.

Among climate scientists, there is no doubt, climate change is real and a problem...among politicians...well a different story. The less you know, the less you worry. The more you know.



Climate denial is over-represented in our government

BUSINESS INSIDER

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These are the 130 current members of Congress who have doubted or denied climate change

Ellen Cranley Apr 29, 2019, 1:36 PM

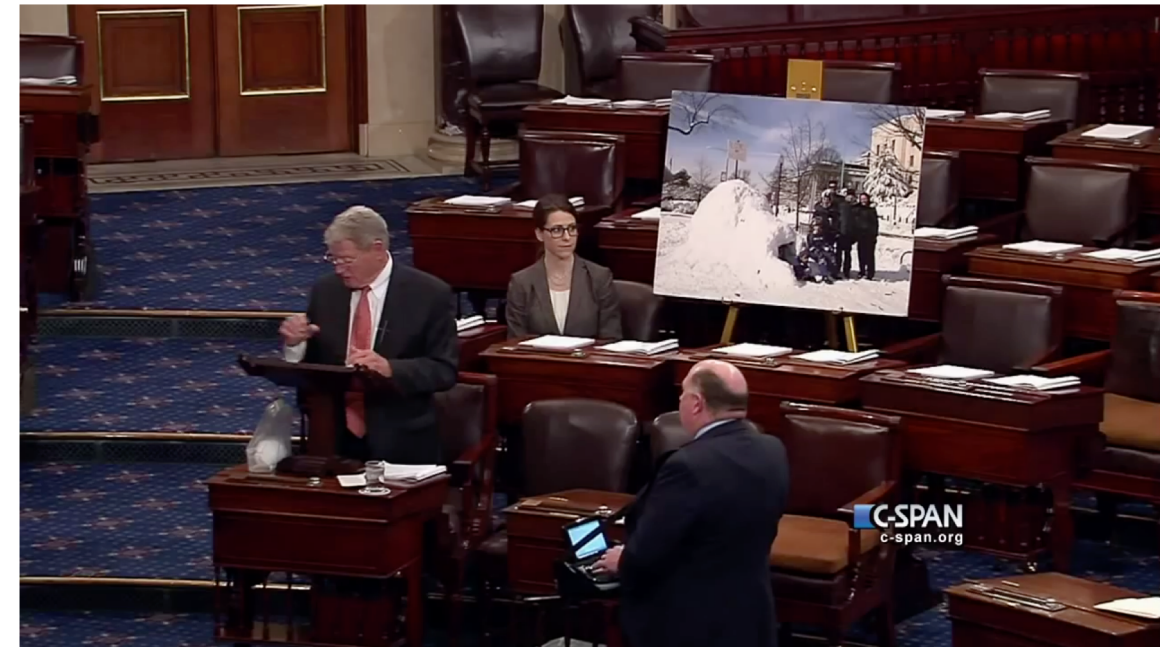
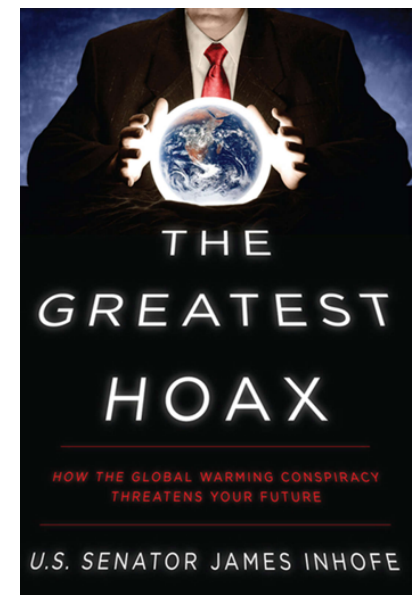


The climate change deniers in Congress are overwhelmingly Republican. Samantha Lee/Business Insider

**THE HOAX
DEBUNKED: DON'T
FEEL TOO SORRY FOR
AL GORE**

“With all of the hysteria, all of the fear, all of the phony science, could it be that man-made global warming is the greatest hoax ever perpetrated on the American people? It sure sounds like it.”

—*Senator Jim Inhofe, July 29, 2003*¹



Inhofe famously [brought a snowball](#) onto the floor in February 2015 as a bid to disprove climate change.



Home

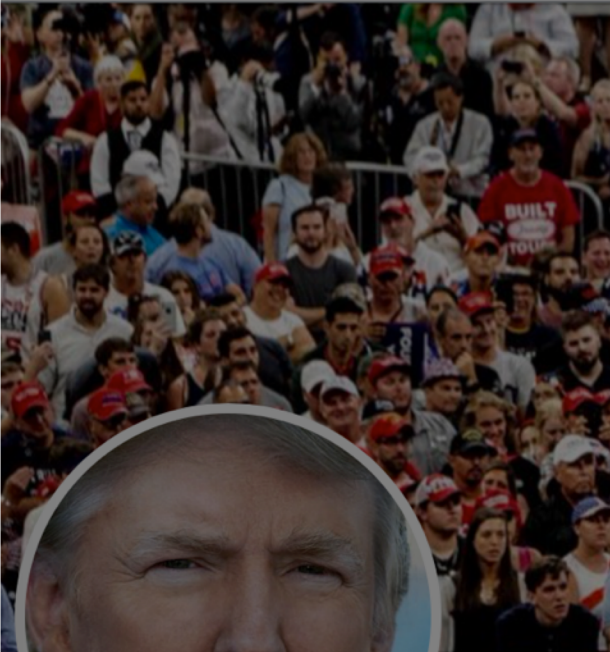


Moments

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Donald J. Trump

@realDonaldTrump

45th President of the United States of America

Washington, DC

[Instagram.com/realDonaldTrump](https://www.instagram.com/realDonaldTrump)



Donald J. Trump

@realDonaldTrump

Follow



Patrick Moore, co-founder of Greenpeace:
“The whole climate crisis is not only Fake News, it’s Fake Science. There is no climate crisis, there’s weather and climate all around the world, and in fact carbon dioxide is the main building block of all life.”

[@foxandfriends](#) Wow!

5:29 AM - 12 Mar 2019

31,718 Retweets 100,816 Likes



31K



32K



101K

This Tweet is unavailable.

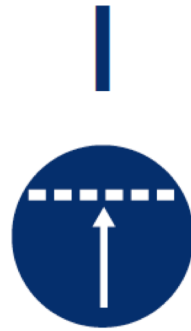
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Top 10 Denialist claims (from Paul and Chris' informal internet survey!)

1. The climate is always changing; it's natural.
2. The models are wrong.
3. The hockey stick is broken.
4. CO₂ is good! Plants need it.
5. Warming might be good for people and the planet
6. The 97% consensus among scientists is wrong.
7. It's the sun, stupid.
8. It will cost too much to decarbonize the economy
9. There's nothing we can do about global warming
10. Scientists are raising alarm to secure more funding

1. The climate is always changing; it's natural.

Rep. Robert Aderholt

"I fall into the second group of people who believe, as do many very credible scientists, that the earth is currently in a natural warming cycle rather than a man-made climate change," [Aderholt wrote in a 2009 op-ed](#). "Many scientists believe that natural cycles of warming and cooling have existed since the beginning of Earth. If we take the current models of climate prediction and apply those same models to what actually happened in the last thirty years, the models are shown to be very flawed. In addition, what knowledge we do have of a warming period in the Middle Ages cannot be explained by current models which are focused on greenhouse gas reductions."

<https://www.businessinsider.com/climate-change-and-republicans-congress-global-warming-2019-2#alabama-1>

U.S. HOUSE OF REPRESENTATIVES
CONGRESSMAN
ROBERT B. ADERHOLT
REPRESENTING ALABAMA'S 4TH DISTRICT

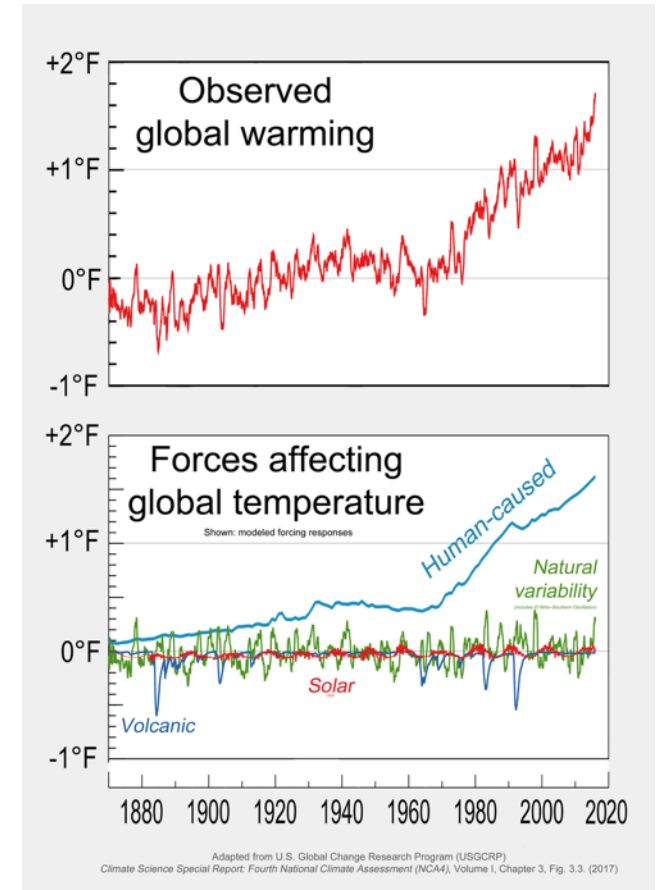
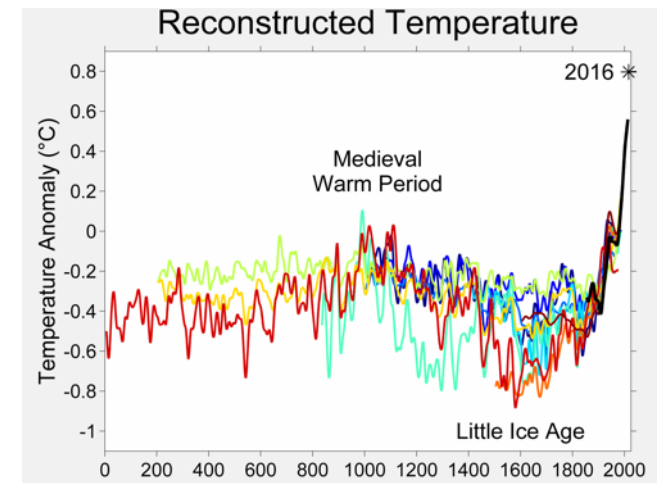
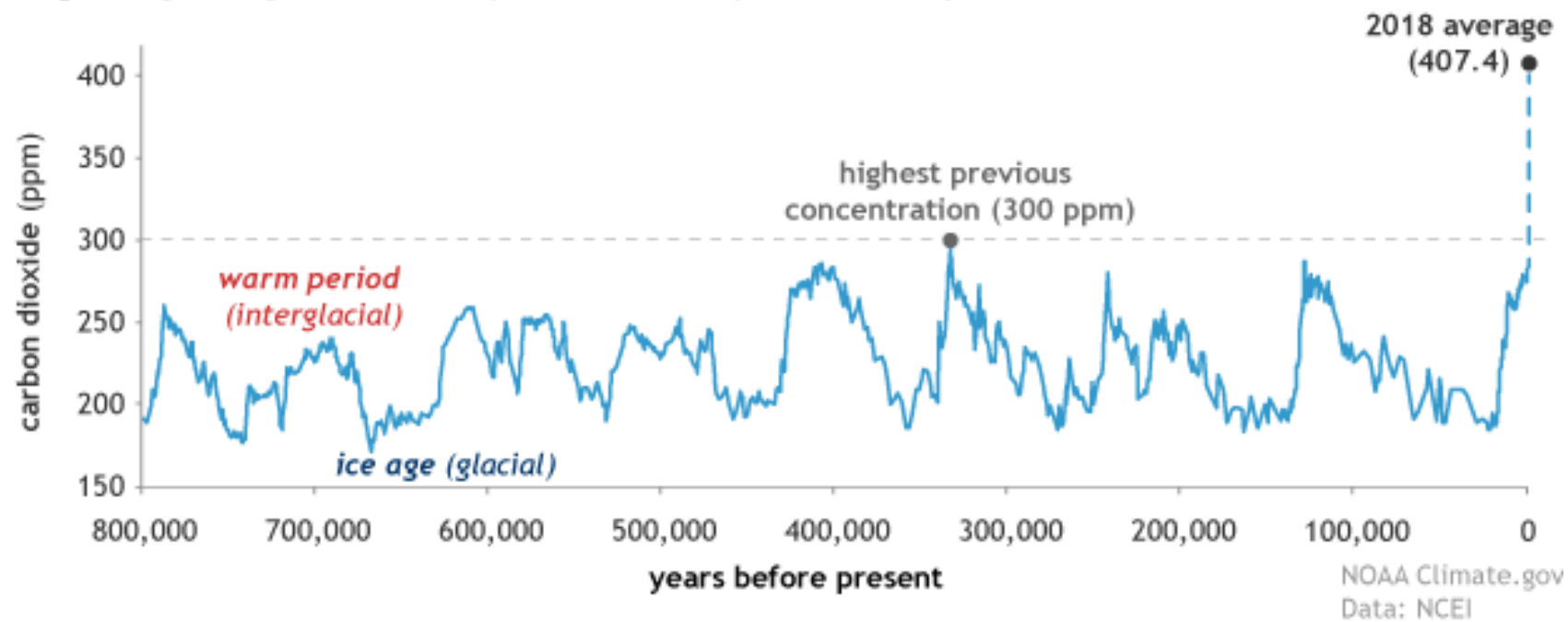
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Home > About Robert

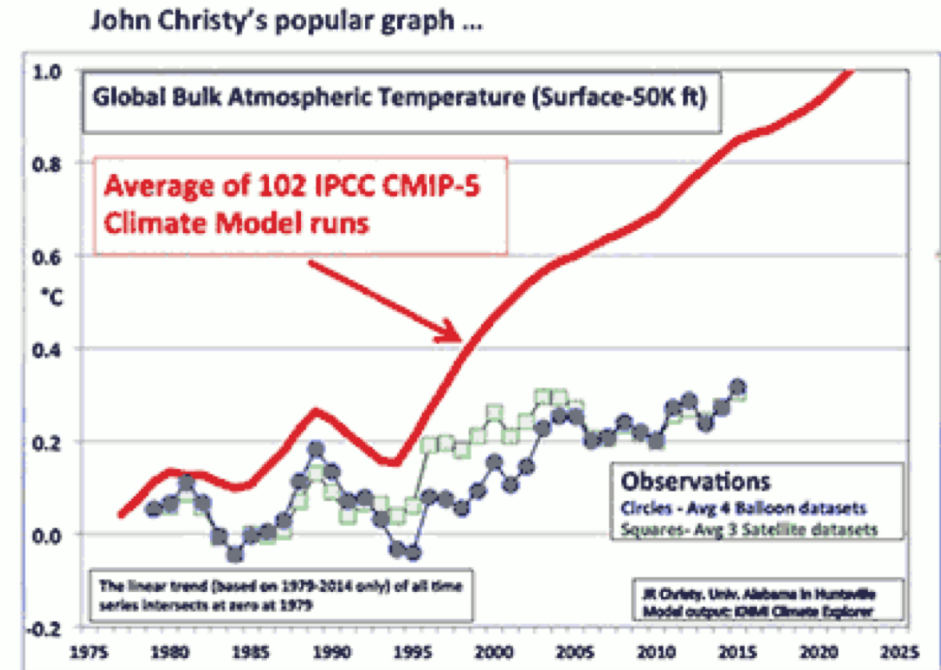
Official Photograph

Yes, but...the neither the pace of recent climate change and nor what's driving it are natural – they are unprecedented.

