

VIRGINIA:

IN THE CIRCUIT COURT FOR THE CITY OF RICHMOND

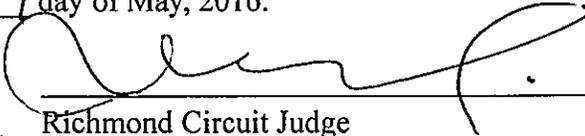
CHRISTOPHER HORNER, *et al*,)
)
 Petitioners,)
)
 v.)
)
 RECTOR AND VISITORS OF)
 GEORGE MASON UNIVERSITY)
)
 Respondent.)

Case No. CL15004712-00

ORDER RELEASING MATERIAL

THIS DAY CAME counsel for the Petitioners and moved that this Court release the material the respondent has filed with the Court, to the Petitioners, as provided in this Court's orders entered April 22, 2016 and May 13, 2016. The Clerk of this Court will release the records to Pe-

titioners' counsel forthwith. Respondents did not appear and petitioners are here appearing with the consent of the respondents. Endorsement SO ORDERED this the 27 day of May, 2016. *Endorsement will be sent to Rule 1:13*

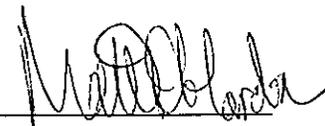

 Richmond Circuit Judge

A Copy
 Teste: EDWARD P. JEWETT, CLERK

BY:  D.C.

I ask for this:

Seen and _____:


 Matthew D. Hardin
 VSB# 87482
 314 West Grace Street, Suite 304
 Richmond, VA 23220
 Telephone: 804-608-6456

 David Drummey,
 University Counsel
 4400 University Drive, MS 23A
 Fairfax, VA 22030
 Telephone: 703-993-2619

From: Edward W. Maibach
To: Sheldon Whitehouse; Barry Klinger
Cc: Kevin Trenberth; Cane Mark; J Shukla; John_P._Holdren@ostp.eop.gov; Patricia_M._McLaughlin@ostp.eop.gov; Paul A Dirmeyer; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Robock Alan; Kalnay Eugenia; Kirtman Ben; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Biasutti Michela; Goddard Lisa; Dr. Alan Betts; Joseph Majkut; Lara Quint
Subject: Re: Letter to President, AG, and OSTP Director
Date: Friday, October 02, 2015 7:11:27 PM

From: Sheldon Whitehouse <sheldonwhitehouse@cox.net>

Sent: Tuesday, September 22, 2015 1:39 PM

To: Barry Klinger

Cc: Edward W Maibach; Kevin Trenberth; Cane Mark; J Shukla; John_P._Holdren@ostp.eop.gov; Patricia_M._McLaughlin@ostp.eop.gov; Paul A Dirmeyer; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Robock Alan; Kalnay Eugenia; Kirtman Ben; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Biasutti Michela; Goddard Lisa; Dr. Alan Betts; Joseph Majkut; Lara Quint

Subject: Re: Letter to President, AG, and OSTP Director

Free Beacon headline and text both say "criminal" where we have all said civil. Assuages their taste for hysterics, but far off on the facts. Sort of like their position on climate.

On Sep 22, 2015, at 11:48 AM, Barry Klinger <klinger@cola.iges.org> wrote:

I've updated my RICO web page with
"Do we work at 'alarmist' institutions?" and
"Who is a skeptic?"
<http://mason.gmu.edu/~bklinger/rico.html>

For those of you not trying to ignore media stories on
this, here's
another w/ attacks on Shukla and IGES and some quotes
from me near
the bottom:

<http://freebeacon.com/issues/scientist-demands-criminal-investigation-of-climate-change-skeptics/>

On 9/17/2015 5:19 PM, Edward W Maibach wrote:

From Marc Morano at Climate Depot:

<http://www.climatedepot.com/2015/09/17/twenty-climate-scientists-including-top-un-scientist-call-for-rico-investigation-of-climate->

[skeptics-in-a-letter-to-obama-argue-skeptics-guilty-of-disinformation-like-tobacco-companies/](#)



Debate no more! Jailed for scientific dissent?! Twenty climate scientists, including Top UN scientist, call for RICO investigation of climate skeptics in letter to Obama | Climate Depot
Top UN scientist Dr. Kevin Trenberth and 19 other scientists have become so tired of debating global warming that they are now apparently seeking to jail those who disagree with them. One of the sc...

[Read more...](#)

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Kevin Trenberth <trenbert@ucar.edu>
Sent: Thursday, September 17, 2015 11:45 AM
To: Cane Mark; J Shukla
Cc: John_P_Holdren@ostp.eop.gov;
Patricia_M_McLaughlin@ostp.eop.gov; Edward W Maibach; Paul A Dirmeyer; Professor Barry Klinger; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Robock Alan; Kalnay Eugenia; Kirtman Ben; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Biasutti Michela; Goddard Lisa; Dr. Alan Betts; Sheldon Whitehouse; Joseph Majkut; Lara Quint
Subject: Re: Letter to President, AG, and OSTP Director

From Climate Nexus:

Documenting Dangers, Doing Nothing: Exxon supported scientists conducted pioneering research into fossil fuels' role in climate change back in the 1970s. But when scientists warned management that addressing climate issues through policy change could affect their profitability, Exxon began a decades-long campaign to discredit the research. The second in a multi-part series from InsideClimate News reveals how an early culture of elite scientific exploration was abandoned by a corporate agenda that sought to hide the truth and cover up the potentially catastrophic implications of business-as-usual. (**News:** [InsideClimate News](#), [The Hill](#), [Newsweek](#), [PBS](#), [Fortune](#)) **Commentary:** [New York Times](#), [Andrew Revkin column](#) \$, [Inverse](#), [Jacqueline Ronson column](#), [Grist](#), [Katie Herzog column](#), [Wired](#), [Sarah Zhang column](#))

On 9/17/15 9:38 AM, Cane Mark wrote:

In case you missed this initial article on Exxon:

<http://insideclimatenews.org/news/15092015/frontline-video>

On Sep 14, 2015, at 11:18 AM, J Shukla
<shukla@iges.org> wrote:

Dear Dr. Holdren,

It has been a long time since I have had email correspondence with you. I do hope this email will reach your office.

Please find enclosed a letter to the President, the Attorney General, and you, reiterating the position of an overwhelming majority of climate scientists about the potentially serious adverse effects of human-induced climate change. The letter also supports Senator Whitehouse's proposal that the Department of Justice begin a RICO investigation of the fossil-fuel industry, who according to Senator Whitehouse, have knowingly deceived the American people about the risks of climate change. The letter

has been endorsed by a number of distinguished scientists whose names and affiliations are provided at the end of the letter.

We will be grateful if you can please bring this letter to the attention of the President.
Thank you.

Regards,
J. Shukla

University Professor, George Mason
University
President, Institute of Global Environment &
Society
Research Hall, Room 105
George Mason University, MSN: 2B3
4400 University Drive
Fairfax, VA 22030 USA

Tel: 703-993-5700
E-mail: shukla@iges.org
http://www.iges.org/

<Letter to Pres, AG, Holdren_Final.docx>

On Sep 9, 2015, at 4:11 PM, J
Shukla <shukla@iges.org> wrote:

Dear Friends,

Please find enclosed a copy of the
final letter. Thank you for your
support.

Regards,
Shukla

<Letter to Pres, AG,
Holdren_Final.docx>

Mark A. Cane
G. Unger Vetlesen Professor of Earth and Climate Sciences
Lamont-Doherty Earth Observatory of Columbia University
61 Route 9W
Palisades, NY 10964-8000

mcane@ldeo.columbia.edu Secretary: Virginia DiBlasi
845 365 8344 (phone) 845 365 8667
845 365 8736 (fax) virginia@ldeo.columbia.edu
<http://www.ldeo.columbia.edu/research/ocean-climate-physics>

Department of Earth and Environmental Science <http://eesc.columbia.edu/>
Department of Applied Physics and Applied Math
Founder, Master of Arts Program in Climate and Society:
<http://www.columbia.edu/cu/climatesociety/>

--
Kevin E Trenberth ph
303 497 1318
Distinguished Senior Scientist fax
303 497 1333
Climate Analysis Section email
trenbert@ucar.edu
National Center for Atmospheric Research
PO Box 3000
Boulder, CO 80307, USA

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Barry Klinger, Associate Professor and Graduate Coordinator

Department of Atmospheric, Oceanic, and Earth Sciences, and
Center for Ocean-Land-Atmosphere Studies (COLA),
George Mason University

4400 University Drive, MS 2B3, Fairfax, VA 22030
116 Research Hall, 703-993-9227, bklinger@gmu.edu
<http://mason.gmu.edu/~bklinger>, <http://cos.gmu.edu/aoes>

From: [d w](#)
To: goddard@iri.columbia.edu; akbetts@aol.com; robock@envsci.rutgers.edu
Subject: Scientists Ask Obama To Prosecute Global Warming Skeptics
Date: Friday, September 18, 2015 2:20:24 PM

Utter nonsense.

From: [Science and Environmental Policy Project](#)
To: [Edward W. Malbach](#)
Subject: TWTW Sep 19 2015
Date: Sunday, September 20, 2015 7:11:28 PM

Mad-Mimi-Header



The Week That Was: 2015-09-19 (Sep 19, 2015)
Brought to You by SEPP www.sepp.org
The Science and Environmental Policy Project (SEPP)

PLEASE NOTE: The complete TWTW can be downloaded in an easily printable form at this web site: <http://www.sepp.org/the-week-that-was.cfm...>

Please forward this Newsletter to those interested in Science and Environmental Policy. Thank you. Forward.



Quote of the Week:

"The worthwhile problems are the ones you can really solve or help solve, the ones you can really contribute something to." Richard Feynman

Number of the Week: 23

THIS WEEK:

By Ken Haapala, President, Science and Environmental Policy Project (SEPP)

RICO: For years, some advocates of the position that human emissions of carbon dioxide (CO₂) are causing unprecedented and dangerous global warming have also falsely claimed that the science is settled. Included in these claims are highly questionable claims that 97% of the scientists concur with this view. Now, twenty climate scientists have written to the President and the US Attorney General requesting legal prosecution of those who publically disagree with their views. The legal actions they are proposing fall under Racketeer Influenced and Corrupt

Organizations Act, known as RICO. The act was designed to combat organized crime and makes a person who instructs criminal action taken by others guilty of the crime. In short, the individuals who wrote the letter are stating that anyone who does not agree with their views is guilty of a crime - racketeering.

This action is a clear display of the illogical thinking by some of those in the largely, publically-financed Climate Establishment whose vanity exceeds the rigor of their work. Rather than producing compelling physical evidence that human emissions of CO2 are causing dangerous global warming, they will compel others to publically think as they do by legal action. In effect, they are undermining their own position and their action illustrates that simply because some people trained as scientists believe X that does not make belief in X scientific.

The evidence these individuals cite demonstrates their lack of critical thinking. For example, they cite the *Merchants of Doubt*, a book with extensive accusations against four distinguished scientists, but little documented evidence. The authors present no documented evidence that those accused took money from tobacco companies in exchange for suppressing evidence that cigarette smoking causes lung cancer.

This lack of evidence by the authors, Oreskes and Conway, who claim to be historians of science, can be easily seen in other imaginative claims, such as everyone was aware of the economic weakness of the Soviet Union long before it fell. The authors fail to note a major controversy in US economics profession during the 60s, 70s, and 80s was the economic strength of the Soviet Union.

Nobel Laurate Paul Samuelson, author of the highly influential textbook, *Economics*, later joined by William Nordhaus, argued that the military and space accomplishments of the Soviet Union were compelling evidence that the Soviet economy was comparable to that of the United States, and an example of the success of a centrally planned economy. Others disagreed, claiming that the Soviet military was strong, but the economy was weak. To maintain a strong military, the Soviet Union required far greater government spending in relation to the gross national product than the US. President Reagan accepted the second position, and sought to build up the US military to confront the economic weakness of the Soviet Union, which would try to match it. The issue was not the military strength, but the economic strength to maintain a strong military.

In *Merchants of Doubt*, Oreskes and Conway distort the issue, falsely claiming that three of the four scientists accused in the book exaggerated the military strength of the Soviet Union, which was not the issue at all. A simple check of the economics textbooks of the period show Oreskes and Conway misrepresent the issue.

The absurdity of the RICO accusations by the 20 individuals with scientific training (the 20) is increased by their citing political support by Sheldon Whitehouse, a senator from Rhode Island. Rhode Island and the Providence Plantations was founded by Roger Williams, who left England for the Massachusetts Bay Colony to seek religious freedom. Massachusetts, the "American Experiment" was considered to be founded on the idea of religious freedom. However, Williams was tried for his independent thinking in Salem, Massachusetts, and was banished. Apparently, Senator Whitehouse wishes to continue the concept of "freedom of thought for me, but not for thee."
<http://www.americaslibrary.gov/jb/c...>

Last week, TWTW quoted Freeman Dyson stating global climate models used by the Climate Establishment are full of "fudge factors" that adjust to whatever data is feed into them. As the data changes the fudge factors change, but that does not give the models predictive power, skill. Dyson has other significant criticisms of the models and of the Climate Establishment. Are "the 20" proposing prosecuting this eminent, 91 year-old theoretical physicist for racketeering because he dares to think differently than they do? See links under Suppressing Scientific Inquiry - The Witch Hunt and Suppressing Scientific Inquiry - The Witch Hunt - Push-Back.

The Sun: Increasingly we are seeing more papers asserting that the sun is a major factor in climate change. Yet, in its Summaries for Policy Makers, the government-funded, UN, Intergovernmental Panel on Climate Change (IPCC) largely dismisses it as an important influence on recent climate global warming/climate change. The total energy emitted by the sun drives the climate systems in the solar system, including the earth. Yet, according to the IPCC, and the group of 20 (above) minor changes in total energy emitted, including solar wind and magnetism are far less important in determining changing climate than human additions of CO2 into the atmosphere. See links under Science: Is the Sun Rising? and 100+ Papers - Sun Drives Climate

EPA Endangerment Finding: With many new publications, the supposed scientific basis of the EPA's finding that human greenhouse gas emissions, particularly CO₂, endanger human health and welfare continues to implode. Yet, some US climate "experts" are trying to suppress those who rely on empirical research and solid data.

Since 1993, US has spent over \$40 billion on what government bureaucracies classify as "climate science", and over \$165 Billion on other climate activities including subsidies for solar and wind - more than on the Apollo program. [SEPP has been unable to find a solid accounting produced by government agencies on expenditures in fiscal year 2014 and fiscal year 2015, which ends September 30.] The one thing being endangered is this flow of funds. In FY 2013, it was 78% greater than National Institutes of Health reported as expenditures on all categories of clinical research on known threats to human health. No wonder, "the 20" are trying to suppress those who think independently. See "Climate Fears and Finance" http://www.sepp.org/key_issues/ClimateFearsandFinance6-6.pdf

Pope's Visit: Starting Tuesday, the Pope is visiting Washington, New York City, and Philadelphia. Except for linking to articles discussing the Pope's views on western economic systems, TWTW has not discussed them. These systems can be termed as based on capitalism, private enterprise, or free enterprise. In the last, the meaning of free is from undue government control.

Many of those who strongly oppose western economic systems focus on the writings of Adam Smith, particularly *The Wealth of Nations* (1776). They correctly state that this book is largely devoid of human traits, especially of compassion. Unfortunately, these critics and too many exuberant followers of Smith ignore his prior work, *The Theory of Moral Sentiments* (1759), which provides the ethical and philosophical foundations to Smith's later work. In it, Smith discusses some important human characteristics such as sympathy, propriety, virtues, unsocial passions, etc. Understanding Smith's economic work requires understanding *The Theory of Moral Sentiments*. See links under Expanding the Orthodoxy - The Pope - Loyal Opposition and https://en.wikipedia.org/wiki/The_T...

Delay in Regulations: During a hearing before the Senate Environment and Public Works Committee on a different subject, Environmental Protection

Agency administrator Gina McCarthy was unable to explain why the EPA has failed to publish in the Federal Register its rules under the so-called Clean Power Plan (CCP). Delay in publishing rules has become part of the operating procedures of the Administration and the EPA.

Announcing forthcoming rules prevents utilities from beginning the planning and construction of facilities that may run afoul of the rules (a process that may take six to eight years). Not publishing the announced rules prevents the utilities and states affected from suing the EPA and the Administration, because the courts will dismiss such litigation as "not ripe", premature until the final rules are published.

During the delay, the EPA and the Administration can boost what it is doing to "fight" climate change without incurring the need to defend their actions. See Article # 1 and links under The Administration's Plan - Push-Back

Clinging to Fat Tails: Mr. Mann of hockey-stick repute has an op-ed in the Huff Post emphasizing the "fat tail" of IPCC climate change risk, a risk that is largely imaginary. According to Mr. Mann the "fat tails" indicate a "greater likelihood of warming that is well in excess of the average amount of warming predicted by climate models." Mr. Mann ignores that fact that the climate models, in general, greatly over-estimate current warming of the atmosphere, where the greenhouse effect takes place. Without "fat tails" the flow of funds to the alarmists in the Climate Establishment would be jeopardized.

Further, in discussing "existential threats" Mr. Mann ignores the threat of global cooling. Given the history of the earth over the past 2.5 million years, and its CO2 concentrations, cooling is a greater threat to humanity than warming. See link under Oh Mann.

California Snowpack: The bountiful farms of the southern Central Valley of California depend upon moisture from the Sierra Nevada Mountains. Whether the moisture falls as snow or rain is not as important as the extensive reservoir system that is designed to capture it. The current drought in California is disturbing; but, historically, not unprecedented. The headlines based on a letter published in Nature claimed the Sierra Nevada snowpack is at a 500 year low. The headline writers did not bother reading the graphs accompanying the letter or the text.

The graph was based on instrument data dating to 1930, with measurements taken April 1. Prior data is based on proxy data from tree rings. The error range for the instrument data shows that the current low point was approximated in 1977. In the proxy data, there are about 11 years when the value was equaled or below the current value. See links under Changing Cryosphere.

Wildfire Risk: Much is being made of wildfires occurring in the West, particularly in California. (Note the change in language from forest fires.). California Governor Brown blames these on global warming caused by CO2 emissions. He ignores the change in Federal and state government policies of suppressing fires by removing underbrush and creating fire breaks. This change in policy became intense after a controlled burn went out of control in Yellowstone in 1988. See Article # 3.

A Tribute: On his web site, Roy Spencer gives a tribute to S Fred Singer, founder of the Science and Environmental Policy Project (SEPP) and the Non-governmental International Panel on Climate Change (NIPCC). The first director of the National Weather Satellite Service, Singer was a pioneer on remote sensing by satellites.

Spencer and his colleagues at the National Space Science & Technology Center at University of Alabama in Huntsville also deserve a tribute for demonstrating how government-financed research should be conducted in spite of political whims and politicalized views of editors of once distinguished journals in science. See link under Challenging the Orthodoxy.

Number of the Week: 23. Writing on his web site, No Tricks Zone, Pierre Gosselin states that thus far this year he has counted 23 different papers that challenge the IPCC's claim that the solar influence on the earth's climate is minor. Of course, such papers undermine the credibility of the IPCC's claim that human emissions of CO2 dominate the earth's climate. Also, they further weaken the EPA's claim that CO2 emissions endanger public health and welfare. See links under Commentary: Is the Sun Rising?

ARTICLES:

Please note that articles not linked easily or summarized here are reproduced in

the Articles Section of the full TWTW that can be found on the web site under the date of the TWTW.

1. Obama's House of Cards

By S. Fred Singer, American Thinker, Sep 15, 2015

<http://www.americanthinker.com/arti...>

SUMMARY: President Obama seems anxious to shore up his legacy in several disparate areas: concluding a nuclear deal with Iran; reaching an international climate accord in Paris in December 2015; phasing out fossil fuels for electric generation in favor of wind and solar. But his legacy-building involves risks; biting off too much can activate adversaries. Over-riding just one White House (WH) veto may be enough to cause his whole house of cards to collapse.

2. How to Transport Oil More Safely

Each method-pipeline, rail, boat or truck-has its pros and cons. But they all could use some improvement.

By Dan Molinski, WSJ, Sep 13, 2015

<http://www.wsj.com/articles/how-to-...>

SUMMARY: With the tremendous growth of crude oil production in North America, the issue is the best way to transport it. The article discusses the pros and cons of each method. The statistics are based on point of delivery of crude in the US, and may include transport using multi-methods. Pipelines, which delivered 58% of the crude in in the US, are the cheapest way to move crude and spill less often than other methods. However, they can corrode over time, leading to spills, which can be large. Some pipelines have been operating since the 1940s, The American Petroleum Institute announced it was developing a comprehensive new set of standards for pipeline safety.

In 2014, boats, including tankers and barges, delivered 37% of the crude transported in the US. "Volume is the big advantage boats offer. A barge has a cargo capacity of around 1.3 million gallons-and there can be several barges per tow-while the largest transoceanic tankers can carry around 84 million gallons. A truck can move only about 9,000 gallons, and a train of 100 cars 3 million. What's more, even with their great capacity, barges don't face the same kind of traffic and other logistical issues as ground transport."

Of concern are locations that experience frequent, but minor spills such as Galveston Bay, an important oil-shipping channel near Houston, which sees about 275 spills of oil and related liquids a year. According to the Congressional Research Service "Barges are the workhorses in moving Bakken [region of North Dakota] and Texas oil by water." "However, the Coast Guard has just begun establishing a safety inspection regime for barges."

Rail delivered about 2.7% of the crude. It is more flexible, and the spills are generally small. However as demonstrated by the Lac-Mégantic, Quebec rail disaster in 2013, which killed 47 people, spills can be deadly. Among other measures, railroads have ordered trains to slow down and forced shippers to use reinforced tank cars.

Trucks delivered about 2.6% of the crude. They are the most flexible, and often are the first leg of delivery of crude. The trucking industry is working methods of improving safety, including driver training.

[SEPP Comment: Contrary to the article, non-lethal accidents have not necessarily gotten worse, but reporting has expanded.]

3. Carbon, Wind and Fire

California's wildfires undo Jerry Brown's anticarbon planning.

Editorial, WSJ, Sep 16, 2015

<http://www.wsj.com/articles/carbon-...>

SUMMARY: "Thousands of buildings and some 300,000 acres-10 times as much land as the city of San Francisco-have gone up in flames this week as three massive wildfires blazed across northern California. Tens of thousands of people have abandoned their homes, and Jerry Brown thinks he's found the villain: fossil fuels.

"At a press conference on Monday, the Governor warned that the wildfires are a result and portent of cataclysmic climate change. "This is the future, from now on. It's going to get worse, just by the nature of how the climate's changing," Mr. Brown inveighed. "What we see in Europe now with mass migrations, that will happen in California . . . Central America and Mexico, as they warm, people are going to get on the move."

"Europe's refugee crisis has been driven by turmoil in the Arab world and Western disengagement. In any case, Mr. Brown should be more worried about mass emigration driven by California's anti-business climate.

"One irony is that wildfires diminish the impact of California's anti-carbon policies. In 2007 environmental scientists at the National Center for Atmospheric Research (NCAR) and the University of Colorado at Boulder found that "a severe fire season lasting only one or two months can release as much carbon as the annual emissions from the entire transportation or energy sector of an individual state."

"According to a study this year led by the National Park Service and University of California, Berkeley, annual carbon releases from burning California wildland and forests-among the densest in the world-accounted for as much as 5% to 7% of statewide carbon emissions between 2001 and 2010.

"This year's fast-burning fires are fueled by the historic drought and fanned by strong winds. But as with so many other crises in California, government policies bear much of the blame. To wit, federal policy of suppressing fires in national parks and on other protected lands for forest preservation.

"A century of fire suppression has contributed to a potentially unsustainable buildup of vegetation,' explains UC Berkeley forest ecologist John Battles. 'This buildup provides abundant fuel for fires that contribute to carbon emissions.'" University of Colorado researcher Jason Neff likewise notes that fire suppression policies have 'had the unintended benefit of sequestering more carbon in our forests and reducing the impact of human combustion of fossil fuels.'

"One lesson here is that politically motivated policies intended to protect the environment often backfire-on the environment."

NEWS YOU CAN USE:

Science: Is the Sun Rising?

Strong evidence that Svensmark's solar-cosmic ray theory of climate is correct

The Cloud feedback

By Magnus Cederlöf. Google translation from the Stockholm Initiative site, The

Hockey Shtick, Sep 12, 2015
<http://hockeyshtick.blogspot.com/2...>

Body Of Science Continues To Grow ...Solar Impact On Climate System Is Major And Unequivocal

The sun drives the climate: Proof of the 90 and 200-year cycles in the earth's climate history

By Dr. Sebastian Lüning and Prof. Fritz Vahrenholt, Translated/edited by P Gosselin, No Tricks Zone, Sep 16, 2015

<http://notrickszone.com/2015/09/16/...>

Review By German Experts Show That Even The 11-Year Solar Cycle Has Undeniable Impact On Global Climate

The sun drives climate: 11-year cycles shown in natural climate archives

By Dr. Sebastian Lüning and Prof. Fritz Vahrenholt, (Translated/edited by P Gosselin), Sep 15, 2015

<http://notrickszone.com/2015/09/15/...>

Long-term climate variability in the Northern Hemisphere linked to solar variations

By Anthony Watts, WUWT, Sep 15, 2015

<http://wattsupwiththat.com/2015/09/...>

Link to paper: Solar forcing synchronizes decadal North Atlantic climate variability

By Thiéblemont, et al, Nature Communications, Sep 15, 2015

<http://www.nature.com/ncomms/2015/1...>

Commentary: Is the Sun Rising?

Already 23 Papers Supporting Sun As Major Climate Factor In 2015 ...Burgeoning Evidence No Longer Dismissible!

What's new on solar energy? Overview of the latest papers on complex topic of sun/climate

By Dr. Sebastian Lüning and Prof. Fritz Vahrenholt, (Translated, edited by P Gosselin), No Tricks Zone, Sep 14, 2015

<http://notrickszone.com/2015/09/14/...>

100+ Papers - Sun Drives Climate

By P. Gosselin, No Tricks Zone, No Date

<http://notrickszone.com/100-papers-...>

Suppressing Scientific Inquiry - The Witch Hunt

RICO!

By Judith Curry, Climate Etc. Sep 17, 2015

<http://judithcurry.com/2015/09/17/r...>

[SEPP Comment: The appalling low being reached by those who do not tolerate intellectual questioning and disagreement.]

Climate Scientists give up on science, talk tobacco, want to jail skeptics

By Jo Nova, Her Blog, Sep 18, 2015

<http://joannenova.com.au/2015/09/cl...>

Scientists Ask Obama To Prosecute Global Warming Skeptics

By Michael Bastasch, Daily Caller, Sep 17, 2015

<http://dailycaller.com/2015/09/17/s...>

Scientists ask Obama for RICO investigation to end climate debate

By Thomas Richard, Examiner, Sep 17, 2015

<http://www.examiner.com/article/sci...>

Suppressing Scientific Inquiry - The Witch Hunt - Push-Back

**Failed Climate Scientists Call For RICO Investigation To Stop Criticisms,
And Non-Scientist Claims Scientists Will Cause Next Genocide**

By William Briggs, His Blog, Sep 18, 2015

<http://wmbriggs.com/post/16865/...>

RICO: IPCC and comrades may be prosecuted for racketeering

By Lubos Motl, The Reference Frame, Sep 18, 2015

<http://motls.blogspot.com/2015/09/r...>

Silencing Dissent Via the Police (No Climate Free Speech, Part 3)

By Donna Laframboise, NFC, Sep 18, 2015

<http://nofrackingconsensus.com/2015...>

Challenging the Orthodoxy - NIPCC

Climate Change Reconsidered II: Physical Science

Idso, Carter, and Singer, Lead Authors/Editors, 2013

<https://www.heartland.org/media-lib...>

Climate Change Reconsidered II: Biological Impacts

Idso, Idso, Carter, and Singer, Lead Authors/Editors, 2014

<http://www.nipccreport.org/reports/...>

Challenging the Orthodoxy

S. Fred Singer: A 1960s Trailblazer for Satellite Remote Sensing

By Roy Spencer, His Blog, Sep 19, 2015

<http://www.drroyspencer.com/2015/09...>

Is It Time To Stop The Insanity Of Wasting Time and Money On More Climate Models?

Guest Opinion: Dr. Tim Ball, WUWT, Sep 14, 2015

<http://wattsupwiththat.com/2015/09/...>

Science says science is shoddy

By Ivo Vegter, Daily Maverick, South Africa, Sep 15, 2015 [H/t GWPF]

<http://www.dailymaverick.co.za/opin...>

Defending the Orthodoxy

Global warming 'pause' never happened, scientists say

By Chelsea Harvey, Washington Post, Sep 17, 2015 [H/t Timothy Wise]

<http://www.washingtonpost.com/news/...>

[SEPP Comment: Evidently the atmosphere is unknown to the journalist. There has been no warming for over a decade.]

Not Doomed Yet: A New Newsletter About Climate Change

A weekly summary of global-warming news, for people who want to pay more attention to it.

By Robinson Meyer, Atlantic, Sep 14, 2015 [H/t Clyde Spencer]

<http://www.theatlantic.com/science/...>

The Changing Climate on Climate Change

By Gro Harlem Brundtland, a former prime minister of Norway and a member of The Elders, a group of independent global leaders working together for peace and human rights, Project Syndicate, Sep 17, 2015

<http://www.project-syndicate.org/co...>

Questioning the Orthodoxy

Barents Sea polar bears in excellent condition say Norwegian biologists

By Susan Crockford, Polar Bear Science, Sep 18, 2015

<http://polarbearscience.com/2015/09...>

Mt. Baker glaciers disappearing? A response to the Seattle Times

By Don J. Easterbrook, WUWT, Sep 13, 2015

<http://wattsupwiththat.com/2015/09/...>

Moonbeam Science - And Then There's Dr. Ben Carson's Real Science

Editorial, IBD, Sep 15, 2015

<http://news.investors.com/ibd-edito...>

VANISHED GLOBAL WARMING may NOT RETURN - UK Met Office

But it might. Hey, we don't know, we're the Met Office

By Lewis Page, The Register, Sep 14, 2015 [H/t GWPF]

<http://www.theregister.co.uk/2015/0...>

What Using NONE Of The World's Fossil Fuels Would Do To Human Society ...Hundreds Of Millions Dead In Just Weeks!

By P Gosselin, No Tricks Zone, Sep 18, 2015

<http://notrickszone.com/2015/09/18/...>

You Ought to Have a Look: Carbon Sinks, Hurricanes, SETI

By Paul C. "Chip" Knappenberger and Patrick J. Michaels, Cato, Sep 15, 2015

<http://www.cato.org/blog/you-ought-...>

The China - US Agreement?

China Outmaneuvers United States Again

By Donn Dears, Power For USA, Sep 18, 2015

<https://dddusmma.wordpress.com/2015...>

On to Paris!

Europe: The Secret Weapon for Global Climate Change Deal

By Jeff Black, Bloomberg, Sep 11, 2015

<http://www.bloomberg.com/news/artic...>

EU targets 40% cut in emissions by 2030

By Staff Writers, AFP, Sep 18, 2015
http://citizen.co.za/afp_feed_artic...

Global Warming: More Evidence Emerges That It's A Con

Editorial, IBD, Sep 14, 2015 [H/t Timothy Wise]
<http://news.investors.com/ibd-edito...>

India, like-minded nations to negotiate together at climate change summit

India, LMDCs draw up strategy prior to October meeting in Bonn where Paris summit's negotiating text will be finalized

By Mayank Aggarwal, Live Mint, Sep 17, 2015
<http://www.livemint.com/Politics/RR...>

Paris meet on climate change shouldn't be mitigation-centric:

By Staff Writers, Press Trust of India, Sep 15, 2015
<http://www.business-standard.com/ar...>

Power, Politics and Climate Change

By Sarah Miller, World Energy, Sep 2015
<http://www.energyintel.com/pages/wo...>
[SEPP Comment: Optimism for Paris.]

The Administration's Plan

Obama Seeks Psychological Help with Climate Change

The social sciences could help combat global warming

By Evan Lehmann, Scientific American, Sep 16, 2015
<http://www.scientificamerican.com/a...>

Link to the Executive Order: Using Behavioral Science Insights to Better Serve the American People, The White House, Sep 15, 2015
<http://www.eenews.net/assets/2015/0...>

After Iran deal, Obama to pivot to climate change

He'll also resume his elusive quest to close Guantanamo, officials say.

By Michael Crowley, Politico, Sep 11, 2015
<http://www.politico.com/story/2015/...>

The Administration's Plan - Independent Analysis

Fossil Fuels are Essential For Modern Living

By Donn Dears, Power For USA, Sep 15, 2015
<https://dddusmma.wordpress.com/2015...>

The Administration's Plan - Push-Back

Alaska's climate scientists tell us the rest of the news, what Obama forgot to mention

By Larry Kummer, from the Fabius Maximus website, WUWT, Sep 13, 2015
<http://wattsupwiththat.com/2015/09/...>

EPA chief caught off guard on climate rule

By John Siciliano, Washington Examiner, Sep 16, 2015
<http://www.washingtonexaminer.com/e...>

The president's decarbonization fantasy

By Luke Popovich, Vice president for external communications at the National Mining Association (NMA), Washington Examiner, Sep 16, 2015
<http://www.washingtonexaminer.com/t...>

Obama's Not-So-Grand Energy Strategy: *Aimless Authoritarianism*

By William Yeatman, Global Warming.org, Sep 16, 2015
<http://www.globalwarming.org/2015/0...>

[SEPP Comment: The president abhors subsidies and tax preferences, except for industries he favors.]

Social Benefits of Carbon

Sahel greening confirmed

By Andrew Montford, Bishop Hill, Sep 15, 2015
<http://bishophill.squarespace.com/b...>

Link to paper: On regreening and degradation in Sahelian watersheds

By Kaptué, Prihodko, and Hanan, PNAS, Sep 9, 2015
<http://www.pnas.org/content/early/2...>

[SEPP Comment: A result of increasing precipitation and CO2?]

Problems in the Orthodoxy

Kiss This Important Climate Goal Goodbye

By Staff Writers, American Interest, Sep 16, 2015
<http://www.the-american-interest.co...>

[SEPP Comment: Using UNFCCC questionable accounting practices, the pledges

will amount to more than 2°C.]

African nations threaten veto if climate deal too weak

By Charles Ole Ngereza, SciDev, Sep 16, 2015

<http://www.scidev.net/global/climat...>

Negotiators will block any move to weaken two degree Celsius cap

They also want deal to recognise indigenous environmental knowledge

*Some nations may fight deal because of high cost of cutting emissions

[SEPP Comment: Too weak meaning not enough money for these nations.]

India, others resist emission diktat

By Staff Writers, Telegraph, India, Sep 16, 2015 [H/t GWPF]

<http://www.telegraphindia.com/11509...>

"In loss and damage, there is double speak," he said. "When a hurricane happens, they see the gravity of climate change, when some country asks for loss and damage on that account, they come out with the logic that one has to prove whether it is climate change event or a natural event - when compensation is to be paid, it is a natural event, when there is no claim then it becomes a climate change event."

Seeking a Common Ground

Unsustainable Development Goals

By Bjørn Lomborg, Project Syndicate, Sep 15, 2015

<http://www.project-syndicate.org/co...>

[SEPP Comment: Another morass of UN goals leading to false promises.]

The academy is broken

By Andrew Montford, Bishop Hill, Sep 15, 2015

<http://bishophill.squarespace.com/b...>

Link to summary: It's finally out-The big review paper on the lack of political diversity in social psychology

By Jonathan Haidt, Heterodox Academy, Sep 14, 2015

<http://heterodoxacademy.org/2015/09...>

Heterodox Academy

By Judith Curry, Climate Etc. Sep 15, 2015

<http://judithcurry.com/2015/09/15/h...>

Hiatus revisionism

By Judith Curry, Climate Etc. Sep 17, 2015

<http://judithcurry.com/2015/09/17/h...>

Review of Recent Scientific Articles by CO2 Science

Modelling Caribbean Sea Surface Temperature (SST) Trends

Ryu, J.-H. and Hayhoe, K. 2015. Regional and large-scale influences on seasonal to interdecadal variability in Caribbean surface air temperature in CMIP5 simulations. *Climate Dynamics* 45: 455-475. Sep 16, 2015

<http://www.co2science.org/articles/...>

850 Years of East Siberian Summer Temperatures

Fedotov, A.P., Trunova, V.A., Enushchenko, I.V., Vorobyeva, S.S., Stepanova, O.G., Petrovskii, S.K., Melgunov, M.S., Zvereva, V.V., Krapivina, S.M. and Zheleznyakova, T.O. 2015. A 850-year record climate and vegetation changes in East Siberia (Russia), inferred from geochemical and biological proxies of lake sediments. *Environmental Earth Sciences* 73: 7297-7314. Sep 15, 2015

<http://www.co2science.org/articles/...>

As indicated in the figure below, although there have been periods of both colder and warmer temperatures, there appears to be no long-term trend in the data. In addition, it is clear from the current temperature line (shown in red) that present temperatures are neither unusual, nor unordinary, within the context of the past 850 years.