CO₂ during ice ages and warm periods for the past 800,000 years



2. The models are wrong.



"Climate change is nothing but a bunch of computer models that attempt to tell us what's going to happen in 50 years or 30. Notice the predictions are never for next year or the next 10 years. They're always for way, way, way, way out there, when none of us are going to be around or alive to know whether or not they were true."

— *Rush Limbaugh on Sunday, February 17th, 2019 in an interview*

Scientists' response to Rush Limbaugh's climate denial: 'utter nonsense'

<https://www.politifact.com/punditfact/statements/2019/feb/19/rush-limbaugh/scientists-response-rush-limbaughs-climate-denial/>

"Broecker predicted by 2010 the world would have warmed by around 0.74C," Hausfather said. "In reality, it warmed by 0.62C, which is pretty good for a very rudimentary climate model in the 1970s."



3. The hockey stick is broken.

James Taylor is Director of the Arthur B. Robinson Center for Climate and Environmental Policy at The Heartland Institute. **Taylor received his bachelor's degree from Dartmouth College where he studied atmospheric science and majored in government. He received his Juris Doctorate from Syracuse University.**



ARTICLE TAGS

ENVIRONMENT

CLIMATE CHANGE

AUTHOR



[James Taylor](#)

James Taylor is Director of the Arthur B. Robinson Center for Climate and Environmental Policy at The Heartland Institute.

[Full Bio >](#)

NEW HOCKEY STICK SENT TO THE PERMANENT PENALTY BOX

APRIL 5, 2013

By [James Taylor](#)

Climate Change Weekly #87The “4,000-year hockey stick” scare is over, after a shelf life that did not last a full month.

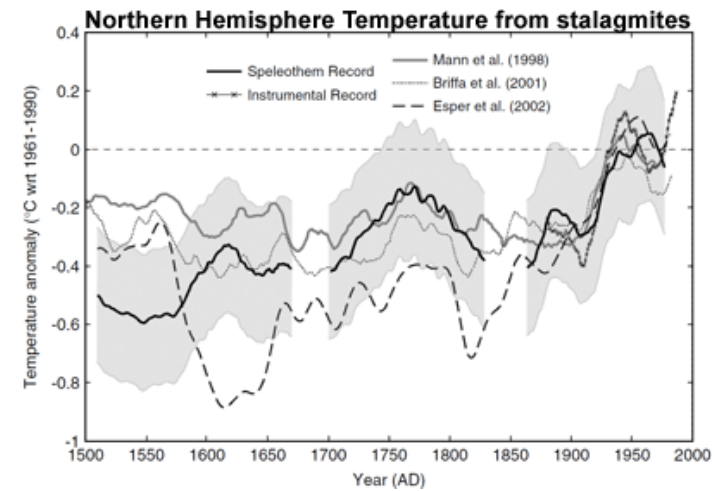
Climate Change Weekly #87

The “4,000-year hockey stick” scare is over, after a shelf life that did not last a full month. The warmist-fawning media used the 4,000-year hockey stick to create one of the most intense global warming scares in recent memory, but it quickly died with a thud – just like so many asserted global warming scares before it.

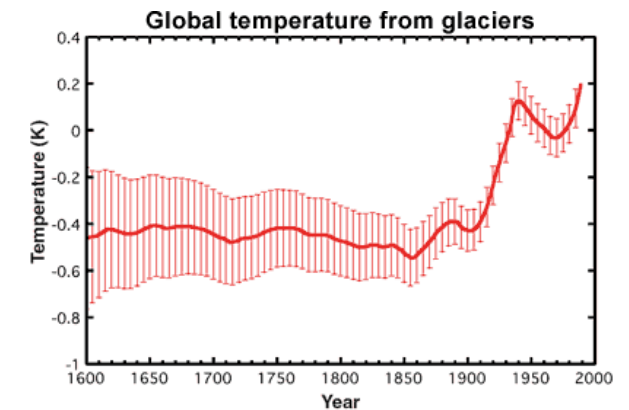
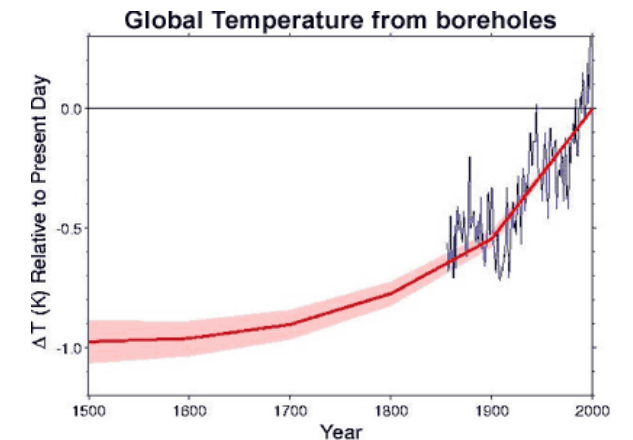
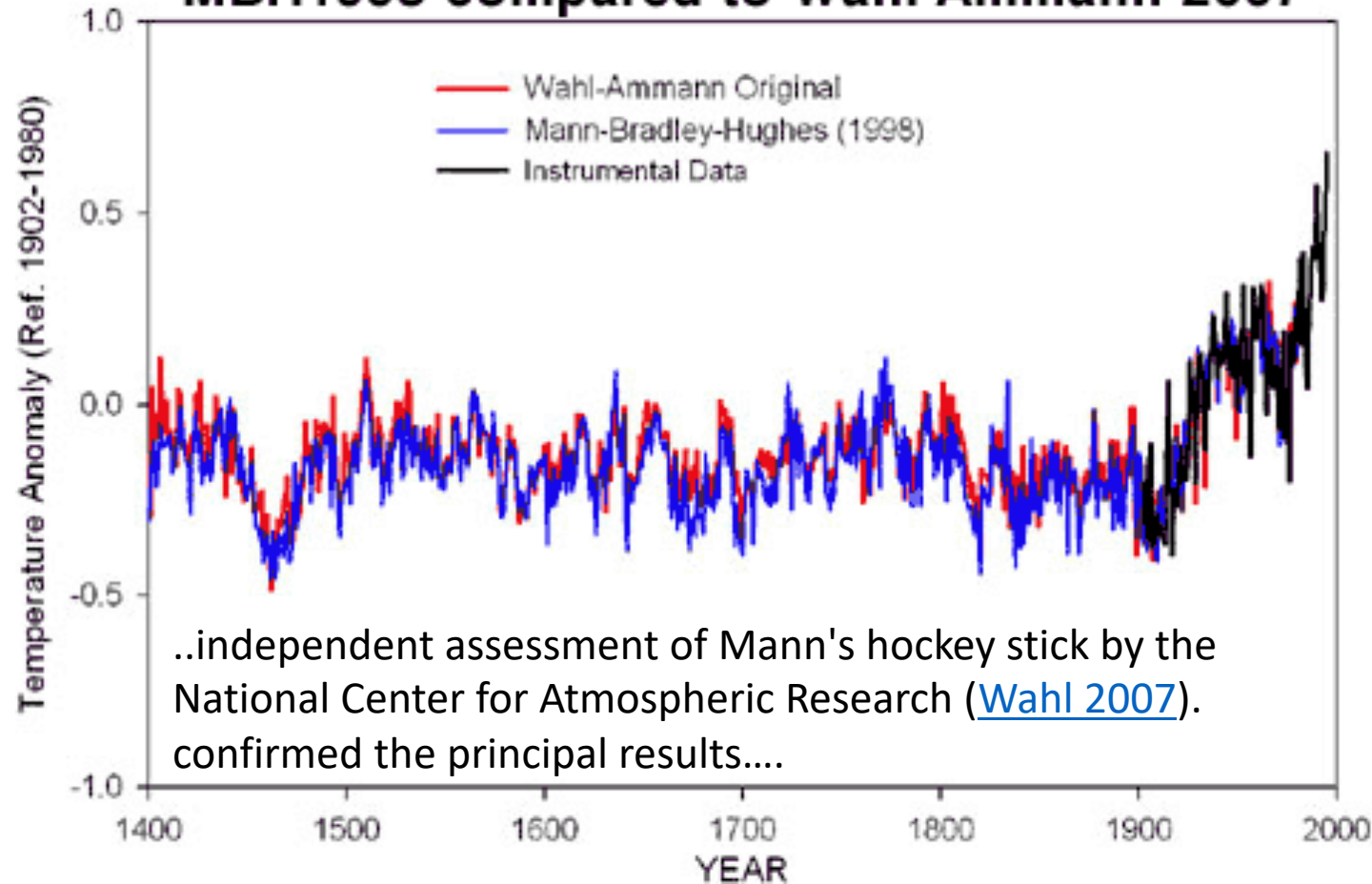
A little-known scientist who had only recently completed his Ph.D. published a paper claiming proxy temperature reconstructions showed a 4,000-year decline in global temperatures until the twentieth century. The paper claimed the 4,000-year decline abruptly ended in the twentieth century as recent warmth obliterated the 4,000 years of cooling and placed the Earth at its warmest in the 4,000-year record. Moreover, the asserted rapid temperature spike during the past century appeared to be the sharpest in 11,000 years.

“Paleoclimatology draws upon a range of proxies and methodologies to calculate past temperatures. This allows independent confirmation of the basic hockey stick result: that the past few decades are the hottest in the past 1,300 years.”

<https://skepticalscience.com/broken-hockey-stick.htm>



MBH1998 compared to Wahl-Ammann 2007



4. CO₂ is good! Plants need it.

ENERGY / COMMENTARY

Don't Believe the Hysteria Over Carbon Dioxide

[Rep. Lamar Smith](#) / [@LamarSmithTX21](#) / July 24, 2017 / [2 Comments](#)

"The American people should be made aware of both the negative and positive impacts of carbon dioxide in the atmosphere.....The benefits of a changing climate are often ignored and under-researched....A higher concentration of carbon dioxide in our atmosphere would aid photosynthesis, which in turn contributes to increased plant growth.... This correlates to a greater volume of food production and better quality food. Studies indicate that crops would utilize water more efficiently, requiring less water. "

Lamar has a B.A.in American Studies from Yale University and a J.D. from Southern Methodist University

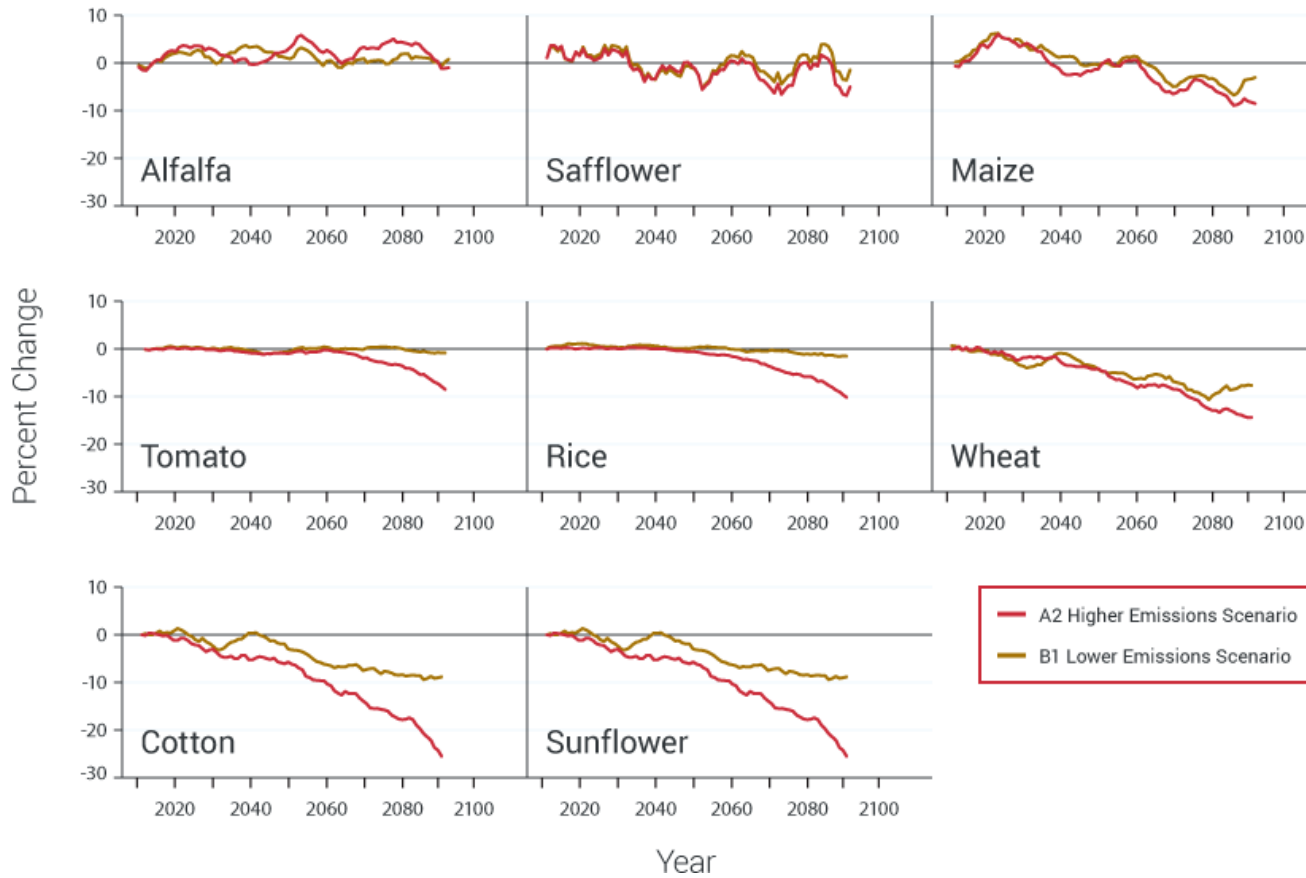


Rep. Lamar Smith
[@LamarSmithTX21](#)

Rep. Smith is a Republican who has represented Texas's 21st district since 1987.

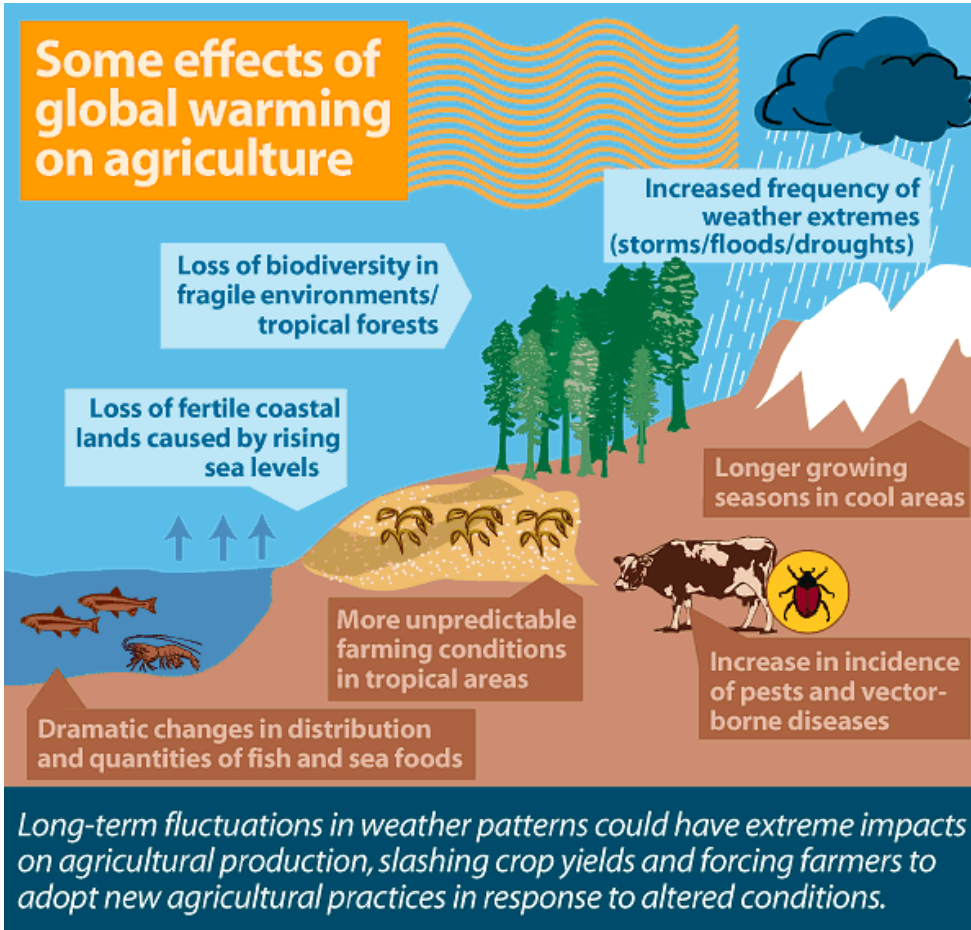
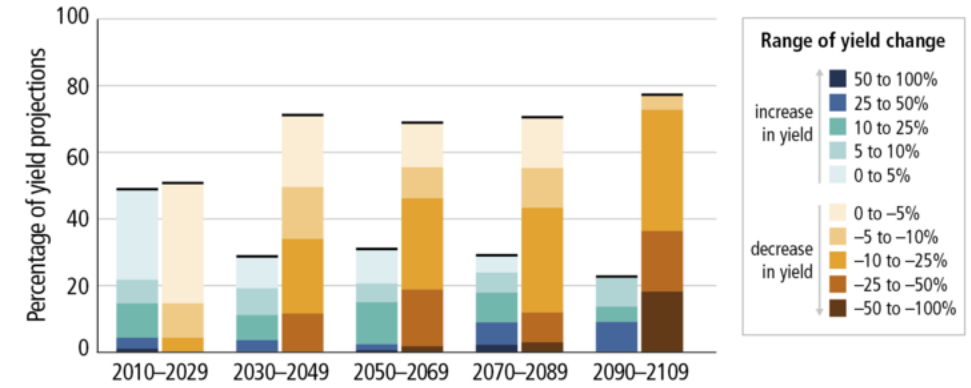
Expert models don't agree well with Lamar

Crop Yield Response to Warming in California's Central Valley



<https://nca2014.globalchange.gov/report/sectors/agriculture>

IPCC



EPA head Scott Pruitt says global warming may help 'humans flourish'

EPA administrator says 'There are assumptions made that because the climate is warming that necessarily is a bad thing'



<https://www.theguardian.com/environment/2018/feb/07/epa-head-scott-pruitt-says-global-warming-may-help-humans-flourish>

▲ Scott Pruitt: 'It's fairly arrogant for us to think we know exactly what [the ideal surface temperature] should be in 2100.' Photograph: Michael Reynolds/EPA

5. Warming might be good for people and the planet

"We know humans have most flourished during times of warming trends. There are assumptions made that because the climate is warming that necessarily is a bad thing. Do we know what the ideal surface temperature should be in the year 2100 or year 2018?" "It's fairly arrogant for us to think we know exactly what it should be in 2100."

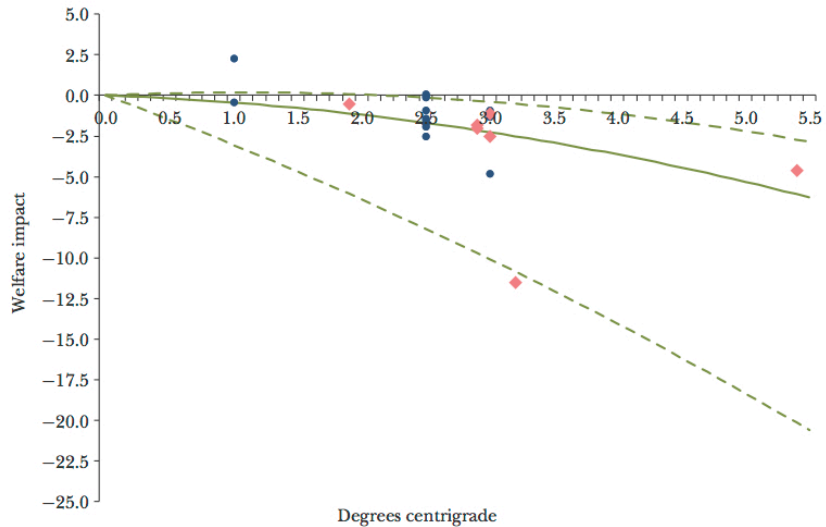
Pruitt has a bachelor's degrees in political science and communications. University of Tulsa law degree

THE BLOG

Significant Errors in Study Suggesting Global Warming is Good for the World

The new issue of the *Journal of Economic Perspectives* includes a remarkable admission about a controversial academic paper that wrongly suggested moderate amounts of global warming would have an overall positive economic impact on the world.

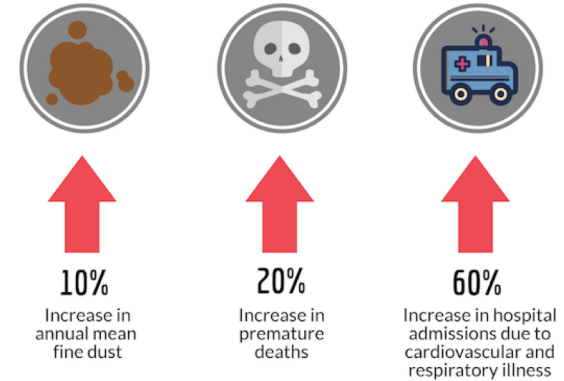
Figure 2
Twenty-One Estimates of the Global Economic Impact of Climate Change



<https://andthentheresphysics.wordpress.com/2014/05/05/tols-corrections/>

Best-case scenario

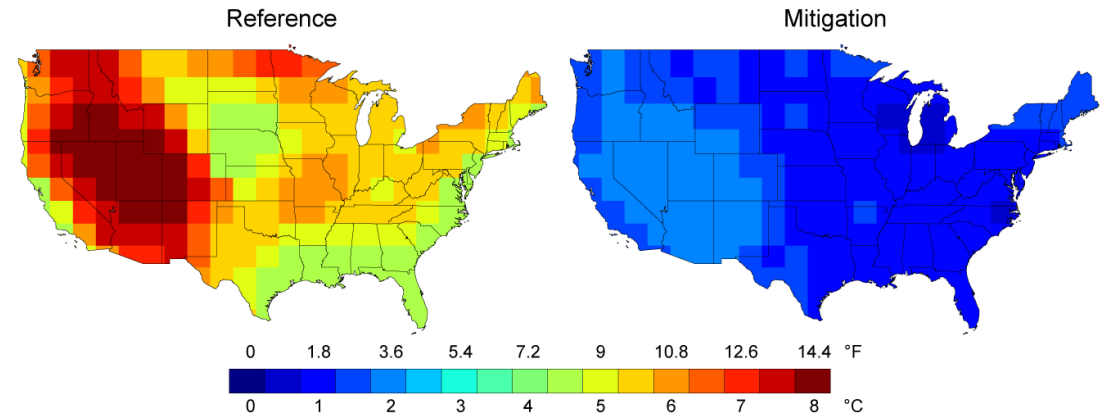
The implications for airborne dust in the Southwest by 2100 under the IPCC's best-case climate change scenarios



<https://www.seas.harvard.edu/news/2018/04/airborne-dust-threatens-human-health-southwest>

Figure 4. Change in Magnitude of Extreme Heat Events with and without Global GHG Mitigation

Change in the extreme heat index (T99)—the temperature of the hottest four days, or 99th percentile, of the year—simulated by the IGSM-CAM for 2100 (average 2085-2115) relative to the baseline (average 1981-2010) (CS 3°C).



Adapted from Monier, E. and X. Gao. 2014. Climate change impacts on extreme events in the United States: an uncertainty analysis. *Climatic Change*, DOI:10.1007/s10584-013-1048-1.

For more information, visit EPA's "Climate Change in the United States: Benefits of Global Action" at www.epa.gov/cira.

6. There is no consensus among scientists

Oregon Institute of Science and Medicine (OISM) Petition

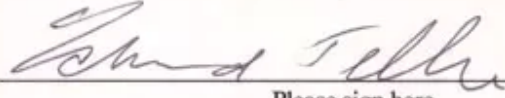
One of several claims that large numbers of scientists do not agree with the theory of human-induced climate change

31,487 American scientists have signed this petition, including 9,029 with PhDs

Petition

We urge the United States government to reject the global warming agreement that was written in Kyoto, Japan in December, 1997, and any other similar proposals. The proposed limits on greenhouse gases would harm the environment, hinder the advance of science and technology, and damage the health and welfare of mankind.

There is no convincing scientific evidence that human release of carbon dioxide, methane, or other greenhouse gases is causing or will, in the foreseeable future, cause catastrophic heating of the Earth's atmosphere and disruption of the Earth's climate. Moreover, there is substantial scientific evidence that increases in atmospheric carbon dioxide produce many beneficial effects upon the natural plant and animal environments of the Earth.


Please sign here

Please send more petition cards for me to distribute.

My academic degree is B.S. M.S. Ph.D. in the field of PHYSICS

All evidence suggests there is agreement...

32,000 signatories out of 10.6 million qualified U.S. science graduates = **0.3%**

- OISM has never revealed how many people they canvassed (**response rate is unknown**)
- OISM has **not revealed its sampling methodology**
- **No evidence ever given** to support either statement in petition

Meanwhile...

- 7 independent, peer-reviewed, published studies indicate over 90% consensus among qualified scientists

Studies into scientific agreement on human-caused global warming



Figure from Cook et al. (2016)

7. It's the sun, stupid



Last Updated: Tuesday, 6 July 2004, 16:07 GMT 17:07 UK

[E-mail this to a friend](#)

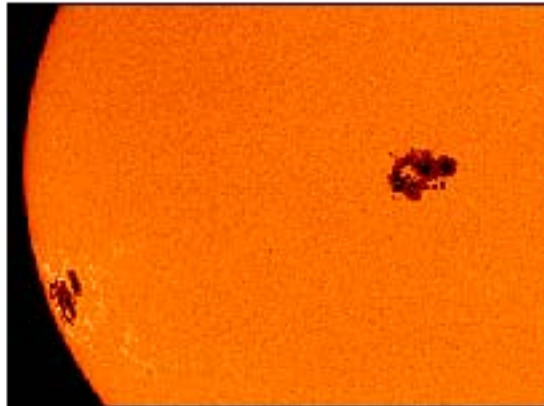
[Printable version](#)

Sunspots reaching 1,000-year high

By Dr David Whitehouse
BBC News Online science editor

A new analysis shows that the Sun is more active now than it has been at anytime in the previous 1,000 years.