Fifteen Hundred Years of South China Sea Water Temperatures

Yan, H., Sun, L., Shao, D. and Wang, Y. 2015. Seawater temperature seasonality in the South China Sea during the late Holocene derived from high-resolution Sr/Ca ratios of *Tridacna gigas*. *Quaternary Research* 83: 298-306.

<http://www.co2science.org/articles/...>

[SEPP Comment: One thousand years ago summers were about the same temperature and winter temperatures were higher than today.]

Modeling United States Cloud Fraction, Insolation and Precipitation

Lee, H., Kim, J., Waliser, D.E., Loikith, P.C., Mattmann, C.A. and McGinnis S. 2015. Using joint probability distribution functions to evaluate simulations of precipitation, cloud fraction and insolation in the North America Regional

Climate Change Assessment Program (NARCCAP). *Climate Dynamics* 45: 309-323., Sep 10, 2015

<http://www.co2science.org/articles/...>

Models v. Observations

The climate monsoon

By Madhav Khandekar, Financial Post (Can) Via GWPF, Sep 17, 2015

<http://www.thegwfp.com/madhav-khand...>

[SEPP Comment: Climate models fail to depict the most important annual climate event on earth for humans.]

Model Issues

How reliable are the climate models?

Guest essay by Mike Jonas, WUWT, Sep 17, 2015

<http://wattsupwiththat.com/2015/09/...>

Predicting tornadoes months or even seasons in advance

By Staff Writers, Toronto, Canada (SPX), Sep 15, 2015

<http://www.terraily.com/reports/P...>

[SEPP Comment: Already being done by those examining weather patterns.]

Measurement Issues

August 2015 Global Surface (Land+Ocean) and Lower Troposphere Temperature Anomaly & Model-Data Difference Update

By Bob Tisdale, WUWT, Sep 14, 2015

<http://wattsupwiththat.com/2015/09/...>

Climate Money and Adjustments: Keeping Things in Perspective [H/t Paul Homewood]

By Shub Niggurath, His Blog, Mar 21, 2015

<https://nigguraths.wordpress.com/20...>

Kent Clibze has been trying to get hold of documents that record the 'rationale, methodology and discussions' relating to temperature adjustments carried out by NOAA.

NOAA in turn has informed the FOI requester it needs money to comply with the request: - \$262,000!

Link to rejection letter <https://stevengoddard.files.wordpress.com...>

[SEPP Comment: This was before the latest round of NOAA adjustments!]

Scandal Part 3: Bureau of Meteorology homogenized-the-heck out of rural

sites too

By Jo Nova, Her Blog, Sep 17, 2015
<http://joannenova.com.au/2015/09/sc...>

Changing Weather

It's the peak of the hurricane season, and guess what...

There are no tropical storm, depressions, or hurricanes anywhere on Earth.

Guest essay by Dr. Richard Keen, WUWT, Sep 12, 2015

<http://wattsupwiththat.com/2015/09/...>

[SEPP Comment: Unusual weather day!]

**Ireland Sees Coldest Summer In 30 Years! ...North Atlantic, Scandinavia,
Northern Russia Endure Frigid Summer**

By P Gosselin, No Tricks Zone, Sep 12, 2015

<http://notrickszone.com/2015/09/12/...>

Changing Cryosphere - Land / Sea Ice

Arctic Sea Ice Reaches Annual Low

By Staff Writers, NASA, Earth Observatory, September 16, 2015

<http://earthobservatory.nasa.gov/IO...>

Arctic summer ice cover is 31st HIGHEST EVER RECORDED

Oh, and the Northeast Passage is open as normal

By Lewis Page, The Register, Sep 16, 2015 [H/t GWPF]

<http://www.theregister.co.uk/2015/0...>

[SEPP Comment: A different headline twist.]

Sierra Nevada snowpack is much worse than thought: a 500-year low

By Monte Morin, LA Times, Sep 14, 2015

<http://www.latimes.com/science/scie...>

Link to correspondence under Opinion & Comment: Multi-century evaluation of
Sierra Nevada snowpack

By Trouet, et al, Nature, No Date

<http://www.nature.com/articles/ncli...>

"Our error estimation indicates that there is a possibility that a few (primarily
sixteenth century) years exceeded the 2015 low..."

Changes in the Arctic: Background and Issues for Congress

By Ronald O'Rourke, CRS, Sep 4, 2015

<http://www.fas.org/sgp/crs/misc/R41...>

[SEPP Comment: A description of the issues in the Arctic.]

Acidic Waters

Are the Oceans Becoming More Acidic?

Guest essay by Clyde Spencer, WUWT, Sep 15, 2015

<http://wattsupwiththat.com/2015/09/...>

On the Bright Side: Juvenile Atlantic Cod Behavior Is Impervious to Ocean Acidification

By Craig Idso, Cato, Sep 10, 2015

<http://www.cato.org/blog/juvenile-a...>

Un-Science or Non-Science?

Burning remaining fossil fuel could cause 60-meter sea level rise

By Staff Writers, Washington DC (SPX), Sep 15, 2015

<http://www.spacedaily.com/reports/B...>

[SEPP Comment: Over the next 10,000 years, all assuming CO2 is the primary driver of climate and there is not another ice age.]

Communicating Better to the Public - Exaggerate, or be Vague?

In warming Arctic, mosquitoes may live long and prosper

By Will Dunham, Reuters, Sep 15, 2015 [H/t Clyde Spencer]

<http://news.yahoo.com/warming-arcti...>

[SEPP Comment: Those building the Alaska-Canadian Highway in the early 1940s realized mosquitoes were large and prospered.]

Communicating Better to the Public - Make things up.

All of Antarctica Might Melt, Drowning Major Cities

By Zoë Schlanger, Newsweek, Sep 11, 2015 [H/t Peter Salonijs]

<http://news.yahoo.com/antarctica-mi...>

Another Lew paper

By Andrew Montford, Bishop Hill, Sep 16, 2015

<http://bishophill.squarespace.com/b...>

Link to paper: The "Pause" in Global Warming: Turning a Routine Fluctuation into a Problem for Science

By Lewandowsky, Risbey, and Oreskes, AMS, Preliminary, No date
<http://journals.ametsoc.org/doi/pdf...>

**The latest head in the sand excuse from climate science: the global warming
pause 'never happened'**

By Anthony Watts, WUWT, Sep 17, 2015

<http://wattsupwiththat.com/2015/09/...>

Link to paper: Debunking the climate hiatus

By Rajaratnam, et al, Climate Change, Sep 17, 2015

<http://link.springer.com/article/10...>

Global warming to pick up in 2015, 2016: experts

By Staff Writers, London (AFP), Sept 13, 2015

<http://www.spacedaily.com/reports/G...>

[SEPP Comment: What makes the El Nino a man-made event?]

Communicating Better to the Public - Do a Poll?

Chesterton On Polls

By William Brigs, His blog, Sep 16, 2015

<http://wmbriggs.com/post/16867/...>

"It is an error to suppose that statistics are merely untrue. They are also wicked.

As used to-day, they serve the purpose of making masses of men feel helpless and cowardly..."

"Statistics never give the truth, because they never give the reasons."

Communicating Better to the Public - Go Personal.

**'Climate Change Deniers Are as Bad as Hitler'. Yale History Professor Goes
Full Godwin**

If you don't believe in climate change you're as bad as Hitler.

By James Delingpole, Breitbart, Sep 15, 2015

<http://www.breitbart.com/big-journa...>

**Proof-positive that AGW is not science... "World court should rule on climate
science to quash sceptics, says Philippe Sands...."**

Guest post by David Middleton, WUWT, Sep 18, 2015

<http://wattsupwiththat.com/2015/09/...>

Communicating Better to the Public - Use Propaganda

Blankets cover Swiss glacier in vain effort to halt icemelt

By Nina Larson, AFP, Sep 14, 2015 [H/t Clyde Spencer]

<http://news.yahoo.com/blankets-cove...>

Expanding the Orthodoxy

Transforming our world: the 2030 Agenda for Sustainable Development

By Staff Writers, Sustainable Development, No Date [H/t Dennis Ambler]

<https://sustainabledevelopment.un.o...>

"We, the Heads of State and Government and High Representatives, meeting at the United Nations Headquarters in New York from 25-27 September 2015 as the Organization celebrates its seventieth anniversary, have decided today on new global Sustainable Development Goals."

French winemakers hunt for climate change-resistant grape

By Sandra Laffont, Liergues, France (AFP) Sept 15, 2015

<http://www.seeddaily.com/reports/Fr...>

[SEPP Comment: They may have to compete with wine producers in Yorkshire in mid-lands of England as they did 1000 years ago!]

Expanding the Orthodoxy - The Pope - Loyal Opposition

The Disconnect between Pope Francis' Climate Views and His Concern for the Poor

By Alan Carlin, Carlin Economics and Science, Sep 17, 2015

<http://www.carlineconomics.com/arch...>

Donald J. Boudreaux: Pope Francis Misses The Sizable Moral Dimensions To Capitalism

By Donald Boudreaux, IBD, Sep 17, 2015

<http://news.investors.com/ibd-edito...>

Questioning Green Elsewhere

Green Dreams Dashed as Turnbull Backs Abbott's Climate Policy (For Now)

By Angus Whitey and James Paton, Bloomberg, Via GWPF, Sep 15, 2015

<http://www.thegwpf.com/green-dreams...>

Funding Issues

'West Polluted World' for 150 Years, and India Says It Won't Pay

By Anindya Upadhyay, Bloomberg, Sep 17, 2015

<http://www.bloomberg.com/news/artic...>

Poor nations want U.S. to pay reparations for extreme weather

By Thomas Kostigen, USA Today, Sep 12, 2015

<http://www.usatoday.com/story/news/...>

The Political Games Continue

GOP Candidates: Time to Defuse Climate Alarmism

By James Rust, Master Resource, Sep 16, 2015

<https://www.masterresource.org/2016...>

[SEPP Comment: Interesting post by Norman Page of correspondence with Freeman Dyson.]

Cap-and-Trade and Carbon Taxes

"The Case Against a U.S. Carbon Tax" (working paper lays out the issues)

By Robert Bradley Jr. Master Resource, Sep 17, 2015

<https://www.masterresource.org/deba...>

Subsidies and Mandates Forever

Dear House: Say NO to Wind PTC (10th extension crucial for Obama's energy/climate agenda)

By Robert Bradley Jr., Master Resource, Sep 18, 2015

<https://www.masterresource.org/prod...>

[SEPP Comment: Since first enacted 23 years ago, this temporary subsidy has been extended 9 times. Wind power is not an infant industry in need of protection. But, it has not solved a fundamental problem that has existed for the thousands of years man has tried to harness wind - wind is unreliable.]

EPA and other Regulators on the March

Committee Chairman Questions EPA's Transparency Over Doctored Video

Agency edited video of Gold King Mine spill

By Elizabeth Harrington, Washington Free Beacon, Sep 17, 2015

<http://freebeacon.com/issues/commit...>

New Report Details Economic Impact of EPA's Ozone Proposal on Colorado

By Staff Writers, Center for Regulatory Solutions, Aug 12, 2015 [H/t Timothy Wise]

<http://centerforregulatorysolutions...>

[SEPP Comment: Report stating that by changing regulatory standards, the EPA is asserting regulatory control over about 85% of the state's economic activity and employment.]

New Report: Federal Controls From Tighter Ozone Caps Threaten Virginia's Economic Growth and Will Make Traffic Worse

By Staff Writers, Small Business & Entrepreneurship Council, Sep 10, 2015 [H/t Timothy Wise]

<http://www.sbecouncil.org/2015/09/1...>

[SEPP Comment: Report stating that by changing ozone standards EPA is asserting control over 56% of the state's economy, 47% of the work force, and 44% of the population.]

Numbers of Contaminated Federal Sites, Estimated Costs, and EPA's Oversight Role

By Staff Writers, GAO, Sep 11, 2015 [H/t Timothy Wise]

<http://gao.gov/products/GAO-15-830T...>

[SEPP Comment: So large that no one knows.]

Energy Issues - Non-US

Resilience of US shale has surprised oil market, says ADIA economist

By Gaurav Sharma, Sharecast, Sep 17, 2015 [H/t GWPF]

<https://uk.finance.yahoo.com/news/r...>

[SEPP Comment: ADIA is Abu Dhabi Investment Authority, a sovereign wealth fund.]

Recent statistical revisions suggest higher historical coal consumption in China

By Staff Writers, EIA, Sep 16, 2015

<http://www.eia.gov/todayinenergy/de...>

[SEPP Comment: Now estimated at 14% higher than before.]

Exclusive: Chinese coal data cast doubt on historic stalling of world CO2

By Alister Doyle and David Stanway, Reuters, Sep 15, 2015

<http://www.reuters.com/article/2015...>

Energy Issues - US

EMP versus AGW - Is There a National Death Wish?

By Norman Rogers, American Thinker, Sep 18, 2015
<http://www.americanthinker.com/arti...>

American Oil Producers Punch Back in Price Fight

By Staff Writers, American Interest, Sep 16, 2015 [H/t GWPF]
<http://www.the-american-interest.co...>

EIA: Shale output fell by 350,000 barrels a day since April

By Collin Eaton, Fuel Fix, Sep 15, 2015
<http://fuelfix.com/blog/2015/09/15/...>

Water demand from fracking less than 1 percent of U.S. total: study

By Richard Valdmanis, Reuters, Sep 15, 2015 [H/t Clyde Spencer]
<http://news.yahoo.com/water-demand-...>

Oil and Natural Gas - the Future or the Past?

Peak Oil is a Function of Oil Price

By Robert Rapier, Energy Trends, Sep 17, 2015
<http://www.energytrendsinsider.com/...>

Return of King Coal?

Vietnam and Malaysia to challenge China and India as coal importers in the long term

By Staff Writers, Coaltrans Conferences, No Date, [H/t Dennis Ambler]
<http://www.coaltrans.com/articles/3...>

Japan: Building coal plants is "climate finance"

Guest essay by Eric Worrall, WUWT, Sep 13, 2015
<http://wattsupwiththat.com/2015/09/...>

Nuclear Energy and Fears

A nuclear future

By Martin Livermore, The Scientific Alliance, Sep 18, 2015
<http://scientific-alliance.org/node...>

China looks forward to reactor firsts

By Staff Writers, WNN, Sep 14, 2015
<http://www.world-nuclear-news.org/N...>

Fukushima dumps first batch of once-radioactive water in sea

By Harumi Ozawa, Tokyo (AFP), Sept 14, 2015

<http://www.terraily.com/reports/F...>

[SEPP Comment: The journalist does not bother to report the current extent of its radioactivity - was it significantly greater than natural background of the oceans? What happens after it is diluted?]

Japan nuclear plant begins commercial operations

By Staff Writers, AFP, Sep 10, 2015 [H/t Toshio Fujita]

<https://in.news.yahoo.com/japan-nuc...>

Report: Nuke Plants Unprotected From Iranian EMP Attack

Editorial, IBD, Sep 16, 2015 [H/t Timothy Wise]

<http://news.investors.com/ibd-edito...>

Alternative, Green ("Clean") Solar and Wind

David Attenborough's Renewable "Apollo Project"

Guest essay by Eric Worrall, WUWT, Sep 17, 2015

<http://wattsupwiththat.com/2015/09/...>

[SEPP Comment: It is as if hundreds of millions spent over the last 100 plus years to store electricity never occurred.]

Windmills and Sunbeams Won't Keep the Lights On

By Larry Bell, Newsmax, Sep 14, 2015

<http://www.newsmax.com/LarryBell/Cl...>

Germany Faced Huge Cost of Wind Farm Decommissioning,

By Franz Hubik, Handelsblatt, Trans. Philipp Mueller, Via GWPF, Sep 17, 2015

<http://www.thegwgf.com/germany-face...>

[SEPP Comment: How many hundreds of acres of non-operating wind turbines exist in California? Governor Brown does not go there for photo opportunities.]

AWED Energy & Environmental Newsletter: September 14, 2015

By John Droz, Jr. Master Resource, Sep 14, 2015

<https://www.masterresource.org/alli...>

Solar power is still growing rapidly, but it's about to hit a speed bump

By Brad Plumer, Vox, Sep 9, 2015

<http://www.vox.com/2015/9/9/9295907...>

[SEPP Comment: Useful graph on solar power by state and by user.]

Alternative, Green ("Clean") Energy - Other

Hawaii Taps the Ocean to Generate Carbon-Free Power

By Katharine Gammon, Take Part.com, Sep 15, 2015 [H/t Clyde Spencer]

<http://news.yahoo.com/hawaii-taps-o...>

[SEPP Comment: Poor reporting. The Ocean Thermal Energy Conversion (OTEC) power plant takes advantage of temperature difference between warm surface water and cold deep water off the coast of Hawaii. Such a generation system can be a breakthrough for coastal areas with warm surface waters that have a steep drop-off. The system does not need sunlight and can operate 24/7. It will be interesting to see how the project develops. http://www.makai.com/makai-news/2015_08_29_makai_connects_otec/]

California Dreaming

California Passes a Bill Targeting 50% Renewables by 2030

Supporters are happy, but the entire package of energy bills receives mixed reviews.

By Julia Pyper, Green Tech Media, Sep 12, 2015

<http://www.greentechmedia.com/artic...>

California Climate Law an \$8.6 Billion Coup for Solar Utilities

By James Nash, Bloomberg, Sep 14, 2015

<http://www.bloomberg.com/politics/a...>

Oh Mann!

The 'Fat Tail' of Climate Change Risk

By Michael Mann, Huff Post Green, Sep 11, 2015 [H/t Timothy Wise]

<http://www.huffingtonpost.com/micha...>

Environmental Industry

EPA Official Disavows American Lung Association Air-Quality Claims

By Karen Kerrigan, Center for Regulatory Solutions, Sep 11, 2015

<http://centerforregulatoryolutions...>

Other Scientific News

World's longest continental volcano chain in Australia

By Staff Writers, Canberra, Australia (SPX), Sep 15, 2015
<http://www.spacedaily.com/reports/W...>

Other News that May Be of Interest

US military develops prosthetic hand that can 'feel'

By Staff Writers, Washington (AFP), Sept 14, 2015

<http://www.spacedaily.com/reports/U...>

[SEPP Comment: A goal for many years.]

Three Senators Make The Anti-Science Hall Of Fame

By Nicholas Starpoli, ACSH, Sep 15, 2015

<http://acsh.org/2015/09/three-senat...>

BELOW THE BOTTOM LINE:

Extended world war

By Staff Writers, Climate Change Predictions, Sep 16, 2015

<http://climatechangepredictions.org...>

If we do not deal with climate change decisively, "what we're talking about then is extended world war," Lord Nicholas Stern, Feb 24, 2009

Half of marine life wiped out in 40 years: WWF

By Nina Larson, Marlowe Hood in Paris, Geneva (AFP) Sept 16, 2015

<http://www.terrady.com/reports/H...>

[SEPP Comment: No comment needed.]

Growing El Nino May Launch Huge Latino Migration to U.S.

By Chriss Street, Breitbart, Sep 12, 2015 [H/t Timothy Wise]

<http://www.breitbart.com/big-govern...>



PLEASE NOTE: The complete TWTW can be downloaded in an easily printable form at this web site: <http://www.sepp.org/the-week-that-was.cfm...>



Please forward this Newsletter to those interested in Science and Environmental Policy. Thank you. Forward.

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From: Margie Alt, Environment America Executive Director
To: Edward W. Maibach
Subject: Tell EPA: Throw the book at VW
Date: Saturday, September 26, 2015 10:03:56 AM

Volkswagen admitted to installing faulty devices in their diesel cars that allowed them to emit 15-35 times the legal limit of smog-forming pollution, violating the Clean Air Act. Sign the petition to the EPA to hold VW accountable.

Ed,

Volkswagen repeatedly violated the Clean Air Act for the last six years. The company's "clean diesel" cars included software in **nearly 500,000 cars in the U.S. set to evade emissions tests. As many as 11 million diesel vehicles worldwide have the same defect.** [1]

When U.S. researchers discovered that VW cars circumvented emissions regulations in 2014, the company said they identified a fix. But we now know the problem persisted for almost half a million vehicles in the U.S.

hold VW accountable



And the real-world impacts are astounding: **Affected VW cars could be emitting up to 15-35 times more smog-forming pollution** while on the road than was showing up on their emissions tests. [2] Initial estimates suggest that these rigged cars worldwide emit excess pollution equivalent to all major sources in the UK combined. [3]

Sign our petition to the EPA today: "Cheating the Clean Air Act is unacceptable. Show VW that it doesn't pay to pollute by issuing maximum fines and prosecute VW to the fullest extent of the law."

The last thing we need is more air pollution. According to a recent American Lung Association report, more than four in 10 Americans live with smog pollution levels that are often too dangerous to even breathe. [4]

Join the call to the EPA. Sign the petition today.

Sincerely,

Margie Alt
Environment America Executive Director

P.S. What's the best way to make it clear we're outraged by this cheating? Get one signature for each vehicle VW sold and profited from in the last 6 years. Help us get 482,000 signatures by signing the petition and forwarding the email to friends and family today. [6]

[1] Volkswagen AG has issued the following information, September 22, 2015.

[2] EPA's notice of Violation of the Clean Air Act to Volkswagen [press statement], September 18, 2015.

[3] VW scandal caused nearly 1m tonnes of extra pollution, analysis shows, September 22, 2015.

[4] State of the Air: Ozone Pollution, September, 2015.

[5] EPA, California Notify Volkswagen of Clean Air Act Violations, Septemebr 18, 2015.

Donate today. A cleaner, greener future is within our reach. Your donation today can help us bring the vision we share a little closer to reality.

Environment America, Inc.

294 Washington St, Suite 500, Boston, MA 02108, (617) 747-4449

Federal Advocacy Office: 218 D Street SE, Washington, DC 20003, (202) 683-1250

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From: [Science and Environmental Policy Project](#)
To: [Edward W Malbach](#)
Subject: TWTW Sep 26 2015
Date: Sunday, September 27, 2015 6:15:35 PM

Mad-Mimi-Header



The Week That Was: 2015-09-26 (Sep 26, 2015)
Brought to You by SEPP www.sepp.org
The Science and Environmental Policy Project (SEPP)

PLEASE NOTE: The complete TWTW can be downloaded in an easily printable form at this web site: <http://www.sepp.org/the-week-that-was.cfm...>

Please forward this Newsletter to those interested in Science and Environmental Policy. Thank you. Forward.



Quote of the Week:

"Common sense is the collection of prejudices acquired by age eighteen." Albert Einstein

Number of the Week: 7 Years

THIS WEEK:

By Ken Haapala, President, Science and Environmental Policy Project (SEPP)

Changing Science: Several developments related to climate science occurred this week that can have some influence on policy as governments are rushing towards an "agreement" to be reached at the 21st session of the Conference of the Parties (COP-21) of the United Nations Framework Convention on Climate Change (UNFCCC) to be held in Paris from November 30 to December 11. No doubt, these developments will be ignored by some governments, the government-supported Climate Establishment, which adheres to the findings of the UN

Intergovernmental Panel on Climate Change (IPCC) while ignoring its deficiencies, and by the well-funded Green lobby, which depends on an image of "saving the world." One development is a book-length independent review of the IPCC's work by Alan Longhurst, a biological oceanographer with over 50 years' experience. The second development is group of essays by mathematician and electrical engineer David Evans posing a serious critique of the models depended upon by the IPCC and the Climate Establishment.

Longhurst Review: Encouraged by Judith Curry, Alan Longhurst reviewed the work of the IPCC from 2012 to 2015 and reached the following conclusions.

- * Global surface-air temperature records do not provide a reliable estimate of the influence of increased CO₂ due to land use change (urbanization, etc.) and effects of industrial particulates.
- * Users cannot judge the consequences of adjustments to surface-air data sets.
- * Sea surface temperatures are not a substitute for surface-air temperatures over oceans - due to changes attributable to ocean vertical motions, upwelling, etc.
- * Description of the global heat budget is inadequate.
- * Evidence for an intensification of extreme weather events and, in particular, tropical cyclones is very weak and is largely due increasing reliability and coverage of weather monitoring.
- * "Global climate in the present configuration of the continents falls naturally into a limited number of patterns that are forced externally and patterned by internal dynamics" - influenced by the North Atlantic Oscillation and the Southern Oscillation that describes the strength of trade winds.
- * "The recent melting of arctic ice cover over larger areas than 20 years ago in summer is not a unique event, but is a recurrence of past episodes and is the result of cyclically-variable transport of heat in warm North Atlantic water into the Arctic basin through the Norwegian Sea..."
- * Sea level is rising, but the causes - especially at regional scale - are more complex than suggested by the IPCC and involve many processes other than

expansion due to warming.

* "The consequences of acidification of seawater is one of the most enigmatic questions, it seems now that (i) marine organisms are more resilient to changing pH than was originally feared, because of the genetic diversity of their populations and (ii) the history of pH of seawater during geological time suggests that resilience through selection of genomes has emerged when appropriate in the past."

* "Unfortunately, the essential debate on these issues will not take place, at least not openly and without prejudice, because so many voices are today saying - nay, shouting -? 'enough, the science is settled, it is time for remediation'. In fact, many have been saying this for almost 20 years, even as fewer voices have been heard in the opposite sense. As discussed in Chapter 1, the science of climate change -? like many other complex fields in the earth sciences -? does not function so that at some point in time one can say 'now, the science is settled': there are always uncertainties and alternative explanations for observations."

Nothing reviewed of Longhurst's work appears inconsistent with the findings of the Nongovernmental International Panel on Climate Change (NIPCC): Climate Change Reconsidered II. The NIPCC reports include extensive reviews of scientific papers citing the benefits of increased atmospheric CO₂, including benefits to marine life.

Longhurst does not address atmospheric temperatures measured by satellites, independently supported by weather balloon measurements. These are beyond ordinary human influences that affect surface-air measurements taken a few feet off the ground. SEPP considers atmospheric measurements which engulf virtually the entire globe to be the only ones from which average global temperatures can be calculated.

The recent modifications made by the US National Oceanic and Atmospheric Administration (NOAA) to the sea surface temperature records intensify the issues, not reduce them. See links under Challenging the Orthodoxy - NIPCC and Challenging the Orthodoxy.

David Evans: The analysis of IPCC climate models by model expert David Evans is appearing in a series of posts by Jo Nova, his wife, on her web site. Jo Nova is

a very articulate writer on science issues, particularly on climate issues. The posts under the title "New Science" will likely continue for some time. Already, the criticisms are addressing significant flaws in the climate models, which make the models unsuitable for long-term projections and for policy decisions. The second paragraph in the opening is refreshing:

"Government science is stuck in a rut, strangled - trying to capture the creative genius of discovery and force it through a bureaucratic formula, like it can work to a deadline or be judged by the number of papers, or pages, or citations, or by b-grade officials. Blogs are new, but this form of independent scientific research, done for the thrill of discovery, outside institutions and funded by philanthropists, is the way science was mainly done before WWII."

Evans then discusses the core of the basic physics model that a doubling of CO₂ will cause a warming of 1.2 ° C, as estimated in the Charney Report of 1979. [The IPCC has amplified the range of the warming proposed in the Charney Report, but has not improved on it.] He will take us on a tour of the feedbacks and the details of the models, asserting that the structure of the model is wrong - it is connected the wrong way.

The journey is beginning, and promises to be interesting. Since some posts are more technical than what customarily appears herein, TWTW will link to the posts, largely without comment. We will enjoy the journey and see if Evans accomplishes what he asserts: *"Basically it is going to come down to one connection. The basic physics is correct, but the climate scientists misapplied it. After fixing the plumbing, it all flows beautifully.*
"This argument potentially breaks the intellectual logjam. The empirical reality was measured correctly after all."

See links under Challenging the Orthodoxy and "Climate Fears and Finance"
http://www.sepp.org/key_issues/Clim...

The Pope's Visit: The writings of the Pope and his talks reflect antiquated thinking about economic systems more in line with 19th century thinking brought in sharper contrast during the period between WWI and WWII. He criticized what he calls capitalism, a term not commonly used until the mid- to-late 1800s. Karl Marx and Friedrich Engels strongly criticized the "capitalistic system" in *Das Kapital* (1867). However, western economic systems can be better termed as

based on private enterprise, or free market systems. In the latter, the meaning of free is from undue government control. These terms better fit the market economies of the west than capitalism.

The critical economic issue is who controls the means of production and the decisions of what to produce. Is it a central authority or the multitude of decisions by many people? As seen in many countries, such as the Soviet Union and Argentina during the reign of Peron, central decision making, often favoring a few, can be economically repressive to the many. Conversely, in market economies, if private companies make poor decisions on what to produce, they fail leading to bankruptcy or take-over. Unfortunately, in his economic pronouncements, the Pope fails to make such important distinctions.

Western market economies have addressed environmental deterioration and greatly improved environmental conditions without centralized decision-making. The claim that human carbon dioxide emissions will cause unprecedented and dangerous global warming is not supported by atmospheric temperature measurements, which are the finest, only comprehensive measurements of global temperatures existing. Simply, there is no compelling environmental or human reason to institute centralized economic powers, which have repeatedly failed in the past.

Murkiness of thinking was characteristic in his remarks to Congress. He requested Congress not impede immigration from Latin America. He may realize that people are immigrating largely for economic reasons, to find a better life. These antiquated remarks are forgivable for the Pope, but not for his economic advisors.

The Pope insists that governments must interfere with free-market system to address climate change, which, however, is based on inadequate science.

The cost of such interference is enormous. It is the free market system in the US that allowed the expansion of oil production from shale - all occurring on private or state-owned lands, not federally controlled lands and waters. This production is breaking the grip of government-controlled petroleum companies in OPEC. The resulting decline in oil prices is a boon to humans in general. See links under Defending the Orthodoxy, Expanding the Orthodoxy - The Pope, and Expanding the Orthodoxy - The Pope - Loyal Opposition

A Stern Review: Michael Kelly has a review of the new book by Nicholas Stern: *Why Are We Waiting? The Logic, Urgency, and Promise of Tackling Climate Change*. Lord Stern is the author of an influential report on the costs of climate change. The report depends on statistical manipulation of estimates of future costs using discount rates that are fitting for economies that are undergoing prolonged economic recession or depression.

Mr. Kelly's review shows a poetic flair: *"Those building the biblical Tower of Babel, intending to reach heaven, did not know where heaven was and hence when the project would be finished, or at what cost. Those setting out to solve the climate change problem now are in the same position. If we were to spend 10 or even 100 trillion dollars mitigating carbon dioxide emissions, what would happen to the climate? If we can't evaluate whether reversing climate change would be value for money, why should we bother, when we can clearly identify many and better investments for such huge resources? The forthcoming Paris meeting on climate change will be setting out to build a modern Tower of Babel."* See link under A Stern Review

US Energy Plan: Ernest Moniz and John Holdren announced a review of the current state of energy technology. After the now usual rhetoric that global climate change, caused by carbon dioxide from energy use, is one of the most significant threats to the well-being of people now alive as well as to that of future generations, the statement claims that the released second Quadrennial Technology Review (QTR) "identifies game-changing clean and efficient energy technologies." The report promotes the current construction of four nuclear reactors, wind power and solar power.

Reliable electricity is critical for modern civilization. The administration's top scientists fail to mention the greatest failure in Mr. Obama's power plan - the inability to store electricity on an affordable, commercial scale. The only proven method is pumped storage; but, the administration's intensified water regulations make it doubtful if any new such facilities can be built. But the plan contains a promise: "Energy storage: Fundamental research on efficient, durable storage **could enable transformational change across multiple sectors, including transportation, and the electricity system.**" [Boldface added].

The statement also claims: "The QTR provides a blueprint for the Energy Department's energy-technology development and for enabling the science that

will make future technology breakthroughs possible." Some hoped for breakthroughs may never materialize. Great technological advances in one area do not necessarily mean great advances in another area.

The statement claims that: "Since the last QTR was published in 2011, the number of large-scale carbon capture and storage (CCS) demonstration projects has doubled globally." SEPP was unable to identify one commercially viable project that is not connected to using carbon dioxide to produce additional quantities of oil or natural gas from wells. The British CCS project is in trouble as private companies power have pulled out due to reversals on subsidies making the project too risky to proceed.

The US plan promises energy savings. Many such promises have been based on making labor saving appliances more energy efficient; but, less efficient for humans, or more expensive. See links under The Administration's Plan and Questioning European Green

RICO 20: As expected, there is push-back against the 20 people who signed a letter addressed to the US President and the Attorney General demanding racketeering (RICO) investigations of those who disagree with their views about climate change. The critiques reflect the saying: "Those who live in glass houses should not throw stones."

The letter does not advance science, but largely ignores it - namely the inability of global warming proponents to advance climate science significantly beyond the Charney Report of 1979. One of the critiques brought up that some of RICO 20 signers are from the government-funded Center for Climate Change Communication at George Mason University. The actions of the RICO 20 are similar to the actions during World War I by the U.S. Committee on Public Information, actions which participant Edward Bernays later called propaganda. Is the Center for Climate Change Communication a reincarnation of the WW I committee? See links under Suppressing Scientific Inquiry - The Witch Hunt - Push-Back.

Blood Moon: For parts of the world, September 27, 2015, will be marked by the eclipse of the harvest moon, the largest apparent full moon, creating what is called a "blood moon." September 27 is Fred Singer's 91st birthday. Is the heavenly event a celebration of Mr. Singer's birthday? Ever-skeptical Fred Singer

would say no. See link under Other News that May Be of Interest.

Number of the Week: 7 years. Washington's time frame for review of Keystone, now 7 years, is taking on biblical proportions - the concept of indefinite plentitude.

It took less time to build the transcontinental railroad, 1,907 miles, from Council Bluffs, Iowa, to the San Francisco Bay, connecting the eastern railroad system to the Pacific coast. The railroad was built largely by hand and explosives, and supplied by newly laid rail. Today, the bureaucrats in Washington are using high speed computers to generate mounds of meaningless paper.

Washington is involved because the pipeline will cross the international border. This is how Washington treats the largest trading partner of the US and the country with which it has its longest border. Should the President of China trust Washington? See links under Washington's Control of Energy.

ARTICLES:

Please note that articles not linked easily or summarized here are reproduced in the Articles Section of the full TWTW that can be found on the web site under the date of the TWTW.

1. Methane Madness: Science Does Not Support White House Policy

By S. Fred Singer, American Thinker, Sep 22, 2015

<http://www.americanthinker.com/arti...>

SUMMARY: The US Environmental Protection Agency (EPA) on 18 August 2015 proposed regulations to reduce emissions of methane. These regulations would be the first to directly restrict methane emissions by the oil and gas industry; they build on a 2012 rule that sought to curb volatile organic compounds (VOCs) from hydraulic fracturing (fracking) to extract natural gas. Combined, the two regulations could reduce the oil and gas sector's methane emissions by up to 30% by 2025, compared with 2012 levels, EPA says.

The proposed EPA regulations are part of a larger effort by the White House to reduce national methane emissions by 40-45% by 2025. [See go.nature.com/o6uzlj for more detail.] But methane has only negligible influence on climate - contrary to popular belief and contrary to the claims of the IPCC, the

UN's climate science panel. Basic physics does not support White House policies to control methane emissions.

2. Methane Regulation: Some Personal Recollections

By S. Fred Singer, American Thinker, Sep 23, 2015

<http://www.americanthinker.com/arti...>

SUMMARY: The White House-EPA plan to control methane emissions is but the latest effort against our domestic energy industry and would simply raise costs to consumers. It acts like an energy tax, but with no money flowing into the US Treasury - a pure waste of resources. EPA is apparently unaware that the generally believed greenhouse (GH) effectiveness of methane (when compared to a molecule of CO₂) is too high by a factor of about 100. In addition, atmospheric methane levels are roughly 200 times less than those of CO₂ - yielding a GH overestimate of about 20,000. This display of recent scientific ignorance has brought back memories of 45 years ago.

3. Gas Prices Ought to Be Lower

Oil prices have dropped 60%, but a gallon of gas is down only 25%. Why? Regulation isn't cheap.

By Jacob Borden, WSJ, Sep 23, 2015

<http://www.wsj.com/articles/gas-pri...>

SUMMARY: *"Though commonly known as commodities, oil and refined fuels are increasingly design-specific products. That is, the price you pay at the pump for a gallon reflects local constraints, not merely the price of oil. No two refineries are designed identically, and no new world-scale refinery has been built in the U.S. since 1976. Meanwhile, the global oil market has grown more diverse, including heavier, unconventional tar sands and shale oils as well as relatively light and sweet benchmark crudes.*

"Some refineries are limited by the amount of asphalt they can accept in their crude, while others are limited by their capacity to remove sulfur. Only a handful of U.S. refiners have so far elected for the extensive upgrades and regulatory approvals needed to process large amounts of unconventional crude. Thus the regulatory burdens are leaving the American refinery fleet largely inflexible. That's why crude-oil processing has become specific to the design details of each refinery."

Further, the refinery fleet is complicated by a wide variety of specialized fuels required in specific areas.

"This is exacerbated by the renewable-fuels mandate, which requires blending nearly all gasoline with ethanol. Ethanol, when mixed with gasoline, increases the tendency for the lightest molecules to evaporate and contribute to urban smog. Gasoline therefore has to be stripped of so-called light-ends, increasing refining costs while reducing the yield of marketable fuel.

"A similar set of regulatory constraints is affecting the retail price of diesel. In 2007, the EPA lowered the sulfur limit for on-road diesel to 15 parts per million, and for the first time applied the previous specification of 500 parts per million to off-road diesel-railroad and marine fuels, for instance. The 15 parts per million ultralow sulfur diesel specification now applies to off-road diesel as well. Meeting the new specifications has left refiners with three options: use only the lightest and sweetest crudes, operate equipment harder and sacrifice yields, or invest to maintain capacity."

"And so this regulatory patchwork builds a price premium into every gallon, essentially to compensate refiners for providing fuels that meet ever-increasing regulatory and production demands. The result: When oil prices rise, the rise is reflected in retail fuel prices. But when oil prices fall, the relief you feel at the pump is limited."

4. The VW Emission Bug

Why would the company install a 'defeat device' on its U.S. cars?

Editorial, WSJ, Sep 23, 2015

<http://www.wsj.com/articles/the-vw-...>

SUMMARY: The editorial answers the questions how and why. How, electronic sensors and the software recognize if the automobile is being driven or if it is undergoing a stationary test. Under the former, the anti-NOx system is turned off. Why, the system reduces fuel mileage and torque, the ability to accelerate, often called performance.

[SEPP Comment: The systems demonstrate the enormous complexity and miniaturization of electronics and sensors in automotive systems.]

NEWS YOU CAN USE:

Science: Is the Sun Rising?

**2 More Papers! RUSSIAN ICE CORES Show Powerful Relationship
Between Solar Activity And Antarctic Climate!**

The sun drives the climate

By Dr. Sebastian Lüning and Prof. Fritz Vahrenholt, (German text translated/edited by P Gosselin), No Tricks Zone, Sep 25, 2015

<http://notrickszone.com/2015/09/25/...>

**4 New Papers Show Sun's Impact On Global Climate. German Scientists:
Sun Is "A Major Climate Factor"**

The Sun Drives Climate: The Latest from America

By Sebastian Lüning and Fritz Vahrenholt (German text translated/edited by P Gosselin), No Tricks Zone, Sep 24, 2015

<http://notrickszone.com/2015/09/24/...>

Climategate Continued

The "Blade" of Ocean2K

By Steve McIntyre, Climate Audit, Sep 19, 2015

<http://climateaudit.org/2015/09/19/...>

Suppressing Scientific Inquiry - The Witch Hunt - Push-Back

Climate Science Turned Monster

Guest Opinion: Tim Ball, WUWT, Sep 19, 2015

<http://wattsupwiththat.com/2015/09/...>

Disinformation from Barry Klinger and the RICO 20

By Steve McIntyre, Climate Audit, Sep 25, 2015

<http://climateaudit.org/2015/09/25/...>

Muck and brass

By Andrew Montford, Bishop Hill, Sep 21, 2015

<http://bishophill.squarespace.com/b...>

"The news about Shukla is just the latest in a long line of stories showing that the loudest scaremongers in the Green blob are able to command extraordinary incomes."

Climate Scientists give up on science, talk tobacco, want to jail skeptics

By Jo Nova, Her Blog, Sep 21, 2015

<http://joannenova.com.au/2015/09/cl...>

Edward Maibach, The Center for Climate Change Communication & That Letter

By Paul Homewood, Not a Lot of People Know That, Sep 24, 2015

<https://notalotofpeopleknowthat.wor...>

Leading Climate Scientists Blast Letter By 20 Academics As "Naïve" ... "Implied Coercion" Damages Field Of Science.

By P Gosselin, No Tricks Zone, Sep 23, 2015

<http://notrickszone.com/2015/09/23/...>

Should Global Warming Skeptics Go To Court, Be Tossed In Prison?

By Kerry Jackson, IBD, Sep 21, 2015

<http://news.investors.com/blogs-cap...>

Challenging the Orthodoxy - NIPCC

Climate Change Reconsidered II: Physical Science

Idso, Carter, and Singer, Lead Authors/Editors, 2013

<https://www.heartland.org/media-lib...>

Summary: <http://www.nipccreport.org...>

Climate Change Reconsidered II: Biological Impacts

Idso, Idso, Carter, and Singer, Lead Authors/Editors, 2014

<http://www.nipccreport.org/reports/...>

Summary:

<https://www.heartland.org/media-lib...>

Challenging the Orthodoxy

New Science 1: Pushing the edge of climate research. Back to the new-old way of doing science

By Jo Nova, Her Blog, Sep 22, 2015

<http://joannenova.com.au/2015/09/ne...>

New Science 2: The Conventional Basic Climate Model - the engine of "certain" warming

By Jo Nova, Her Blog, Sep 23, 2015
<http://joannenova.com.au/2015/09/ne...>

New Science 3: The Conventional Basic Climate Model - In Full

By Jo Nova, Her Blog, Sep 25, 2015
<http://joannenova.com.au/2015/09/ne...>

New Science 4: Error 1: Partial Derivatives

By Jo Nova, Her Blog, Sep 26, 2015
<http://joannenova.com.au/2015/09/ne...>

New book: Doubt and Certainty in Climate Science

By Judith Curry, Climate Etc. Sep 21, 2015
<http://judithcurry.com/2015/09/20/n...>

Link to book: Doubt and Certainty in Climate Science

By Alan Longhurst, A biological oceanographer, March 2012 - September 2015
<https://curryja.files.wordpress.com...>

"One of the things my research career taught me was that you can't understand how the ocean works from studying one region - just as I know that you can't make any solid conclusions about how the climate works from studying just the short period since 1960, which is what many people are doing."

For Climate Alarmism, The Poor Pay The Price

By Michael Kelly, Standpoint, Oct 2015
<http://www.standpointmag.co.uk/node...>

The Major Unsolved Climate Alarmist Political Problem

By Alan Carlin, Carlin Economics and Science, Sep 24, 2015
<http://www.carlineconomics.com/arch...>

Defending the Orthodoxy

Climate policy: Democracy is not an inconvenience

Climate scientists are tiring of governance that does not lead to action. But democracy must not be weakened in the fight against global warming, warns Nico Stehr.

By Nico Stehr, Nature, Sep 22, 2015 [H/t GWPF]
<http://www.nature.com/news/climate-...>

Focus: Society and the Pope's encyclical

By Staff Writers, Nature Climate Change, Sep 24, 2015

<http://www.nature.com/nclimate/focu...>

[SEPP Comment: Various views on the Pope's encyclical.]

Questioning the Orthodoxy

Strange New Climate Change Spin: The Hottest Year Ever Inside a Global Warming 'Pause'?

By William Briggs, The Stream, Sep 23, 2015

<https://stream.org/climate-change-s...>

Climate scientists can restart the climate change debate & win: test the models!

By Larry Kummer, from the Fabius Maximus website, WUWT, Sep 24, 2015

<http://wattsupwiththat.com/2015/09/...>

[SEPP Comment: The advocates do not wish to debate and the cost of running the models is large.]

Climate Change - The U.S. Is Irrelevant

Here is NZ Climate Truth Newsletter No 344

Guest Writer Kerry Brown, ESQ, St. Petersburg, FL, Sep 22, 2015

<http://theclimatescepticsparty.blog...>

How many children died because peer reviewed data was buried and results cherry-picked?

By Jo Nova, Her Blog, Sep 20, 2015

<http://joannenova.com.au/2015/09/ho...>

[SEPP Comment: Applying the experience in the drug industry to misrepresentation by the Climate Establishment.]

The China - US Agreement?

China Visit Underlines Climate Change's Dodgy Value

Editorial, IBD, Sep 25, 2015

<http://news.investors.com/ibd-edito...>

On to Paris!

Obama's Plan to Avoid Senate Review of the Paris Protocol

By Steven Groves, Heritage Foundation, Sep 21, 2015

<http://www.heritage.org/research/re...>

The Administration's Plan

The Current State of Energy Technology

By Ernest Moniz and John Holdren, Energy Gov. Sep 10, 2015

<http://www.energy.gov/articles/curr...>

Link to report: Quadrennial Technology Review: A Assessment of Energy Technologies and Research Opportunities

By Staff Writers, Department of Energy, September, 2015

Executive Summary at:

<http://www.energy.gov/sites/prod/fi...>

Full Report at:

<http://www.energy.gov/sites/prod/fi...>

The Administration's Plan - Push-Back

None Dare Call It Conspiracy: Obama's Coordinated Climate Campaign

By Christopher Horner, IBD, Sep 22, 2015

<http://news.investors.com/ibd-edito...>

Chilling Testimony on the Clean Power Plan

By Thomas Lindsay, Real Clear Policy, Sep 23, 2015 [H/t Timothy Wise]

<http://www.realclearpolicy.com/blog...>

Link to study: Potential Energy Impacts of the EPA Proposed Clean Power Plan

By Staff Writers, National Economic Research Associates, Oct 2014

<http://www.americaspower.org/sites/...>

Problems in the Orthodoxy

US Climate Finance in Limbo, Risking 'Trust Gap' Before Paris

By Valerie Volcovici, Reuters, Sep 24, 2015

<http://www.voanews.com/content/reu-...>

Seeking a Common Ground

Associated Press drops 'Climate Denier' Label

By Paul Colford, AP, Via Sep 23, 2015

<http://www.thegwpf.com/associated-p...>

[SEPP Comment: Changing "Climate Change Denier" to "Climate Change Doubter" still ignores the central issue. How about "Doubter of Politicized Climate Science?"]

Tilting at windmills - 100% renewable energy

By Martin Livermore, The Scientific Alliance, Sep 25, 2015

<http://scientific-alliance.org/node...>

"The report talks about the need to address the challenges and develop generating, storage, heating and cooling technologies, but gives no real examples of how this could be done. Working through scenarios on the assumption that the right technology exists is all very well, but they would be much more credible if potential solutions to the many existing problems had been put forward. Maybe innovations in coming decades will make more widespread use of renewables a viable and economic option. Until then, the energy [r]evolution remains a dream."

[SEPP Comment: Analysis of a Greenpeace report.]

Review of Recent Scientific Articles by CO2 Science

A 400-Year Temperature Record from the Russian Far East

Wiles, G.C., Solomina, O., D'Arrigo, R., Anchukaitis, K.J., Gensiarovsky, Y.V. and Wiesenberg, N. 2015. Reconstructed summer temperatures over the last 400 years based on larch ring widths: Sakhalin Island, Russian Far East. *Climate Dynamics* 45: 397-405. Sep 22, 2015

<http://www.co2science.org/articles/...>

"Thus, we have yet another example refuting the climate alarmist claim that temperatures of the past few decades are exceptional or unprecedented over the past thousand years or more."

Uncorrected Climate Model Biases Over the Tropical Indian Ocean

Li, G., Xie, S.-P. and Du, Y. 2015. Monsoon-induced biases of climate models over the tropical Indian Ocean. *Journal of Climate* 28: 3058-3072. Sep 21, 2015

<http://www.co2science.org/articles/...>

...[The researchers] "go on to conclude that although the IPCC's Fifth Assessment Report characterizes this future IO dipole-like projection in the mean state as robust based on consistency among models, their own findings (as well as those of many other researchers they site), cast doubts on this conclusion."

The Medieval Warm Period and Little Ice Age in the Bay of Biscay

Mary, Y., Eynaud, F., Zaragosi, S., Malaize, B., Cremer, M. and Schmidt, S. 2014. High frequency environmental changes and deposition processes in a 2 kyr-long sedimentological record from the Cap-Breton canyon (Bay of Biscay). *The Holocene* 25: 348-365. Sep 21, 2015

<http://www.co2science.org/articles/...>

"Once again, therefore, we have further confirmation of the reality of the Little Ice Age and the Medieval Warm Period, along with new evidence from the Bay of Biscay, where peak mean annual temperature (MAT) of the Medieval Warm Period was approximately 1.7°C warmer than the peak MAT of the Current Warm Period (see figure above from which this calculation was derived)."

CMIP5 Hind-Casting of Precipitation in the Karakoram-Himalaya

Palazzi, E., von Hardenberg, J., Terzago, S. and Provenzale, A. 2015.

Precipitation in the Karakoram-Himalaya: a CMIP5 view. *Climate Dynamics* 45: 21-45. Sep 17, 2015

<http://www.co2science.org/articles/...>

So - are we there yet? - as the saying goes. Not by a long shot! And this is only *one* aspect of the many climate model inadequacies that are described and discussed on our website under the general heading of Climate Models (Inadequacies).

Measurement Issues

Met Office Shows How To Simplify, Then Exaggerate

By David Whitehouse, GWPF, Sep 18, 2015

<http://www.thegwpf.com/met-office-s...>

Link to report: Big changes underway in the climate system?

By Staff Writers, Met Office, Sep 14, 2015

<http://www.metoffice.gov.uk/news/re...>

"The report is described as new research. It isn't. It pretends to be an even-handed assessment of current science, but in reality ties itself up in contradictions whilst trying to imply it knows more than it actually does. It presents a patina of confidence in its ability to advise on what may happen in the future, but can't bring itself to state clearly the obvious conclusion of the science it surveys. That is, no one knows what will happen to global temperatures in the near future."

Camouflage illusions in the matrix: same mysterious temperature, same day, year after year

By Jo Nova, Her Blog, Sep 25, 2015

<http://joannenova.com.au/2015/09/ca...>

[SEPP Comment: How could Australia's Bureau of Meteorology create detailed maps for specific days one hundred years before instruments in the area existed?]

The Urban Heat Island (UHI) is mapped in major U.S. cities

By Anthony Watts, WUWT, Sep 18, 2015

<http://wattsupwiththat.com/2015/09/...>

Changing Weather

NOAA: Hurricane Drought Hits Record 119 Months

By Barbara Hollinsworth, CNS News, Sep 24, 2015 [H/t Timothy Wise]

<http://www.cnsnews.com/news/article...>

Changing Seas

Doubling up the sea level scare for Paris using the old 'one-two punch' line

By Anthony Watts, WUWT, Sep 21, 2015

<http://wattsupwiththat.com/2015/09/...>

Fishy Tales of the Great Barrier Reef

By Walter Starck, Quadrant, Sep 24, 2015

<http://quadrant.org.au/opinion/doom...>

"Among the many life forms thriving in the waters off Queensland's coast, environmental activists and academic careerists are by the far most adaptable. Despite voluminous evidence that the Reef is healthy, they extract careers, grants and donations from dumb coral - and dumber journalists."

[SEPP Comment: From a marine scientist with 50 years' experience studying coral reefs.]

September 2015 ENSO Update - Sea Surface Temperatures Continue to Rise in the Central Equatorial Pacific

Guest Post by Bob Tisdale, WUWT, Sep 21, 2015

<http://wattsupwiththat.com/2015/09/...>

Research uncovers microscopic key to reducing ocean dead zones

By Staff Writers, Provo UT (SPX), Sep 23, 2015

<http://www.terraily.com/reports/R...>

"Their research, the most recent of which publishes this week in Proceedings of the National Academy of Sciences, is discovering the potential of naturally-occurring bacteria called rhizobia to stem the tide of oversaturation with nitrogen-based fertilizers."

Changing Cryosphere - Land / Sea Ice

Summer refuge for polar bears in Arctic Basin only 0.3 mkm2 below its possible maximum

By Susan Crockford, Polar Bear Science, Sep 22, 2015

<http://polarbearscience.com/2015/09...>

[SEPP Comment: Another way to present the maximum extent of summer ice loss in the Arctic Basin - a 9% loss or down to about 91% of the maximum ice possible.]

Arctic Ice Pause Enters Ninth Year

By David Whitehouse, GWPF, Sep 22, 2015

<http://www.thegwpf.com/arctic-ice-p...>

As polar ice melts, seabed life is working against climate change

By Staff Writers, Washington DC (SPX), Sep 22, 2015

<http://www.terraviva.com/reports/A...>

Link to paper: Antarctic sea ice losses drive gains in benthic carbon drawdown

By D.K.A. Barnes, Current Biology, Sep 21, 2015

<http://www.cell.com/current-biology...>

Acidic Waters

Ocean acidification discussion thread

By Judith Curry, Climate Etc. Sep 23, 2015

<http://judithcurry.com/2015/09/23/o...>

"Open Thread"

Un-Science or Non-Science?

Costly permafrost emissions

New analysis of the effects of melting permafrost in the Arctic points to \$43 trillion in extra economic damage by the end of the next century, on top of the more than the \$300 trillion economic damage already predicted.

By Staff Writers, Cambridge University, Sep 21, 2015

<http://insight.jbs.cam.ac.uk/2015/c...>

"This brings the total predicted impact of climate change by 2200 to \$369 trillion..."

[SEPP Comment: The 2015 US economic output is estimated to be about \$18 trillion or less than 5% of the calculated amount.]

New computer model says human emissions can 'render Earth ice free'

By Anthony Watts, WUWT, Sep 24, 2015

<http://wattsupwiththat.com/2015/09/...>

Communicating Better to the Public - Exaggerate, or be Vague?

Is climate change killing American starfish?

By Magan Crane Forks, United States (AFP) Sept 22, 2015

<http://www.terradaily.com/reports/I...>

[SEPP Comment: From Alaska to California??? Assuming the cause without bothering to do elementary research.]

Communicating Better to the Public - Make things up.

Global warming: are trees going on strike?

By Joshua Melvin, Paris (AFP) Sept 23, 2015

<http://www.terradaily.com/reports/G...>

[SEPP Comment: Could the delay in early blooming be from cooling?]

Communicating Better to the Public - Do a Poll?

Exploitation of Ignorance About Climate, Reflects How Current Education Is Really Indoctrination.

By Tim Ball, A Different Perspective, Sep 23, 2015

<http://drtimball.com/2015/exploitat...>

Another attempt at Cooking settling consensus on climate change

By Anthony Watts, WUWT, Sep 24, 2015

<http://wattsupwiththat.com/2015/09/...>

Expanding the Orthodoxy

How the IAEA Will Contribute to the Sustainable Development Goals

By Nicole Jawerth and Miklos Gaspar, IAEA, Sep 25, 2015

<https://www.iaea.org/newscenter/new...>

"Take urgent action to combat climate change and its impacts."

Starbucks, Nike join 100% renewable energy pledge

By Staff Writers, New York (AFP), Sept 23, 2015

<http://www.solardaily.com/reports/S...>

[SEPP Comment: Heavy industrial users of US electricity they are not. It would be interesting to see a Walmart department store run exclusively on solar and wind.]

Expanding the Orthodoxy - The Pope

The Pope & the Market

William D. Nordhaus, The New York Review of Books, Oct 8, 2015

<http://www.nybooks.com/articles/arc...>

Review of: Laudato Si': On Care for Our Common Home

An encyclical letter by Pope Francis, Vatican Press, 184 pp., available at
w2.vatican.va

[SEPP Comment: Nordhaus argues for government interference with free markets using the contrived concept of "social cost of carbon."]

Expanding the Orthodoxy - The Pope - Loyal Opposition

Pope Francis: Before one can know what is moral, he must know what is true.

By Dr. Craig D. Idso, Chairman, Center for the Study of Carbon Dioxide and Global Change, Sep 23, 2015

<http://www.co2science.org/articles/...>

Global warming policies are the real threat to the world's most vulnerable people

Pope on wrong side of history on climate change

By Tom Harris, International Climate Science Coalition, Via Australian Climate Skeptics, Sep 24, 2015

<http://theclimatescepticsparty.blog...>

Pope Francis' fact-free flamboyance

By George Will, Washington Post Sep 18, 2015

<https://www.washingtonpost.com/opin...>

[SEPP Comment: Blunt statements - Not quite so loyal.]

Questioning European Green

Britain's Green Policy Falling Apart As Drax Quits CCS

By Pilita Clark, Financial Times, Via GWPF, Sep 24, 2015

<http://www.thegwpf.com/britains-gre...>

Questioning Green Elsewhere

Federal Welfare Protects Ontario From Failure Of Green Energy Policies.

By Tim Ball, A Different Perspective, Sep 20, 2015

<http://drtimball.com/2015/federal-w...>

Non-Green Jobs

China's dumped steel leaves UK industry facing fight for survival

The Government is being urged to bail out the threatened Redcar steel plant and save 2,000 jobs

By Andrew Critchlow, Telegraph, UK, Sep 20, 2015 [H/t GWPF]

<http://www.telegraph.co.uk/finance/...>

"Another handicap facing British producers is the high cost of energy. Chinese steel mills benefit from cheap domestically-produced metallurgical coal and do not have to meet tough air pollution standards due here by 2020."

Funding Issues

Why the MacArthur Foundation is doubling down on climate change

By Robert Kropp, Green Biz, Sep 22, 2015

<http://www.greenbiz.com/article/why...>

[SEPP Comment: Another \$50 million to green groups.]

Litigation Issues

Computer crimes

By Andrew Montford, Bishop Hill, Sep 21, 2015

<http://bishophill.squarespace.com/b...>

[SEPP Comment: Points out a significant error in a Guardian article about attorney Philippe Sands. Sands was commenting on the need for a court competent to rule on scientific questions.]

Cap-and-Trade and Carbon Taxes

China Recycles: Another Attempt at Cap and Trade

By Patrick Michaels, Cato, Sep 25, 2015

<http://www.cato.org/blog/china-recy...>

Carbon Pricing Poised for Rapid Adoption, World Bank Says

By Mathew Car, Bloomberg, Sep 20, 2015

<http://www.bloomberg.com/news/artic...>

Subsidies and Mandates Forever

Carbon mandate: an account of collusion, cutting corners and costing Americans billions

By Judith Curry, Climate Etc. Sep 25, 2015

<http://judithcurry.com/2015/09/25/c...>

[SEPP Comment: Review of a report by the Senate Environment and Public Works Committee]

EPA and other Regulators on the March

E&E Legal on the Capture of EPA

By JV DeLong, Forbes, Sep 18, 2015

<http://www.forbes.com/sites/jvdelon...>

EPA's Gold King Whitewash, Part II (What EPA, DRMS, and ER should have done)

By Paul Driessen, Master Resource, Sep 24, 2015

<https://www.masterresource.org/epa-...>

[SEPP Comment: Second of three parts.]

New Mexico official: EPA kept water data secret after spill

By Matthew Brown, AP, Sep 17, 2015 [H/t Clyde Spencer]

<http://news.yahoo.com/mexico-offici...>

Energy Issues - Non-US

Shale gas - an inconvenient truth for the anti-fracking lobby

By Andrea Leadsom, Minister of State, UK, Sep 23, 2015 [H/t GWPF]

<https://decc.blog.gov.uk/2015/09/23...>

"Energy strategy in Britain has three big goals; keeping the lights on, keeping the bills down, and moving to a clean energy future."

Smart Coal: Putting People Ahead of Climate Hysteria (Japan vs. Obama)

By Donn Dears, Master Resource, Sep 21, 2015

<https://www.masterresource.org/japa...>

CBI Concerned About Britain's Green Policy Reversals

By Pillita Clark, Financial Times, Via GWPF, Sep 22, 2015

<http://www.thegwpf.com/cbi-concerne...>

Energy Issues - US

Fracking Productivity Doubling Every Two Years

By Chriss Street, Breitbart, Sep 21, 2015

<http://www.breitbart.com/big-govern...>

The Evolution of the Fracking Revolution

By Gary Jason, American Thinker, Sep 24, 2015

<http://www.americanthinker.com/arti...>

Washington's Control of Energy

Seven years later, Keystone XL decision is due

By Luke Hilgemann, The Hill, Sep 19, 2015

<http://thehill.com/blogs/congress-b...>

"How's this for American exceptionalism: It has now officially taken longer for the federal government to review the Keystone XL pipeline's permit application than it did to build the entire transcontinental railroad 150 years ago."

Harming our Canadian Friends

By Donn Dears, Power For USA, Sep 22, 2015

<https://dddusmma.wordpress.com/2015...>

Oil and Natural Gas - the Future or the Past?

Historical Oil Prices Chart

Oil Prices in Inflation Adjusted Terms

By Tim McMahon, Inflation Data.com, Apr 30, 2015

<http://inflationdata.com/Inflation/...>

The Real Price of Oil

You have to account not just for inflation but for what economists call "oil intensity"

By Vaclav Smil, IEEE Spectrum, Sep 21, 2015

<http://spectrum.ieee.org/energy/fos...>

Nuclear Energy and Fears

Fukushima disaster was preventable

By Staff Writers, Los Angeles CA (SPX), Sep 22, 2015

<http://www.terraily.com/reports/F...>

[SEPP Comment: Yes.]

The Lords on fusion

By Andrew Montford, Bishop Hill, Sep 22, 2015

<http://bishophill.squarespace.com/b...>

"Lord Peston: I am a bit lost again-as you can tell, I get lost all the time. How can technology that will be available in 40 to 80 years possibly influence climate change? If we have to save the planet in the next 40 years, we are doomed anyway. You cannot use the climate change argument."

UK Agrees £2 Billion Taxpayer Subsidy For Nuclear Power Project

By Robin Pagnamenta , The Times, Via GWPF, Sep 21, 2015

<http://www.thegwpf.com/uk-agrees-2-...>

"The financing guarantee, backed by taxpayers, was announced as George Osborne arrived in China for final talks about the troubled project to build two giant 1.6-gigawatt nuclear reactors in Somerset - enough to supply electricity to six million British homes.

"Despite mounting criticism of the estimated £24.5 billion cost of the new station, to be built by EDF Energy, of France, and bankrolled partly by the Chinese government, the chancellor said that he was determined to press ahead with a project that he claimed would boost UK energy supplies and revive Britain's standing as a world leader in nuclear energy."

Alternative, Green ("Clean") Solar and Wind

Greening the electric grid with gas turbines

Massive deployment of storage not needed for renewable sources to play large 'decarbonization' role

By Staff Writers, Science Daily, Sep 21, 2015 [H/t Toshio Fujita]

<http://www.sciencedaily.com/release...>

Link to paper: How much bulk energy storage is needed to decarbonize electricity

By Safaei and Keith, Energy and Environmental Science, Sep 4, 2015

<http://pubs.rsc.org/en/Content/Arti...>

[SEPP Comment: The time-resolution of 15 minutes poorly describes the erratic power from wind.]

The Night They Drove the Price of Electricity Down

Wind power was so plentiful in Texas that producers sold it at a negative price.

What?

By Daniel Gross, Slate, Sep 18, 2015

<http://www.slate.com/articles/busin...>

Carbon Schemes

The fading dream of CCS

By Andrew Montford, Bishop Hill, Sep 25, 2015

<http://bishophill.squarespace.com/b...>

California Dreaming

California energy dreaming costs consumers billions

By Dan McSwain, San Diego Union-Tribune, Sep 19, 2015 [H/t GWPF]

<http://www.sandiegouniontribune.com...>

Health, Energy, and Climate

Malaria maths

By Andrew Montford, Bishop Hill, Sep 25, 2015

<http://bishophill.squarespace.com/b...>

On The Bright Side: Declining Deaths Due to Hot and Cold Temperatures in Hong Kong

By Craig Idso, Cato, Sep 17, 2015

<http://www.cato.org/blog/bright-sid...>

Oh Mann!

Steyn puts Warmists in the Dock

By Richard Kirk, American Thinker, Sep 19, 2015

<http://www.americanthinker.com/arti...>

[SEPP Comment: Another review of Steyn's book on Mr. Mann.]

Other News that May Be of Interest

Oldest traces of heavy metal pollution caused by humans uncovered

By Staff Writers, AFP, Sep 21, 2015 [H/t Clyde Spencer]

<http://news.yahoo.com/oldest-traces...>

[SEPP Comment: Humans polluting since early stone-age!]

Perfect Sky Conditions Tomorrow for Supermoon Eclipse

By Cliff Mass, Weather Blog, Sep 26, 2015

<http://cliffmass.blogspot.com/2015/...>

[SEPP Comment: For the Pacific Northwest.]

Political Correctness Replaces The Tyranny of the Majority With The Tyranny Of The Minority.

By Tim Ball, A Different Perspective, Sep 24, 2015

<http://drtimball.com/2015/political...>

"As Jacques Barzun put it, 'Political correctness does not legislate tolerance; it only organizes hatred.'"

Space Architecture: From Outer Space to the Ocean Floor

By Jeannie Kever for UH News, Houston TX (SPX), Sep 22, 2015

<http://www.spacedaily.com/reports/S...>

BELOW THE BOTTOM LINE:

Hilarious claim: "we know when global (cough, cough) warming first appeared in the temperature record, er, models"

By Anthony Watts, WUWT, Sep 22, 2015

<http://wattsupwiththat.com/2015/09/...>

Claim: Global warming is shortening the tongues of Bumble Bees

Guest essay by Eric Worrall, WUWT, Sep 25, 2015

<http://wattsupwiththat.com/2015/09/...>

Earth gets Royal reprieve!

"Prince Charles told 200 business leaders in Rio de Janeiro that the world has "less than 100 months" to save the planet."

By Staff Writers, Climate Change Predictions.org, Sep 19, 2015

<http://climatechangepredictions.org...>

From Telegraph, UK, Mar 12, 2009

Failed Kiribati Climate Refugee finally leaves New Zealand

Guest essay by Eric Worrall, WUWT, Sep 22, 2015

<http://wattsupwiththat.com/2015/09/...>



PLEASE NOTE: The complete TWTW can be downloaded in an easily printable form at this web site: <http://www.sepp.org/the-week-that-was.cfm...>



Please forward this Newsletter to those interested in Science and Environmental Policy. Thank you. Forward.

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From: [The Aspen Institute](#)
To: [Edward W Maibach](#)
Subject: Five Best Ideas of the Day: September 28, 2015
Date: Monday, September 28, 2015 12:17:31 PM

The Aspen Institute



Five Best Ideas of the Day



Published each weekday, at noon.

September 28, 2015

1



Here are the four structural reasons John
Boehner couldn't lead his caucus.

by Elaine Kamarck at the Center for Effective Public Management

2



The DOJ claims it's getting tough on corporate
crime. The VW emissions scandal is the
perfect test.

by David Dayen in the American Prospect

3



Why aren't there more female economists?

by Victoria Bateman in the Guardian

4



UN peacekeepers need a technology upgrade.

by Nadeen Shaker in Quartz

5



The next frontier for drug smugglers? Illegal wildlife.

by Kevin Xie in Harvard International Review

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E&E DAILY — Tue., September 29, 2015

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1. AGENDA:

Highway, Ex-Im bills may resurface before Boehner leaves

The upcoming departure of Speaker John Boehner (R-Ohio) may breathe new life into efforts to move a long-term highway bill and extension of the Export-Import Bank of the United States, lawmakers said yesterday.

IN THE HOUSE

2. LEADERSHIP:

McCarthy shoring up support in speaker's race

3. POLITICS:

Industry dollars flow to aspiring House leaders

4. ENDANGERED SPECIES:

92 House Dems ask Obama to veto bills with anti-ESA riders

IN THE SENATE

5. APPROPRIATIONS:

Stopgap funding clears Senate hurdle

6. AIR POLLUTION:

Senators urge DOJ to strongly penalize Volkswagen

7. NATURAL GAS:

Industry pushes back in face of possible pipeline safety bill

ADVOCACY

8. COAL:

Advocacy group to slash staff in market downturn

E&ETV'S ONPOINT

9. INTERNATIONAL:

Maldives' foreign secretary discusses outlook for island nations ahead of Paris meeting

UPCOMING HEARINGS AND MARKUPS

10. CALENDAR:

Activity for September 28 - October 4, 2015

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To: [Edward W Maibach](#)
Subject: Mason Climate Comm. (@Mason4C) retweeted your Tweet!
Date: Tuesday, September 29, 2015 10:37:37 AM



Mason Climate Comm.
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Ed Maibach @MaibachEd

Is the fossil fuel industry, like the tobacco industry, guilty of racketeering? | Dana Nuccitelli gu.com/p/4cmk5/stw
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From: [Witte, Howard Joe. \(GSFC-610.0\)\[ADNET SYSTEMS INC\]](#)
To: [Edward W Malbach](#)
Subject: Smith launches investigation of George Mason group
Date: Friday, October 02, 2015 2:38:56 PM
Importance: High

oops!

CLIMATE:

Smith launches investigation of George Mason group

Jean Chemnick<http://www.eenews.net/staff/Jean_Chernick>, E&E reporter

Published: Thursday, October 1, 2015

House Science, Space and Technology Chairman Lamar Smith (R-Texas) is launching an investigation into a climate research institute housed at George Mason University over reports it spearheaded a letter suggesting the White House pursue corruption and racketeering charges against corporations that propagate climate science skepticism.

The congressman asked Jagadish Shukla, founder of the Institute of Global Environment and Society (IGES), in a

letter<<https://science.house.gov/sites/republicans.science.house.gov/files/documents/10-1-15%20CLS%20to%20Shukla.pdf>> today to retain "relevant communications" to help the committee in its investigation. Shukla is a George Mason professor and an Intergovernmental Panel on Climate Change co-author.

Smith's letter directed him to "preserve all e-mail, electronic documents, and data" since January 2009 "that can be reasonably anticipated to be subject to a request for production by the committee." Smith also requested a list of current and former IGES employees.

Smith based his investigation of the now-defunct nonprofit on the fact that it received federal funding, including from the National Science Foundation.

A letter<<https://wattsupwiththat.files.wordpress.com/2015/09/shukla-letter-all-signers.png>> Smith cited appears to have been signed by Shukla and 19 other academics from institutions around the country. It has been referenced in several stories by conservative news organizations including The Daily Caller and was provided to E&ENews PM by the House committee.

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Addressed to President Obama, Attorney General Loretta Lynch and White House science adviser John Holdren, the academics' letter suggested that one "tool" available to the administration in its fight against warming is to investigate corporations "that knowingly deceived the American People about climate change" using the Racketeer Influenced and Corrupt Organizations (RICO) Act.

"The methods of these organizations are quite similar to those used earlier by the tobacco industry," it said.

The Justice Department has pursued civil charges under RICO against tobacco companies, alleging that they worked to conceal and misrepresent the results of their own medical studies, which showed the health dangers of smoking.

In his letter, Smith cited conservative news outlets' reporting alleging that "IGES is responsible for circulating" the letter to the White House, raising concerns that it was taking federal funding while "participating in partisan political activity by requesting a RICO investigation of companies and organizations that disagree with the Obama administration on climate change."

But it is unclear whether IGES was responsible for the letter, which was dated Sept 1. The nonprofit's phone line appeared to be disconnected, and a link included in a Sept. 21 Daily Caller story redirects to an IGES URL that states that the letter has been removed, but also that the organization was disbanded in July and its website is being decommissioned.

Sen. Sheldon Whitehouse (D-R.I.) raised the issue of using RICO to combat funders of climate contrarianism in a column in May in The Washington Post.

He, too, compared the actions of some fossil fuel companies to those of the tobacco industry.