Scientists based at the Institute for Astronomy in Zurich used ice cores from Greenland to construct a picture of our star's activity in the past.



Sunspots are plentiful nowadays

Over the past few hundred years, there has been a steady increase in the numbers of sunspots, a trend that has accelerated in the past century, just at the time when the Earth has been getting warmer.

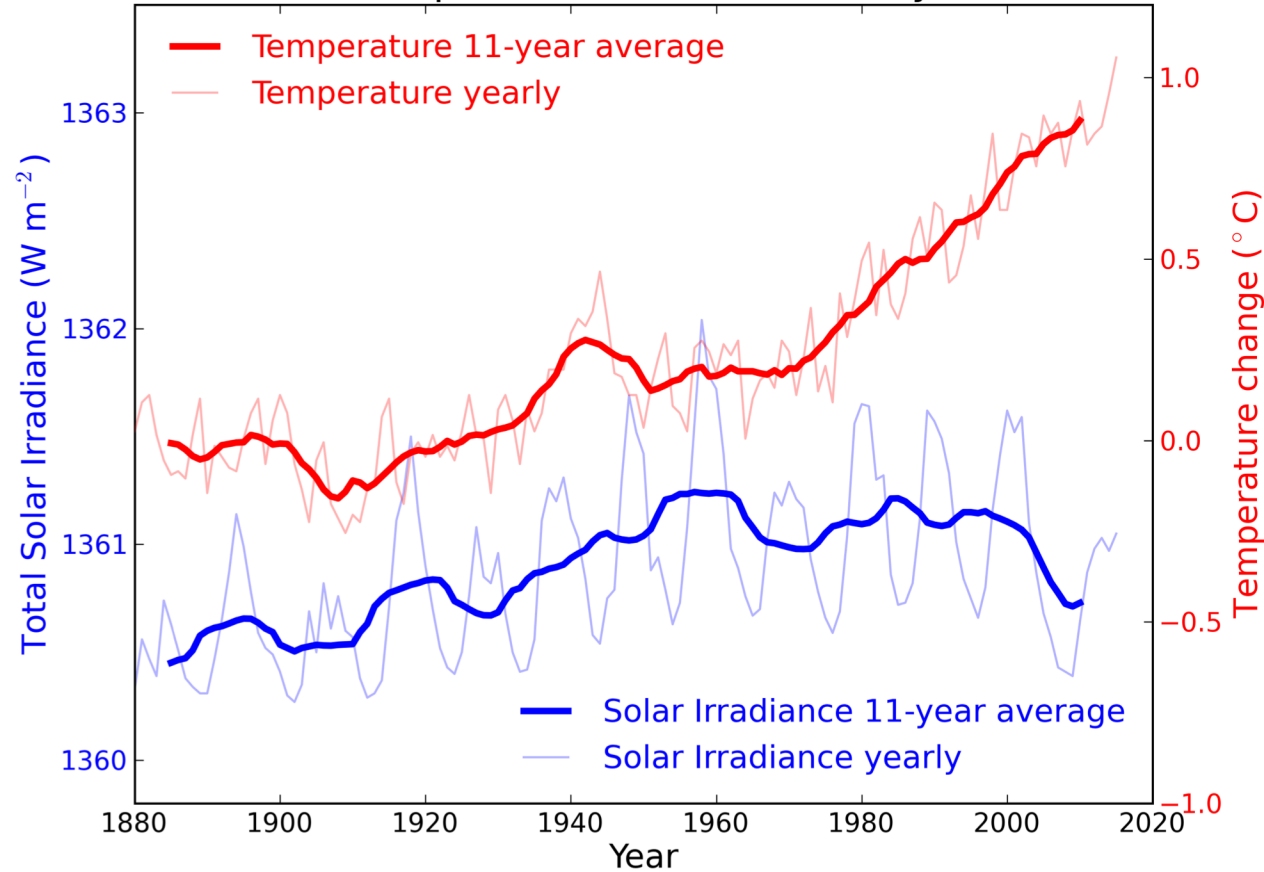
The data suggests that changing solar activity is influencing in some way the global climate causing the world to get warmer.

Over the past 20 years, however, the number of sunspots has remained roughly constant, yet the average temperature of the Earth has continued to increase.

This is put down to a human-produced greenhouse effect caused by the combustion of fossil fuels.

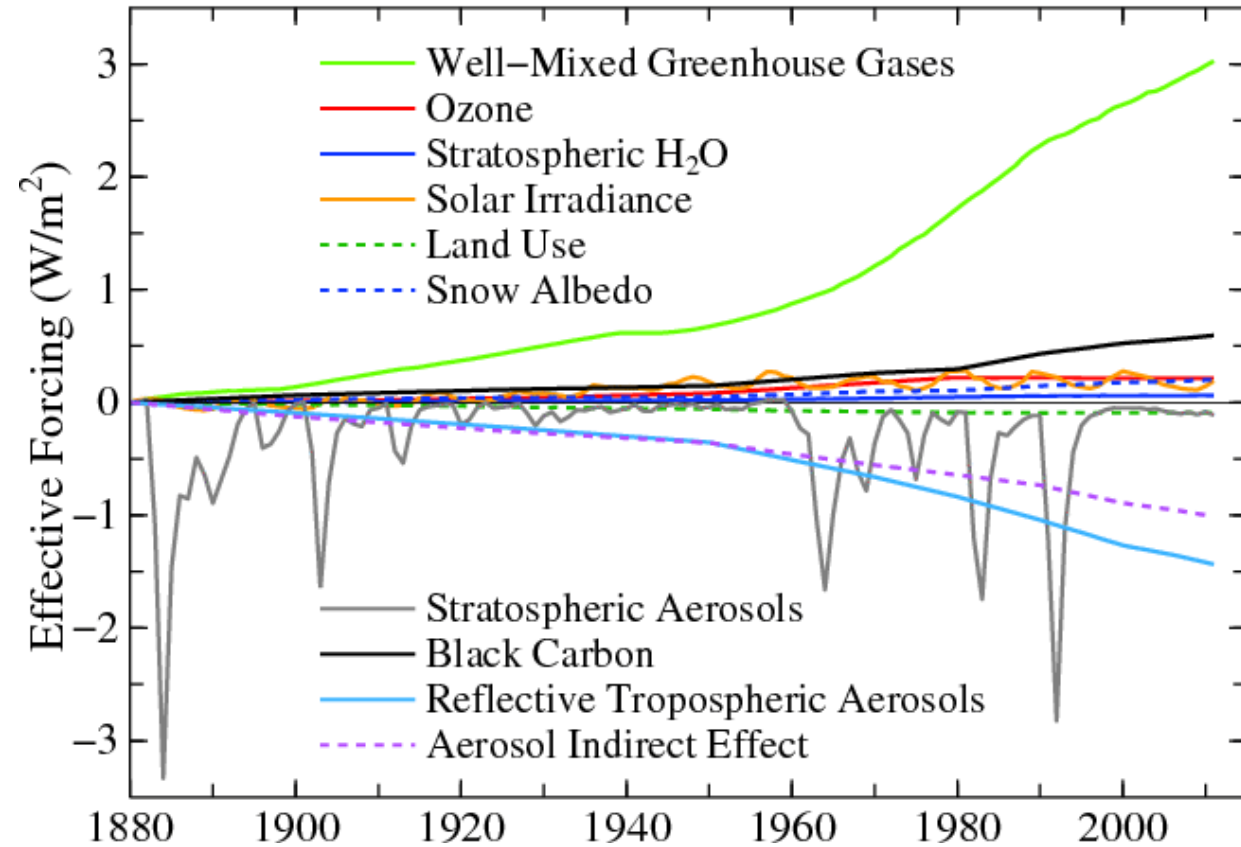
Not in recent history, not powerful enough

Temperature vs Solar Activity



**Some rise in solar radiation,
but none in last 40+ years**

(a) Radiative Forcings



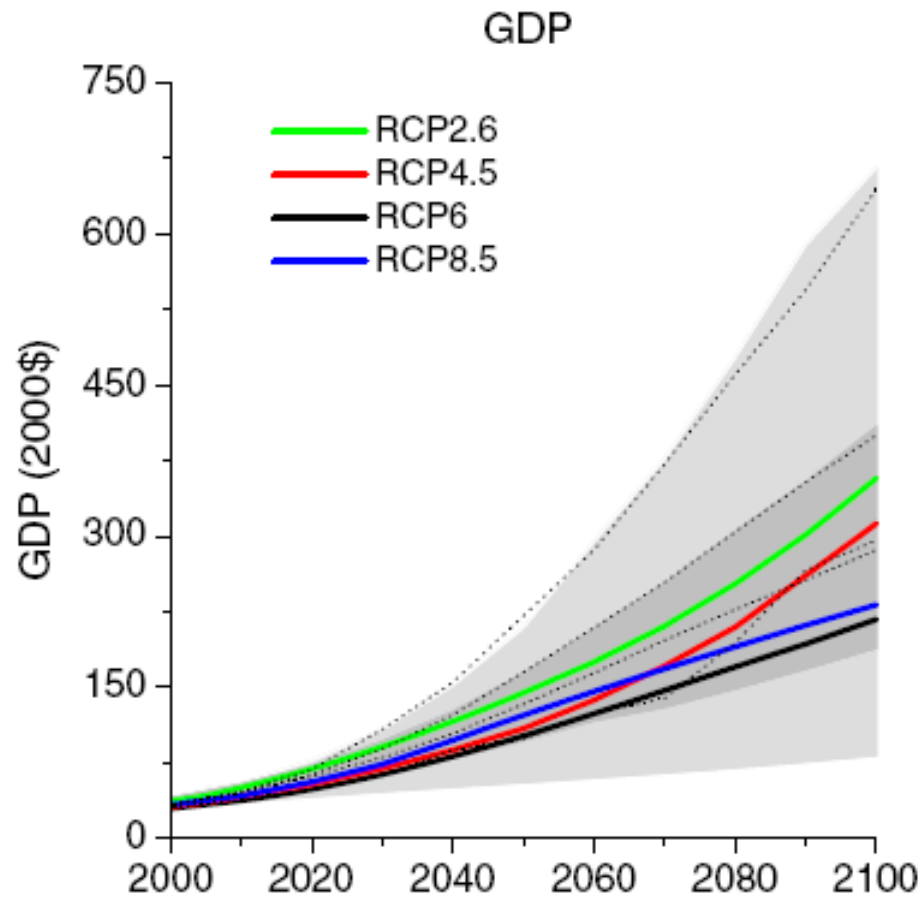
**When compared to other climate
forcers, change in solar is *weak***

8. It will cost too much to decarbonize the economy

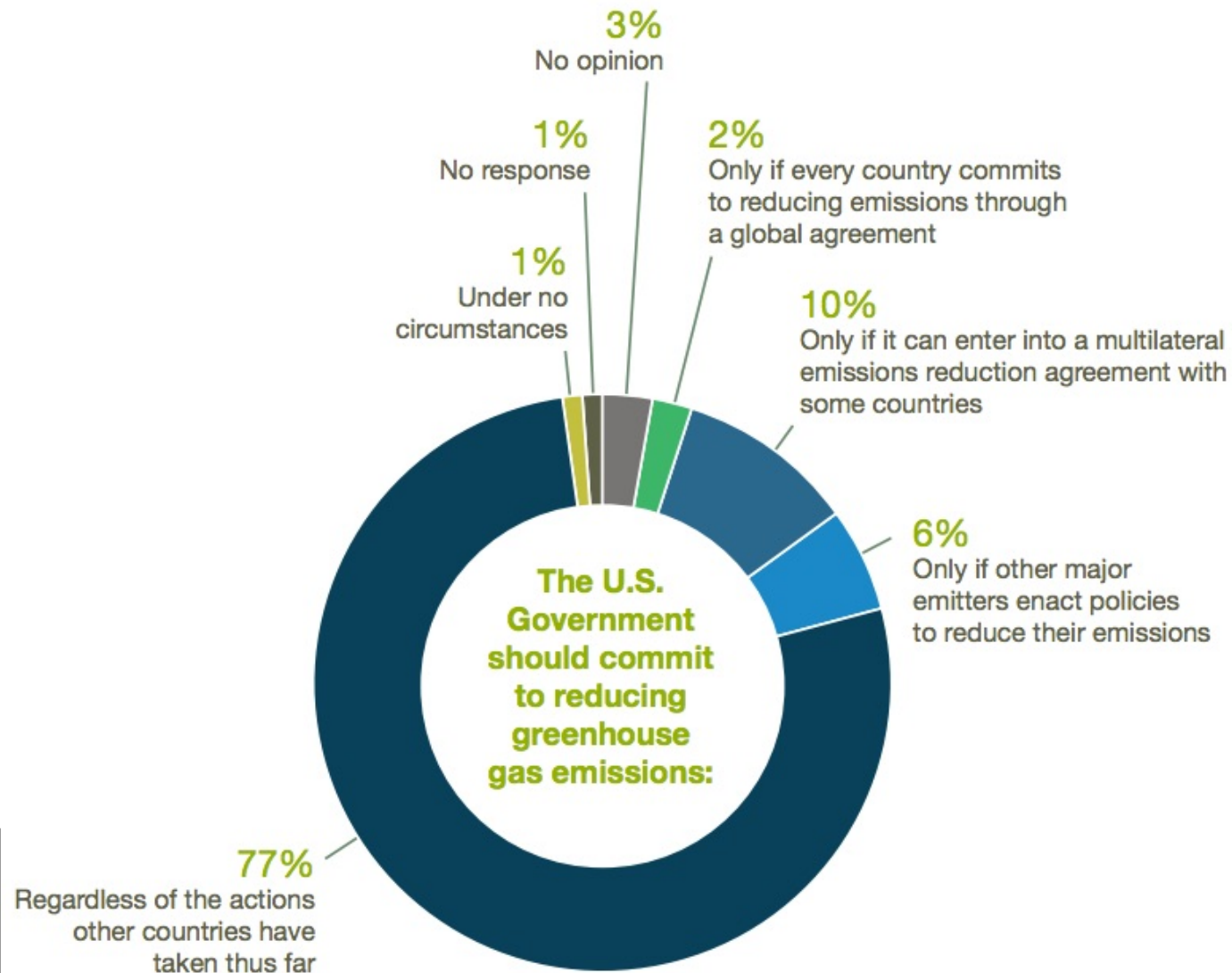
All options (or combination of options) will require significant economic costs immediately

	Supply-side	Demand-side
Restrictive (of fossil fuels)	<i>Keep carbon in the ground</i>	<i>Nudge consumers away from carbon</i>
Supportive (of alternatives)	<i>Boost supply of alternative energy technology</i>	<i>Encourage consumers to use alternative energy technology</i>

It will cost too much to *not* decarbonize the economy



Over long-term, RCP6 & 8.5 are the least profitable. Early savings dwarfed by later costs of damage and disruption



9. There's nothing we can do



Is it too late to prevent climate change?