"To be clear: I don't know whether the fossil fuel industry and its allies engaged in the same kind of racketeering activity as the tobacco industry," he wrote. "We don't have enough information to make that conclusion. Perhaps it's all smoke and no fire. But there's an awful lot of smoke."

Twitter: @chemnipot<<https://twitter.com/chemnipot>>

Email: jchemnick@eenews.net<<mailto:jchemnick@eenews.net>>

From: Science and Environmental Policy Project
To: Edward W Malbach
Subject: TWTW Oct 3 2015
Date: Sunday, October 04, 2015 9:22:09 PM

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The Week That Was: 2015-10-03 (Oct 3, 2015)
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Please forward this Newsletter to those interested in Science and Environmental Policy. Thank you. Forward.



Quote of the Week:

"It is necessary to look at the results of observation objectively, because you, the experimenter, might like one result better than another." Richard Feynman

Number of the Week: \$7 Billion USD

THIS WEEK:

By Ken Haapala, President, Science and Environmental Policy Project (SEPP)

More IPCC Challenges: The US administration is attempting to establish an agreement to be reached at the 21st session of the Conference of the Parties (COP-21) of the United Nations Framework Convention on Climate Change (UNFCCC) to be held in Paris from November 30 to December 11. Meanwhile, more challenges to the findings of the UN Intergovernmental International Panel on Climate Change (IPCC) continue to emerge. Many of the challenges do not question the basic science or logic found in the climate models, but do question

the use to which they are put. This questioning especially applies to the 95% certainty expressed in the Summary for Policymakers of IPCC's Fifth Assessment Report (AR-5).

In a recent paper, distinguished physicist Wallace Manheimer expressed it well: "This paper reviews a great deal of worldwide data, some of which confirms, some of which disputes the global warming hypothesis. While increasing CO₂ in the atmosphere is a concern, it is hardly a planetary emergency." Perhaps these sentences summarize the views of the global warming skeptics: carbon dioxide (CO₂) emissions are not causing a planetary emergency, only the politically motivated advocates and politicians are. This political motivation extends to the IPCC and its work based on the assumption it can predict (project), with great certainty, global warming from human causes without thoroughly understanding the natural influences on climate.

To illustrate his view, Manheimer uses two examples of community madness from US history: the Salem witchcraft trials and the prosecution of preschool teachers for sex abuse of their students in the 1980s and 90s. The former is well known and lasted a year. Many try to suppress the latter. The prosecutions were based on work and testimony by social workers and psychologists who insisted they could interpret actions and words by 6 to 7 year old children to have them recall sexual abuse claimed to have occurred when the children were 3 or 4. Eventually, all the convictions were overturned, with one man serving 18 years based on absurd accusations. Unlike the 17th century governor of Massachusetts who later apologized for the witch trials, none of the governors of the states involved in the late 20th century false trials apologized.

After explaining these examples, Manheimer embarks on a brief review of the evidence behind the claim that human emissions of CO₂ are causing unprecedented and dangerous global warming, and finds it lacking. He lists the reasons why. Including: "Fourth, if the measurement is just barely on the edge of a detectable effect; some measurements show a slight effect, others do not, or show the opposite effect, as in the climate change case, there is certainly strong grounds for skepticism, at least as regards the current status of the effect. Fifth, computer simulation is a very powerful technique (I have spend [sic] a good part of my career developing and using computer models of complex physical systems), but it is hardly infallible. They [The models] should be regarded with at least some skepticism, no matter how many of them point to a particular effect."

See links under Challenging the Orthodoxy

Société de Calcul Mathématique: Several French mathematicians under the Société de Calcul Mathématique SA wrote a 195 page white paper on global warming and the political ramifications of the actions of its proponents. The title of the paper is well put: "The battle against global warming: an absurd, costly and pointless crusade." Writing from the perspective of French, European, and world policy, the paper finds an enormous impact on the economy with every activity affected. It also states:

"The impact on the entire field of scientific research is particularly clear and especially pernicious. No project can be launched, on any subject whatsoever, unless it makes direct reference to global warming. You want to look at the geology of the Garonne Basin? It is, after all, an entirely normal and socially useful subject in every respect. Well, your research will be funded, approved and published only if it mentions the potential for geological storage of CO₂. It is appalling.

"The crusade has invaded every area of activity and everyone's thinking: the battle against CO₂ has become a national priority. How have we reached this point, in a country that claims to be rational? At the root lie the declarations made by the IPCC [IPCC], which have been repeated over the years and taken up by the European Commission and the Member States. France, which likes to see itself as the good boy of Europe', adds an extra layer of virtue to every crusade. When others introduce reductions, we will on principle introduce bigger reductions, without ever questioning their appropriateness: a crusade is virtuous by its very nature. And you can never be too virtuous.

"But mathematicians do not believe in crusades; they look at facts, figures, observations and arguments."

The paper assesses the facts, explaining why the authors consider the crusade is absurd, costly, and pointless. Under the scientific section, it discusses the natural variability of the climate, humans influence on the climate (tiny while the natural influence is huge), that humans do not have the technology to change the climate (or make it stable), and that the consequences of global warming are that the world will adjust as it always has. The paper criticizes the IPCC [which it abbreviates as the IPPC] and states: "The IPPC's conclusions go against observed

facts; the figures used are deliberately chosen to support its conclusions (with no regard for the most basic scientific honesty), and the natural variability of phenomena is passed over without comment."

The paper presents a detailed overview of the surface temperature measuring stations, with Europe covered for more than 150 years and the US for more than 110 years. From a historical perspective land mass is not well covered and, except for Europe, the US, and eastern China, the bulk of the land mass is not well covered today. Surface sea coverage is spotty, at best, distributed in a few areas in the world, mostly in the Northern Hemisphere. The paper also discusses the manipulation of the surface record by NOAA, but not the one in 2015. It suggests that one cannot use the surface data to define or calculate an average temperature.

The paper challenges the widely accepted measurements of CO2 from Mauna Loa, and states there is a poor distribution of sensors, with nearly all located in Europe or the US. Also it states:

Among other criticisms, the paper points out weaknesses in satellite estimates of temperatures, independently supported by weather balloon measurements. SEPP maintains these are the finest available, though not perfect.

Under the heading "Be Careful!" the paper briefly discusses models:

"Conclusions based on any kind of model should be disregarded. As the SCM specializes in building mathematical models, we should also be recognized as competent to criticize them. Models are useful when attempting to review our knowledge, but they should not be used as an aid to decision-making until they have been validated. Now, validating a climate model requires thousands of years." [Boldface added.]

Perhaps that is the intention of those who control the IPCC. See link under Challenging the Orthodoxy.

David Evans: Jo Nova's web site continues to present criticisms of the IPCC models by mathematician and electrical engineer David Evans. As stated last week, TWTW will refrain from detailed comments until the entire presentation is complete. That said, the heavy use of partial differentiation of two or more independent variables appears serious. Traditionally, such measures require all

other variables remain constant.

Water vapor is the most important greenhouse gas. As easily demonstrated by the South Asian monsoon, it varies by region, season, and year. Assuming water vapor is constant can lead to major complications. See links under Challenging the Orthodoxy.

UN Sustainable Summit: The September 25 to 27 UN Sustainable Summit ended with the attendees approving 17 goals, down from 169 initially proposed. Simply because the number of goals were reduced, that does not mean all are achievable. For example: Goal # 13 is "Take urgent action to combat climate change and its impacts." Exactly how the UN proposes to combat climate change that has been occurring for hundreds of millions of years, thousands of times longer than humanity, is not clear.

The details of the goal include some highly questionable assertions. "From 1880 to 2012, average global temperature increased by 0.85°C." As pointed out by the Société de Calcul Mathématique, we do not have the ability to calculate average global surface temperatures today, much less in 1880.

The statement also includes: "Oceans have warmed, the amounts of snow and ice have diminished and sea level has risen. From 1901 to 2010, the global average sea level rose by 19 cm as oceans expanded due to warming and ice melted. The Arctic's sea ice extent has shrunk in every successive decade since 1979, with 1.07 million km² of ice loss every decade." Why stop at 1901? Since 18,000 years ago oceans have risen by 120 meters (400 feet). Other than a past trend, claims of future temperature rise and sea level rise are speculation from un-validated climate models.

"Goal 15: Sustainably manage forests, combat desertification, halt and reverse land degradation, halt biodiversity loss." "Due to drought and desertification each year 12 million hectares are lost (23 hectares per minute), where 20 million tons of grain could have been grown."

The concept that, in general, the earth is greening, as demonstrated by satellite photographs, has not reached the UN. Also, the massive increase in world-wide yields from modern agriculture has eluded the UN, including a 54% increase in yields of cereals (not including rice) from 1986-89 to 2013-15.

Some of the UN goals stated are reasonable and commendable, but a number of the goals demonstrate the lack of critical thinking and general ignorance of these international leaders.

See Expanding the Orthodoxy, TWTW - Sep 5, 2015,

<http://www.un.org/sustainabledevelopment...>

and

<http://www.un.org/sustainabledevelo...>

Ozone: The US EPA has intensified its ozone regulations without significant scientific justification of how the new regulations may improve public health. The new regulations may be among the most costly undertaken. A number of links identify the costs, but few address a major issue with ground level ozone - increasingly, it is caused by nature.

Even the EPA web site recognizes that Volatile Organic Compounds (VOC), which cause ozone, are created, in part, by nature. Other than PM 10 (Particulate Matter, which fell by 17%), VOCs fell the least amount of EPA category pollutants, by only 18% from 2000 to 2013. The EPA realizes that weather conditions influence ozone. "Ozone is more readily formed on warm, sunny days when the air is stagnant."

This weather influence, is particularly true for VOCs such as isoprene, which is largely produced by trees. Plants produce significant amounts of VOCs on warm sunny days, particularly humid days. Environmental groups tend to blame that the haze of Blue Ridge Mountains of Virginia, part of the Appalachian Mountain system, on automobiles, but fail to mention the tremendous increase in density and number of trees in the mountains since the 1930s, partially from a decline in need for pasture and biofuels. The early settlers named it the Blue Ridge for a reason, not for its crystal-clear air.

Similarly, environmental groups are quick to blame haze in the Grand Canyon on the coal-fired

Four Corners Generating Station or Navajo Generating Station. The former requires that emissions go in the opposite direction to the prevailing winds. The latter requires that emissions go to the north and east, rather than the prevailing winds to the east.

Few groups, including the EPA, bring up that the North Rim of the Grand Canyon is dominated by the heavy woodlands of the Kaibab National Forest, with a "warm summer, humid, continental climate." A combination that results in naturally caused haze.

See Article # 2 and links under EPA and other Regulators on the March,
<https://web.archive.org/web/2015091...>
and
<https://web.archive.org/web/2015090...>

Additions and Corrections: The August 29th TWTW pointed out that the extreme heat of Venus is not so much due to "run-away greenhouse" but due to the atmospheric pressure at the surface being more than 90 times that of earth. The discussion omitted Mars. Comparing the atmospheric pressure of Mars, Venus, and Earth shows that pressure is not so much due to the composition of the atmospheres, but thickness. Both Venus and Mars have high concentration of CO2 (about 95%); but, the thickness of the atmosphere varies.

Number of the Week: \$7 Billion USD. After the expenditure of about \$7 Billion, Royal Dutch Shell announced it would halt exploration in the US Chukchi Sea (Arctic), because it failed to find adequate quantities of oil and natural gas. The \$7 Billion expenditure includes about \$2.1 Billion to the US government for leases. According to reports, US Geological Survey has estimated that US Arctic water hold about 26 billion barrels of recoverable oil. Exxon-Mobil, BP and other producers have discovered about 10 billion barrels.

No doubt, the drop in the price of oil, thanks to hydraulic fracking of dense shale, was an important factor in Shell's decision. Also, the harsh conditions, the failure of the Arctic to warm as many predicted, contributed. But the harsh conditions of US permitting may have been significant. After BP, Keystone, and the Administration's failure to establish reasonable regulations for hydraulic fracturing on federally controlled lands and waters; what oil company would trust Washington? See Washington's Control of Energy.

ARTICLES:

Please note that articles not linked easily or summarized here are reproduced in the Articles Section of the full TWTW that can be found on the web site under

the date of the TWTW.

1. For Sustainable Energy, Choose Nuclear

By S. Fred Singer, American Thinker, Sep 30, 2015

<http://www.americanthinker.com/arti...>

SUMMARY: Energy based on nuclear fission has many of the same advantages and none of the disadvantages of solar and wind; politics based on false fears are retarding its growth. Yet many believe that wind and solar energy are essential, when the world "runs out" of non-renewable fossil fuels. [They also believe that wind and solar are unique in providing energy that's carbon-free, inexhaustible, and essentially without cost. However, a closer look shows that all three special features are based on illusions and wishful thinking.]

2. The Twilight Ozone

The Grand Canyon may soon be an EPA 'non-attainment' area.

Editorial, WSJ, Oct 1, 2015

<http://www.wsj.com/articles/the-twi...>

SUMMARY: *The new rules for ..."ozone may be the costliest regulations in US history. The new "rule is wholly discretionary, and none other than President Obama overruled the EPA on ozone in 2011 in the name of "reducing regulatory burdens and regulatory uncertainty." But that was headed into an election year, and Mr. Obama is making amends to burnish his eco-legacy.*

"Ozone in the ambient air can contribute to smog and respiratory ailments, but the U.S. has worked hard to control O3 to the point of virtual nonexistence. "Back in 1979, Los Angeles still was so full of smog that there were days where people who were vulnerable just could not go outside," Mr. Obama said in August. "And you fast-forward 30, 40 years later, and we solved those problems."

"Sure enough, the EPA's latest measures show most of the U.S. is meeting the 2008 standards of ozone concentrations of 75 parts per billion (ppb) or less, except for pockets in Texas and the northeast. Only green-happy California is in 'extreme non-attainment.'"

"The EPA is nonetheless lowering the standard to 70 ppb and the green lobby wanted 65 ppb or even 60 ppb. So while avoiding the worst-case scenario, the

factories, utilities, refineries, farms, cars and trucks that produce the man-made emissions that cause ozone to form will need to install expensive retrofits. New ones will be more expensive. The EPA estimated the 2011 draft proposal would cost the private economy anywhere from \$19 billion to \$90 billion.

"All that money will buy few public health benefits. The EPA is attempting to drive ozone down to or below the "background" level where it naturally occurs from sources like forest fires and plant life. The Grand Canyon and Yellowstone will likely become 'non-attainment areas' under the new standard.

"Mr. Obama and the EPA invoke asthma attacks, and cleaning up dirty air in a city like Beijing would certainly help asthmatics-and everybody else. But the marginal gains decline sharply when moving from clean U.S. air to allegedly cleaner air.

"... costly regulations like the ozone rule make it harder for the economy to expand. Dollars that a manufacturer spends to replace functional equipment can't be spent to hire new workers or finance a new idea. California gets a special dispensation and more time to comply because the EPA deems its ozone problem is "uniquely stubborn," but the state is also losing factories and businesses that will take the hit. Federal permits are much harder to obtain in "non-attainment areas."

"If you want to know why the U.S. has had 2% growth for so long, the EPA's almost bimonthly release of regulations like the ozone rule-or the coal ash rule, the mercury rule, or the waters of the United States rule-is a big part of the explanation." Boldface added

NEWS YOU CAN USE:

Science: Is the Sun Rising?

North Atlantic Oscillation (NAO) couple to solar activity: New studies find a time-lag of 3 years

[It's the Sun, Stupid! Growing Number Of Studies Show Oceanic Cycles (Climate) Driven By Solar Activity]

By Dr. Sebastian Lüning and Prof. Fritz Vahrenholt (Translated/ edited by P Gosselin), No Tricks Zone, Oct 1, 2015

<http://notrickszone.com/2015/10/01/...>

Commentary: Is the Sun Rising?

**German Scientists: Models Showing Bitter Winters Are Ahead For Europe ...
Current Solar Cycle Weakest In 200 Years**

The sun in August 2015 and the climatic UV amplifier in the stratosphere
By Frank Bosse and Fritz Vahrenholt (Translated/edited by P Gosselin) No Tricks
Zone, Sep 29, 2015
<http://notrickszone.com/#sthash.YeE...>

**Latest Study Indicates Solar Variability "Dominant Influence On
Temperature" ...CMIP5 Models Fail**

By P Gosselin, No Tricks Zone, Sep 27, 2015
<http://notrickszone.com/2015/09/27/...>
[SEPP Comment: On a previously linked paper by Soon, et al.]

Suppressing Scientific Inquiry - The Witch Hunt - Push-Back

A new low in science: Criminalizing climate change skeptics
By Judith Curry, Fox News, Sep 28, 2015
<http://www.foxnews.com/opinion/2015...>

My Fox News op-ed on RICO

By Judith Curry, Climate Etc. Sep 28, 2015
<http://judithcurry.com/2015/09/28/m...>
[SEPP Comment: Addition insights on her op-ed]

Shukla's Gold

By Steve McIntyre, Climate Audit, Sep 28, 2015
<http://climateaudit.org/2015/09/28/...>

**Those scientists who want to use RICO to prosecute AGW 'deniers' have a
big problem**

By Russell Cook, American Thinker, Oct 1, 2015
<http://www.americanthinker.com/arti...>

Climate activists want us prosecuted under RICO

Losing the climate science battle, climate activists want government to silence
skeptics
Guest essay by Paul Driessen, WUWT, Sep 29, 2015

<http://wattsupwiththat.com/2015/09/...>

Getting Rich off Climate Extremism

By Ian Tuttle, National Review, Oct 1, 2015 [H/t Timothy Wise]

<http://www.nationalreview.com/artic...>

House Panel Probing Taxpayer Support for Effort to Investigate Climate Change Skeptics

Congressman asks taxpayer-funded green group to preserve records ahead of investigation

By Laqchlan Markay, Washington Free Beacon. Oct 1. 2-15

<http://freebeacon.com/issues/house-...>

#RICO20 \$4 million NSF grant while Shukla's organization is being "dissolved" ?

By Anthony Watts, WUWT, Sep 30, 2015

<http://wattsupwiththat.com/2015/09/...>

Challenging the Orthodoxy - NIPCC

Climate Change Reconsidered II: Physical Science

Idso, Carter, and Singer, Lead Authors/Editors, 2013

<https://www.heartland.org/media-lib...>

Summary: <http://www.nipccreport.org/reports...>

Climate Change Reconsidered II: Biological Impacts

Idso, Idso, Carter, and Singer, Lead Authors/Editors, 2014

<http://www.nipccreport.org/reports/...>

Summary:

<https://www.heartland.org/media-lib...>

Challenging the Orthodoxy

The battle against global warming: an absurd, costly and pointless crusade

By Haberstich, Schmitt, Berton, Tournié and Basso,.Editor: Gombero.

(mathematicians), Société de Calcul Mathématique, SA (France), September, 2015

http://www.scmsa.eu/archives/SCM_RC...

Original Sin, Prophets, Witches, Preschool Sex Abuse, and Global Warming

By Wallace Manheimer, Standard Scientific Research and Essays, Sep 2015

<http://www.standresjournals.org/jou...>

Fundamental Science Errors In The Pope's Encyclical

By Tim Ball, A Different Perspective, Sep 30, 2015

<http://drtimball.com/2015/fundament...>

[SEPP Comment: Explaining why ignoring water vapor is a fundamental error in IPCC science, thus in the Pope's Encyclical.]

New Science 4: Error 1: Partial Derivatives

By Jo Nova and David Evans, Her Blog, Sep 26, 2015

<http://joannenova.com.au/2015/09/ne...>

New Science 5: Error 2: Model architecture means all feedbacks work through the surface temperature?

By Jo Nova and David Evans, Her Blog, Sep 27, 2015

<http://joannenova.com.au/2015/09/ne...>

New Science 6: How the Greenhouse Effect Works and "four pipes" to space

By Jo Nova and David Evans, Her Blog, Sep 28, 2015

<http://joannenova.com.au/2015/09/ne...>

New Science 7: Rerouting Feedback in Climate Models

By Jo Nova and David Evans, Her Blog, Oct 1, 2015

<http://joannenova.com.au/2015/10/ne...>

New Science 8: Applying the Stefan-Boltzmann Law to Earth

By Jo Nova and David Evans, Her Blog, Oct 2, 2015

<http://joannenova.com.au/2015/10/ne...>

The Need To Revisit The Climategate Revelations To Counter Mainstream Media Failure And The Paris Climate Conference Plans

Guest opinion: Dr. Tim Ball, WUWT, Sep 28, 2015

<http://wattsupwiththat.com/2015/09/...>

Dr. Alan Carlin, former Senior EPA analyst, writes a comprehensive book on the craziness of the EPA

By John Dunn, Junkscience.com, Sep 27, 2015

<http://junkscience.com/2015/09/27/d...>

[SEPP Comment: Review of Alan Carlin's book.]

Defending the Orthodoxy

Climate Change: Facts Versus Opinions

By John Horgan, Scientific American, Oct 1, 2015

<http://blogs.scientificamerican.com...>

"FACT: As a result of increases in atmospheric carbon dioxide, global surface temperatures have increased by about one degree centigrade since 1880."

[SEPP Comment: There was no way of measuring global temperatures in 1880. Causation is not established.]

The IPCC at a crossroads: Opportunities for reform

By Carraro et al. Science Mag, Oct 2, 2015

<http://www.sciencemag.org/content/3...>

Questioning the Orthodoxy

Unsustainable Development Goals

By Bjørn Lomborg, Project Syndicate, Sep 15, 2015

<http://www.project-syndicate.org/co...>

What is the global economic impact of climate change?

By SJ Tol, World Economic Forum, Sep 18, 2015

<https://agenda.weforum.org/2015/09/...>

[SEPP Comment: Explaining some of the deceit behind the 2°C target. Tol uses his version of the social cost of carbon.]

The China - US Agreement?

China Cap-and-Trade: James Hansen on Carbon Cronyism

By Robert Bradley Jr. Master Resource, Sep 29, 2015

<https://www.masterresource.org/chin...>

China-U.S. deal sets bar low ahead of Paris climate talks

By David Stanway, Reuters, Sep 28, 2015

<http://uk.reuters.com/article/2015/...>

China's 2017 Carbon Timetable May Be Hit by Slowing Economy

By Staff Writers, Bloomberg, Sep 29, 2015 [H/t GWPF]
<http://www.bloomberg.com/news/artic...>

China Recycles: Another Attempt at Cap and Trade

By Patrick Michaels, Cato, Sep 25, 2015
<http://www.cato.org/blog/china-recy...>

On to Paris!

All Those Climate Change Pledges Are A Farce, New York Times Says

By John Merline, IBD, Sep 28, 2015 [H/t Clyde Spencer]
<http://news.investors.com/092815-77...>

Modi calls for climate change agenda that helps developing countries

By David Brunnstrom and Jeff Mason, Reuters, Sep 29, 2015
<http://news.yahoo.com/modi-calls-cl...>

Philippines makes conditional offer to cut emissions by 70%

By Staff Writes, AFP, Oct 1, 2015
<https://uk.news.yahoo.com/philippin...>

The uncertainty of climate sensitivity and its implication for the Paris negotiations

By Judith Curry, Climate Etc. Sep 30, 2015
<http://judithcurry.com/2015/09/30/t...>

The Administration's Plan

Publication Date a Focal Point of \$300B Climate Fight

By Bill Murray, Real Clear Energy, Sep 24, 2015
<http://www.realclearenergy.org/arti...>

[SEPP Comment: According to the article, in spite of costs to utilities and consumers, the administration is delaying publishing its plan for fear of the courts placing an injunction against the administration's actions.]

The Administration's Plan - Push-Back

EPA's Energy Power Grab

By Brad D. Schimel, Heartland, Sep 10, 2015
<http://news.heartland.org/newspaper...>

[SEPP Comment: Discussing the pending litigation against the Administration's

power plan.]

Social Benefits of Carbon

Forests And Fields In Record Growth Around The Planet

John Ross, The Australian, Via GWPF, Mar 31, 2015

<http://www.thegwpf.com/forests-and-...>

Impact of CO2 fertilization on maximum foliage cover across the globe's warm, arid environments

By Donohue, Roderick, McVicar, and Farquhar, Geophysical Research Letters, Jun 19, 2015

<http://onlinelibrary.wiley.com/doi/...>

Problems in the Orthodoxy

India's climate plans pointer to green summit differences

By Pramit Pal Chaudhuri, Hindustan Times, New Delhi, Oct 2, 2015 [H/t GWPF]

<http://www.hindustantimes.com/india...>

India's Climate Plan Will Triple Emissions By 2030

By Paul Homewood, Not a Lot of People Know That, Oct 2, 2015

<https://notalotofpeopleknowthat.wor...>

Climate Change And The Myth Of Stranded Assets

By Nick Butler, Financial Times, Via GWPF, Sep 28, 2015

<http://www.thegwpf.com/climate-chan...>

Climate pledges so far would allow extensive global warming by 2100

By Eli Kintisch, Science Mag, Sep 28, 2015

<http://news.sciencemag.org/climate/...>

[SEPP Comment: Assuming a temperature sensitivity to carbon dioxide that is far from demonstrated.]

Seeking a Common Ground

Confluence (not conflict) of interest

By Judith Curry, Climate Etc. Sep 30, 2015

<http://judithcurry.com/2015/09/30/c...>

Commissions of Inquiry

By Tim Ball, A Different Perspective, Oct 2, 2015

<http://drtimball.com/2015/commissio...>

Review of Recent Scientific Articles by CO2 Science

Beijing Climate Center's Climate System Model BCC_CSM1.1(m)

Liu, X., Wu, T., Yang, S., Jie, W., Nie, S., Li, Q., Cheng, Y. and Liang, X. 2015. Performance of the seasonal forecasting of the Asian Summer Monsoon by BCC_CSM1.1(m). *Advances in Atmospheric Sciences* 32: 1156-1172., Sep 30, 2015

<http://www.co2science.org/articles/...>

The Current Status of Modelling Arctic Summer Storm Tracks

Nishii, K., Nakamura, H. and Orsolini, Y.V. 2015. Arctic summer storm track in IP3/5 climate models. *Climate Dynamics* 44: 1311-1327. Sep 28, 2015

<http://www.co2science.org/articles/...>

[SEPP Comment: The models failure to predict do not justify dire projections about the Arctic.]

Giant Kelp Unaffected by Ocean Acidification

Fernández, P.A., Roleda, M.Y. and Hurd, C.L. 2015. Effects of ocean acidification on the photosynthetic performance, carbonic anhydrase activity and growth of the giant kelp *Macrocystis pyrifera*. *Photosynthesis Research* 124: 293-304. Sep 25, 2015

<http://www.co2science.org/articles/...>

"As demonstrated here, and in numerous *additional* reviews of *other* experiments posted on our website (found under the topics - and sub-topics - of *Ocean Acidification and Ocean Acidification and Warming* in our Subject Index), for many species, ocean acidification will be a non-problem ... and maybe even a *blessing!*"

The Climate Change that May Suppress Tropical Cyclone Strength

Huang, P., Lin, I.-I., Chou, C. and Huang, R.-H. 2015. Change in ocean subsurface environment to suppress tropical cyclone intensification under global warming. *Nature Communications* 6: 10.1038/ncomms8188. Sep 24, 2015

<http://www.co2science.org/articles/...>

Measurement Issues

Approximately 92% (or 99%) of USHCN surface temperature data consists

of estimated values

Guest essay by John Goetz, WUWT, Sep 27, 2015

<http://wattsupwiththat.com/2015/09/...>

Is There Evidence of Frantic Researchers "Adjusting" Unsuitable Data?

(Now Includes July Data)

Guest Post by Professor Robert Brown from Duke University and Werner Brozek,

Edited by Just The Facts, WUWT, Oct 1, 2015

<http://wattsupwiththat.com/2015/10/...>

Human error in the surface temperature record

Guest essay by John Goetz, WUWT, Sep 28, 2015

<http://wattsupwiththat.com/2015/09/...>

Tired of the Claims of "Warmest Ever" Month and Year? They Will Likely Continue Next Year

Guest Post by Bob Tisdale, WUWT, Sep 28, 2015

<http://wattsupwiththat.com/2015/09/...>

Changing Weather

Extraordinary Flooding Possible In South Carolina

By Cliff Mass, Weather Blog, Oct 2, 2015

<http://cliffmass.blogspot.com/2015/...>

Changing Climate

Climate cooling and sea-level changes caused crocodilian retreat

By Staff Writers, London, UK (SPX), Sep 25, 2015

<http://www.spacedaily.com/reports/C...>

Changing Seas

Surface of the oceans affects climate more than thought

Press Release, Leipzig Institute for Tropospheric Research, Sep 30, 2015

<https://www.tropos.de/en/current-is...>

Loss of ocean predators has impact on climate change strategies

By Staff Writers, Nathan, Australia (SPX), Oct 01, 2015

<http://www.terraily.com/reports/L...>

Link to paper: Predators help protect carbon stocks in blue carbon ecosystems

By Atwood, et al. Nature Climate Change, Sep 28, 2015
<http://www.nature.com/nclimate/jour...>

Lo! Shark god protects us from storms, floods, heatwaves (sayth Nature & ABC)

By Jo Nova, Her Blog, Sep 30, 2015
<http://joannenova.com.au/2015/09/lo...>
[SEPP Comment: See link immediately above.]

Ups and downs of sea level

Mitrovica speaks on scenarios connected to gravitational effect
By Alvin Powell, Harvard Gazette, Sep 23, 2015 [H/t Climate Etc.]
<http://news.harvard.edu/gazette/sto...>

Changing Cryosphere - Land / Sea Ice

On the Bright Side: The Stability of Glaciers in the Astore Basin of Northwestern Himalaya

By Craig Idso, Cato, Sep 24, 2015
<http://www.cato.org/blog/bright-sid...>

Arctic sea ice still too thick for regular shipping route through Northwest Passage

By Anthony Watts, WUWT, Sep 29, 2015
<http://wattsupwiththat.com/2015/09/...>

Arctic Ice Rebound

By Ron Clutz, Science Matters, Sep 28, 2015
<https://rclutz.wordpress.com/2015/0...>

Dramatic Recovery In Arctic Sea Ice In September

By Paul Homewood, Not a Lot of People Know That, Oct 1, 2015
<https://notalotofpeopleknowthat.wor...>
[SEPP Comment The 2009 to 2012 declining trend changed in 2013.]

Changing Earth

Icelandic volcano's toxic gas is treble that of Europe's industry

By Staff Writers, Edinburgh, UK (SPX), Sep 25, 2015
<http://www.terradaily.com/reports/I...>

Agriculture Issues & Fear of Famine

GMOs and Junk Science

By Henry Miller and Kavin Senapathy, Project Syndicate, Sep 24, 2015

<http://www.project-syndicate.org/co...>

20 Reasons Not To Feed Your Family Organic

By David Zaruk, ACSH, Sep 29, 2015

<http://acsh.org/2015/09/20-reasons-...>

Un-Science or Non-Science?

ASU study finds weather extremes harmful to grasslands

By Staff Writers, Tempe AZ (SPX), Oct 01, 2015

<http://www.seeddaily.com/reports/AS...>

"They increased precipitation variability on each plot to mimic the projected increased in the frequency of weather extremes such as drought and unusually wet conditions."

[SEPP Comment: The study would have been more interesting if it was not linked to projections from climate models.]

Lowering Standards

Bank of England: "Climate change a 'huge' financial risk"

Guest essay by Eric Worrall, WUWT, Sep 30, 2015

<http://wattsupwiththat.com/2015/09/...>

Is that you or your eco-warrior wife speaking Mark? Carney feels heat after saying 'climate change could cause new crash'

By Hugo Duncan, Daily Mail, Oct 1, 2015 [H/t GWPF]

<http://www.dailymail.co.uk/news/art...>

Communicating Better to the Public - Exaggerate, or be Vague?

King crabs threaten Antarctic ecosystem due to warming ocean

By Staff Writers, Melbourne FL (SPX), Oct 01, 2015

<http://www.spacedaily.com/reports/K...>

Link to paper: No barrier to emergence of bathyal king crabs on the Antarctic shelf

By Aronson, et al. PNAS, Sep 28, 2015

<http://www.pnas.org/content/early/2...>

[SEPP Comment: The abstract states the area of study was limited to the western Antarctic Peninsula, not the Antarctic. "Among the likely first arrivals are king crabs (Lithodidae), which were discovered recently on the adjacent continental slope." Boldface added.]

Climate Change and El Niño Will Make Ocean Levels Swing Like a Seesaw

By Padma Nagappan, TakePart.com Sep 30, 2015 [H/t Clyde Spencer]

<http://news.yahoo.com/climate-chang...>

Communicating Better to the Public - Make things up.

Coffee, with a pinch of salt

By Andrew Montford, Bishop Hill, Oct 2, 2015

<http://bishophill.squarespace.com/b...>

Link to debunked article: Global Coffee Shortage Looms as Market Braces for Climate Change

By Whitney McFerron, Bloomberg, Oct 1, 2015

<http://www.bloomberg.com/news/artic...>

[SEPP Comment: Low prices of the threat of climate change depress future supplies??]

Lying To Boost The Climate Scare

By Tom Harris, Climate Science Coalition, Daily Caller, Sep 30, 2015

<http://dailycaller.com/2015/09/30/l...>

Oil Giants Form Climate Lobbying Group

By Staff Writers, Environmental Leader, Sep 29, 2015 [H/t Dennis Ambler]

<https://www.environmentalleader.com...>

[SEPP Comment: Only one company, Shell, is a major oil producer. What is the World Bank Group doing in this lobbying effort?]

Political Fraud - Van Ypersele Tries Using "Climate Change" As Excuse For Massive Middle East Policy Incompetence!

By P Gosselin, No Tricks Zone, Sep 28, 2015

<http://notrickszone.com/2015/09/28/...>

Communicating Better to the Public - Do a Poll?

Relatively few in U.S., Europe see climate change as a serious threat

By Jill Carle, Pew Research Center, Sep 15, 2015

<http://www.pewresearch.org/fact-tan...>

Expanding the Orthodoxy

Historic New Sustainable Development Agenda Unanimously Adopted by 193 UN Members

By Staff Writers, UN, Sep 25, 2015

<http://www.un.org/sustainabledevelo...>

The UN's Hard-to-Swallow Climate Fare

By Michael Kile, Quadrant, Sep 29, 2015

<http://quadrant.org.au/opinion/doom...>

Questioning European Green

£6 Billion Of Crappy Renewable Energy: Just What The Third World Needs

By James Delingpole, Breitbart, Sep 29, 2015

<http://www.breitbart.com/london/201...>

Climate Saviours & Europe's Mad Rush For Diesel

By Dominic Lawson, The Sunday Times, Via GWPF, Sep 27, 2015

<http://www.thegwpf.com/dominic-laws...>

Non-Green Jobs

Shale revolution revitalizing U.S. manufacturing

By William F. Shughart II, San Diego Union Tribune, Sep 23, 2015

<http://www.sandiegouniontribune.com...>

"Since 2010, U.S. manufacturers have added 1 million jobs. While those additions are still only a fraction of the manufacturing jobs lost during decades of offshoring, the turnaround is striking."

Government comes under increasing pressure to scrap green charges as Redcar steel plant closure sparks outburst

By Peter Campbell, Daily Mail, UK, Sep 28, 2015 [H/t GWPF]

<http://www.thisismoney.co.uk/money/...>

Funding Issues

Time to switch from 'climate change' to 'climate justice': Modi

By Anisha Khatun, The Samaya, Sep 26, 2015

<http://odishasamaya.com/news/time-t...>

[SEPP Comment: If the West believes its non-science on global warming, pay us for you abusing the climate!]

UK's £10billion plan to help Third World adopt more green energy:

Cameron announces 50% increase in amount of aid spent on controversial initiative

By Jack Doyle, Daily Mail, UK, Sep 28, 2015 [H/t GWPF]

<http://www.dailymail.co.uk/news/art...>

UK Energy Minister gives £5.8 billion of funding to UN to make everyone richer, may stem migration too

By Jo Nova, Her Blog, Sep 29, 2015

<http://joannenova.com.au/2015/09/uk...>

The Political Games Continue

Ideology adds heat to the debate on climate change - Jennifer Marohasy

By Jo Nova, Her Blog, Sep 28, 2015

<http://joannenova.com.au/2015/09/id...>

A Fault That Knocks Politicians From The Environmental Moral High Ground.

By Tim Ball, A Different Perspective, Oct 2, 2015

<http://drtimball.com/2015/a-fault-t...>

Aussie Government Climate Skeptic Purge Continues

Guest essay by Eric Worrall, WUWT, Sep 27, 2015

<http://wattsupwiththat.com/2015/09/...>

The Uncertain Republican Congressional Trumpet

By Alan Carlin, Carlin Economics and Science, Oct 2, 2015

<http://www.carlineconomics.com/arch...>

Litigation Issues

Federal District Court Blocks Obama Water Rule

H. Sterling Burnett, Heartland, Sep 23, 2015

<http://news.heartland.org/newspaper...>

Minnesota Hearing Addresses the Social Cost of Carbon

By Roy Spencer, His Blog, Sep 30, 2015

<http://www.drroyspencer.com/2015/09...>

[SEPP Comment: Will the next "cause" be the social cost of water vapor?]

Cap-and-Trade and Carbon Taxes

Carbon Floor Pricing contributing to UK steel crisis, says think tank

Global Warming Policy Foundation calls on government to scrap costly policy

By Staff Writers, Institution of Mechanical Engineers, Oct 1, 2015 [H/t GWPF]

<http://www.imeche.org/news/engineer...>

Subsidies and Mandates Forever

Michigan's Wind Energy Mandate Costs Each Family Nearly \$4,000

By Jack Spencer, Michigan Capitol Confidential, Oct 2, 2015

<http://www.michigancapitolconfident...>

Link to report overview and report: Renewable Portfolio Standards: Michigan

By Staff Writers, Institute of Political Economy, Utah State University, Sep 27, 2015

<http://www.usu.edu/ipe/index.php/re...>

Minnesota weather clouds solar power potential

By Tom Steward, Watchdog.org, Sep 28, 2015 [H/t Timothy Wise]

<http://watchdog.org/239957/minnesot...>

EPA and other Regulators on the March

EPA Finalizes Costly, Unnecessary Ozone Rule

By Staff Writers, IER, Oct 1, 2015

<http://instituteforenergyresearch.o...>

Link to Air Quality Trends

By Staff Writers, EPA, Sep. 12, 2015

<https://web.archive.org/web/2015091...>

"EPA claims that further reducing ozone will lessen a variety of health ailments, including asthma. However, as ozone levels have decreased, asthma rates have actually risen. Specifically, child asthma rates are up 131 percent since 1980, despite falling ozone concentrations. If reducing ozone alleviated asthma as much as EPA claims, one would expect asthma rates to be falling with ozone levels."

EPA's Gold King Whitewash, Part III

By Paul Driessen, Master Resource, Sep 28, 2015

<https://www.masterresource.org/epa-...>

EPA To Volkswagen: Emissions Cheating Is Far Worse Than Killing 124 People

Volkswagen's bombshell admission that it cheated on US emissions testing has become the latest in a string of auto industry scandals driven by the moral hazard of bailouts.

By Edward Niedermeyer, The Federalist, Sep 25, 2015 [H/t Timothy Wise]

<http://thefederalist.com/2015/09/25...>

Background Ozone a Major Issue in U.S. West

By Staff Writers, Pasadena CA (JPL), Oct 01, 2015 [H/t Toshio Fujita]

<http://www.spacedaily.com/reports/B...>

[SEPP Comment: Also a major summer issue in the East - from vegetation.]

EPA cracks down on oil refinery pollution

By Devin Henry, The Hill, Sep 29, 2015

<http://thehill.com/policy/energy-en...>

EPA Finalizes Steam Electric Power Plant Effluent Guidelines

By Sonal Patel, Power Mag, Sep 30, 2015

<http://www.powermag.com/epa-finaliz...>

Energy Issues - Non-US

Have the Saudis Opened Pandora's Box?

By Donn Dears, Power For USA, Sep 29, 2015

<https://dddusmma.wordpress.com/2015...>

Final leg of new European gas line completed

Statoil lays gas pipeline across Arctic Circle.

By Daniel Graeber, UPI, Sep 29, 2015 [H/t Toshio Fujita]

http://www.upi.com/Business_News/En...

[SEPP Comment: The pipeline carries natural gas from north of the Arctic Circle - 66.5° N.]

Energy Issues - US

Does Clean Power Destroy the Economy?

By Jay Hakes, Real Clear Energy, Sep 27, 2015

<http://www.realclearenergy.org/arti...>

[SEPP Comment: The analogy with past regulations is false. There were commercially available technologies to deal with particle emissions. There is no commercially available technology to deal with CO2 emissions, despite what administration officials claim. Further, there is no commercially available technology to convert unreliable electricity from solar and wind to reliable electricity on a massive scale.]

Shell Halts Alaska Offshore Exploration After Failing to Find Enough Oil

By Rakteem Katakey and Winnie Zhu, Bloomberg, Sep 28, 2015

<http://www.bloomberg.com/news/artic...>

TransCanada tries new legal route for Keystone XL

By Daniel J. Graeber, Bismarck, N.D. (UPI), Sep 30, 2015

<http://www.oilgasdaily.com/reports/...>

Washington's Control of Energy

Judge To Obama: You Can't Regulate Fracking On Federal Lands

By Michael Bastasch, Daily Caller, Sep 30, 2015

<http://dailycaller.com/2015/09/30/j...>

US Court Blocks Obama Administration Rules on Fracking

Editorial, New York Times, Via GWPF, Oct 1, 2015

<http://www.thegwpf.com/us-court-blo...>

[SEPP Comment: Although fracking is highly successful as regulated by states, Washington cannot establish a reasonable set of regulations for federally controlled lands and waters and the New York Times cannot explain the issue to its readers.]

Oil and Natural Gas - the Future or the Past?

The Shale Shock: How the world has changed

Few understand it, but the shale revolution has opened up additional centuries of low-cost oil and gas for the world.

By Steve Goreham, CDN, Sep 30, 2015

<http://www.commdiginews.com/feature...>

Department of Transportation Needs to Complete Regulatory, Data, and Guidance Efforts

By Staff Writers, GAO, Sep 29, 2015 [H/t Timothy Wise]

<http://www.gao.gov/products/GAO-15-...>

Link to testimony: Pipeline Safety

By Susan Fleming, GAO Physical Infrastructure Issues, Sep 29, 105

<http://www.gao.gov/assets/680/67280...>

[SEPP Comment: For oil and natural gas pipelines.]

Nuclear Energy and Fears

Nuclear Power - Rebirth or Renaissance?

By William Tucker, Real Clear Energy, Sepp 24, 2015

<http://www.realclearenergy.org/arti...>

Aussie Nuclear Industry: "renewables won't get us across the line"

By Eric Worrall, WUWT, Sep 29, 2015

<http://wattsupwiththat.com/2015/09/...>

Alternative, Green ("Clean") Solar and Wind

Germany Now Faced With Thousands Of Aging Wind Farms

By Gaurav Agnihotri, Oil Pirce.com, Sep 28, 2015

<http://oilprice.com/Alternative-Ene...>

Reality Check: Solar Is Not The Cheapest Form Of Energy

By Michael Lynch, Forbes, Oct 1, 2015

<http://www.forbes.com/sites/michael...>

Solar Technology's Glaring Inferiority ...Phileas Fogg's 19th Century Balloon Beats 21st Century Solar Impulse 2 By Over 300 Days!

By P Gosselin, No Tricks Zone, Sep 26, 2015

<http://notrickszone.com/2015/09/26/...>

[SEPP Comment: The errors in the article take away from the message, the highly publicized solar airplane stopped flying.]

Alternative, Green ("Clean") Energy - Other

Swansea Bay's £1bn tidal lagoon hit by delay

By Staff Writers, BBC, Oct 2, 2015

<http://www.bbc.com/news/uk-wales-so...>

Alternative, Green ("Clean") Vehicles

Do diesels have a future?

By Martin Livermore, The Scientific Alliance, Oct 2, 2015

<http://scientific-alliance.org/node...>

*[SEPP Comment: Analysis of various alternative to powering automobiles.
Question the health dangers of PM2.5 as compared with PM10]*

Hybrids and the cost of virtue signaling

By Andrew Montford, Bishop Hill, Oct 1, 2015

<http://bishophill.squarespace.com/b...>

Link to report: Quantifying the impact of real-world driving on total CO2 emissions from UK cars and vans

By Staff Writers, Element Energy Limited for The Committee on Climate Change, UK, Sep 2015

<http://static1.1.sqspcdn.com/static...>

VW's Audi says 2.1 mn cars worldwide fitted with emission-cheating software

By Staff Writers, AFP, Sep 28, 2015

<https://in.news.yahoo.com/vws-audi-...>

Carbon Schemes

CCS projects may be uninsurable

By Andrew Montford, Bishop Hill, Sep 30, 2015

<http://bishophill.squarespace.com/b...>

Other News that May Be of Interest

Academic Calls for a Return to Eugenics (to Battle Global Warming)

By William Briggs, The Stream, Oct 1, 2015

<https://stream.org/academic-calls-r...>

[SEPP Comment: As absurd as this seems, 20 years ago how many people would have claimed carbon dioxide is a pollutant? Yet, now it is routine.]

Oxford University Student Union bans free speech magazine because it is 'offensive'

The prestigious university's Student's Union was not impressed by the magazine, which is called 'No Offence'

By Helena Horton, Telegraph, UK, Oct 1, 2015

<http://www.telegraph.co.uk/educatio...>

BELOW THE BOTTOM LINE:

Climate Murder Conspiracy Complaint Dismissed

By David Brown, The Times, Via GWPF, Sep 28, 2015

<http://www.thegwpf.com/climate-murd...>

They're invading!...but then again maybe not

By Staff Writers, Climate Change Predictions.org, Oct 2, 2015

<http://climatechangepredictions.org...>

"Ancient viruses have been lying dormant in Siberian permafrost for centuries. But global warming is about to change that. Scientists have made another massive discovery of ancient (and giant) viruses hidden dormant in the permafrost. As the planet warms, finding these things-and waking them-is going to become more commonplace.

"... the distant possibility does exist, and as more and more polar thawing occurs, our statistical chance of finding something will grow. But Dr. James Van Etten, a professor at University of Nebraska-Lincoln thinks that a viral outbreak is a worry you can put out of your head. "Certainly," he says, "I would not lose any sleep over this issue." The Daily Beast, 27 Sep 2015



PLEASE NOTE: The complete TWTW can be downloaded in an easily printable form at this web site: <http://www.sepp.org/the-week-that-was.cfm...>



Please forward this Newsletter to those interested in Science and Environmental Policy. Thank you. Forward.

Mad-Mimi Header-Antarctica





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From: [Edward W Maibach](#)
To: [Alex Bozmoski](#)
Subject: Fw: Join us for a discussion of how conservatives should think about climate change
Date: Monday, June 29, 2015 10:51:16 AM

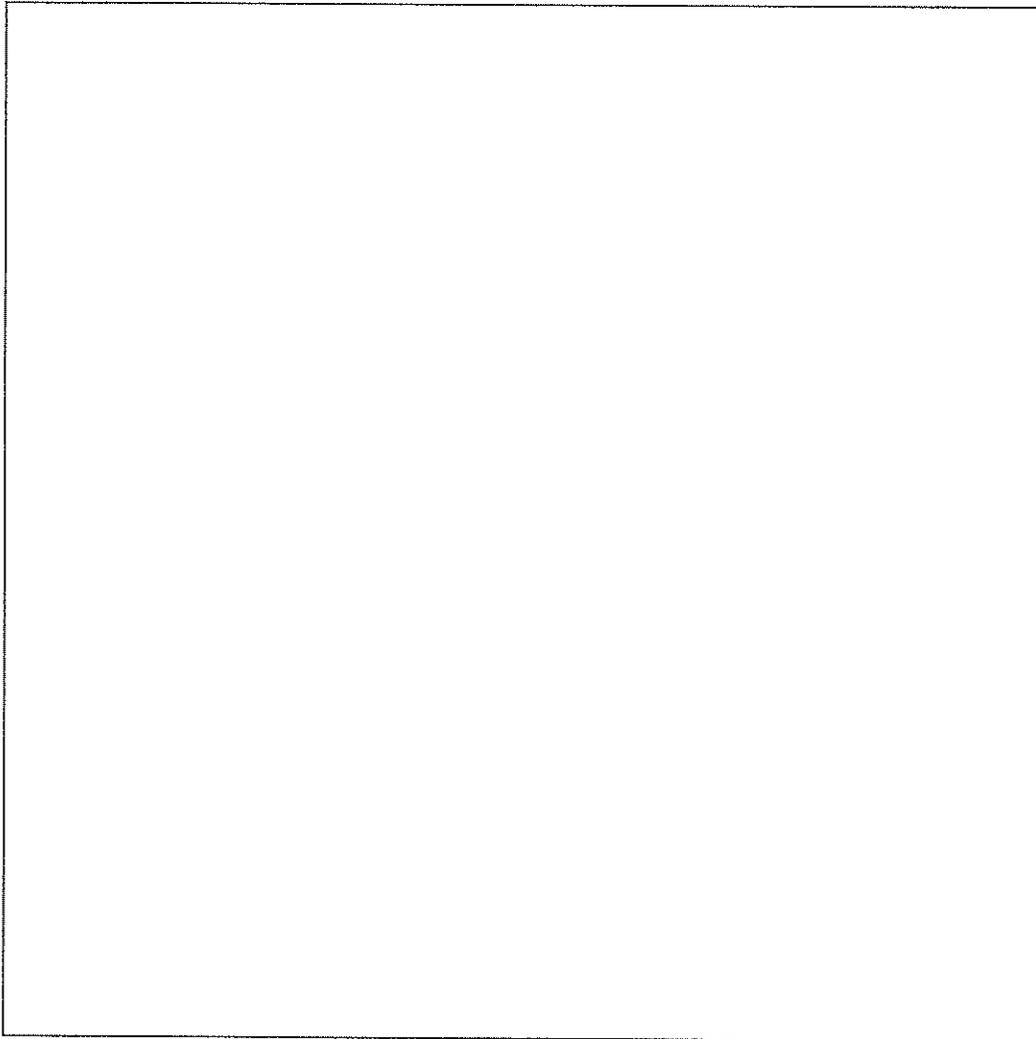
Should I attend?

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Lori Sanders <lsanders@rstreet.org> on behalf of Lori Sanders
<lsanders@rstreet.org>
Sent: Monday, June 29, 2015 10:26 AM
To: Edward W Maibach
Subject: Join us for a discussion of how conservatives should think about climate change

You're invited to a great event

[View this email in your browser](#)



**Climate of Confusion:
How Should Conservatives Think About Climate Change?**

"Denier." "Anti-science." "Shills for the oil industry." Whether it's Sen. Whitehouse threatening to prosecute those who express skepticism or the president himself blatantly maligning conservatives in congress who disagree with his forthcoming regulatory nightmare, the left continually trumpets the notion that conservatives refuse to confront the issue of climate change.

Fortunately, that's simply not true. Though our solutions may not be the preferred regulatory morass of the left, conservatives and libertarians are grappling with the issue and trying to find solutions that unleash the power of the market to solve this problem.

In the summer issue of National Affairs, five leading thinkers contributed four essays to the debate, applying conservative principles to the scientific and political

challenges presented by our changing climate. Join the R Street Institute and National Affairs to hear from the authors and learn how the right should address climate change to ensure a better outcome for our economy and our environment.

WHERE

Rayburn HOB
Gold Room - 2168

WHEN

Monday, July 6
6:00 PM

RSVP

climateofconfusion.splashthat.com

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From: [Edward W Maibach](#)
To: [Alex Bozmoski](#)
Subject: Re: Fw: Join us for a discussion of how conservatives should think about climate change
Date: Monday, June 29, 2015 11:02:41 AM

I shall.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Alex Bozmoski <alex@republicen.org>
Sent: Monday, June 29, 2015 10:54 AM
To: Edward W Maibach
Subject: Re: Fw: Join us for a discussion of how conservatives should think about climate change

I think so!

On Mon, Jun 29, 2015 at 9:51 AM, Edward W Maibach <emaibach@gmu.edu> wrote:

Should I attend?

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Lori Sanders <lsanders=rstreet.org@mail6.suw11.mcdlv.net> on behalf of Lori Sanders
<lsanders@rstreet.org>
Sent: Monday, June 29, 2015 10:26 AM
To: Edward W Maibach
Subject: Join us for a discussion of how conservatives should think about climate change

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From: Edward W Maibach
To: J Shukla
Subject: Re: Letter to Senator Sheldon Whitehouse
Date: Tuesday, July 21, 2015 6:35:39 AM

Hi Shukla,

I would be happy to do so, but our letter might have more impact if we targeted our Senators and members of Congress, and cc'ed Whitehouse. Are you a Virginian, or a Marylander?

Or, better yet, we could consult my friend and mentor Bill Novelli -- who was central in the tobacco suit. He could give us counsel on how to be most effective.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: J Shukla <shukla@iges.org>
Sent: Monday, July 20, 2015 5:13 PM
To: Edward W Maibach
Subject: Letter to Senator Sheldon Whitehouse

Dear Ed,

Are you, like me, puzzled as to why in spite of such overwhelming scientific evidence showing the influence of human activities on the Earth's climate during the past 50-100 years, a significant fraction of the US society remains skeptical? Please see the attached Op-Ed in the Washington Post, and text of a speech Senator Sheldon Whitehouse made on the floor of the US Senate on May 6, 2015.

http://www.washingtonpost.com/opinions/the-fossil-fuel-industrys-campaign-to-mislead-the-american-people/2015/05/29/04a2c448-0574-11e5-8bda-c7b4e9a8f7ac_story.html

<http://www.whitehouse.senate.gov/news/speeches/time-to-wake-up-climate-denial-recalls-tobacco-racketeering->

According to Senator Whitehouse, the fossil-fuel industry has launched a massive and sophisticated campaign to mislead the American people about the science of global warming and its harmful effects on the people. He asserts that the fossil-fuel industry is doing what big tobacco did to deny the health dangers of smoking. Senator Whitehouse is proposing that the Department of Justice of the US government begin the inquiry to file a civil suit against the fossil-fuel industry, just like the Department of Justice did against the big tobacco companies more than 15 years ago.

I believe that human-induced climate change is already affecting our planet and our societies, and will do major harm to our future generations. Therefore, I wholeheartedly support Senator Whitehouse's proposal to begin such an investigation. I plan to write to Senator Whitehouse reiterating a strong agreement among the scientific community that climate change is real, it is happening now, it is human-induced, and that we support his proposal.

I am writing to you to ask you if you are able and willing to join me in sending a letter of support to Senator Whitehouse. Thank you for your consideration.

Regards,
Shukla

President, Institute of Global Environment & Society
University Professor, George Mason University

From: [Edward W Maibach](#)
To: [J Shukla](#)
Subject: Re: Letter to Senator Sheldon Whitehouse
Date: Wednesday, July 22, 2015 3:57:28 PM

Hi Shukla,

I had breakfast with David Michaels today. He is currently the Director of the Occupational Health and Safety Administration (in the US Department of Labor), and a former environmental health colleague of mine at George Washington University. He is an expert in the case against the tobacco industry.

His feels the odds of the DOJ pursuing this case against industry are slim to none, because there are no easily quantifiable (health care) costs that the government can seek reimbursement for.

That said, I have no objection to our sending a letter to the President, our Maryland Senators and members of Congress (mine is John Delaney), with a cc to Senator Whitehouse, asking them to support Senator Whitehouse's call for a RICO investigaton.

If we do this, we should choose our words carefully, because they could wind up on page 1 of the Washington Post. In fact, if we do this, I will want to run our draft past some very thoughtful advisers.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: J Shukla <shukla@cola.iges.org>
Sent: Tuesday, July 21, 2015 6:44 AM
To: Edward W Maibach
Cc: J Shukla
Subject: Re: Letter to Senator Sheldon Whitehouse

Dear Ed,

As always, excellent suggestions. I live in Maryland. Please let me know what Bill Novelli suggests.

I am a novice on such matters.

In the past I had taken the view that perhaps I can be more effective as an educator if I were not engaged in political debates/actions.

I have changed my mind (with regrets as to why I waited so long!),and I have decided to get fully engaged in this process, not just the climate change issues but even the larger issues of inequality and social justice.

I count on your advice.

Regards,
Shukla

----- Original Message -----

From: "Edward W Maibach" <emaibach@gmu.edu>

To: "J Shukla" <shukla@iges.org>

Sent: Tuesday, July 21, 2015 6:35:38 AM

Subject: Re: Letter to Senator Sheldon Whitehouse

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All the best,

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To: Edward W Maibach
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<http://www.whitehouse.senate.gov/news/speeches/time-to-wake-up-climate-denial-recalls-tobacco-racketeering->

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Regards,
Shukla

President, Institute of Global Environment & Society

University Professor, George Mason University

From: [Edward W Maibach](#)
To: [J Shukla](#); [Edward W Maibach](#)
Subject: Re: Letter to Senator Sheldon Whitehouse
Date: Saturday, July 25, 2015 7:27:57 AM

Hi Shukla,

I will draft a letter this weekend.

My inclination is to write a group letter. We can encourage other climate scientists -- in as many states and Congressional districts as possible -- to co-sign the letter. This will make it very easy for other scientists to participate.

The letter would be addressed to the President and the Attorney General -- given that they are the "deciders" on this decision -- and we would cc the Senators and Representatives of every co-signer.

If we can find one co-signer in every one of the nation's 435 Congressional districts, we will end up sending the letter to every member of Congress -- which would be spectacular. The letter will get lots of media attention.

We might be wise to ask one of the large science-based environmental advocacy to help us with this project. Union of Concerned Scientists would be a natural. I have excellent connections there. Environmental Defense would be good too, given that Eric Pooley is their director of communication, and he wrote a book about the dirty tricks of the fossil fuel industry that we can cite in the letter. Would you object to my asking for their help?

Back to you soon with a draft letter.

All the best,

Ed

Sent from my iGlasses

> On Jul 24, 2015, at 3:04 PM, J Shukla <shukla@iges.org> wrote:

>

> Dear Ed,

>

> Thank you for your very helpful email. Your email has given me an idea; not only can we write letters to our leaders, I will contact about 100 climate scientists that I personally know, covering most of the states, and urge them to write to their own representatives.

>

> As I had mentioned to you before, this is all new stuff for me. I have never been formally engaged in any political debate, and therefore I completely agree with you that we have to choose our words carefully. One thing we don't have to hesitate in writing is that the evidence of human induced climate change is overwhelming. You are of course a great communicator, and it will be a big help to me if you gave me a draft of what you might write to your own Congressman/Senator on this matter. I will use your draft to prepare a more general letter, which I intend to send to at least 1 or 2 climate scientists in each of the 50 states of the US.

>

> Will appreciate any help you can provide.

>

> Regards,

> Shukla

>

>

>

>> On Jul 22, 2015, at 3:57 PM, Edward W Maibach <emaibach@gmu.edu> wrote:

>>

>> Hi Shukla,

>>

>> I had breakfast with David Michaels today. He is currently the Director of the Occupational Health and Safety Administration (in the US Department of Labor), and a former environmental health colleague of mine at George Washington University. He is an expert in the case against the tobacco industry.

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>> If we do this, we should choose our words carefully, because they could wind up on page 1 of the Washington Post. In fact, if we do this, I will want to run our draft past some very thoughtful advisers.

>>

>> All the best,

>>

>> Ed

>>

>> Edward Maibach, MPH, PhD

>> University Professor, Department of Communication

>> Director, Center for Climate Change Communication

>> George Mason University, MS 6A8

>> Fairfax, VA 22030

>> www.climatechangecommunication.org

>>

>>

>> From: J Shukla <shukla@cola.iges.org>

>> Sent: Tuesday, July 21, 2015 6:44 AM

>> To: Edward W Maibach

>> Cc: J Shukla

>> Subject: Re: Letter to Senator Sheldon Whitehouse

>>

>> Dear Ed,

>>

>> As always, excellent suggestions. I live in Maryland.

>> Please let me know what Bill Novelli suggests.

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>> I am a novice on such matters.

>> In the past I had taken the view that perhaps I can be more effective as an educator if I were not engaged in political debates/actions.

>> I have changed my mind (with regrets as to why I waited so long!),and I have decided to get fully engaged in this process, not just the climate change issues but even the larger

>> issues of inequality and social justice.

>>

>> I count on your advice.

>>

>> Regards,

>> Shukla

>>

>> ----- Original Message -----

>> From: "Edward W Maibach" <emaibach@gmu.edu>

>> To: "J Shukla" <shukla@iges.org>

>> Sent: Tuesday, July 21, 2015 6:35:38 AM

>> Subject: Re: Letter to Senator Sheldon Whitehouse

>>

>> http://www.washingtonpost.com/opinions/the-fossil-fuel-industrys-campaign-to-mislead-the-american-people/2015/05/29/04a2c448-0574-11e5-8bda-c7b4e9a8f7ac_story.html

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>> I believe that human-induced climate change is already affecting our planet and our societies, and will do major harm to our future generations. Therefore, I wholeheartedly support Senator Whitehouse's proposal to begin such an investigation. I plan to write to Senator Whitehouse reiterating a strong agreement among the scientific community that climate change is real, it is happening now, it is human-induced, and that we support his proposal.

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>> I am writing to you to ask you if you are able and willing to join me in sending a letter of support to Senator Whitehouse. Thank you for your consideration.

>>

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>> Regards,

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>>

>>

>>

>> President, Institute of Global Environment & Society

>>

>> University Professor, George Mason University

>

From: Edward W Maibach
To: Shukla
Subject: Re: Letter to Senator Sheldon Whitehouse
Date: Saturday, July 25, 2015 10:12:44 AM
Attachments: [Dear President Obama and Attorney General Lynch.docx](#)

Here is my draft. I will await your reply before contacting UCS and EDF.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Shukla <shukla@iges.org>
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Subject: Re: Letter to Senator Sheldon Whitehouse

Fantastic Ed. Please ask whoever you consider appropriate. Just cc me.
I am also contacting some attorneys.

I am so excited to move forward.
BTW, my student assistant Colin Nackerman who has worked with your group is available to help us.
He is a dedicated activist.

Looking forward to receiving a draft of the group letter.

Regards,
Shukla

University Professor, George Mason University
President, Institute of Global Environment & Society
Research Hall, Room 105
George Mason University, MSN: 2B3
[4400 University Drive](#)
[Fairfax, VA 22030 USA](#)

Tel: [703-993-5700](tel:703-993-5700)

E-mail: shukla@iges.org

<http://www.iges.org/>

On Jul 25, 2015, at 7:27 AM, Edward W Maibach <emaibach@gmu.edu> wrote:

Hi Shukla,

I will draft a letter this weekend.

My inclination is to write a group letter. We can encourage other climate scientists -- in as many states and Congressional districts as possible -- to co-sign the letter. This will make it very easy for other scientists to participate.

The letter would be addressed to the President and the Attorney General -- given that they are the "deciders" on this decision -- and we would cc the Senators and Representatives of every co-signer.

If we can find one co-signer in every one of the nation's 435 Congressional districts, we will end up sending the letter to every member of Congress -- which would be spectacular. The letter will get lots of media attention.

We might be wise to ask one of the large science-based environmental advocacy to help us with this project. Union of Concerned Scientists would be a natural. I have excellent connections there. Environmental Defense would be good too, given that Eric Pooley is their director of communication, and he wrote a book about the dirty tricks of the fossil fuel industry that we can cite in the letter.

Would you object to my asking for their help?

Back to you soon with a draft letter.

All the best,

Ed

Sent from my iGlasses

On Jul 24, 2015, at 3:04 PM, J Shukla <shukla@iges.org> wrote:

Dear Ed,

Thank you for your very helpful email. Your email has given me an idea; not only can we write letters to our leaders, I will contact about 100 climate scientists that I personally know, covering most of the states, and urge them to write to their own representatives.

As I had mentioned to you before, this is all new stuff for me. I have never been formally engaged in any political debate, and therefore I

completely agree with you that we have to choose our words carefully. One thing we don't have to hesitate in writing is that the evidence of human induced climate change is overwhelming. You are of course a great communicator, and it will be a big help to me if you gave me a draft of what you might write to your own Congressman/Senator on this matter. I will use your draft to prepare a more general letter, which I intend to send to at least 1 or 2 climate scientists in each of the 50 states of the US.

Will appreciate any help you can provide.

Regards,

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All the best,

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From: J Shukla <shukla@cola.iges.org>

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Cc: J Shukla

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issues of inequality and social justice.

I count on your advice.

Regards,

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----- Original Message -----

From: "Edward W Maibach" <emaibach@gmu.edu>

To: "J Shukla" <shukla@iges.org>

Sent: Tuesday, July 21, 2015 6:35:38 AM

Subject: Re: Letter to Senator Sheldon Whitehouse

Hi Shukla,

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Or, better yet, we could consult my friend and mentor Bill Novelli -- who was central in the tobacco suit. He could give us counsel on how to be most effective.

All the best,

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From: J Shukla <shukla@iges.org>

Sent: Monday, July 20, 2015 5:13 PM

To: Edward W Maibach

Subject: Letter to Senator Sheldon Whitehouse

Dear Ed,

Are you, like me, puzzled as to why in spite of such overwhelming scientific evidence showing the influence of human activities on the Earth's climate during the past 50-100 years, a significant fraction of the US society remains skeptical? Please see the attached Op-Ed in the Washington Post, and text of a speech Senator Sheldon Whitehouse made on the floor of the US Senate on May 6, 2015.

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I believe that human-induced climate change is already affecting our planet and our societies, and will do major harm to our future generations. Therefore, I wholeheartedly support Senator Whitehouse's proposal to begin such an investigation. I plan to write to Senator Whitehouse reiterating a strong agreement

among the scientific community that climate change is real, it is happening now, it is human-induced, and that we support his proposal.

I am writing to you to ask you if you are able and willing to join me in sending a letter of support to Senator Whitehouse. Thank you for your consideration.

Regards,

Shukla

President, Institute of Global Environment & Society

University Professor, George Mason University

Dear President Obama and Attorney General Lynch,

As climate scientists, we are exceedingly concerned that America's response to climate change – indeed, the world's response to climate change – is currently insufficient to prevent serious and potentially lasting harm to human health and well-being, and to the resources on which all people depend – including agriculture, livestock, safe water supplies, clean air, forests, and eco-systems. These and other serious risks – and potential response strategies – are detailed in the Third National Climate Assessment (2014), *Climate Change Impacts in the United States*. Human civilization emerged and thrived over the past ten thousand years in large measure due to the stability of the earth's climate during that period. We are now at high risk of seriously destabilizing the earth's climate – largely as a result of our continued reliance on fossil fuels – the consequences of which would be grave for hundreds or thousands of years to come. We urge you to use all tools available to you to escalate America's response – and the global community's response – to climate change, so that Americans and all other people around the world, especially the world's poorest people, are not needlessly and irreparably harmed for many generations to come.

One such tool – recently proposed by Senator Sheldon Whitehouse – is a RICO (Racketeer Influenced and Corrupt Organizations Act) investigation of corporations and other organizations that have knowingly deceived the American people about the risks of climate change, as a means to forestall America's response to climate change. We are familiar with the actions of these organizations – which have been extensively chronicled in peer-reviewed academic research (Brulle, 2013) and in several recent books: *Doubt is their Product* (Michaels, 2008), *Climate Cover-Up* (Hoggan & Littlemore, 2009), *Merchants of Doubt* (Oreskes & Conway, 2010), *The Climate War* (Pooley, 2010) – in large part because they have sought to undermine our efforts to conduct scientific research on the risks of climate change. We strongly endorse Senator Whitehouse's call for a RICO investigation.

A RICO investigation (1999 to 2006) played an important role in stopping the tobacco industry from continuing to deceive the American people about the dangers of smoking – to smokers and everyone else who is exposed to tobacco smoke, including unborn children. If corporations in the fossil fuel industry and their supports are guilty of the misdeeds that have been documented in books and journals articles, it is imperative that these misdeeds be stopped as soon as possible so that America – and the world – can get on with the critically important business of finding effective ways to restabilize the earth's climate, before even more lasting damage is done.

Sincerely,

Your pals

Cc:

Senator Barbara Mikulski

Senator Ben Cardin

Representative John Delaney

From: [Edward W Maibach](#)
To: [J Shukla](#)
Subject: Re: Letter to Senator Sheldon Whitehouse
Date: Monday, July 27, 2015 8:22:39 AM

Good point about starting with an affirmation of the scientific consensus (given that I have published a half dozen studies showing that it is an effective message).

When you make your edits, I suggest starting the letter with the following statement:

Based on the evidence, more than 97% of climate scientists are convinced that human-caused climate change is happening.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
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www.climatechangecommunication.org

From: J Shukla <shukla@iges.org>
Sent: Monday, July 27, 2015 6:04 AM
To: Edward W Maibach
Subject: Re: Letter to Senator Sheldon Whitehouse

Dear Ed,

This is a great letter. References to the articles and books adds intellectual weight to the letter. Some of my fellow climate scientists had suggested earlier that as climate scientists, we should should say something about the overwhelming scientific evidence of human caused climate change. They would also like to see a draft.

After I go to GMU today, I will make some minor revisions to your letter and share it with GMU scientists.

Please go ahead and contact UCS and EDF. Today I also plan to contact the legal assistant of Senator Whitehouse.

Regards,
Shukla

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From: "Edward W Maibach" <emaibach@gmu.edu>

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President, Institute of Global Environment & Society

University Professor, George Mason University

<Dear President Obama and Attorney General Lynch.docx>

From: [Edward W Maibach](#)
To: AHuertas@ucsusa.org
Subject: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Monday, July 27, 2015 8:34:09 AM
Attachments: [Dear President Obama and Attorney General Lynch.docx](#)

Hi Aaron,

Jagadish Shukla -- Mason's most senior climate scientist -- and I are planning on sending a letter to the POTUS and AG (with a cc to our members of Congress) to encourage them to act on Senator Whitehouse's proposal. We can easily get a couple of dozen additional climate scientists to co-sign (with a cc to all of their members of Congress too).

With a bit of extra work -- and this is why I am writing you -- perhaps we could get at least one climate scientist from all 435 congressional districts to co-sign the letter, which would allow us to cc every member of Congress (and would become a big media story).

Can UCS help us with this?

A draft of the letter is attached (although Shukla is going to make a few small edits this morning).

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Sincerely,

Your pals

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Senator Barbara Mikulski
Senator Ben Cardin

Representative John Delaney

From: [Edward W Maibach](#)
To: NCole@ucsusa.org
Cc: AHuertas@ucsusa.org; AMeyer@ucsusa.org
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Monday, July 27, 2015 10:35:42 AM
Attachments: [Dear President Obama and Attorney General Lynch.docx](#)

Hi Alden and Nancy,

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Dear President Obama and Attorney General Lynch,

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One such tool – recently proposed by Senator Sheldon Whitehouse – is a RICO (Racketeer Influenced and Corrupt Organizations Act) investigation of corporations and other organizations that have knowingly deceived the American people about the risks of climate change, as a means to forestall America's response to climate change. We are familiar with the actions of these organizations – which have been extensively chronicled in peer-reviewed academic research (Brulle, 2013) and in several recent books: *Doubt is their Product* (Michaels, 2008), *Climate Cover-Up* (Hoggan & Littlemore, 2009), *Merchants of Doubt* (Oreskes & Conway, 2010), *The Climate War* (Pooley, 2010) – in large part because they have sought to undermine our efforts to conduct scientific research on the risks of climate change. We strongly endorse Senator Whitehouse's call for a RICO investigation.

A RICO investigation (1999 to 2006) played an important role in stopping the tobacco industry from continuing to deceive the American people about the dangers of smoking – to smokers and everyone else who is exposed to tobacco smoke, including unborn children. If corporations in the fossil fuel industry and their supports are guilty of the misdeeds that have been documented in books and journals articles, it is imperative that these misdeeds be stopped as soon as possible so that America – and the world – can get on with the critically important business of finding effective ways to restabilize the earth's climate, before even more lasting damage is done.

Sincerely,

Your pals

Cc:

Senator Barbara Mikulski
Senator Ben Cardin

Representative John Delaney

From: [Edward W Maibach](#)
To: [Nancy Cole](#)
Cc: [Aaron Huertas](#); [Alden Meyer](#)
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Monday, July 27, 2015 1:32:09 PM

Thanks Nancy!

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Nancy Cole <NCole@ucsusa.org>
Sent: Monday, July 27, 2015 10:47 AM
To: Edward W Maibach
Cc: Aaron Huertas; Alden Meyer
Subject: RE: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Ed, great to hear from you, and thanks for sharing this intriguing idea.