Humans have caused major climate changes to happen already, and we have set in motion more changes still. Even if we stopped emitting greenhouse gases

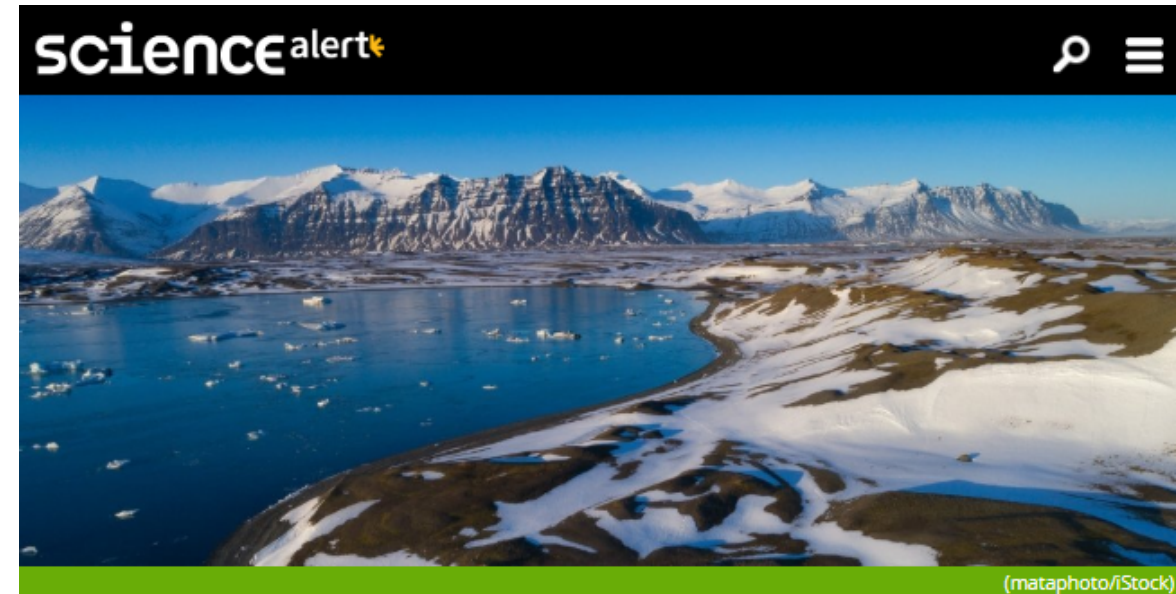


Credit: BrAt82/Shutterstock.com.

General questions

Is the Sun causing global warming?

Is the ocean continuing to warm?

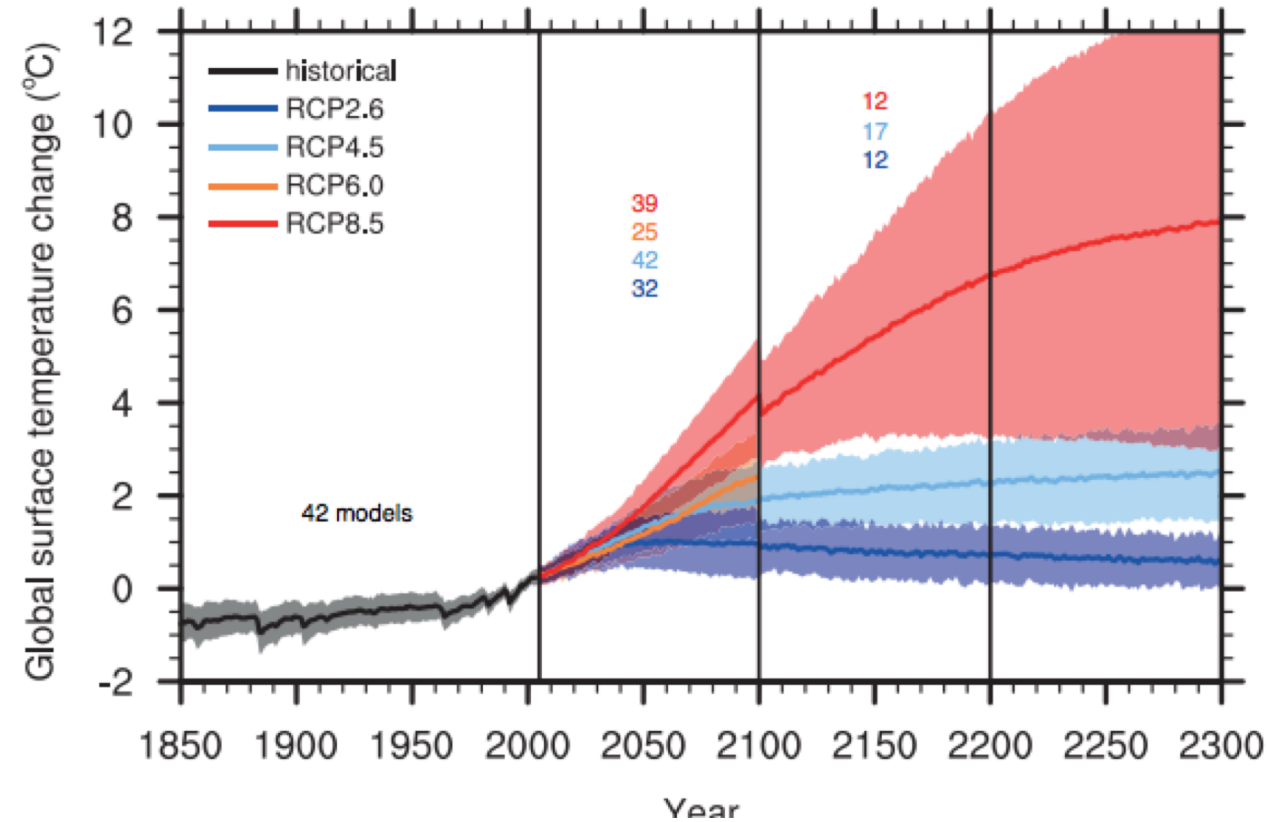
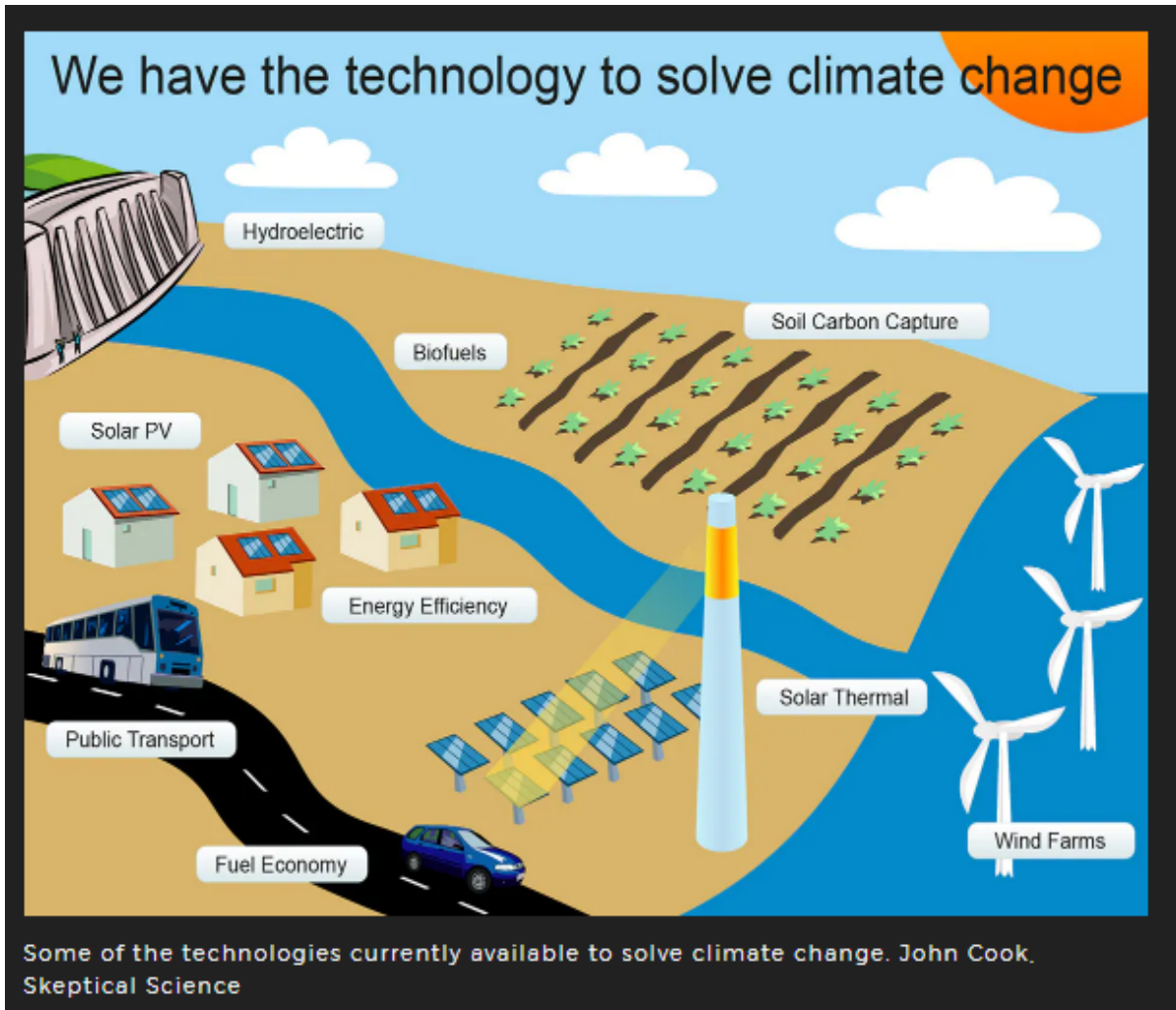


ENVIRONMENT

It's Official: There's Nothing We Can Do Now to Stop Arctic Temperature Rise

CARLY CASSELLA 15 MAR 2019

We will have to make some adaptations, but we can avoid *much* worse impacts by mitigating emissions now



10. Scientists are raising alarm to secure more funding



Follow the (Climate Change) Money

Dec 18th, 2018 3 min read



[Stephen Moore](#)
[@StephenMoore](#)

Distinguished Visiting Fellow

Stephen Moore is the Distinguished Visiting Fellow for Project for Economic Growth at The Heritage Foundation.



Climate scientists are getting rich off federal grant money... of course they'll keep saying there's a problem!

With our degrees, we could make more money elsewhere

The truth is, climate scientists could make more money in other fields or industry (especially the fossil fuel industry)

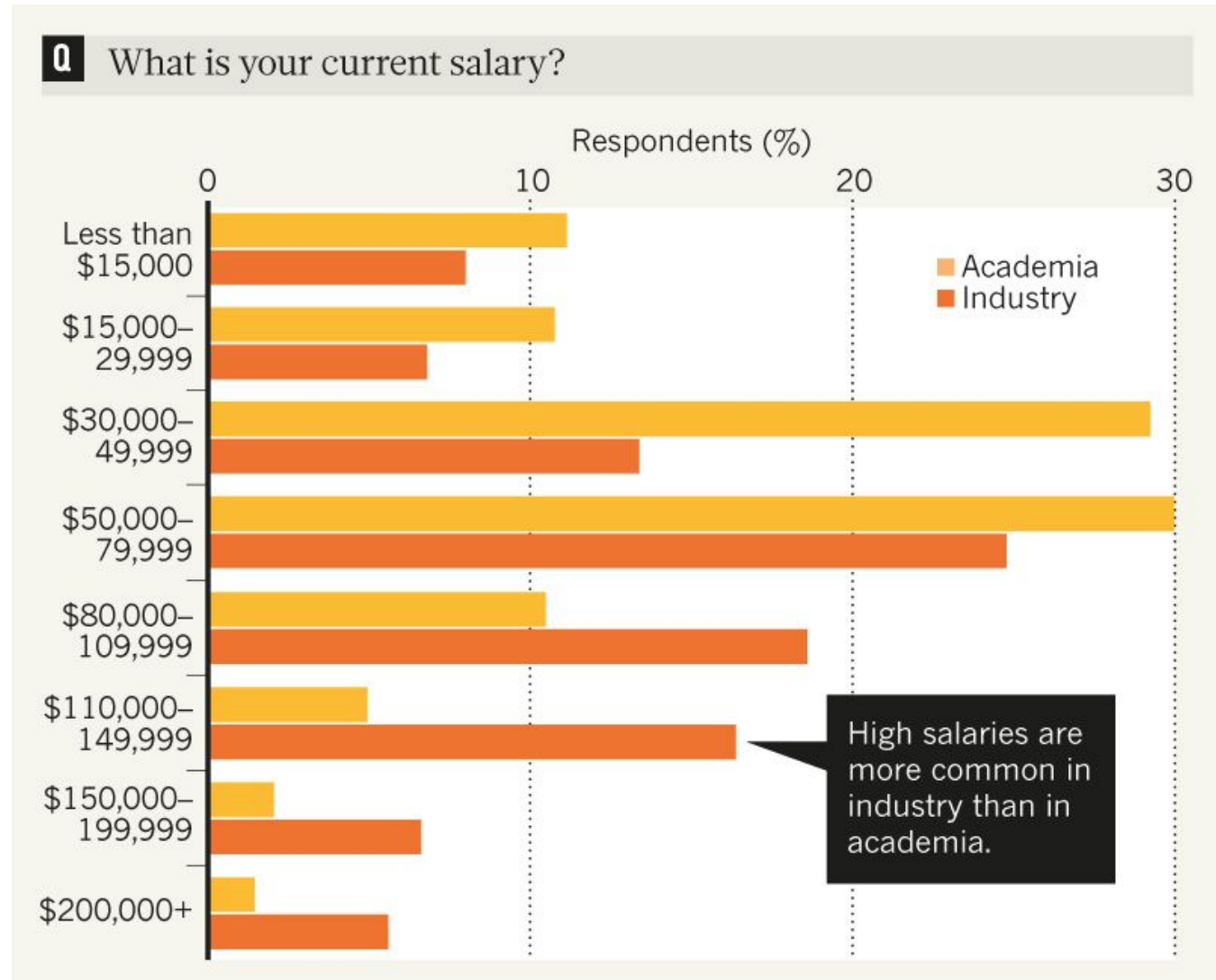


Figure from *Nature*

Willie Soon, Ph.D.