As you may know, we have entered the "fossil energy company accountability" arena ourselves and recently released a compilation report detailing some of the most egregious examples of corporate deception on this issue. < www.ucsusa.org/stopdeception >

The sign-on letter is an interesting idea. Let me discuss with a couple of my colleagues here and get back to you shortly.

Hope you are well!

Nancy

Nancy S. Cole
Director of Campaigns
Climate and Energy Program
Union of Concerned Scientists
2 Brattle Square
Cambridge, MA 02138-3780
617.301.8034 (phone)
617.864.9405 (fax)
ncole@ucsusa.org

The Union of Concerned Scientists puts rigorous, independent science to work to solve our planet's

most pressing problems. Joining with citizens across the country, we combine technical analysis and effective advocacy to create innovative, practical solutions for a healthy, safe, and sustainable future.

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From: Edward W Maibach [mailto:emaibach@gmu.edu]
Sent: Monday, July 27, 2015 10:36 AM
To: Nancy Cole
Cc: Aaron Huertas; Alden Meyer
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Alden and Nancy,

Jagadish Shukla -- Mason's most senior climate scientist -- and I are planning on sending a letter to the POTUS and AG (with a cc to our members of Congress) to encourage them to act on Senator Whitehouse's proposal. We can easily get a couple of dozen additional climate scientists to co-sign (with a cc to all of their members of Congress too).

With a bit of extra work -- and this is why I am writing you -- perhaps we could get at least one climate scientist from all 435 congressional districts to co-sign the letter, which would allow us to cc every member of Congress (and would become a big media story).

Can UCS help us with this?

A draft of the letter is attached (although Shukla is going to make a few small edits this morning).

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W Maibach](#)
To: [Jean Sideris](#)
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Wednesday, July 29, 2015 3:15:39 PM

Hi Jean,

Thanks for getting back to me.

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Shukla and I are open to suggested edits. I too was planning on making an edit or two - to add more language about "accountability" which is a strong conservative value.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Jean Sideris <JSideris@ucsusa.org>
Sent: Wednesday, July 29, 2015 2:50 PM
To: Edward W Maibach
Subject: RE: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Ed-

Nancy forwarded this on. Great idea and thanks for reaching out to us! We are reviewing the letter internally and will get you a response soon, just need to run it through the traps on our end. Few questions for you. What's your timing? If we had some suggested edits to the letter would you be open to it? I'll be in touch as soon as I can get you a definite response.

Best,

Jean Sideris
Climate Campaign Manager
Climate and Energy Program
Union of Concerned Scientists
Cambridge, MA
617.301.8032
jsideris@ucsusa.org

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| Join the conversation on our [blog](#) or follow us on [Facebook](#) and [Twitter](#).

From: Edward W Maibach [<mailto:emaibach@gmu.edu>]
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To: Nancy Cole
Cc: Aaron Huertas; Alden Meyer
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

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Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication

Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W. Maibach](#)
To: [Alex Bozmoski](#)
Subject: editorial assistance needed
Date: Wednesday, July 29, 2015 3:25:47 PM
Attachments: [Letter to President & AG.docx](#)

Hi Alex,

Please review the attached letter. I'm hoping you will highlight any language that screams "liberal drivel" and suggest ways of incorporating language that resonate with conservative values, such as accountability.

Thanks,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

Dear President Obama and Attorney General Lynch,

Based on evidence, more than 97% of climate scientists are convinced that human-induced climate change is happening. As climate scientists, we are very concerned that America's response to climate change – indeed, the world's response to climate change – is currently insufficient to prevent serious and potentially lasting harm to human health and well-being, and to the resources on which all people depend – including agriculture, livestock, biodiversity, safe water supplies, clean air, forests, and eco-systems. These and other serious risks, including rising sea levels and increasing ocean acidity – and potential response strategies – are detailed in the Third National Climate Assessment (2014), *Climate Change Impacts in the United States*. Human civilization emerged and thrived over the past ten thousand years in large measure due to the stability of the earth's climate during that period. We are now at high risk of seriously destabilizing the earth's climate – largely as a result of our continued reliance on fossil fuels – the consequences of which would be grave for hundreds or thousands of years to come. We urge you to use all tools available to you to escalate America's response – and the global community's response – to climate change, so that Americans and all other people around the world, especially the world's poorest people, are not needlessly and irreparably harmed for many generations to come.

One such tool – recently proposed by Senator Sheldon Whitehouse – is a RICO (Racketeer Influenced and Corrupt Organizations Act) investigation of corporations and other organizations that have knowingly deceived the American people about the risks of climate change, as a means to forestall America's response to climate change. We are familiar with the actions of these organizations – which have been extensively chronicled in peer-reviewed academic research (Brulle, 2013) and in several recent books: *Doubt is their Product* (Michaels, 2008), *Climate Cover-Up* (Hoggan & Littlemore, 2009), *Merchants of Doubt* (Oreskes & Conway, 2010), *The Climate War* (Pooley, 2010) – in large part because they have sought to undermine our efforts to conduct scientific research on the risks of climate change. We strongly endorse Senator Whitehouse's call for a RICO investigation.

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Sincerely,

Your pals

Cc:

Senator Barbara Mikulski

Senator Ben Cardin
Representative John Delaney

From: [Edward W Maibach](#)
To: [Alex Bozmoski](#)
Subject: Re: editorial assistance needed
Date: Wednesday, July 29, 2015 4:51:32 PM

LOL. Good points.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Alex Bozmoski <alex@republicen.org>
Sent: Wednesday, July 29, 2015 4:48 PM
To: Edward W Maibach
Subject: Re: editorial assistance needed

Ed, I'd delete the civilization claim...civilization didn't thrive "due to" stability. Maybe it wasn't prevented by instability. But that's different. Don't turn climate into God.

Other than that, it's just an impossible topic to not scream hard-core left. You're talking about prosecuting conservatives. At the AEI event, even R Street was making a big (and public) fuss about how ridiculous it is for Whitehouse to ask for cooperation while he's threatening RICO.

Sorry to not be sunnier :-)

alex

On Wed, Jul 29, 2015 at 2:25 PM, Edward W Maibach <emaibach@gmu.edu> wrote:

Hi Alex,

Please review the attached letter. I'm hoping you will highlight any language that screams "liberal drive!" and suggest ways of incorporating language that resonate with conservative values, such as accountability.

Thanks,

Ed

Edward Maibach, MPH, PhD

University Professor, Department of Communication
Director, Center for Climate Change Communication
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From: [Edward W Maibach](#)
To: [Jean Sideris](#)
Cc: [Edward W Maibach](#)
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Wednesday, July 29, 2015 4:54:02 PM

Hi Jean,

One of my E&EI/republicEN colleagues suggested:

Ed, I'd delete the civilization claim...civilization didn't thrive "due to" stability. Maybe it wasn't prevented by instability. But that's different. Don't turn climate into God.

I suspect that is good counsel.

All the best,

Ed

Edward Maibach, MPH, PhD
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From: Edward W Maibach
Sent: Wednesday, July 29, 2015 3:15 PM
To: Jean Sideris
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Jean,

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Shukla has forwarded the current draft to several dozen of his closest climate science associates around the country to see if they are willing to sign on. If getting additional signatures is something UCS can help us with, then we can take whatever amount of time is necessary to get signatories in every possible Congressional district. If we are left to our own devices -- i.e., if we don't have coordination assistance from UCS -- we will likely aim a bit lower and get the letter out the door a bit faster. Personally, I would love to get a clean sweep...at least one signature from every Congressional district, because I think that would attract considerable media attention.

Shukla and I are open to suggested edits. I too was planning on making an edit or two - to add more language about "accountability" which is a strong conservative value.

All the best,

Ed

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From: Jean Sideris <JSideris@ucsusa.org>
Sent: Wednesday, July 29, 2015 2:50 PM
To: Edward W Maibach
Subject: RE: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Ed-

Nancy forwarded this on. Great idea and thanks for reaching out to us! We are reviewing the letter internally and will get you a response soon, just need to run it through the traps on our end. Few questions for you. What's your timing? If we had some suggested edits to the letter would you be open to it? I'll be in touch as soon as I can get you a definite response.

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From: Edward W Maibach [<mailto:emaibach@gmu.edu>]

Sent: Monday, July 27, 2015 10:36 AM
To: Nancy Cole
Cc: Aaron Huertas; Alden Meyer
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

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From: [Edward W Maibach](#)
To: [Jagadish Shukla](#)
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Wednesday, July 29, 2015 4:54:42 PM

Hi Shukla,

UCS is still considering our request....see below.

All the best,

Ed

Edward Maibach, MPH, PhD
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Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Edward W Maibach
Sent: Wednesday, July 29, 2015 4:54 PM
To: Jean Sideris
Cc: Edward W Maibach
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

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Climate Campaign Manager
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| Join the conversation on our [blog](#) or follow us on [Facebook](#) and [Twitter](#).

From: Edward W Maibach [<mailto:emaibach@gmu.edu>]
Sent: Monday, July 27, 2015 10:36 AM
To: Nancy Cole
Cc: Aaron Huertas; Alden Meyer
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

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All the best,

Ed

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From: [Edward W Maibach](#)
To: [Peter Frumhoff](#)
Subject: Re: of possible interest
Date: Friday, July 31, 2015 2:40:52 PM

Hi Peter,

Thanks for sharing this article, and congratulations on its publication.

Are you aware that UCS is considering my request for logistical support on a letter to the POTUS and AG in support of Senator Whitehouse's call for a RICO investigation? My colleague J. Shukla and I hope to get at least one co-signer from the climate science community in every one of the 435 congressional districts so that we can cc the letter to every member of Congress in both houses.

All the best,

Ed

Edward Maibach, MPH, PhD
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Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Peter Frumhoff <PFrumhoff@ucsusa.org>
Sent: Friday, July 31, 2015 1:08 PM
To: Edward W Maibach
Subject: of possible interest

Attached is a new paper in Climatic Change making the case for holding companies accountable.

Look forward to crossing paths soon,

All best,

Peter

From: [Edward W Maibach](#)
To: [Peter Frumhoff](#)
Cc: [Nancy Cole](#); [Alden Meyer](#); [Aaron Huertas](#); [Jagadish Shukla](#)
Bcc: [Rob Gould](#)
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Friday, July 31, 2015 3:00:46 PM

Hi Peter,

Thanks for closing the loop with me so quickly.

Shukla has been consulting with lawyers so it is possible that -- with their input -- we too may decide that Senator Whitehouse's proposal is not viable. We'll let you know what we decide to do.

Regardless, our real intent is to rally the climate science community around useful proposals -- focused on solutions, and on removal of barriers. Please keep us in the loop on your plans to promote accountability in the fossil fuel industry, as we would like to be of service. I would be delighted to get involved in assessing (and helping to shape) public opinion on this issue. I am confident that a concerted "truth" campaign can generate public indignation over the deceptions sponsored by the fossil fuel industry.

BTW: My dear friend Rob Gould -- former GM of Porter Novelli's DC office, and one of the creators of the highly successful "truth" teen anti-tobacco campaign -- would surely enjoy brainstorming with us about how to mount a similar trust campaign aimed at fossil fuel companies.

All the best,

Ed

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e o

From: Peter Frumhoff <PFrumhoff@ucsusa.org>
Sent: Friday, July 31, 2015 1:03 PM
To: Edward W Maibach

Cc: Nancy Cole; Alden Meyer; Aaron Huertas

Subject: FW: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Ed,

I'm following up on the scientists letter proposal that you shared with Nancy and Alden earlier this week to let you know that (1) it prompted a lot of discussion among our staff, including with UCS president Ken Kimmell and (2) after taking a close look, we've decided to not pursue this opportunity with you.

Here's why: In reaching out to climate scientists to sign on, we feel that we'd need to give them some firmer grounding for believing that a federal investigation under the RICO statute is warranted - enough so that they'd be able to explain their rationale for signing on to reporters and others. As you know, deception/disinformation isn't itself a basis for criminal prosecution under RICO. We don't think that Sen Whitehouse's call gives enough of a basis for scientists to sign on to this as a solid approach at this point.

Just so you know, we're also in the process of exploring other state-based approaches to holding fossil fuel companies legally accountable - we think there'll likely be a strong basis for encouraging state (e.g. AG) action forward and, in that context, opportunities for climate scientists to weigh in. It would be interesting - and perhaps very useful - to consider how calls for legal accountability will play out in the court of public opinion in different states/with different subsets of the American public - something perhaps we could work with you all on as this unfolds.

So, I am sorry to decline this particular opportunity. Thanks for proposing this and please keep us in the loop on how this plays out.

Thanks, Ed.

All best,

Peter

Peter C. Frumhoff Ph.D.
Director of Science and Policy
Chief Scientist, Climate Campaign
Union of Concerned Scientists
Cambridge MA
617.301.8035
@peterfrumhoff

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All the best,

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www.climatechangecommunication.org

From: [Edward W Maibach](#)
To: [Peter Frumhoff](#)
Subject: Re: of possible interest
Date: Friday, July 31, 2015 3:01:10 PM
Attachments: OutlookEmoji.png

My bad. Reading emails out of order. 😊

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Peter Frumhoff <PFrumhoff@ucsusa.org>
Sent: Friday, July 31, 2015 2:56 PM
To: Edward W Maibach
Subject: RE: of possible interest

I am – and sent you a separate email with a response to that request.

I'm hoping it came through but if not I can resend.

All best,

Peter

From: Edward W Maibach [<mailto:emaibach@gmu.edu>]
Sent: Friday, July 31, 2015 2:41 PM
To: Peter Frumhoff
Subject: Re: of possible interest

Hi Peter,

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All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Peter Frumhoff <PFrumhoff@ucsusa.org>

Sent: Friday, July 31, 2015 1:08 PM

To: Edward W Maibach

Subject: of possible interest

Attached is a new paper in Climatic Change making the case for holding companies accountable.

Look forward to crossing paths soon,

All best,

Peter

From: Edward W Maibach
To: Jagadish Shukla
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry
Date: Friday, July 31, 2015 5:25:04 PM

Perhaps it would be best if we first found a lawyer with RICO experience to give us an independent opinion on the basis -- or lack thereof -- of a RICO investigation. If there really is no basis, then I feel we would be unwise to engage other scientists in recommending a baseless action.

Do you know anyone with RICO experience?

Sent from my iGlasses

On Jul 31, 2015, at 5:05 PM, Jagadish Shukla <jshukla@gmu.edu> wrote:

Thanks Ed for copying me on this email exchange. I will send our draft to about 100 climate scientists in academia whom I know reasonably well. Will contact you after I have received the first batch of responses.

Regards,
Shukla

University Professor, George Mason University
President, Institute of Global Environment & Society
Research Hall, Room 105
George Mason University, MSN: 2B3
4400 University Drive
Fairfax, VA 22030 USA

Tel: 703-993-5700
E-mail: shukla@iges.org
<http://www.iges.org/>

On Jul 31, 2015, at 3:00 PM, Edward W Maibach <emaibach@gmu.edu> wrote:

Hi Peter,

Thanks for closing the loop with me so quickly.

Shukla has been consulting with lawyers so it is possible that -- with their input -- we too may decide that Senator Whitehouse's proposal is not viable. We'll let you know what we decide to do.

Regardless, our real intent is to rally the climate science community around useful proposals -- focused on solutions, and on removal of barriers. Please keep us in the loop on your plans to promote accountability in the fossil fuel industry, as we would like to be of service. I would be delighted to get involved in

assessing (and helping to shape) public opinion on this issue. I am confident that a concerted "truth" campaign can generate public indignation over the deceptions sponsored by the fossil fuel industry.

BTW: My dear friend Rob Gould -- former GM of Porter Novelli's DC office, and one of the creators of the highly successful "truth" teen anti-tobacco campaign -- would surely enjoy brainstorming with us about how to mount a similar trust campaign aimed at fossil fuel companies.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

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From: Peter Frumhoff <PFrumhoff@ucsusa.org>
Sent: Friday, July 31, 2015 1:03 PM
To: Edward W Maibach

Cc: Nancy Cole; Alden Meyer; Aaron Huertas

Subject: FW: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Ed,

I'm following up on the scientists letter proposal that you shared with Nancy and Alden earlier this week to let you know that (1) it prompted a lot of discussion among our staff, including with UCS president Ken Kimmell and (2) after taking a close look, we've decided to not pursue this opportunity with you.

Here's why: In reaching out to climate scientists to sign on, we feel that we'd need to give them some firmer grounding for believing that a federal investigation under the RICO statute is warranted - enough so that they'd be able to explain their rationale for signing on to reporters and others. As you know, deception/disinformation isn't itself a basis for criminal prosecution under RICO. We don't think that Sen Whitehouse's call gives enough of a basis for scientists to sign on to this as a solid approach at this point.

Just so you know, we're also in the process of exploring other state-based approaches to holding fossil fuel companies legally accountable - we think there'll likely be a strong basis for encouraging state (e.g. AG) action forward and, in that context, opportunities for climate scientists to weigh in. It would be interesting - and perhaps very useful - to consider how calls for legal accountability will play out in the court of public opinion in different states/with different subsets of the American public - something perhaps we could work with you all on as this unfolds.

So, I am sorry to decline this particular opportunity. Thanks for proposing this and please keep us in the loop on how this plays out.

Thanks, Ed.

All best,

Peter

Peter C. Frumhoff Ph.D.
Director of Science and Policy
Chief Scientist, Climate Campaign

Union of Concerned Scientists
Cambridge MA
617.301.8035
@peterfrumhoff

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From: Edward W Maibach [<mailto:emaibach@gmu.edu>]
Sent: Monday, July 27, 2015 10:36 AM
To: Nancy Cole
Cc: Aaron Huertas; Alden Meyer
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Alden and Nancy,

Jagadish Shukla -- Mason's most senior climate scientist -- and I are planning on sending a letter to the POTUS and AG (with a cc to our members of Congress) to encourage them to act on Senator Whitehouse's proposal. We can easily get a couple of dozen additional climate scientists to co-sign (with a cc to all of their members of Congress too).

With a bit of extra work -- and this is why I am writing you -- perhaps we could get at least one climate scientist from all 435 congressional districts to co-sign the letter, which would allow us to cc every member of Congress (and would become a big media story).

Can UCS help us with this?

A draft of the letter is attached (although Shukla is going to make a few small edits this morning).

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Edward W Maibach
To: Tony Biglan
Subject: Re: a question
Date: Thursday, August 27, 2015 3:57:36 PM
Attachments: [Scheufele \(2013\) Communicating science in social settings.pdf](#)
[Lupia \(2013\) Communicating science in politicized environments.pdf](#)
[Scheufele \(2014\) Science Comm as Pol Comm.pdf](#)

Hi Tony,

I should be an expert on that topic, but regrettably I'm not. Here are a few items that speak to the issue, more or less.

<http://onlinelibrary.wiley.com/doi/10.1111/jcc4.12009/full>

I hope this helps.

All the best,

Ed

p.s. How are book sales? More importantly, is it having an impact?

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Tony Biglan <tony@ori.org>
Sent: Thursday, August 27, 2015 12:38 PM
To: Edward W Maibach
Subject: a question

Hi,

I hope you noticed that I tweeted about the piece that described your research. I have gotten quite interested in climate change and what can be done about it. I will be writing more about.

But today's question is about the impact of negative, argumentative public discussion in turning people away from civic engagement. I wrote the following, but then began to search for evidence on it and was surprised to be unable to find evidence consistent with it?

You are the expert. Can you enlighten me?

When I was President of the ACLU of Oregon in the early 1990's we had data showing that if we sent a letter (that's right on paper...through the mail) to people who might be sympathetic to the ACLU and got more than six percent of the recipients to join the organization, we would pay for the mailing. The messages we used were invariably ones about a threat to something recipients might feel was important. For example, abortion rights was an issue that reliably prompted people to join ACLU. So in our mailings we emphasized the threat to this right and what we were doing to protect it.

Of course on the other side, were organizations against abortion that were reaching out to people opposed to it. They would emphasize the harm to "unborn children" to motivate people to join and give money to their cause.

Now a ten percent return on a letter was considered fabulous. But what about the 90% who didn't join? What effect did our missive have on them? We never considered it and so we never assessed it. But I suspect that it made many of those people feel threatened and angry. One of the things you can do when you feel threatened is turn away from the source of threat. I think our mailings and those of the "other side" turned many people away from civic discourse.

Fast forward to today's mass media. On the right we have Fox News. On the left, MSNBC. Now I think that Fox is enormously inaccurate and harmful to the development of good public policy.

And I watch Rachel Maddow. So you have a pretty good idea where my politics are.

But the business model of each of these channels is the exactly the same: Feed your audience a steady stream of news about the outrageous things the "other side" is doing and you will keep your audience attending. Neither channel reaches a large audience. The three major news networks (ABC, CBS, and NBC) average a combined audience of more than 20 million, while Fox has less than 2 million viewers and MSNBC less than a million. But a steady diet of the outrageous things "those people" are doing, keeps a small and threatened group of people mesmerized and reaps profits for these stations.

Warm regards,

Tony

Anthony Biglan, Ph.D.
Senior Scientist
Oregon Research Institute
1776 Millrace Drive
Eugene, OR 97403-2536
Phone: 541-484-2123
Cell: 541-953-0002
The Nurture Effect: www.nurtureeffect.com
Follow me on Twitter @ABiglan

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How *the* Science of
Human Behavior
Can Improve
Our Lives & Our World



ANTHONY BIGLAN, PhD

with contributions by **STEVEN C. HAYES, PhD**

in consultation with **DAVID SLOAN WILSON, PhD**

Communicating science in social settings

Dietram A. Scheufele¹

Department of Life Sciences Communication, College of Agricultural and Life Sciences, University of Wisconsin, Madison, WI 53706

Edited by Baruch Fischhoff, Carnegie Mellon University, Pittsburgh, PA, and accepted by the Editorial Board July 1, 2013 (received for review April 29, 2013)

This essay examines the societal dynamics surrounding modern science. It first discusses a number of challenges facing any effort to communicate science in social environments: lay publics with varying levels of preparedness for fully understanding new scientific breakthroughs; the deterioration of traditional media infrastructures; and an increasingly complex set of emerging technologies that are surrounded by a host of ethical, legal, and social considerations. Based on this overview, I discuss four areas in which empirical social science helps clarify intuitive but sometimes faulty assumptions about the social-level mechanisms of science communication and outline an agenda for bench and social scientists—driven by current social-scientific research in the field of science communication—to guide more effective communication efforts at the societal level in the future.

public opinion | mass media | journalism | communication theory

In 1999, Cornell entomologist John Losey and colleagues (1) published a Scientific Correspondence in the journal *Nature* outlining results from laboratory studies that suggested that *Bacillus thuringiensis* (Bt)-transgenic corn might have harmful effects on Monarch butterfly larvae. The report triggered an intense academic debate, including criticism from some of Losey's own colleagues at Cornell, who raised methodological concerns about the generalizability of laboratory-based findings (2). Other criticisms focused on the fact that an earlier version had been rejected as a research article by the journal *Science* (3) and was now being published as a Correspondence piece in *Nature* after potentially much less rigorous peer review (4).

This technical debate among a small group of specialized scientists was largely glossed over by the news outlets covering the *Nature* piece. Instead, *USA Today's* front page made the sweeping announcement that “Engineered corn kills butterflies” (5), and the *Washington Post* pitted “biotech” researchers against the monarch butterfly—the “Bambi” of insects.” (6)

This disconnect between scientific discourse and public debate highlights two important points about the societal dynamics surrounding science communication. First, communication disconnects between science and the public can have immense impacts on markets and policy debates. In fact, a number of scientists argued that the media debate about Bt corn had done irreparable damage to the emerging scientific field of genetic engineering: “[I]mmediately after publication of the *Nature* correspondence, there was a nearly 10% drop in the value of Monsanto stock, possible trade restrictions by Japan, freezes on the approval process for Bt-transgenic corn by the European Commission (Brussels), and calls for a moratorium on further planting of Bt-corn in the United States” (2).

Second, the way new technologies or scientific breakthroughs are communicated in social settings is at least as important as the scientific content that is being conveyed when lay audiences interpret new technologies or make decisions about public funding for science.

The success of Greenpeace's “Frankenfood” campaign is a good illustration. The campaign invoked the imagery of Frankenstein's monster by inventing “Tony the Frankentiger” as a fictitious spokesperson for genetically modified foods—or Frankenfoods, for short. Hearing the term Frankenfood likely triggers a series of socially and culturally shared interpretive

schemas in an audience member's head, ranging from “playing god” to “runaway science” and the notion of “unnatural, artificial” food (7). And the use of metaphors or allegories by journalists, such as the “Bambi” of insects” headline in the *Washington Post* article, plays to similar culturally shared imagery.

Unfortunately, some of the public statements made by scientists during the Bt corn debate also demonstrated how difficult it can be for scientists to present their work in ways that resonate with lay audiences. When pressed by a journalist about the impacts of Bt-transgenic corn on larvae of monarch butterflies, for example, Cornell entomologist Tony Shelton dismissed the concerns by asking, “[H]ow many monarchs get killed on the windshield of a car?” (as cited in ref. 8). This highly publicized statement unintentionally distilled two competing metaphors: the beloved monarch butterfly (or the “Bambi” of butterflies), on the one hand, and the image of a heartless scientist, on the other hand, who is not concerned at all about the impacts that his or her work has on society.

This paper explores some of the societal complexities that surround science communication, especially during controversies such as the Bt corn debate: an inattentive public, increasingly complex and fast-moving scientific developments, and the decline of science journalism in traditional news outlets. Based on this overview, I outline four areas in which empirical social science has helped clarify sometimes faulty intuitive assumptions about the mechanisms of science communication in societal contexts. I will close with a set of recommendations about building and sustaining better science–society interfaces in the future.

Science in Modern Communication Environments

Disconnects between science and the societal environment within which it operates, of course, are not new. The Roman Inquisition's prosecution of Galileo Galilei was probably one of the earliest run-ins that modern science had with the values, beliefs, and social norms of its time. In modern democracies, of course, the public plays a central role in determining how science is funded, used, and regulated. This democratic decision making about regulatory and funding infrastructures for science can pose challenges for some issues, such as evolution, where public acceptance lags far behind scientific consensus (9). However, public engagement can also serve as an important regulatory mechanism in instances when scientific recommendations may not serve the larger public good (10). All of these dynamics are indicative of political and social environments that—at least in their current constellation—create new sets of challenges when it comes to the societal debates surrounding complex and sometimes controversial science. Three challenges are particularly worth highlighting.

This paper results from the Arthur M. Sackler Colloquium of the National Academy of Sciences, “The Science of Science Communication,” held May 21–22, 2012, at the National Academy of Sciences in Washington, DC. The complete program and audio files of most presentations are available on the NAS Web site at www.nasonline.org/science-communication.

Author contributions: D.A.S. wrote the paper.

The author declares no conflict of interest.

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¹E-mail: scheufele@gmail.com.

Preparedness for New Scientific Information. The first challenge relates to a US citizenry that is not as accepting of scientific facts as other nations. Comparative surveys in Europe and the United States, for example, show that “one in three American adults firmly rejects the concept of evolution, a significantly higher proportion than found in any western European country” (9). Data on levels of information about science show similar patterns.

Since 1979, the National Science Board has conducted bi-annual trend surveys that have tracked, among other variables, knowledge levels, understanding, and attitudes toward science among the American public. Known as the “Science and Engineering Indicators,” these surveys show that levels of knowledge of basic scientific facts among the American public have traditionally been quite low. Between 1992 and 2010, the dates for which comparable data were collected, knowledge levels have stayed fairly stable, with US adults being able to answer an average of 59% of factual knowledge questions correctly in 1992 and 63% in 2010 (11). Respondents were asked whether the earth goes around the sun or vice versa, which 73% of respondents were able to answer correctly, and how long it takes for the earth to go around the sun (only asked for people who answered the previous question correctly). Sixty-three percent of respondents answered the second question correctly.

Some scholars have rightfully pointed out that the ability to answer factual questions about scientific topics may not be the best indicator of what lay publics can realistically be expected to know or normatively should know about emerging science (12). However, results from the same survey show that a lack of scientific understanding among many members of the US public goes beyond factual recall. Many members of the public lack the ability to differentiate a sound scientific study from a poorly conducted one and to understand the scientific process more broadly. In the most recent iteration of the Science and Engineering Indicators survey, for example, only two thirds of respondents (66%) had a correct understanding of the concept of probability, 51% were able to pick the correct definition of an experiment, and only 18% could correctly describe the components of a scientific study (11).

Nature of Modern Science. The lack of scientific literacy among nonexpert publics and their limited frameworks for processing new scientific information are of particular concern, given the scientific and policy uncertainties surrounding many areas of emerging science. In fact, we live in a world of what some have called postnormal science, i.e., technologies and scientific breakthroughs for which scientific “facts are uncertain, values in dispute, stakes high and decisions urgent” (13).

Nanotechnology is just one recent example of postnormal science. The technology involves the observation and modification of materials at the scale of 1–100 nanometers, with a nanometer being a billionth of a meter. Although well over 1,500 nano-based applications are available on the consumer end market today, ranging from cosmetics to automobile products, sporting goods, and foods (14), a recent National Research Council report raised serious concerns about the ongoing uncertainties surrounding engineered nanomaterials. In fact, the report implicitly describes nanotechnology as an example of postnormal science, i.e., a technology that is characterized by significant scientific uncertainties and high-stakes, urgent policy choices: “Despite some progress in assessing research needs and in funding and conducting research,” the report states, “developers, regulators, and consumers of nanotechnology-enabled products remain uncertain about the variety and quantity of nanomaterials in commerce or in development, their possible applications, and any potential risks” (15).

However, nanotechnology is only one part of what has been described as a broader Nano-Bio-Info-Cogno (NBIC) convergence across scientific disciplines (16). This NBIC convergence

involves rapidly emerging intersections among fields, such as biology, nanotechnology, or information science. In addition to the scientific complexities surrounding each of their components, NBIC technologies also confront nonexpert publics with an increasingly complex set of decisions about the ethical, legal, and social implications (ELSI) of emerging interdisciplinary research areas, such as Big Data or synthetic biology, but also political programs, such as President Obama’s recent initiative to invent and refine new technologies to understand the human brain.

Given their rapid development and transdisciplinary nature, emerging NBIC technologies have the potential to further complicate the challenges that postnormal science poses for lay audiences (17). The scientific uncertainties surrounding the toxicity of novel nanomaterials, the value-based debates around the potential creation of artificial life in the laboratory, or the urgency of developing policy frameworks for patenting naturally occurring and synthetic human genes are just a few recent examples.

Crumbling Science–Public Infrastructures. A third challenge relates to the rapid decline of traditional infrastructures for bridging public–science divides. We are in the midst of a tectonic transformation of our traditional media infrastructures and many of the sources for science news that nonexpert audiences have traditionally relied on. Many of these shifts are discussed in greater detail in Dominique Brossard’s article in this colloquium issue (18), but three overall trends are worth highlighting in the context of this broader overview.

A first trend relates to shrinking audiences for traditional print and broadcast media, especially for news about science and technology. Recent studies have shown significant shifts among audiences away from traditional news (mostly television and newspapers) as primary sources for scientific information and toward news diets that are heavily supplemented by or rely exclusively on online sources as the primary source for scientific information. Most of this development is due to cohort shifts, especially among younger audiences, who are growing up without news diets dominated by print newspapers or television and are therefore significantly more likely to develop news use habits based on online-only sources for science news or at least to supplement use of traditional outlets with online sources (11, 19).

In fact, the most recent set of Science and Engineering Indicators data—collected in 2010—marked the first time that Americans were about equally likely to rely on the Internet (35%) and on television (34%) as their primary source for news about science and technology. These results mark an increase of about 6% for the Internet and a drop of about 5% for television from 2 y earlier. The increasing importance of the Internet as an everyday source of information becomes even clearer when Americans are asked where they turn when wanting to “learn about scientific issues such as global warming or biotechnology.” Almost two thirds (59%) of Americans cite the Internet as their primary source, with television coming in a distant second at 15% (11).

It is difficult to disentangle, of course, whether audiences increasingly migrate to online channels in response to traditional outlets offering less science-related content or vice versa. What is clear, however, is that audience shifts for science and technology news have coincided with a second trend: the shrinking size of news holes devoted to science and technology. The amount of news available in traditional news outlets is not just a problem affecting science and technology news. News holes in general, i.e., the number of column inches devoted to news in print or the time available for news on television, are shrinking. *Newsweek*, for example, published its final print issue in December 2012, and even bigger daily newspapers, such as the *Detroit Free Press*, have reduced home delivery to three issues a week (20). Some global outlets, such as *The Economist*, and national papers in countries, such as Germany, have been less affected by these

trends but have also supplemented their print editions with paywalled online and mobile editions. Most newspapers that do continue to publish print editions, however, have had to severely cut back on the amount of science and technology related news they are able to print. In 1989, for example, 95 newspapers had weekly science sections. This number dropped to 34 science sections in 2005 and—this year—is down to only 19 newspapers who still publish weekly science sections (21).

The deterioration of traditional media infrastructures also contributes to a third trend: the disappearance of trained science journalists in traditional newsrooms. This trend has affected television outlets, such as CNN, who in 2008 cut its entire science, technology, and environment news staff, including Miles O'Brien, its chief technology and environment correspondent (22), but also print newspapers, such as *The New York Times*, who earlier this year dismantled their environmental desk and reassigned their seven reporters and two editors to other sections of the newspaper (23).

The trend among many media organizations to no longer use (full-time) science journalists raises a series of concerns, given the important roles that these journalists have traditionally played as translators of complex scientific phenomena into formats that attract interest and are easily digestible by nonexpert audiences. The dwindling numbers of full-time science journalists is particularly problematic for issues, such as nanotechnology, that combine complex basic research, high levels of scientific uncertainty, and multifaceted policy dilemmas.

A recent content analysis of over 20 y of newspaper coverage of nanotechnology in the United States, for instance, examined the proportion of journalists who wrote regularly about the issue during this time period (24). Among the 656 journalists in the sample, only about 6% (38 journalists) had written at least six articles over the roughly 20-y time period the study covered, and only about 1% (7 journalists) had written 25 articles. Almost three in four (70%) journalists identified in the study had written only one nanotechnology article over the roughly 20-y time period analyzed.

Two aspects of these findings warrant particular attention. First, the vast majority of articles on emerging technologies are written by reporters whose primary responsibilities do not involve scientific topics, including fashion editors running stories on nano-based cosmetics, or sports writers summarizing the latest nano materials used for tennis rackets or downhill skis. Second, even the seven most prolific writers in the area of nanotechnology only averaged a little over one story per year. This number illustrates how small a proportion of the news hole is occupied by scientific breakthroughs, such as nanotechnology. As of today, two of the seven most prolific science journalists identified by the study—the *Washington Post's* Rick Weiss and the *New York Times's* Barnaby Feder—no longer work as science journalists.

Science–Public Interfaces: Intuition vs. Social Science

Ralph Cicerone, President of the National Academy of Sciences, identified many of these problems facing the science–public interface in an editorial back in 2006. Disappearing news holes for science and the thinning ranks of science journalists led him to attribute some responsibility for bridging science–public divides to scientists themselves who—he argued—“must do a better job of communicating directly to the public” (25). In a 2007 keynote address at the annual meeting of the American Association for the Advancement of Science (AAAS), Google cofounder Larry Page echoed those arguments and bluntly accused science of having a “serious marketing problem” (26).

However, the notion of scientists at least partially filling the void left by traditional news outlets comes with its own set of potential pitfalls. First, the structure and rewards systems of academic research institutions are not particularly conducive to encouraging bench scientists and engineers to engage with nonexpert

publics (27, 28). In fact, university tenure and promotion guidelines more often reward securing extramural research funding and publishing in high-impact journals than they promote public scholarship and communication with nonexpert publics. One of Larry Page's suggestion in his AAAS keynote was therefore to directly tie the awarding of tenure and grant money to the media impact of that a scientist's research program has.

Regardless of the likelihood of academic reward structures changing in the short term, Page's idea highlights a second complexity of scientists directly engaging with the public: their scientific training and the internalized norms about communicating within their peer communities that result from it. As part of their socialization into the field of science, young scholars are trained to analyze, present, and communicate scientific data to their scientific peers in ways that overcome all of the shortcomings of subjective human inquiry and lay communication (29). As a result, the very same conventions and skill sets that are invaluable for publications in peer-reviewed journals and proposals for extramural research grants become potential liabilities when it comes to scientists communicating with nonexpert audiences whose cognitive frameworks and communication patterns are directly at odds with many of these scientific conventions.

As a result, AAAS, the National Science Foundation, and many universities have begun to implement various practical training programs to teach science, technology, engineering, and math (STEM) scientists how to interact with journalists or other nonacademic audiences. These programs tend to be taught by practitioners and focus on establishing best practices among scientists for interacting with lay audiences or journalists and typically build little capacity for long-term or short-term empirical evaluations of the outcomes of these ad hoc communication efforts. Although these efforts to build practical day-to-day communication skills are laudable, they do not address a third complexity related to scientists engaging in communication with nonexpert publics: lack of interaction between bench scientists and engineers, on the one hand, and social scientists, on the other. As a result, efforts to bridge science–public disconnects are often less informed than they could be by the large body of research on the individual-level mechanisms underlying human decision making about science, the communication dynamics surrounding emerging technologies at both the group and societal level, and the impacts that the various interfaces between mass media, political stakeholders, and the scientific enterprise can have on public opinion.

A Few Areas That Require Us to Rethink Our Assumptions— and the Empirical Social Science That Tells Us Why

The May 2012 Sackler Colloquium that this special issue is based on provided a first attempt to provide an overview of this research and to establish a more formal exchange among social scientists, bench scientists, and engineers. To contextualize and highlight the importance of the various review articles in this colloquium issue, I will discuss four areas in which systematic input from the social sciences will be particularly useful for building and sustaining more effective science–public interfaces. Each of the four areas originates from assumptions that make a lot of intuitive sense but are often not supported by empirical social science.

Assumption 1: Knowledge Deficits Are Responsible for a Lack of Public Support of Science. Many efforts to build bridges between science and nonexpert audiences have focused on what have been labeled “knowledge deficit models” (30, 31). Reinforced by a number of government reports in Europe and the United States in the 1980s and 1990s, knowledge deficit models attribute a lack of public support for emerging technologies to insufficient information (or a knowledge deficit) among nonexpert publics. Effective communication, based on this logic, is about explaining the science better or to “selling science,” as Dorothy Nelkin

called it, to ultimately build public support for the scientific enterprise (32). Aside from the obvious normative concerns about scientists engaging in the “selling” or “marketing” of science, however, results from empirical studies raise at least two concerns about the usefulness of knowledge deficit models, more broadly.

First, empirical support for the statistical relationship between levels of information among nonexpert publics and their attitudes toward scientific issues is mixed at best. Over time, different researchers found that levels of knowledge can lead to more positive public attitudes toward science or undermine support for science, depending on the particular scientific issue people were debating. In fact, for controversial science topics the relationship between literacy and attitudes approaches zero (33). The most recent updates on this literature suggest that—regardless of issue—the relationship disappears or is significantly weakened after we control for factors such as deference toward scientific authority, trust in scientists, issue involvement (28), and levels of knowledge surrounding the political infrastructures in which science is debated (31).

I do not mean to suggest that higher levels of scientific knowledge among the general public are not inherently desirable and that both informal and formal science education efforts are not crucially important for contributing to a more informed citizenry. Previous research does not support the notion, however, that increasing public understanding will also lead to more public “buy-in” for science.

A second concern relates to the potential unintended consequences of narrowly promoting (informal) learning as an outcome variable without taking into account the broader societal infrastructures in which learning takes place. One illustration is trends in attendance levels in science and technology museums, tracked in the Science and Engineering Indicators datasets. Between 2006 and 2008, for example, attendance in science and technology museums stagnated at around 8% among the least educated segment in the US population (respondents who did not finish high school). Attendance among the most highly educated segment (respondents with a BA degree or higher) increased from 37% in 2006 to 43% in 2008 (34, 35).

Given the complex interplay of influences on museum attendance over time, it is important not to overinterpret this finding by itself. It does suggest, however, that even the most well-intended efforts to inform the least-educated segments of citizens limit their potential reach unless they are based on empirical data on how to best reach these audiences. In fact, even among respondents with at least a college degree, attendance at least once a year was below 50% on average. Second, the data also show a widening attendance gap between 2006 and 2008, with the least-educated segment staying at 8% and the most highly educated segment increasing attendance by about six percentage points.

Education-based gaps in knowledge are a phenomenon that communication researchers have been studying in the fields of health and political communication since the 1970s under the label “knowledge gaps.” When tracking the dissemination and adoption of health information in communities over time, scholars noticed that, “[a]s the infusion of mass media information into a social system increases, segments of the population with higher socioeconomic status tend to acquire this information at a faster rate than the lower status segments, so that the gap in knowledge between these segments tends to increase rather than decrease” (36). In other words, highly educated people are able to extract information they receive from museums, media, or other informational sources more efficiently and therefore learn more quickly than their less-educated counterparts.

And national surveys tracking the US public’s factual knowledge on nanotechnology show patterns directly consistent with knowledge gap phenomena. Although many researchers have bemoaned low and stagnant levels of awareness and knowledge

about nanotechnology over time (37–39), recent analyses show that empirical patterns are more complex. In particular, as more and more nanotechnology-based products have arrived on the consumer end market and agencies such as the Food and Drug Administration and Environmental Protection Agency have struggled with developing adequate regulatory models, knowledge levels about nanotechnology, measured as the number of correct responses on a true/false knowledge scale, increased somewhat among the most highly educated segment of the population. Among the least-educated segment, however, knowledge levels dropped, effectively producing a widening informational gap between the already information rich and the information poor (40).

These findings highlight the pitfalls of assuming that simply making scientific information widely available through museums, Web sites, and other tools will attract audiences equally across sociodemographic strata. These results also reinforce the need for scientists and policy makers to understand the large body of literature and empirical findings surrounding the dissemination and uptake of scientific information in different social structures.

Assumption 2: Declining Levels of Trust Threaten Public Support for Science. A second assumption is based on the important role that public trust in science can play in shaping public attitudes about specific emerging technologies. Levels of trust in scientists and the scientific enterprise have long been shown to be associated with more positive attitudes toward specific technologies (41, 42). More recently, concerns have been raised about potential partisan divides in the United States with respect to confidence in the scientific enterprise. In fact, data from the General Social Survey (GSS) show a widening rift in confidence between Republicans, who showed a significant decline in confidence in science since 1974, and Democrats, whose levels of confidence on average have increased since 1974 (43). However, a more careful look across different studies in communication and political science shows that this phenomenon may be neither surprising nor particularly disconcerting.

First, a recent national survey tracking US opinions on climate change showed that frequent users of partisan media were also more polarized along ideological lines with respect to trust in scientists as information sources. In particular, respondents who regularly turned to *Fox News* and *The Rush Limbaugh Show* were significantly less likely to trust scientists as a source of information about global warming. In contrast, frequent audiences of CNN, MSNBC, National Public Radio, and network news were significantly more likely to trust scientists as information sources of climate change (44). This pattern, of course, directly parallels the widening gaps between liberals and conservatives observed in the GSS data.

And the fact that partisan news outlets (re)shape and polarize confidence in institutions on both sides of the political aisle is not particularly surprising, given the increasingly fragmented news environment in the United States that maximizes profits by tailoring news toward highly partisan audiences (45). Or, as MSNBC talk show host Rachel Maddow put it in a lecture at Harvard: “Opinion-driven media makes the money that politically neutral media loses” (46). For partisan media to attract likeminded audiences and further polarize their perceptions for highly politicized scientific issues, such as climate change or embryonic stem cell research, is therefore not an unintended consequence of this new type of journalism. It is part of its business model.

Second, despite this media-driven polarization, levels of trust in science among the general public have remained fairly stable. In fact, national surveys show that, even for postnormal scientific issues, such as nanotechnology, university scientists remain among the most trusted sources of information, ahead of industry scientists, consumer organizations, regulatory agencies, and news media (47).

In addition, Fig. 1 shows a comparison of confidence in the people running different institutions, based on the same GSS datasets described earlier. The data plot only those respondents who have expressed “high” (as opposed to “some”) confidence in the people running each institution. The graphs in Fig. 1 show, on the one hand, that confidence in science has been fairly stable and even increasing slightly since the early 1990s, with temporary slumps after September 11, 2001 and the banking crash and subsequent recession of 2008. Religious organizations and the press are plotted for comparison purposes. Both institutions enjoy much lower levels of public confidence and—in the case of the press—a significant decline in confidence since the mid-1980s.

Third, a growing body of research suggests that temporary fluctuations in levels of trust or confidence, potentially driven by events like “Climategate” or highly politicized scientific debates surrounding vaccines, are less important in shaping attitudes than are more stable beliefs in what has been labeled the cultural authority of science (43) or deference toward scientific authority (48). Strongly correlated with formal education—both in general and in science-related fields—deference toward scientific authority represents the belief that the processes, norms, and structures of the scientific enterprise produce outcomes that are—by definition—in the broader public interest and superior to other form of systematic inquiry. As a stable predisposition toward science as an institution, deference toward scientific authority has been linked to more positive attitudes toward issues like nanotechnology, agricultural biotechnology, and stem cell research both directly (48–51) and indirectly through its influence on less stable dispositions, such as trust in scientists (48, 49).

Assumption 3: (Mass) Media’s Main Function Is to Inform the Public About Science. The important role that media can play in polarizing audience views on science already highlights the pitfalls of a third assumption: the idea that media’s role in public debates around science is primarily that of a conveyor of scientific information.

This is not to say that news media do not play a crucially important role as informational conduits between complex and often uncertain science, as described earlier, and a public who on average have little formal science training and a limited understanding of the scientific process. Unfortunately, however, only a small minority of the US public takes advantage of media as a conveyor of scientific information. The percentage of Americans who report paying “very close” attention to science and technology news, for example, has dropped from 22% in

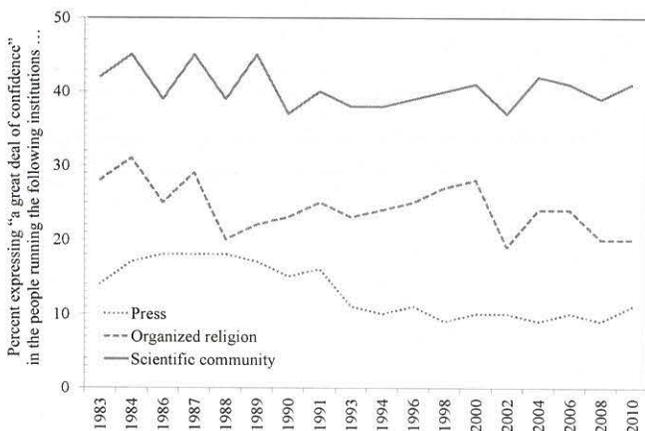


Fig. 1. Levels of confidence in US institutions over time. Note: Data are based on National Opinion Research Center in-person interviews with national adult samples, collected as part of a continuing series of social indicators since 1972.

1998 to just 13% in 2010 (11). That decline has gone hand in hand with less and less coverage of science by traditional media.

Some scholars argue that it makes rational sense for audiences to limit the amount of effort they invest in seeking and processing information about complex science. In political campaigns, this idea has often been referred to as low information rationality (52). The concept of low information rationality is based on the assumption that human beings are cognitive satisficers and minimize the economic costs of making decisions and forming attitudes. As undesirable as this behavior may be with respect to the ideal of an informed electorate, it is important to keep in mind that these patterns of information processing make perfect sense for citizens who have to deal with thousands of pieces of new information every day and need to establish patterns of doing so quickly and efficiently.

And the less expertise citizens have on an issue initially, the more likely they will be to rely on such shortcuts as imperfect rules for decision making. Examples include religious or ideological predispositions, other affective and emotional responses, such as perceptions of other people’s opinions or trust in scientists, and a variety of cues from mass media about how to interpret scientific issues (53). Many of the more individual-level shortcuts that help audiences make sense of scientific issues, even in the absence of information, will be discussed in other contributions to this colloquium issue. However, recent research has identified two particularly powerful shortcuts provided to nonexpert audiences by mass media when it comes to scientific issues: cultivation and framing.

Cultivation refers to the idea that entertainment media provide us with powerful long-term shortcuts about the societal realities surrounding us, especially for issues and phenomena we cannot observe directly. First introduced by George Gerbner, cultivation theory was based on the idea that media portrayals of social realities are both ubiquitous and consonant. For instance, audiences might be exposed to consistent images of older, white, male scientists, regardless of which media channel they turn to. Over time, Gerbner argued, these consonant portrayals across different channels “cultivate” particular world views.

Early empirical research on cultivation focused on correlations between people’s perceptions of the likelihood of their becoming the victim of a violent crime, for example, and the time they spent viewing entertainment television (54). Gerbner’s assumptions about the effect of television was based on the “mean world syndrome,” i.e., the idea that television inundates viewers with a stream of consonant portrayals of a violent world. As a result, frequent viewers are more likely to see the world as more dangerous than it really is.

Subsequent empirical work in the 1980s extended the idea of cultivation to the realm of science and highlighted the important role that media have in shaping attitudes toward science through entertainment programming, rather than by informing audiences. Gerbner and his team content-analyzed entertainment television programming to determine whether scientists were portrayed positively or negatively, how the proportion of positive and negative portrayals compared with the portrayals of other professions, and how these portrayals mapped onto people’s confidence in science (55, 56). Results show that scientists were shown in an overall positive light, but that the proportion of negative or quirky portrayals of scientists on television was nonetheless much higher than for other professions (56). As a result, frequent TV viewing was related to less favorable views toward science, especially among respondents whose education levels and other demographic characteristics made them initially more likely to support science (55).

Recent analyses of TV content have shown that scientists are portrayed in a much more positive light nowadays—even in comparison with other professions—than was the case during Gerbner’s earlier fieldwork (57). Despite these more positive

portrayals of scientists as a profession, however, surveys continue to show a negative link between frequent TV viewing and beliefs in the promise of science, even after controlling for potential sociodemographic confounds and other types of media use (58). More importantly, Gerbner's assumptions about the mechanisms behind cultivation continue to be highly relevant in a society in which most members of the public never have the opportunity to observe a laboratory scientist at work. However, many of us have a mental image of what a typical scientist looks like and how he or she thinks and acts. Those perceived realities continue to be cultivated by media and provide powerful heuristics when we make policy choices about new technologies or form judgments about how much we trust science as an institution.

And the lessons from this empirical work on cultivation for closing science–public divides continue to have applications today. More than 25 y ago, Gerbner wrote: “In an age when a single episode on prime-time television can reach more people than all science and technology promotional efforts put together, scientists must forget their aversion to the mass media and seek stronger ties with those who write, produce, and direct television news and entertainment programs” (55). Today, the National Academy of Sciences' collaboration with various directors and writers in Hollywood as part of the Science and Entertainment Exchange is just one example of an initiative that continues to capitalize on the mechanisms behind cultivation by connecting entertainment industry professionals with top scientists and engineers. The goal of this collaborative effort between science and media professionals is to create film and TV programming that combines engaging narratives and storylines with accurate portrayals of science.

The politicization of science has also given prominence to a second and more subtle model for media effects on science: framing (59). The term framing goes back to work in sociology (60) and psychology (61) in the 1970s and in cognitive linguistics in the 1980s (62) and assumes that all human perception is dependent on frames of reference that can be established by presenting information in particular way. Framing is therefore not concerned with presenting different types of information, but with how the same piece of information can be presented in different ways, and how these differences in presentation can influence how well the message resonates with an underlying cognitive schema (63).

Framing effects are particularly relevant for ambiguous stimuli, i.e., issues or objects that can be interpreted in different ways (64). And, for nonexpert audiences, many emerging technologies are the equivalent of an ambiguous stimulus, especially when they involve preliminary findings or a scientific controversy about the validity of research findings (7). As a result, the terminology or imagery that is being used to describe scientific findings can serve as a very powerful heuristic when audiences are being asked to make judgments about the risks associated with emerging technologies or about regulatory policies to attenuate the risks (53).

Greenpeace's Frankenfood frame, which was discussed at the outset of this article, is a good illustration of this effect. Without providing additional information, the Frankenfood frame shapes audience attitudes simply by tying the issue of genetically modified foods to existing schemas we all share, such as Frankenstein or runaway science (65). Nanotechnology, in a similar fashion, has been framed as the “next plastic” or the “next asbestos” in public debate, implicitly triggering mental connections to a previous health controversy and specifically the absence of adequate regulatory oversight of asbestos. The phrase also activates the notion that emerging nanotechnologies may open a Pandora's box of long-term effects that will be unknown for years to come.

It is important to keep in mind, however, that frames are not just tools for strategic communication, but are an integral part of our day-to-day communication. As a result, they are also

important journalistic tools to translate complex science to often inattentive audiences. A well-framed science story helps readers tie complex scientific phenomena to their everyday experiences and therefore make sense of the potential policy choices or funding decisions surrounding them. As a result, the way scientists frame scientific issues for public audiences is less a matter of being persuasive or of “spinning” science than it is a matter of presenting information in a way that makes it accessible to nonexpert publics.

Assumption 4: Science Should Be Debated in Isolation from Personal Values. As outlined earlier, when NBIC technologies, such as nanotechnology or synthetic biology, enter the public arena, they trigger an almost instant debate about the ethical, legal, and social implications of their application in society. And many of these debates are less concerned about what science can do than what science should do. This increasing focus on the societal aspects of emerging science has at least two immediate implications.

First, people's personal value systems become an important basis for decision making for audiences when they think about these technologies. The importance of values in public debates is partly due to the rapid development and the scientific complexity of many NBIC technologies. Values or religious beliefs provide citizens with convenient mental shortcuts for judging technologies that are surrounded by a significant degree of scientific uncertainty. And, once scientific issues become more politicized, mass media often make values an even more salient part of the debate by focusing on the conflict between competing value systems in society. A study of the issue cycles surrounding stem cell research, for example, shows that print media covered the scientific potential of a wide variety of stem cells between before the early 1990s, but then—driven by the emerging political debate around ethical and religious concerns—refocused almost 75% of its coverage narrowly toward embryonic stem cell research beginning in the early 2000s (66).

The use of values and ideological predispositions as shortcuts, however, is a phenomenon that can also be observed in expert audiences. Research has shown that the scientific uncertainties surrounding modern science make it more likely for scientists themselves to rely on their value systems when asked to judge the policy implications of their work. A recent study of highly cited nano scientists in the United States, for instance, showed that, even after controlling for scientific rank, discipline, and judgments about objective risks and benefits, a scientist's political ideology continued to significantly predict his or her views on the need for more regulations in the field of nanotechnology (67). In other words, the assumption that societal discussion surrounding science can or should occur in isolation from personal value systems is unrealistic, even for expert publics.

Values and other predispositional influences, however, play a second important role in (re)shaping societal debates about science, beyond simply serving as replacements for information. In particular, recent research has examined the role of values as filtering mechanisms that explain why and how different audiences respond differently to new scientific information (68). Different scholars have offered a variety of labels for this phenomenon, including “perceptual filters” and “cultural cognition.” (68, 69) They all tap the same underlying mechanism, however: the idea that all human beings engage to varying degrees in biased information processing, motivated by values, worldviews, normative expectations, or religious beliefs, that ultimately favors goal-supportive evidence over contradictory facts when forming attitudes. As a result, the same scientific facts will mean different things to different audiences, depending on which values or beliefs most motivate their information processing (70).

Recent surveys have shown, for instance, that the relationship between levels of scientific understanding and belief in the impacts of climate change was moderated significantly by egalitarian/

hierarchical worldviews. In other words, for respondents with egalitarian worldviews, scientific understanding played a significantly stronger positive role in shaping beliefs in the consequences of climate change than for respondents with hierarchical worldviews (71). Similar processes can be found for other areas of science (68, 72). Survey panel data from the 2004 US presidential election show that respondents with higher levels of understanding of embryonic stem cell research, measured through true/false survey questions similar to the Science and Engineering Indicators measures, were also more likely to support embryonic stem cell research. This knowledge–attitude link, however, was significant only for respondents who self-identified as being not or only somewhat religious. Among highly religious respondents, a better understanding of the scientific facts surrounding stem cell research showed no significant relationship to support for embryonic stem cell research (50).

Dynamic Nature of the Science–Society Interface

This essay provided an overview of the societal dynamics surrounding modern science. It highlighted at least three challenges that any effort to communicate science in social environments needs to grapple with: lay publics with varying levels of preparedness for fully understanding new scientific breakthroughs; crumbling media infrastructures, at least as far as traditional media are concerned; and an increasingly complex set of NBIC technologies that are surrounded by a host of ethical, legal, and social considerations.

Given these complexities, it is more important than ever to base any social-level communication effort about science on a firm empirical understanding of what we know about media, audiences, and the interaction between the two. Toward that end, this essay examined four broad assumptions about science–society interfaces that may have some intuitive validity, but that are at least partly at odds with empirical findings from various fields of social science.

The first assumption refers to knowledge deficit models and their simplistic assumption about more knowledgeable citizens also being more supportive of science. It is important to keep in mind, of course, that the lack of empirical support for a link between knowledge and attitudes discussed here does in no way diminish the importance of an informed citizenry in democratic societies. In fact, as some of the research discussed earlier shows, preventing widening knowledge gaps among groups with different socioeconomic status should be a continued focus of communication researchers and professionals.

Previous research has also highlighted the important role that trust in scientists and in science as an institution plays in shaping public attitudes toward science. Two points are particularly worth highlighting. First, most empirical data do not show declining levels of trust in science in recent years, even though some research suggests that an increasingly polarized political and news environment is also mirrored in more pronounced partisan differences related to trust in science. Second, research suggests that more long-term orientations, such as deference toward science, may be more important than relatively short-term fluctuations in trust. As discussed earlier, deference toward scientific authority taps a general buy-in among citizens to the scientific process and a willingness to defer to scientific expertise in areas they know little about. Initial data show that deference toward scientific authority is strongly linked to formal schooling in K–16, but the processes that help create it in various educational settings is much less understood.

A third assumption discussed earlier referred to the informational mission of mass media. Without a doubt, raising awareness of new technologies and providing information to audiences continues to be an important function of any form of public communication. The ability of media to push scientific issues to the forefront of public debate, for example, has been well-documented in countless studies since the 1970s (65). However, we also know from decades of communication research that media influences are multifaceted and go well beyond simply conveying information. Some efforts spearheaded by the National Academy of Sciences already take advantage of media effects models, such as cultivation, that have demonstrated how entertainment media can have long-term influences on the images audiences have of scientists.

A final assumption deals with the potential clash of social values and scientific research. As previous research has shown, values are important influences on attitudes toward emerging technologies, both among nonexpert and expert audiences, which is partly a function of the speed of development or the complexity of NBIC technologies. It is also a result of the particular questions addressed by NBIC technologies and their real-world applications. Should synthetic biologists create life in the laboratory, for example? Is it a good idea to create nanomaterials that do not exist in nature? And what are the moral considerations surrounding de-extinction, i.e., restoring extinct species of plants or animals by using genetic engineering or related techniques? None of these questions have exclusively scientific answers, but will require careful societal debates about the amalgam of scientific, political, moral, ethical, and religious questions they raise.

All four assumptions and the research behind them highlight the enormous potential and need for scientists, policy makers, and academics to think creatively about new directions for rebuilding science–society interfaces and for participating in the ongoing debates surrounding emerging technologies. These efforts will have to take into account all of the challenges outlined at the outset of this article, including the nature of emerging technologies, the ongoing transformation of our communication infrastructures, and—most importantly—the insights from social science about nonexpert audiences and their interfaces with other societal stakeholders.

Building formal collaborative infrastructures between the bench and social sciences is crucially important in a time where highly diverse sets of NBIC technologies constantly produce new scientific, social, and political challenges. As a result, academic institutions, funding agencies, and the federal government will have to prioritize institutional capacity building and infrastructure at the science–society interface, including (i) sustained social science efforts surrounding emerging technologies and (ii) formalized interfaces between social and natural sciences. Building these sustainable collaborative infrastructures is not a luxury. It is a necessity, especially as issues like global warming, nanotechnology, regenerative medicine, and agricultural biotechnology are increasingly blurring the lines between science, society, and politics. I hope this colloquium issue will be a first step in this direction by providing an initial overview and starting a conversation about the empirical social science that needs to be part of this infrastructure.

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Communicating science in politicized environments

Arthur Lupia^{a,b,1}

^aDepartment of Political Science and ^bInstitute for Social Research, University of Michigan, Ann Arbor, MI 48106

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Many members of the scientific community attempt to convey information to policymakers and the public. Much of this information is ignored or misinterpreted. This article describes why these outcomes occur and how science communicators can achieve better outcomes. The article focuses on two challenges associated with communicating scientific information to such audiences. One challenge is that people have less capacity to pay attention to scientific presentations than many communicators anticipate. A second challenge is that people in politicized environments often make different choices about whom to believe than do people in other settings. Together, these challenges cause policymakers and the public to be less responsive to scientific information than many communicators desire. Research on attention and source credibility can help science communicators better adapt to these challenges. Attention research clarifies when, and to what type of stimuli, people do (and do not) pay attention. Source credibility research clarifies the conditions under which an audience will believe scientists' descriptions of phenomena rather than the descriptions of less-valid sources. Such research can help communicators stay true to their science while making their findings more memorable and more believable to more audiences.

belief change | civic education | political communication | science communication

Members of the scientific community share a frustration: many attempts to communicate science are badly received (1–4). This frustration is particularly evident in politicized environments: that is, settings where decisions on divisive public issues must be made.

These communicative frustrations are salient because many scientists work hard to make socially valuable discoveries. Science can help nonscientists make better decisions. However, scientists often find that their advice is ignored or willfully misinterpreted. This article seeks to help science communicators expand the set of circumstances in which they can achieve better outcomes.

In some respects, the difficulty of communicating science to broader audiences is easily explained. Scientists discover new phenomena as well as new relationships among existing phenomena. Describing these discoveries and relationships often requires new language or using existing language in unusual ways. Many nonscientists, however, find our lexicon difficult to access: they see many scientific presentations as needlessly abstract and disconnected from their lives (5, 6). Audiences who see scientific presentations in these ways have less motivation to pay attention to them (7). If such motivations are sufficiently low, seeds for communicative failure are sown.

We, as scientists and science communicators, can improve how scientific information is conveyed to policymakers and the public. One way to realize this potential is to build from a social scientific knowledge base that can help communicators develop more realistic expectations about when others will pay attention to us and when they will believe what we write and say. This knowledge base can help science communicators avoid common presentation mistakes and make it more likely that our audiences acquire relevant knowledge. We need not engage in “spin,” manipulation, or “dumbing down” our presentations to communicate more effectively. Social science reveals multiple ways

for communicators to increase the likelihood that, and the range of audiences for whom, they can successfully convey scientific information.

To allow an article-length presentation, I focus primarily on two communication-related concepts: attention and source credibility. I focus on these two concepts because they are two factors over which science communicators have some measure of discretion when developing communication strategies.

Learning from scientific presentations, for example, requires that an audience pay attention to its content. For any potential learner, attention is a scarce resource. People are physically capable of paying attention to only a tiny fraction of their environment (8). As a result, every single person ignores almost all of the information that nature and other people present to them. Individuals do this not because they want to. People have relatively little control over their attentive capacity. A consequence of these capacity limits is that even the most committed listener can attend to only a fraction of the content to which they are exposed.

A person who pays attention to new information also evaluates it. One important factor that affects such evaluations is the believability, or credibility, of its source. Social scientists use communication models and a range of experiments to clarify how potential learners assess a speaker's credibility (9). These findings often contradict science communicators' intuitions about how others will interpret their words.

For people who seek to communicate in politicized environments, understanding source credibility at more than an intuitive level is vital. This necessity is true because, in such environments, people often hear conflicting claims about the implications of scientific findings for social problems. Complicating matters is the fact that politicized environments often induce suspicions about science communicators' true motives or expertise. Therefore, questions arise about whether scientists can really be trusted. Research on source credibility clarifies the conditions under which audiences in politicized environments will believe what a scientist has to say.

In sum, no science communicator is immune from the fact that attention capacity limits cause individuals to forget almost everything that any scientist ever says to them or the fact that listeners evaluate a speaker's credibility in particular ways. Understanding these phenomena, however, can help us adapt to them. Science communicators who better understand basic aspects of attention and credibility can more effectively position themselves to make their discoveries more memorable and believable to more audiences.

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¹E-mail: lupia@umich.edu.

Attention and Motivation in Reactions to New Information

Science communicators seek to change an audience's beliefs and to increase its members' knowledge about scientific phenomena. By "belief," I mean a cognitively stored association that relates objects and attributes (e.g., "Anne believes that the climate is changing.") (10). By "belief change," I refer to a cognitive process that results in a mind that believes different things *ex post* than it did *ex ante* (e.g., "I used to believe that the sun rotates around the earth, now I believe the opposite"). By "knowledge," I mean the subset of beliefs that can be labeled as having positive truth-value because of their correspondence with reality. With these definitions in hand, I can restate our objective: a science communicator seeks to cause others to change their beliefs in ways that correspond to greater knowledge of a scientific finding. But, how do beliefs change?

Belief change is a product of evolving physical structures and biological processes within a brain. Belief change requires changes in the structure or performance of neurons (brain cells) within neural networks (i.e., sets of neurons that are physically connected or functionally related in a nervous system) (11). For example, if you think "red" when I say "wagon," your reaction is a manifestation of a physical and chemical relationship between clusters and networks of brain cells that store "wagon" and "red" as relevant attributes. Suppose, for example, that you did not initially know that a wagon could be red. Suppose further that a presentation helps you to realize, and later recall, that not only can a wagon be red, but that many wagons are indeed red. Subsequent recollections of this conceptual association are a consequence of networks and clusters of red-attribute-representing brain cells changing their physical or chemical relationships to networks of wagon-attribute-representing brain cells (12). These changes can increase relevant activation potentials and, hence, alter the likelihood that the next time that the person thinks about a wagon, red will also come to mind. Belief change occurs only if parts of these associational networks receive an electrochemical fuel that stimulates physical growth in some of the networks' brain cells or changes in chemical activity within and across these networks (13, 14). This fueling process is propagated by blood-flow variations, which themselves are propagated by the manner in which a person perceives stimuli. If a communicator wants to teach an audience to align a particular set of beliefs with a particular set of scientific findings, the words and images that the communicator presents to an audience must alter the audience members' blood flow in ways that cause the fuel to go to the needed brain areas (15). Although this fueling process has complex properties, one property is key: fuel requires attention (15).

What people often call "attention" is associated with a concept called "working memory" (13). Working memory provides temporary storage for new information while it is being processed. The capacity of working memory is very limited. Scientists have evaluated this capacity in many ways. One famous study used reading-comprehension tests to produce a widely cited result: seven plus or minus two chunks (16). A chunk is a conceptual unit. The unit can represent a single attribute of a single object or it can bring to mind a particular relationship between attributes and objects. Although other evaluations of working memory produce different estimates, all estimates find its capacity to be of a similar order of magnitude (17).

An implication of research on working memory is that all people, whether expert or novice in a particular field, can pay attention to only a small number of stimuli at any given time. Although the number of available chunks limits every person's ability to pay attention to new information, a common difference between experts and novices is that an expert's few chunks store more information than a novice's few chunks. Experts outperform novices at tasks not because their working memories

produce more chunks, but because a typical expert chunk carries more information than a novice chunk (18).

So, when a scientist attempts to convey a particular piece of information to another person at a particular moment, that piece of information is involved in a competition for one of the person's few available chunks with all other phenomena to which that person can potentially pay attention. The competitors for that person's attention include information that the scientist gave earlier in the presentation, potentially distracting attributes of objects that are in the room where the scientist is conveying the information, and any number of things that are not in the room, including past events and possible future occurrences that may come to mind. Compared with all of the things to which a person can possibly pay attention at a given moment, working memory's capacity limits are especially small.

Which competitors win this competition? A combination of automatic and executive control functions in the brain make a person much more likely to concentrate on particular aspects of their environment (19). In times of distress, for example, or when a person perceives a threatening stimulus, these processes induce selective attention to external stimuli associated with the threat. Knowing this much about attention yields a simple rule that can help science communicators earn the attention of others: stimuli that a person perceives as being immediately relevant to their ability to achieve high-value aspirations or ward off significant threats are far better positioned than other stimuli to win a person's attention (20).

One widely cited study documents a representative example of this phenomenon. Ohman et al. (21) exposed experimental subjects to a sequence of 20- by 30-cm photographic grids for 1,200 ms each. In each of three experiments, subjects were asked to identify whether the photographs in a given grid all belonged to a single category (snakes, spiders, flowers, or mushrooms) or whether the images in the grid came from multiple categories. Response times in all three experiments were significantly faster when the task involved fear-relevant pictures rather than fear-irrelevant pictures ($P < 0.0001$). Moreover, although subjects' ability to identify fear-irrelevant pictures was sensitive to the order of display, display order did not affect the speed at which subjects identified fear-relevant pictures. Participants in the third experiment were selected for being especially fearful of spiders or snakes. Compared with a control group of low-fear participants, these participants were far quicker to identify images of fearful objects, but no quicker in locating nonfearful objects.

Such research establishes the potential benefit to science communicators of conveying materials in ways that speak directly to audience members' affective triggers (22–24). A recent example of such a strategy is an attempt to convey an implication of climate change to a large audience of nonscientists. One likely consequence of global warming is rising sea levels. Although rising seas can be described as an abstract global phenomenon, scientists can also use models to estimate the effect of sea level rise on specific neighborhoods and communities (25, 26). Attempts to highlight these local climate change implications have gained new attention for scientific information in a number of high-traffic communicative environments (27). These presentations also have helped members of the media explain how rising seas are linked to the probability of extreme weather events, such as Hurricane Sandy and other large storms that have wreaked havoc on large metropolitan areas (28).

So far, we have established that changing beliefs requires attention and that the capacity of working memory is small in comparison with the set of things to which a person can pay attention at any typical moment. Another factor that complicates effective science communication is that speakers sometimes have misleading intuitions about the extent to which others are paying attention to them (29). A common source of such errors is found

in the visual and oral cues that people offer one another when communicating (30). For example, people nod at certain moments to signal that they are paying attention to a speaker and comprehending their message. However, people who seek to act in socially desirable ways, or people who believe that offering an affirmative comprehension signal will allow them to leave an unwanted conversation, also send such signals (31). In other words, people who have become inattentive to the content of a speaker's utterances, but who recognize that the speaker has paused or stopped speaking often give visual cues to suggest that attention is still being paid. Sometimes speakers can detect such inattention, sometimes not (32, 33). A common result is that speakers become overconfident about the extent to which others are paying attention to them (34, 35). Providing information that pertains directly to an audience's affective triggers, as described above, increases the likelihood of winning attention competitions and provides one way to mitigate potential negative consequences of communicative overconfidence.

Science communicators can also benefit by obtaining information about what an audience initially believes about the new information they are conveying. This claim is true because people assign meaning to the new information to which they attend by comparing it with what they already believe (36). Thus, what audience members learn from a scientific presentation is jointly influenced by the attributes of new information and the audience's preexisting beliefs and knowledge (12). When new information is presented in ways that audience members cannot easily comprehend, the members' prior beliefs have an increasing influence on how they interpret the new information (37).

If audience members also see such information as threatening, a common reaction is for them to generate counterarguments. That is, individuals devote mental energy to the production of reasons for discounting the relevance of, or ignoring, threatening information (38, 39). This reaction is akin to a flight response.

An experiment on public views of carbon nanotubes (CNT) reveals how a person's prior beliefs and feelings about a phenomenon can affect their processing of subsequent information. Druckman et al. (40) recruited 621 subjects at polling places in Cook County, Illinois and asked them to take an Election Day exit poll. During this poll [conducted at time 1 (T1)], subjects were randomly assigned to receive different information about CNT. Some were given positive information: that CNT can reduce energy costs. Others were given negative information: that there is a CNT-related health controversy. Ten days later (T2), the researchers conducted a follow-up interview with 206 of the participants using an Internet survey. All subjects were given identical new information about CNT, including both economic benefits (positive) and environmental risks (negative). When asked to evaluate the new information, subjects who originally received positive information were more likely to rate the new positive information as "highly effective" and were less likely to favorably evaluate the new negative information. Subjects who initially received negative information showed the opposite pattern. Thus, for these individuals (who started with low initial levels of knowledge about CNTs), a small amount of information at T1 had large impact at T2.