Credentials:

- Ph.D., Aerospace Engineering, USC (1991)
- Aerospace engineer at Harvard-Smithsonian Center for Astrophysics
- Astronomer at Mount Wilson Observatory



Documents released under the Freedom of Information Act show that every grant Dr. Soon has received since 2002 has been from oil or gas interests. His most famous publication (Soon and Baliunas, 2003) attempted to disprove the Hockey Stick diagram. In response to the article being published, three of the editors of the publishing journal resigned in protest.

S. Fred Singer, Ph.D.

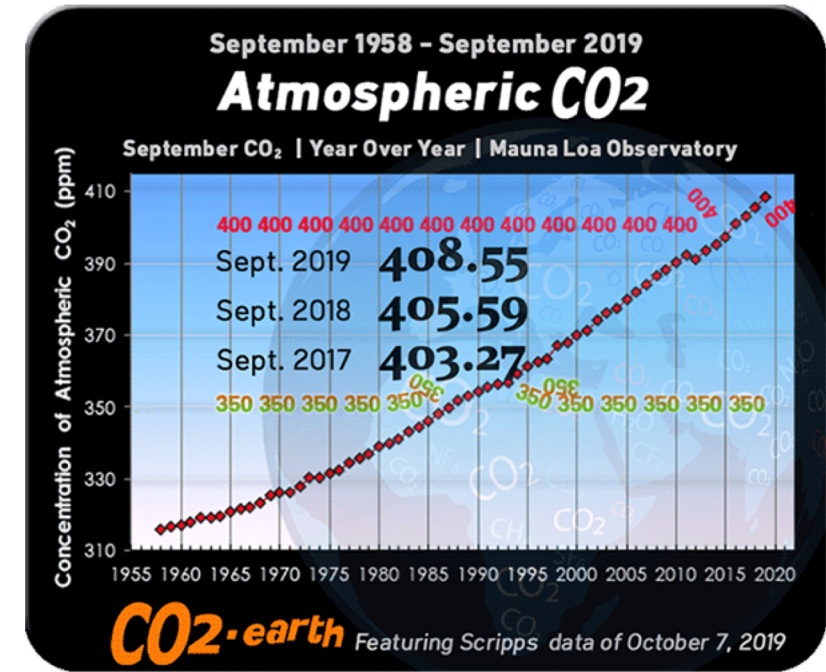
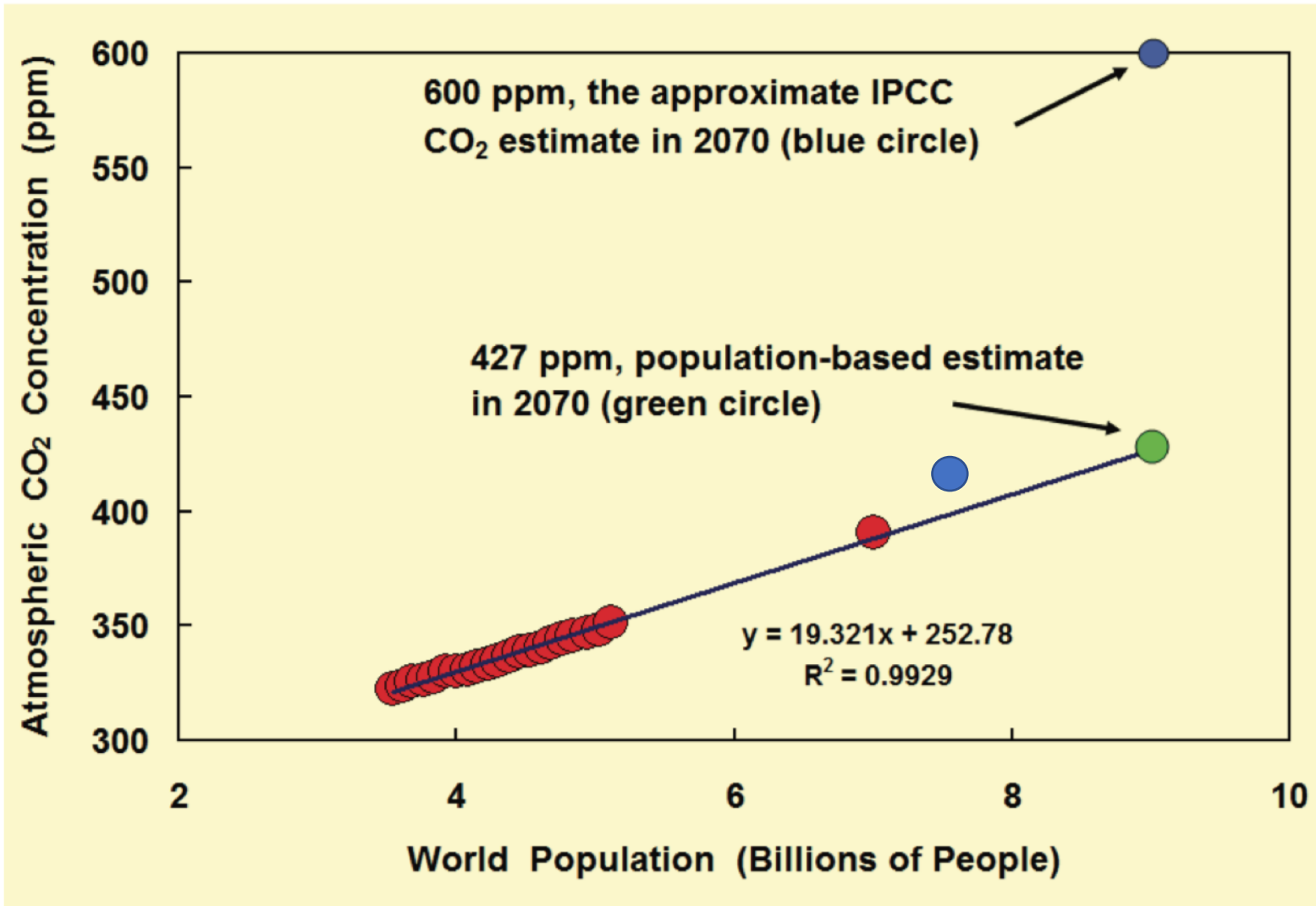
Credentials:

- Ph.D., Physics, Princeton (1948)
- First director of U.S. National Weather Satellite Service (1962-1964)
- Former professor at the University of Virginia (1971-1994)



Former space scientist. He has been on the wrong side of science for decades: formerly tobacco and ozone, acid rain, DDT, and asbestos, now climate. Has been receiving US \$5,000 per month from the Heartland Institute for years. Lied to IRS.

THINK – PAIR – SHARE How is the logic employed in these reports (and this graph) faulty?



Current World Population
7,747,795,743

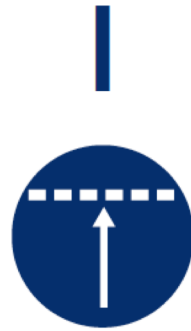
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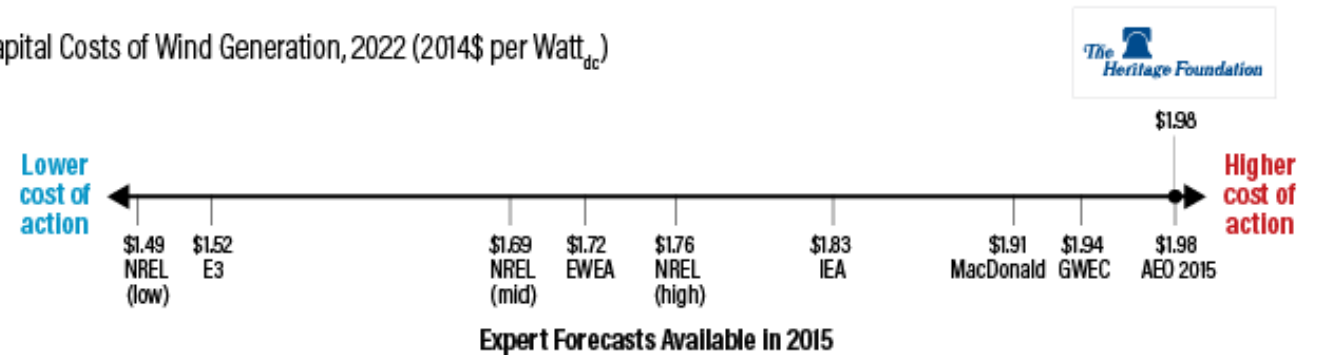
Organized Climate Denial – it's big and important

- The Trump Administration (we've talked enough about that)
- Fossil Fuel companies (Exxon in the lead)
- Conservative "Think Tanks" – Cato Institute, Heritage Foundation, **Heartland Institute**

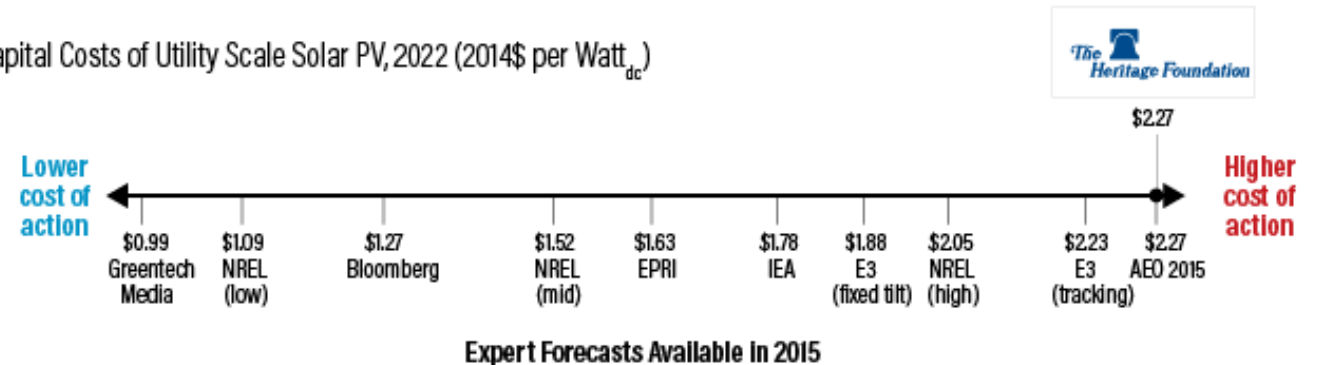
Much of the argument is grounded in non consensus financial models

Heritage vs Experts on the Future Costs of Wind and Solar Energy

Capital Costs of Wind Generation, 2022 (2014\$ per Watt_{dc})



Capital Costs of Utility Scale Solar PV, 2022 (2014\$ per Watt_{dc})



AMERICA MISLED

How the fossil fuel industry
deliberately misled Americans
about climate change

John Cook, Geoffrey Supran,
Stephan Lewandowsky, Naomi Oreskes, Ed Maibach



Fossil Fuel Companies as climate denial “encouragers”

“Climate scientists are as sure that burning fossil fuels causes global warming as public health scientists are sure that smoking tobacco causes cancer.”

“The fossil fuel industry's denial and delay tactics come straight out of Big Tobacco's playbook.”

John Cook, Center for Climate Change Communication, George Mason University
Geoffrey Supran, Department of the History of Science, Harvard University
Stephan Lewandowsky, School of Psychological Science, University of Bristol
Naomi Oreskes, Department of the History of Science, Harvard University
Edward Maibach, Center for Climate Change Communication, George Mason University

Fossil fuel knew (1950s-80s)

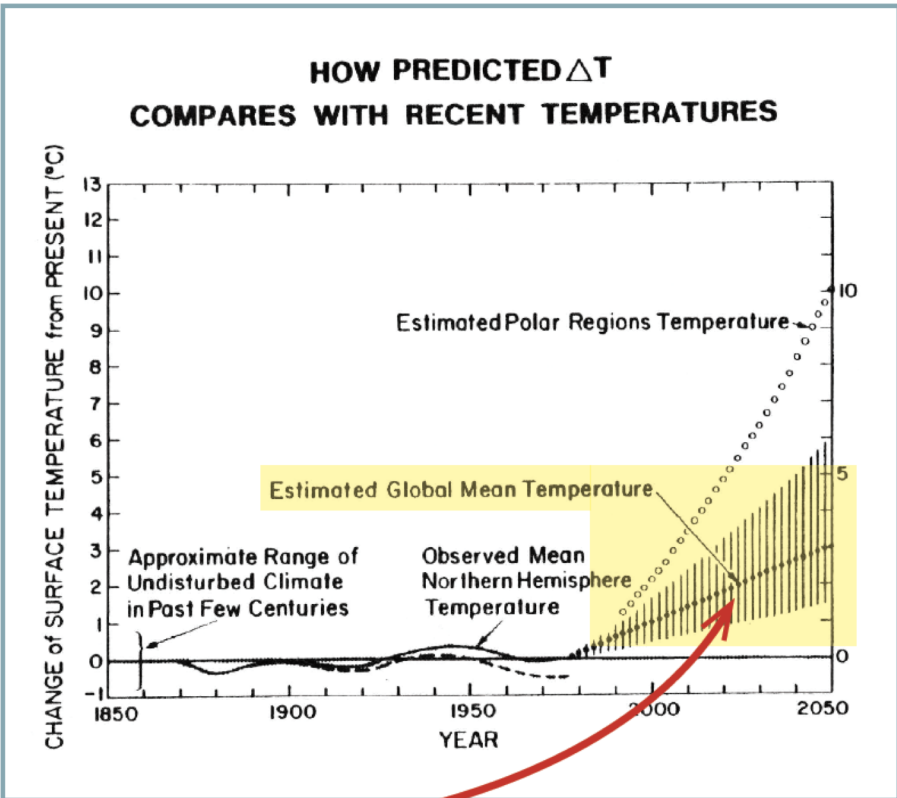
Figure 2: Exxon 1977 internal memo. Fossil fuel industry documents show that they knew the basics of climate science in the 1950s-80s.

CO₂ is causing climate change.

CO₂ comes from burning fossil fuels.

SUMMARY

- I. CO₂ RELEASE MOST LIKELY SOURCE OF INADVERTENT CLIMATE MODIFICATION.
- II. PREVAILING OPINION ATTRIBUTES CO₂ INCREASE TO FOSSIL FUEL COMBUSTION.
- III. DOUBLING CO₂ COULD INCREASE AVERAGE GLOBAL TEMPERATURE 1°C TO 3°C BY 2050 A.D. (10°C PREDICTED AT POLES).
- IV. MORE RESEARCH IS NEEDED ON MOST ASPECTS OF GREENHOUSE EFFECT.
- V. 5-10 YR. TIME WINDOW TO GET NECESSARY INFORMATION.
- VI. MAJOR RESEARCH EFFORT BEING CONSIDERED BY DOE.



Time is running out!

CO₂ emissions will cause 1-3°C warming.

Fossil fuel schemed (1980s-90s)

EXXON'S POSITION

- Emphasize the uncertainty in scientific conclusions regarding the potential enhanced Greenhouse effect.
- Urge a balanced scientific approach.

Cast doubt on the science.

Use "both sides" approach to confuse people.

EXXON'S POSITION

- IMPROVE UNDERSTANDING
 - Extend the Science
 - Include the Costs/Economics
 - Face the Socio-Political Realities
- STRESS ENVIRONMENTALLY SOUND ADAPTIVE EFFORTS
 - Support Conservation
 - Restrict CFCs
 - Improve Global Re/De Forestation

Greenwashing: pretending to care about the environment.

Victory Will Be Achieved When:

- Average citizens "understand" (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the "conventional wisdom".
- Media "understands" (recognizes) uncertainties in climate science.
- Media coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current "conventional wisdom".

Make the public think scientists don't know anything for sure.

Manipulate the media to give attention to "both sides".

Figure 3: Top: Exxon 1988 internal memo. Middle: Exxon 1989 internal memo. Bottom: Exxon et al. 1998 internal memo. Fossil fuel industry documents show that they devised public relations strategies to promote doubt about climate science in the 1980s-90s.

**Fossil fuel denied
(1990s-2010s)**

Unsettled Science

Knowing that weather forecasts are reliable for a few days at best, we should recognize the enormous challenge facing scientists seeking to predict climate change and its impact over the next century. In spite of everyone's desire for clear answers, it is not surprising that fundamental gaps in knowledge leave scientists unable to make reliable predictions about future changes.

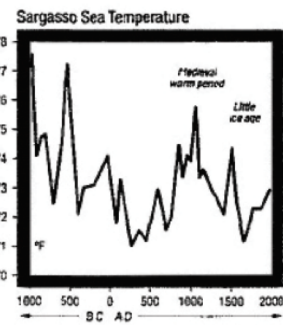
A recent report from the National Research Council (NRC) raises important issues, including these still-unanswered questions: (1) Has human activity already begun to change temperature and the climate, and (2) How significant will future change be?

The NRC report confirms that Earth's surface temperature has risen by about 1 degree Fahrenheit over the past 150 years. Some use this result to claim that humans are causing global warming, and they point to storms or floods to say that dangerous impacts are already under way. Yet scientists remain unable to confirm either contention.

Geological evidence indicates that climate and greenhouse gas levels experience significant natural variability for reasons having nothing to do with human activity. Historical records and current scientific evidence show that Europe and North America experienced a medieval warm period one thousand years ago, followed centuries later by a little ice age. The geological record shows even larger changes throughout Earth's history. Against this backdrop of large, poorly understood natural variability, it is impossible for scientists to attribute the recent small surface temperature increase to human causes.

Moreover, computer models relied upon by climate scientists predict that lower atmospheric temperatures will rise as fast as or faster than temperatures at the surface. However, only within the last 20 years have reliable global measurements of temperatures in the lower atmosphere been available through the use of satellite technology. These measurements show little if any warming.

Even less is known about the potential positive or negative impacts of climate change. In fact, many academic studies and field experiments have demonstrated that increased levels of carbon dioxide can promote crop and forest growth.



So, while some argue that the science debate is settled and governments should focus only on near-term policies—that is empty rhetoric. Inevitably, future scientific research will help us understand how human actions and natural climate change may affect the world and will help determine what actions may be desirable to address the long-term.

Science has given us enough information to know that climate changes may pose long-term risks. Natural variability and human activity may lead to climate change that could be significant and perhaps both positive and negative. Consequently, people, companies and governments should take responsible actions now to address the issue. One essential step is to encourage development of lower-emission technologies to meet our future needs for energy. We'll next look at the promise of technology and what is being done today.



Falsely argues that because we don't know everything, we know nothing.

False: In the 1990s, scientists had already formed a consensus that humans were causing global warming.

Just because climate has changed naturally in the past does not mean it's natural now.

Cast doubt on the scientific consensus on climate change.

Contradicts themselves: they already talk about 1 degree warming.

Uses the same delay argument as the tobacco industry: "Let's wait before we act".

Raising doubts that persist today

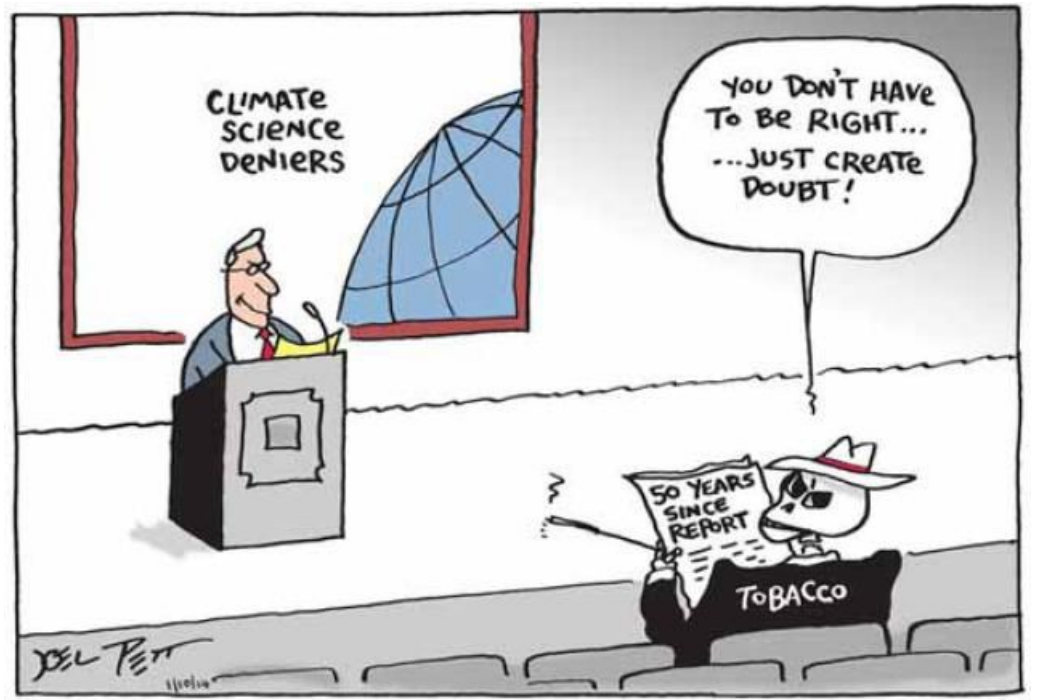


Figure 4: ExxonMobil 2000 advertorial in The New York Times.

A major source of institutionalized climate denial

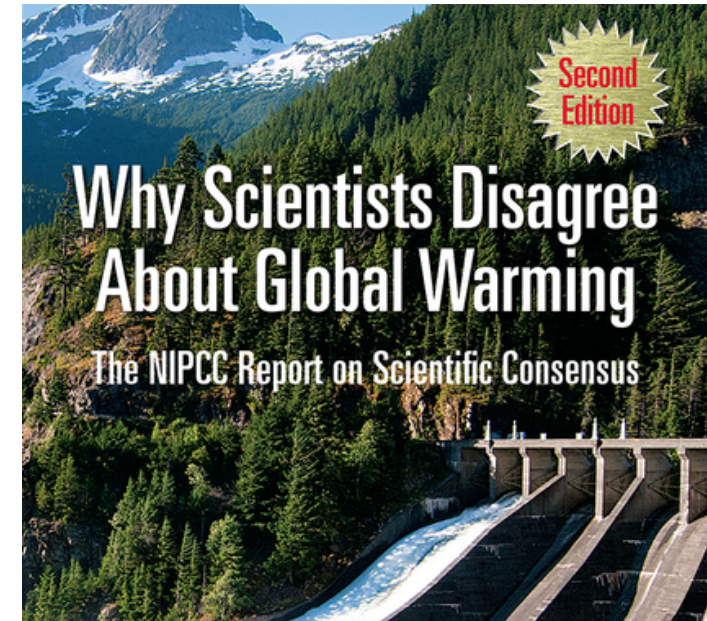


13TH INTERNATIONAL CONFERENCE ON CLIMATE CHANGE

Best Science, Winning Energy Policies

JULY 25, 2019

TRUMP INTERNATIONAL HOTEL - WASHINGTON, DC



🕒 14:00 - 15:15



Panel 3: Scientific Observations

Speakers: Craig Idso; Patrick Michaels; Anthony Watts; H. Sterling Burnett (moderator). This panel will cover: Doctored datasets vs. temperature reality; the real-world benefits of CO2 and a warmer climate; an international view of climate change alarmism and the United Nations.

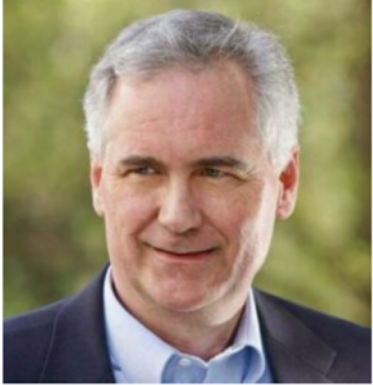
🕒 15:30 - 16:45



Panel 4: Winning Public Policy Options

Speakers: Myron Ebell; Douglas Pollock; James Taylor; Tom Harris (moderator). This panel will cover: Political suicide of CO2 taxes, the Green New Deal, and renewable mandates; Trump's climate victories and what comes next; winning arguments for skeptics of a human-caused climate catastrophe.

KEYNOTE SPEAKERS



REP. TOM MCCLINTOCK

United States Congressman



DOMINIK KOLORZ

Polish Solidarity



**RICHARD LINDZEN,
PH.D.**

Climate Scientist, MIT (emeritus)



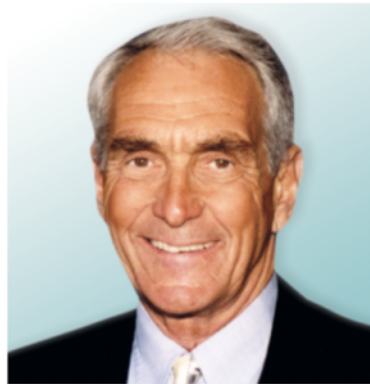
**CHRISTOPHER
MONCKTON**

Advisor to Prime Minister Thatcher
(1982-1986)



**PATRICK MICHAELS,
PH.D.**

American Association of State
Climatologists



JAY LEHR, PH.D.

International Climate Science Coalition



TIMOTHY BALL, PH.D.

University of Winnipeg



JOE BASTARDI

WeatherBELL

What strikes
you about the
conference
speakers?

**Shorter Conference, Fake
Sponsor, Low Attendance, and
a Lot of Gray Haired Men**

In 2008, Heartland's climate conference was a three day affair. Over a decade later, it is down to a single day. In 2008, the event drew over 50 co-sponsors. This year's (2019) conference pamphlet listed only 16. And as it turns out, one of those was fake.



Joe Bastardi

USA

Weather forecaster. Said that CO₂ cannot cause global warming because it's heavier than air. Throws around thermodynamics memes he does not understand.

It's Time to Act on Global Warming

These 58 Heartland Institute "experts" believe global warming is not a crisis. Here is an overview of their credentials and views.

Visit desmog.com/heartland-58 for sources and more information.



Jay Lehr, Ph.D.

USA

Economist, may have expertise in groundwater hydrology. Science director of the Heartland Institute, which received almost US\$800,000 from ExxonMobil since 1998. Also big on "smoker's rights", thanks to US\$190,000 from Philip Morris.



Christopher Monckton

United Kingdom

Degree in Classics and diploma in journalism. The peacock of climate science denial. Gifted speaker and debater with shoddy "facts". Threatens lawsuits and demands resignations when cornered. Birther conspiracy theorist and (former?) claimant of a cure for AIDS, Multiple Sclerosis, and the flu.

Numbers on their faces represent peer-reviewed publications relate to climate science



Richard Lindzen, Ph.D.

USA

MIT professor emeritus of Meteorology. Committed to low 2xCO₂ climate sensitivity with negligible impacts 25 years ago and never changed his mind, likewise on secondhand smoke. Charged US\$2,500 per day for consulting for fossil energy companies.

The distortions of science continue to the next generation

NIPCC

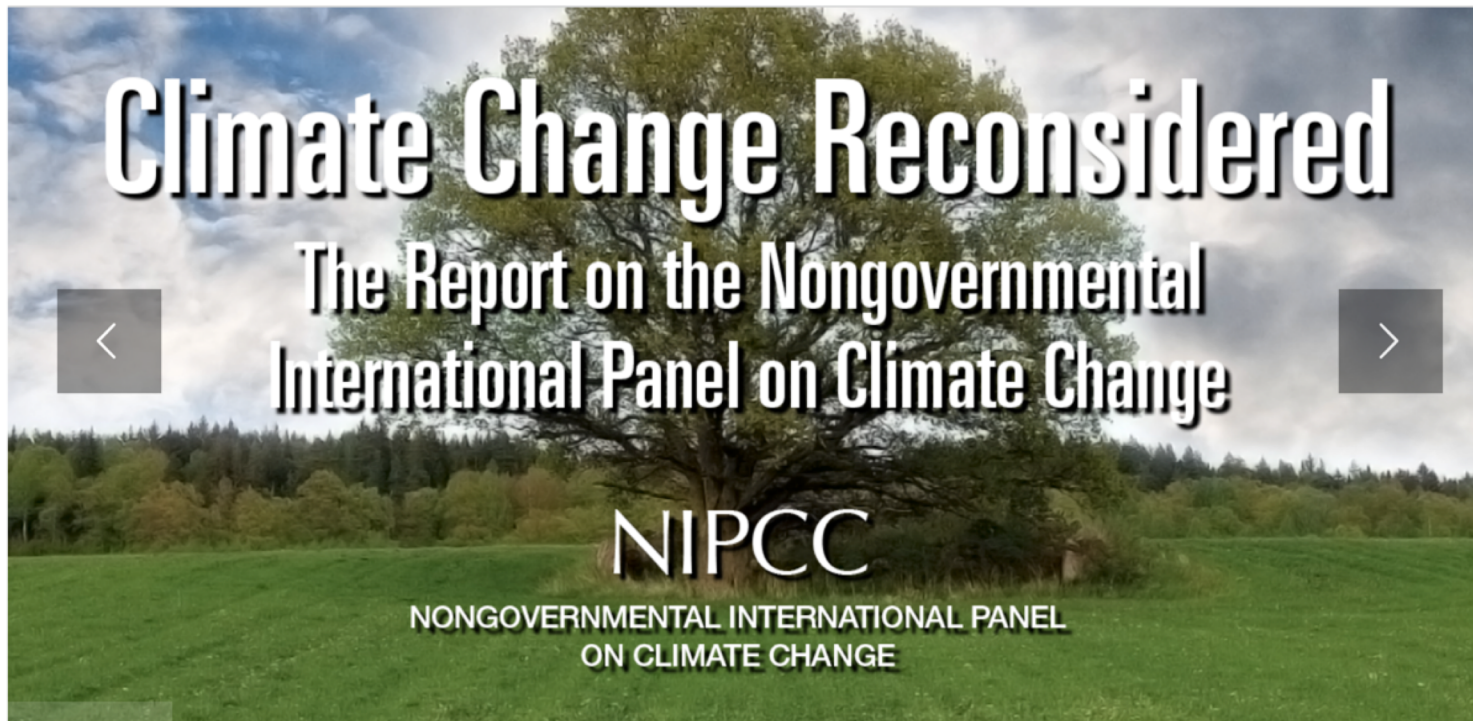
Nongovernmental International Panel on Climate Change

CO₂ SCIENCE



THE HEARTLAND INSTITUTE

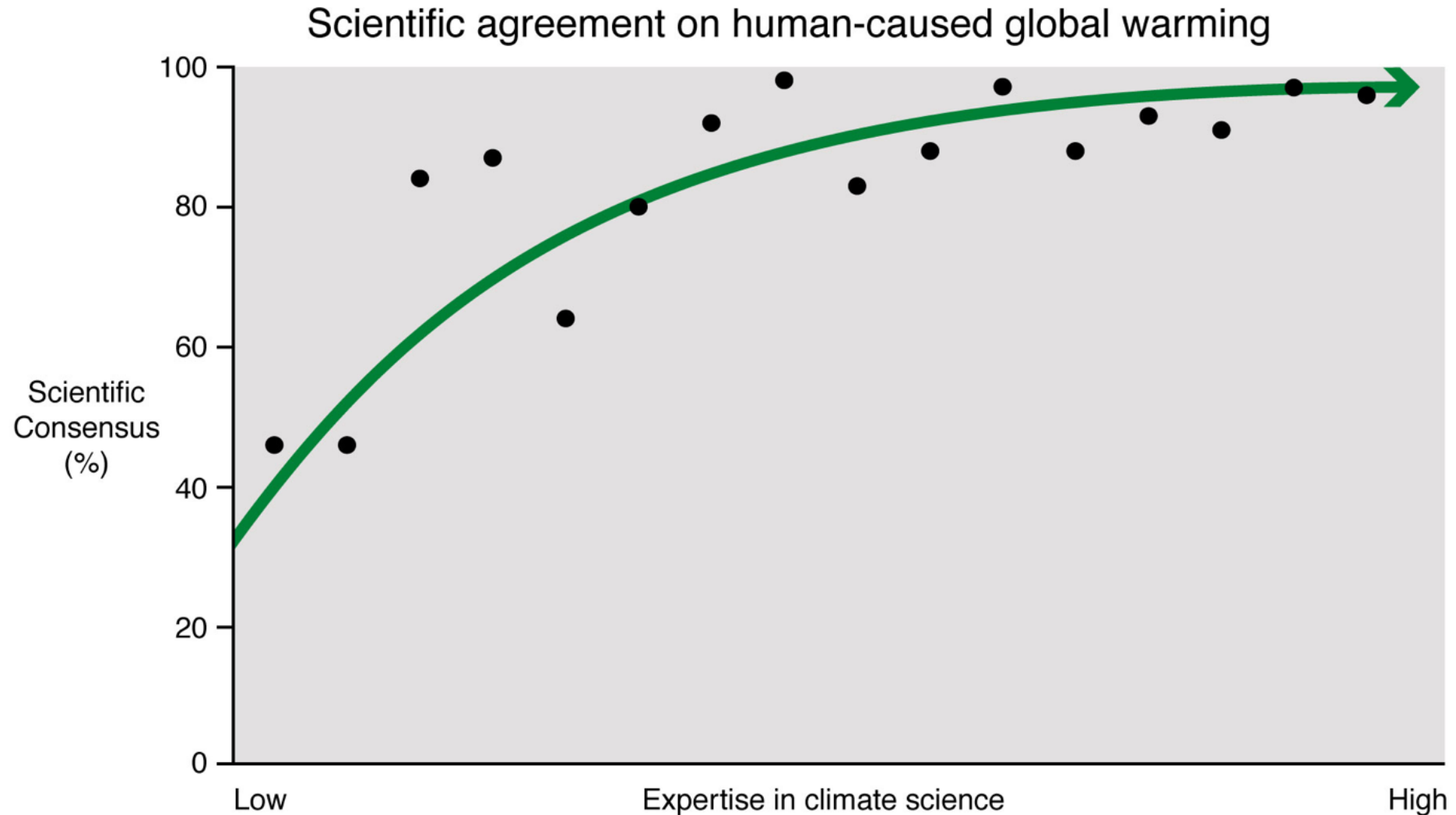
[Home](#) [About](#) [Volumes](#) [Media](#) [NIPCC Scientists](#) [Lead Authors](#) [Links](#) [Reviews](#) [Replies to Critics](#) [Q](#)



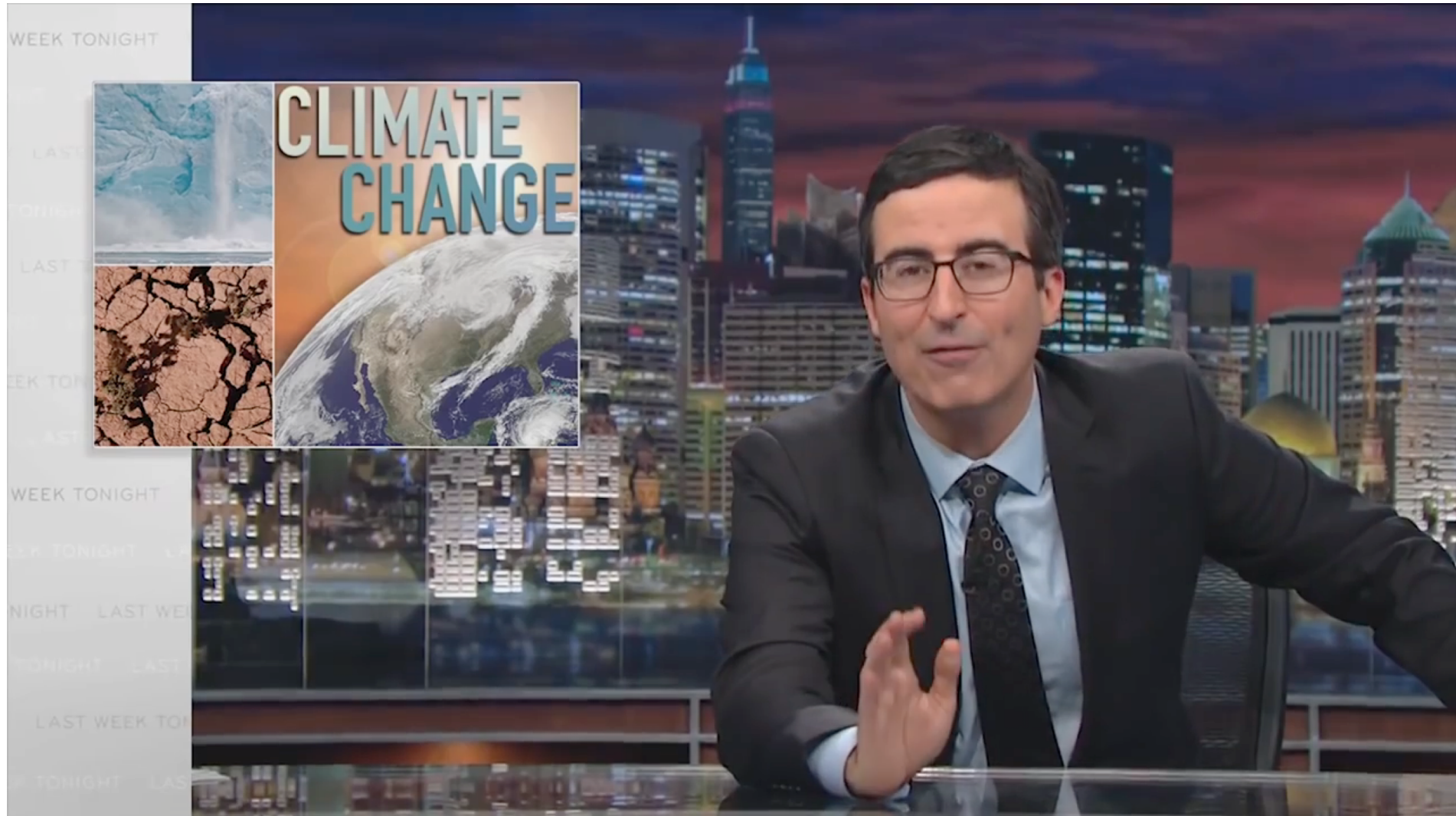
Three lead NIPCC authors – Craig Idso, Robert M. Carter, and S. Fred Singer – wrote a small book titled [Why Scientists Disagree About Global Warming: The NIPCC Report on Scientific Consensus](#) revealing how most scientists do not support the alarmist claims of the Intergovernmental Panel on Climate Change.

The Heartland Institute mailed some 300,000 copies of the second edition of this book to K-12 and college science teachers across America.

Assemble people who communicate well and sow doubt in those citizens with little expertise in climate science



Among climate scientists, there is no doubt...among politicians...well not much



The Essential Truth About Climate Change in Ten Words

IT'S REAL

IT'S US

EXPERTS AGREE

IT'S BAD

THERE'S HOPE

The basic facts of climate change, established over decades of research, can be summarized in five key points:

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.

Final Essay

Your assignment - write an OP-ED for your hometown paper.

Focusing on the same climate system you have considered all semester, write a 400-600 word persuasive essay. GIVE YOUR ESSAY A CATCHY TITLE!

In your OP-ED: 1) STATE the problem. 2) EXPLAIN how the system works including how it has changed in the past. 3) PROVIDE EVIDENCE that this problem is going to affect people now and in the future, and 4) most importantly, SUGGEST SOLUTIONS.

Your work needs to be well written, polished, and carefully proofread.

The folks at the Writing Center are your friends on this one. If you want some help, please, consult them. Here's the website: <https://www.uvm.edu/undergradwriting>

The goal here to finish our time together with something positive and forward looking.



You all can take what you have learned and make UVM and our world a better place.

Thursday – we'll spend much of the class on this final essay – join us!

- Chris will give you climate communication pointers from his workshop in California
- Josh Brown, UVM Environmental Writer will share his secrets on how to write your most persuasive essay
- We'll get your feedback on how to make this the best climate class we possibly can!