Many communicators base presentational strategies on the premise that if they tell an audience what they know, then the inherent quality and virtue of their claims will automatically lead audiences to pay attention. The research described in this section clarifies when communicators can expect to earn an audience's attention. The findings show that people cannot pay attention to all available information and that whether and how people pay attention to a given piece of information depends on their prior feelings about, and experiences with, the topic. Science communicators who base their strategies on these insights will be better positioned to present information that makes their science more likely to attract others' attention.

Source Credibility in Politicized Environments

If a science communicator can gain the attention of policymakers or members of the public, how will these audiences interpret the information that she or he seeks to convey? Many communicators are surprised to find that descriptions that they have offered successfully in academic contexts are met with skepticism by broader audiences. Thus, how does communication in politicized environments differ from communication in environments with which scientists are more familiar?

To clarify my answer to this question, I need to clarify the definition of a key term: politics. By "politics," I mean the mechanisms by which societies attempt to manage conflicts that are not otherwise easily resolved. Issues that people typically perceive as "political" are ones over which salient social disagreements persist (41). When issues cease to have this quality, they tend not to be viewed as political. Child labor, for example, was once a contested political issue in American politics because people held, and were willing to publicly voice, different points of view about the propriety of children working long hours in factories (42). Early in the industrial age, children had worked on family farms and helped with other endeavors critical to life. Many people who advocated for child labor argued that it was natural, and even beneficial, for children to contribute to family income by laboring in factories and mills. Over time, however, a social consensus emerged that children should not work in factories. This consensus became codified in law and policy and is now routinely implemented in practice. Today, few Americans consider the issue political. Hence, political issues are the ones over which deep public conflicts persist.

In politicized contexts, a class of political entrepreneurs seeks leverage for favored candidates or causes. Leverage matters because political outcomes typically require the support of a coalition of actors (e.g., an electoral or legislative majority). Leverage helps entrepreneurs build and maintain supportive coalitions.

Entrepreneurs of all kinds, from candidates for national office to street-level advocates for specific policies, seek leverage through language. Potential leverage can be found in the fact that there are often multiple ways to describe an idea (43–46). Entrepreneurs often seek to describe ideas in ways that can lead more people to support their cause. Herein lies an important challenge for those who want to communicate science in politicized environments. If a political entrepreneur sees an opportunity to reinterpret a scientist's claims in ways that can increase the entrepreneur's leverage, we should not be surprised when the entrepreneur actively seeks to promote his or her reinterpretation.

To get a sense of just how common such attempts at reinterpretation are in political contexts, consider the 2008 election-time controversy over the phrase "lipstick on a pig." Variations of the phrase date back to the eighteenth century (47); it refers to the idea that cosmetic changes are not sufficient to turn a bad idea into a good one. In the decade before the 2008 election, the phrase was used by many politicians to suggest that the other side's policies could not be rescued by giving them new names. In 2004, Vice President Richard Cheney used the term to describe presidential nominee John Kerry's defense stance:

THE VICE PRESIDENT: . . . Now, in the closing days of this campaign, John Kerry is running around talking tough. He's trying every which way to cover up his record of weakness on national defense. But he can't do it. It won't work. As we like to say in Wyoming, you can put all the lipstick you want on that pig, but at the end of the day it's still a pig. (Applause.) That's my favorite line. (Laughter.) (48)

In 2008, presidential nominee Barack Obama conveyed a similar sentiment with respect to the relationship between presidential nominee John McCain's policy stances and those of President George W. Bush:

SENATOR OBAMA: John McCain says he's about change too, and so I guess his whole angle is, Watch out George Bush—except for economic policy, health care policy, tax policy, education policy, foreign policy and Karl Rove-style politics—we're really going to shake things up in Washington. That's not change. That's just calling something the same thing something different. You know you can put lipstick on a pig, but it's still a pig (49).

The 2004 use of the term “lipstick on a pig” did not generate much controversy. The same was not true in 2008. A difference between the 2004 and 2008 uses is that Obama's use occurred just days after the Republican Party had put forward its first female vice presidential nominee, Governor Sarah Palin of Alaska. During her stump speeches, Governor Palin featured “lipstick” in a widely seen, self-referential punch line “You know the difference between a hockey mom and a pit bull? Lipstick” (50).

The ensuing days featured charges and counter charges by political entrepreneurs about the true meaning of Obama's remark. Congresswoman Thelma Drake (R-VA), for example, issued a press release (51) interpreting Senator Obama's words as follows, “Rather than delivering on his promise of hope and change, Barack Obama sunk to a new low with his remarks today regarding Gov. Sarah Palin.” Reports suggested that many people who had already been supporting McCain were similarly upset by the remarks, but those who were already supporting Obama thought that his remarks were being taken out of context (52). This was one of many instances where politically motivated individuals (of both major political parties) attempted to convert the lack of an exact relationship between concept and language into leverage for their favored causes.

A large body of research examines how people choose what and whom to believe in such situations, situations where speakers are competing to influence public perceptions (53, 54). A key concept in this research is source credibility, the extent to which an audience perceives a communicator as someone whose words they would benefit from believing. People often assume that elements of a speaker or writer's true character (e.g., honest), demographic attributes (e.g., a woman), or academic pedigree (e.g., “I have a PhD in physics” or “I have written highly cited work on climate change”) is sufficient for a person to be considered a credible source of information. Research shows this assumption is incorrect. Although there are conditions under which such factors can be correlated with source credibility, these factors do not determine source credibility.

Source credibility is more accurately described as a perception that is bestowed by an audience (53). When an audience's perception of a writer or speaker differs from the writer or speaker's true attributes, the perception, and not the reality, determines the extent to which the audience will believe the speaker. Social scientists use experiments and models to study which factors make a source credible. Experiments document the kinds of attributes that differentiate speakers who change a listener's beliefs from speakers who cannot change beliefs, even if they say the same thing (54). Models clarify how various combinations of speaker attributes, listener perceptions, incentives, and other contextual factors affect the degree to which one person is willing to believe another (55).

Models and experiments, when used together, clarify the factors that most influence source credibility. To see why this is the case, consider that many source credibility experiments identify observable speaker attributes that correlate with source credibility. Most of these experiments vary a single value of a single factor to document such a correspondence. Over time, an increasing number of attributes, such as sex, celebrity status, physical attractiveness, and partisan identification have been shown to correspond to increasing source credibility in controlled settings (54, 56). Most communicators, however, have multiple attributes upon which audiences can base credibility judgments. Understanding the extent to which an audience will find a speaker

credible depends on how the audience weighs these attributes in their perceptions.

Models clarify these weighting dynamics and can help relate the findings of individual source credibility experiments to multifaceted communication contexts. In these models, listener perceptions, speaker attributes, and potentially relevant environmental factors are given mathematical analogs. Scholars use these analogs to identify what kinds of communication outcomes are, and are not, logically reconcilable with thousands of possible combinations of speaker attributes, listener perceptions, and contextual variables. These models produce general theorems and testable hypotheses about the conditions under which one person will find another credible.

In one such model (53), an interaction between a speaker and a listener is characterized. Here, the speaker is the “source” and “credibility” reflects the extent to which the listener believes what the speaker says. In the model, the listener has a decision to make (e.g., to support or oppose a particular policy proposal). The speaker may possess information that can help the listener make a more knowledgeable decision.

A focal variable in the model is the speaker's stake in the listener's decision. The speaker may, for example, benefit from leading the listener to make a decision that they would not make if were better informed. In other words, there are certain values of key variables in the model that would give the speaker an incentive to mislead the listener. For other values of these variables, the speaker would want to convey truthful information. The speaker's and listener's well-being are represented by utility functions. Utility functions in this model are defined with respect to the possible consequences of the listener's decision for the listener and the speaker. A player receives higher utility when a communicative outcome leads to an outcome that he or she prefers.

This model produces a set of theorems and testable hypotheses about conditions under which the listener will find the speaker credible. To describe these findings with greater accuracy, a few definitions are needed. “Commonality of interests” is the extent to which the speaker's and the listener's utility functions overlap. In other words, the listener and speaker have common interests when they want similar outcomes from the speaker's communicative attempt. One factor that the model shows to be critical to understanding source credibility is the listener's perception of the extent to which she and the speaker have common interests. Another critical factor is perceived relative expertise. In the model, the listener has uncertain beliefs about the consequences of her decision. These beliefs are represented as probability distributions over the set of possible consequences. “Relative expertise” refers to the extent to which the speaker knows more about these consequences than the listener. We say that a speaker has relative expertise when the probability distribution that characterizes the speaker's belief about the consequences of the listener's action places more mass on the true consequence than does the probability distribution that characterizes the listener's belief.

With these definitions in hand, we can draw from the model's main theorem a set of testable hypotheses about source credibility. The key point to notice in these statements is that it is the listener's perception of interest commonality and relative expertise, rather than the real values of these factors, that directly influence source credibility:

Actual relative expertise is neither necessary nor sufficient for source credibility.

Actual common interests are neither necessary nor sufficient for source credibility.

The following conditions are individually necessary and collectively sufficient for source credibility: the listener must perceive the speaker to have sufficiently common interests and the listener must perceive the speaker to have relative expertise.

In the presence of external forces, such as sufficiently high verification likelihoods, penalties for lying, or communication costs, the extent to which perceived common interests are required decreases.

The last hypothesis describes a set of external forces that can affect how interest commonality and relative expertise affect source credibility. Penalties for lying, the threat that a claim will be verified, and any factors that make communication costly are attributes of a communicative environment that can affect a speaker's motivation and incentives. These factors can induce a speaker who would otherwise seek to mislead a listener to provide truthful information instead. For example, a listener who encounters a speaker in the context of significant penalties for lying (e.g., perjury fines), can infer that the speaker is either telling the truth or is telling a kind of lie that makes the fine worth paying. If such a penalty is absent, the listener would believe that the speaker would only tell lies that would not justify paying the penalty; thus the penalty's presence can substitute for the perception of common interests to be a sufficient reason for the listener to believe the speaker.

Experimental research demonstrates the predictive accuracy of these hypotheses relative to other common explanations of source credibility (53, 57). This research takes place in laboratories and in more realistic communication environments. In one set of laboratory experiments, subjects predict the outcomes of a series of hidden coin tosses (54). Subjects were told that they would be paid (typically 50 cents to \$1) for each correct prediction. A control group made predictions with no further information. In treatment groups, a randomly selected subject (henceforth, "the speaker") advised all other subjects about which prediction to make for a given coin toss. Multiple speaker and environmental attributes were varied across treatments. These variations included the probability that the speaker was paid when others made correct (or incorrect) predictions (i.e., the extent of common interests), the probability that the speaker would observe the outcome of the coin flip before offering advice (i.e., the extent of relative expertise), and other factors such as the existence and magnitude of penalties for lying, probabilistic verification threats, and the costs associated with sending signals to others. Across all treatments, and when analyzed with respect to prediction sequences over 10 independent coin flips (where there are 2^{10} possible prediction sequences), the hypotheses listed above characterize subject responses to the speaker at levels that are not only far above the level expected by chance but also more accurate than other common explanations of source credibility. This result shows that perceptions of interest commonality and perceived relative expertise explain when and how subjects will follow the speaker's advice.

A similar dynamic has been documented in less-controlled settings (9). In one experiment, 1,464 participants in a random digit-dialed telephone survey were exposed to randomly selected combinations of political commentators (e.g., Rush Limbaugh or Phil Donahue or no one) and issue positions (e.g., supporting or opposing expanded spending on prisons or no position). Subjects were then asked to state their own position on such issues and also asked to answer several questions about the commentator to whom they were exposed. Subject perceptions of the commentator's interest commonality and relative expertise on the issue were the primary determinants of whether or not the subject's issue position followed that of their randomly assigned speaker. Other factors commonly associated with persuasiveness in political settings, such as partisan identification or political ideology, had no significant explanatory power once perceived common interests and perceived expertise were accounted for. The fact that the opposite relation did not hold—perceived common interests and perceived relative expertise had significant associations, even after accounting for party or ideology—attests to the theorem's primacy in explaining source credibility (53).

Collectively, such models and experiments yield a different understanding about source credibility than the previous empirical literature. As mentioned above, the literature on source credibility contains many published experiments that vary a single source attribute by a single variable. Over time, this literature has documented an expansive number of observations demonstrating correlations between observable speaker attributes, such as sex and height, and persuasion. The model and experiments just presented identify continuous, interactive and contingent logical relationships among these variables. Collectively, they show that various personal attributes matter only if they manifest as an indicator of the two basic source effects: perceived common interests and perceived relative knowledge. If the personal attribute in question, sex for example, is present in a context where an audience does not view sex as informative about interest commonality or relative expertise, sex will not increase credibility.

These findings imply that science communicators can establish source credibility by taking the time to relate their own interest in a scientific problem to that of their audience. An example of this strategy is found in the opening minutes of the Geoffrey Haines-Stiles-produced television program, *Earth: The Operator's Manual* (58). Geologist Richard Alley is the program's host. The program is an accessible and visually striking presentation about climate change's causes and consequences.

In the program's opening minutes, Alley describes his background and why he cares about his topic. This vignette is structured to establish Alley's credibility, particularly among potentially skeptical audiences. In it, Alley reveals himself to have valuable expertise on the topic, as well as common interests with typically skeptical groups (58):

I'm a registered Republican, play soccer on Saturday, and go to church on Sundays. I'm a parent and a professor. I worry about jobs for my students and my daughter's future. I've been a proud member of the U.N. Panel on Climate Change and I know the risks. I've worked for an oil company, and know how much we all need energy. And the best science shows we'll be better off if we address the twin stories of climate change and energy. And that the sooner we move forward, the better.

Key moments in this introduction are Alley's identification as a Republican and his description of himself as doing things that are associated with both environmental scientists and people who are often skeptical of such science (e.g., working for an oil company). Conveying such facts can help counter common stereotypes of environmental scientists as too partisan or too idealistic to convey climate science's implications objectively. Consider, by contrast, a presentation on the same topic that does not relate its content to an audience's core concerns and leaves the communicator's motives a mystery. If the audience is not predisposed to believe the scientist, the presentation needs to give them another reason to do so. In such cases, actions such as Alley's can help establish common interests.

The research on source credibility suggests that emphasizing common interests and relative expertise can help science communicators more effectively convey their findings in politicized environments. Credibility is particularly important when scientists can expect political entrepreneurs to try to reinterpret their words. These reinterpretations can come in the form of exaggeration, by entrepreneurs who want to use an inflated version of a finding to support a favored cause, or they can come in the form of relabeling disliked findings as a product of "junk science" (59, 60). The rules of political combat in reinterpreting scientific information in these ways is that the entrepreneur is not obligated to have read the underlying studies or even to have an accurate idea of what the research in question really does.

In cases where entrepreneurs attempt to reinterpret scientific information, how do prospective audiences choose which version of events to believe? Scientists who can demonstrate that they

share important interests with their audience, and who have conducted themselves in ways that audiences correlate with expertise (e.g., demonstrating that she or he has conducted the research process in a transparent and replicable manner; being able to demonstrate that she or he has used similar methods to produce actionable and reliable findings in the past) can give audiences a reason to believe their explanations rather than those of entrepreneurial reinterpreters who seek to mislead. Scientists who proceed in this manner, even if charged by entrepreneurs as promulgating “junk science,” can increase the probability that audiences who want their beliefs to be consistent with scientific knowledge will see them as credible information sources.

Conclusion

Research on attention and source credibility clarifies how people react to presentations of scientific information. Focal themes in this research show the value of understanding, and relating

scientific findings to, a target audience's existing concerns and beliefs. With such knowledge in hand, there is expanded potential for producing communicative outcomes that are more likely to help more audiences reconcile their beliefs and decisions with scientific knowledge. If we take the time to make presentations that produce relevant and credible new memories for our audiences, we can help them to replace false beliefs with knowledge that scientists have evaluated and validated. Our claims can be memorable and persuasive while staying true to the science that we have discovered.

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Science communication as political communication

Dietram A. Scheufele¹

Department of Life Sciences Communication, College of Agricultural and Life Sciences, University of Wisconsin–Madison, Madison, WI 53706

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Scientific debates in modern societies often blur the lines between the science that is being debated and the political, moral, and legal implications that come with its societal applications. This manuscript traces the origins of this phenomenon to professional norms within the scientific discipline and to the nature and complexities of modern science and offers an expanded model of science communication that takes into account the political contexts in which science communication takes place. In a second step, it explores what we know from empirical work in political communication, public opinion research, and communication research about the dynamics that determine how issues are debated and attitudes are formed in political environments. Finally, it discusses how and why it will be increasingly important for science communicators to draw from these different literatures to ensure that the voice of the scientific community is heard in the broader societal debates surrounding science.

advocacy | medialization | public attitudes | deficit model | motivated reasoning

Some of the most polarizing topics in American politics are scientific ones. Even the existence of phenomena, such as global climate change and evolution, that are widely accepted in the scientific community is questioned by significant proportions of the US public (1, 2). In addition, the regulation and public funding of new technologies, such as stem-cell research, have become highly contested issues in national and local election campaigns (3).

The Blurry Lines Between Science and Politics

The explanations for the blurry boundaries between science and politics are multifaceted and some centuries old (4, 5). In other words, the production of reliable knowledge about the natural world has always been a social and political endeavor (6). There are at least three explanations, however, that are particularly relevant when examining the challenges that science faces in modern democracies.

Scientists as Political Advocates. First, in most democratic societies, scientists have long played advisory roles to a variety of political entities. In those roles they have shaped policy and regulatory frameworks as members of advisory panels, through expert testimony and as political appointees, and—as a result—have been the target of partisan criticism (7). In some instances, however, scientists have also interfaced with the political arena in roles even more explicitly focused on advocacy. These efforts have focused on both advocacy for specific investments in science and recommendations on specific applications of science in societal contexts.

One example is Albert Einstein's letter to President Roosevelt in 1939, drafted by fellow physicist Leo Szilard, urging the US government to accelerate academic research on nuclear chain reactions and to maintain "permanent contact . . . between the Administration and the group of physicists working on chain reactions in America" (8). The letter ultimately led to the Manhattan Engineering District, also known as the Manhattan Project, a program designed to develop atomic weapons before Nazi Germany. Six years later, Szilard (9) drafted another petition, this time to President Truman, which did not advocate for investments in science but directly addressed the political implications of using the scientific work of the Manhattan Project for political purposes. In the petition, Szilard and 69 Manhattan Project scientists urged Truman to use a nuclear bomb against Japan only under extreme

circumstances and to consider "all the other moral responsibilities which are involved" (9).

In the mid-1990s, Rice University chemist Richard Smalley played a similarly instrumental role when he openly lobbied Congress and two White House administrations to establish and fund the National Nanotechnology Initiative (NNI), a multibillion dollar program that today coordinates the efforts in nanoscale science, engineering, and technology for 25 different US federal agencies (10). After winning a Nobel Prize in Chemistry in 1996, Smalley engaged in advocacy efforts in the political arena that made him "the most visible champion of nanotechnology and its promise to lead to revolutionary sustainable technologies" (11) and that were instrumental in creating the NNI. Although efforts like Smalley's can be tremendously important in securing funding for particular areas of academic research, they also create perceived or real overlaps between the realms of science and politics.

Such overlaps are even more frequent for scientists who work as staff members, advisers, collaborators, or board members at think tanks or advocacy groups. In these roles, scientists often publish not just peer-reviewed work but also reports and other nonrefereed literature that use their own credibility as scientists to lend scientific credibility to those of the sponsoring organization. Roger Pielke, Jr., for example, critiques scientists for too often playing the role of "stealth advocates" who discuss only a subset of potential policy options for a problem their research has identified rather than presenting the tradeoffs and advantages of a broader, comprehensive portfolio of policy choices (12). This tendency to selectively highlight policy options might be—at least in part—motivated by scientists' own political preferences. Surveys among leading scientists in nanotechnology, for instance, show that, after controlling for discipline, seniority, and scientific judgments about risks and benefits, scientists' support for regulatory options was significantly correlated to their ideological stances, with liberal scientists being more likely to support regulations than conservative scientists (13).

The Media Orientation of the Scientific Profession. Some of these overlaps are directly related to a second explanation for blurring boundaries between science and politics that has been described as "medialization" (14) of science. Medialization refers to the notion that science and media are increasingly linked: "With the growing importance of the media in shaping public opinion, conscience, and perception on the one hand and a growing dependence of science on scarce resources and thus on public acceptance on the other, science will become increasingly media-oriented" (14).

Medialization therefore assumes a reciprocal relationship between scientists and media. Media, on the one hand, rely on public scholars or celebrity scientists for newsworthy portrayals of

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¹To whom correspondence should be addressed. Email: scheufele@gmail.com.

scientific breakthroughs. Scientists, on the other hand, increasingly take advantage of traditional and online media to increase the impact of their research beyond the finite network of academic publishing and to advocate for more public investment in science. A survey comparing responses from scientists in France, Germany, Japan, the United Kingdom, and the United States, for example, showed that—across all five countries—85% of respondents saw the potential “influence on public debate” as a “very important” or “important” benefit of scientists engaging with journalists. Similarly, 95% of scientists answered that creating “a more positive public attitude towards research” was a very important or important benefit, and, for 77% of scientists, “increased visibility for sponsors and funding bodies” was a key benefit (15).

It is important to note, of course, that these results were based on samples of epidemiologists and stem cell researchers: i.e., scientists who work in areas of research that are likely to be of broader public interest than, say, mathematics or theoretical physics. Therefore, levels of medialization likely differ across, and probably even within, disciplines. In fact, previous research has shown that the amount of coverage that scientific issues receive depends—to some degree—on the nature of the societal debates surrounding them and that coverage increases dramatically if and when issues become engulfed in political or societal controversy (16, 17).

Regardless of these differences, an increasing orientation among some scientists toward media and public audiences to shape public attitudes or even attract funding to their research programs also creates explicit overlaps between science and other public and political spheres. Scientists communicating their work in these contexts engage in communication that is—intentionally or not—at least partly political.

The Nature of Modern Science. A third reason for the blurring of boundaries between science and politics is the nature of modern science itself. Science is in the midst of a rapid emergence of interdisciplinary fields. This development includes what some have called a Nano-Bio-Info-Cogno (NBIC) convergence (18) of new interdisciplinary fields at various interfaces of nanotechnology, biotechnology, cognitive science, and information technology.

It has been argued that debates about whether modern science is increasingly interdisciplinary have been part of American science since at least World War II (19). NBIC technologies, for example, severely exacerbate a host of existing challenges when it comes to communicating about science with lay audiences. As discussed elsewhere (4), these challenges include (i) the scientific complexity of emerging interdisciplinary fields of research, such as synthetic biology or neurobiology, a (ii) the pace of innovation in some of those fields, and (iii) the nature of public debates that accompany different applications of NBIC technologies (4).

The uniquely high pace of innovation surrounding NBIC technologies (18) and the impact it would have on the science–public interface had already been anticipated by some members of the scientific community decades earlier. In a 1967 editorial in the journal *Science*, for example, geneticist and Nobel laureate Marshall Nirenberg singled out rapid breakthroughs in DNA research as one emerging field of science that would have far-reaching and rapid impacts on society: “New information is being obtained in the field of biochemical genetics at an extremely rapid rate. . . . [M]an may be able to program his own cells with synthetic information long before he will be able to assess adequately the long-term consequences of such alterations, long before he will be able to formulate goals, and long before he can resolve the ethical and moral problems which will be raised” (20).

Nirenberg’s predictions captured many of the unique types of ethical, legal, moral, and political debates that now accompany NBIC technologies and their applications, partly because of their rapid pace of development. In the early days of the NNI, ethicist

George Khushf outlined some of these potential socio-political implications of NBIC technologies: “The more radical the technology, the more radical the ethical challenges, and there is every reason to expect that the kinds of advancements associated with the NBIC technologies will involve such radical ethical challenges. . . . My point, however, is not simply that we can expect many ethical issues to arise out of NBIC convergence. There is a deeper, more complex problem associated with the accelerating rate of development. We are already approaching a stage at which ethical issues are emerging, one upon another, at a rate that outstrips our capacity to think through and appropriately respond” (21).

In other words, NBIC technologies and modern science, more generally, pose ethical, legal, moral, and political challenges that democratic societies may be increasingly ill-equipped to resolve, especially given the accelerated rate with which they appear on the public agenda. This development is partly due to the fact that—although many of these challenges arise from scientific breakthroughs—they do not have scientific answers. Science can tell citizens how vaccines work, what their likely side effects are, and what the risks are for individuals and society if a certain percentage of the population ends up not getting vaccinated for various reasons. The vaccination issue, however, also raises a series of ethical and political questions: Should vaccinations be mandated? If yes, should there be exceptions based on religious concerns? What kinds of tradeoffs should societies allow between a person’s individual choice to not get vaccinated and the increased risks for all members of society if fewer people get vaccinated? And how can we harmonize regulatory frameworks across different political systems with different underlying value systems to minimize the likelihood of global epidemics? None of these questions have scientific answers: i.e., answers that are based on scientific facts or even accurate judgments of risks and benefits. Instead, the answers to these questions are moral, philosophical, and political in nature.

As a result, public communication about modern science is inherently political, whether we like it or not. Many research areas, such as the ones that developed out of the NBIC convergence discussed earlier (e.g., tissue engineering, nanomedicine, and synthetic biology), raise significant ethical, legal, and social questions with answers that are both scientific and political in nature. How can we ensure the privacy and safety of human genetic information and weigh commercial interests against the rights of individuals? Is it possible to ensure equal access to medical treatments or applications developed from this research, based on race, ethnicity, and socioeconomic factors? And how can society come to an agreement about the right balance between the scientific importance of research on synthetic biology, for instance, and the ethical, moral, and religious concerns that might arise from that research among different public stakeholders?

The tension between what science can do and what might be ethically, legally, or socially acceptable, has become particularly visible for NBIC technologies. When J. Craig Venter and his team transplanted a chemically synthesized genome into a bacterial cell in 2010 (22), the potential of their findings for creating “synthetic life” was immediately apparent. In fact, Venter himself referred to the team’s work as an “important step . . . both scientifically and philosophically” and described their work as “the first incidence in science where the extensive bioethical review took place before the experiments were done. It’s part of an ongoing process that we’ve been driving, trying to make sure that the science proceeds in an ethical fashion, that we’re being thoughtful about what we do and looking forward to the implications to the future” (23).

As a result, political stakeholders have long claimed that modern NBIC-type science is inextricably linked to the need for political decision making. At a Pacific Grove, CA meeting in February 1975, an international group of scientists decided that strict controls should be placed on the use of recombinant DNA:

i.e., transplanting genes from one organism into another (24). The warnings from this group—often referred to as the Asilomar Conference—were echoed in a report to the Subcommittee on Health and Scientific Research of the US Senate Committee on Human Resources (25), which argued that it was “increasingly important to society that the serious problems which arise at the interface between science and society be carefully identified, and that mechanisms and models be devised, for the solution of these problems” (25). For US Senator Jacob Javits, those solutions were inherently political ones, because, as he put it in 1976, a “scientist is no more trained to decide finally the moral and political implications of his or her work than the public—and its elected representatives—is trained to decide finally on scientific methodologies” (26).

Communicating “Polititized” Science

Unfortunately, science has been slow in adjusting its models for communicating with lay audiences to these realities. Instead, most attempts by the scientific community to help the public work through the policy and regulatory difficulties surrounding modern science have continued to focus on closing informational deficits, either with respect to public understanding of new areas of science or to weighing the potential risks and benefits that emerging technologies bring with them.

Model 1 in Fig. 1 outlines these so-called “knowledge deficit models” of science communication. They are built on the assumption that (i) higher levels of scientific literacy among the citizenry in specific scientific areas also correlate with increased public support for scientific research in those areas and that (ii) effective science communication, therefore, should be concerned with increasing levels of scientific understanding among various lay publics. The lack of consistent empirical support for this model across numerous studies has been well documented (4).

In recent years, there has been a concerted effort from the leadership of a number of scientific bodies to replace ineffective knowledge-deficit models with efforts to engage with the public in a more bidirectional dialogue (27). This effort has gone hand in hand with a “growing political commitment at the highest levels to giving citizens more of a voice in the decisions that affect their lives, and to engaging citizens in making government more responsive and accountable” (28). This enthusiasm is also shared by some institutional stakeholders. In a letter to House Speaker Nancy Pelosi urging the passage of the 2008 National Nanotechnology Initiative Amendment Act, for example, Institute of Electrical and Electronics Engineers (IEEE) President Russell J. Lefevre emphasized the potential of public meetings and other outreach tools to “reach tens of thousands of people with information about nanoscience” (29).

The renewed attention to public meetings, town halls, science cafes, and other modes of citizen engagement is particularly pronounced for the emerging NBIC field. Public meetings as a tool for formal citizen engagement were an integral part of a 2000 United Kingdom House of Lords report (30) that recommended making direct dialogue with the public a mandatory and integral part of policy processes, and also the 2003 US Nanotechnology Research and Development Act, which mandated “convening of regular and ongoing public discussions, through mechanisms such as citizens’ panels, consensus conferences, and educational events” (31).

Model 2 in Fig. 1 illustrates the basic mechanisms behind all these efforts—often summarized under the label “public engagement model” of science communication (32–35). As Fig. 1 shows, engagement models of science communication typically highlight the two-way nature of communication between the scientific community and various lay publics and break with the implicit one-directional idea of “spreading the word about science” or “building excitement about science” that had been the basis of knowledge-deficit models.

Engagement models also go beyond deficit models in their broader focus on what kinds of content are part of the two-way conversations between science and various publics, including debates about the scientific aspects of new technologies, but also about ethical, legal, and social issues associated with them.

In reality, however, scientists and various public stakeholders are just some of many voices in the political sphere, even for debates that explicitly focus on scientific breakthroughs or its applications. This is not to say that the two-way dialogue envisioned by engagement models is not a crucially important tool for connecting with highly interested publics that are most likely to participate in engagement exercises (36) or publics that are already predisposed positively toward science, based on their socioeconomic background (37). However, these direct forms of communication—through museum exhibits, science cafes, or other forms of engagement—cannot reach broad cross-sections of the citizenry (36). And even for those audiences who can be reached by public engagement efforts, any potential direct effects of scientist–public communication need to be understood in relation to the countless political or mediated messages related to science that citizens are exposed to every day.

Models 1 and 2, therefore, remain somewhat artificial because they both presuppose interactions between science and various publics that occur in a socio-political vacuum. As a result, they do not account for the larger political contexts in which science–public interactions take place, including the way issues get portrayed in modern environments, for how different stakeholders compete for attention in the political sphere, or for the ways in which citizens interact with the (often contradictory) streams of information they are constantly exposed to. Using model 3 as a blueprint, I will use the following sections to create a more granular overview of what we know from empirical social science about what happens when science enters the political marketplace.

Science as “Mediated” Reality—and Why It Matters

A first way in which model 3 expands on traditional engagement models is by acknowledging the fact that the majority of encounters that members of the nonscientific public have with scientific issues—outside of formal educational settings—do not involve any form of direct public engagement. Instead, most citizens hear about scientific issues from various online and offline media (38). Their exposure to science and scientists, in other words, is not a direct one, but indirect through mass or online media.

The relatively small impact of engagement efforts is illustrated in model 3 through the thin arrows connecting “scientific realities” and “public understanding/perceptions.” Instead, model 3 shows much stronger links from “scientific realities” to “public

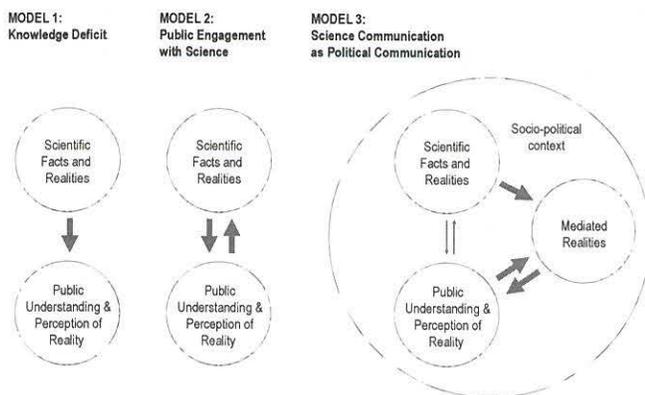


Fig. 1. Models of science communication: How views of the science–society interface among social scientists and practitioners have evolved over time.

understanding/perceptions,” indirectly through “mediated realities.” In other words, even though lay audiences may never have heard a scientist talk about her work or read any primary literature on a scientific topic, they likely have read or heard about federal funding restrictions on stem-cell research, about efforts to promote the teaching of intelligent design in particular school districts, or about the latest consumer products using nanotechnology.

This role of mediated realities as a conduit between science and lay audiences is an important one for citizens. It is based on the idea that none of us can pay attention to everything that is going on the world around us on a daily basis. As a result, an important function of any type of news organization is to pre-select relevant news for citizens to allow them to make informed personal and democratic decisions without having to sift through seemingly infinite amounts of information on a daily basis. As a result, mediated realities heavily influence both public perceptions of science more generally—fact-based or not—and public understanding of scientific topics.

Building Scientific Agendas. Empirical communication research has been examining the idea of news selection—or “gatekeeping” as it is sometimes called—at least since the 1950s (39). This research has been partly concerned with identifying the professional norms that guide journalists’ work and how they impact editorial choices, surveying journalists or relying on participant observations in newsrooms (40). However, a second focus of this body of research has been on the democratic functions that news media fulfill by selecting some issues over others.

Much of this research is driven by variants of two broad normative models of the role that media should play in democratic societies: Should media outlets in democratic societies simply mirror reality as closely as possible with little editorial influence over the prominence or frequency of coverage of particular issues? Or is it necessary for news outlets to fulfill a watch dog function (41) in some instances: i.e., to intentionally devote disproportionately more attention to an issue to alert society to the need for policy solutions? Climate change is a good example of this dilemma. Should media coverage, for example, give a voice to the small minority of climate scientists who question anthropogenic climate change to alert readers to “all sides” of the issue, or have their coverage follow the consensus view held by the vast majority of climate scientists on the issue (42, 43)?

Although there may be disagreement on the normative goals of gatekeeping or news selection, there is consensus across most empirical work in this area that—by being able to cover only a very finite subset of events and issues—news media create a “mediated reality” that is different from, and potentially more impactful in the political arena than, objective reality. Sociologists Harvey Molotch and Marilyn Lester summarized the unique importance of mediated realities best when they wrote: “[W]hat is ‘really happening’ is identical with what people attend to” in news media (44).

Since the 1970s, a significant portion of the empirical work in this area has shifted to work on “agenda building” (45). Agenda building deals with the idea that the selection of news is not just a function of newsroom routines and professional norms among journalists, but is in fact an outcome of strategic efforts by many stakeholders in the policy arena who compete with one another for access to the news agenda—or to “build” the news agenda. Model 3 in Fig. 1 shows an arrow from “scientific realities” to “mediated realities” that represents agenda-building efforts by scientists or universities: i.e., attempts to attract news coverage on a particular study or scientific initiative, to steer public debate on a scientific issue, or to help change health-related behaviors. All of these agenda-building efforts, of course, take place in the larger political sphere shown in model 3, with fierce competition for access to the news agenda from interest groups, nonprofits, (scientific) associations, policy makers, corporations, and many

other entities that all have stakes in communicating with different publics about scientific issues.

Three aspects of agenda building are particularly noteworthy when it comes to communicating science. First, news holes (i.e., the space available for content in news outlets) have been shrinking, especially for scientific issues (4). Shrinking news holes make the competition over access to this space even more pronounced. In addition, the fact that fewer and fewer full-time science journalists are used by major news outlets (4, 46) further limits the likelihood of scientific issues making it onto the news agenda.

Second, research shows that science seldom gets covered for the sake of science alone. In an analysis of almost three decades of public debate around stem-cell research in the United States, for instance, communication researchers Matthew Nisbet, Dominique Brossard, and Adrienne Kroepsch examined the interplay among scientific publications on the topic, press releases from a variety of corporate, political, and academic stakeholders, Capitol Hill Testimony, and news articles (16). Despite significant amounts of research activity (operationalized as the number of peer-reviewed journal publications on stem-cell research), media coverage of the issue remained at fairly low levels until the second half of the 1990s.

Beginning in the late 1990s, Nisbet et al.’s data show an increase in agenda-building efforts (measured through the number of press releases on the issue and also the number of Capitol Hill hearings). This increase also coincided with an increase in press coverage. Finally, new developments in embryonic stem cell research triggered a wave of press releases and congressional hearings on the topic that positioned the issue prominently on the public agenda in the early 2000s.

These findings confirm results from previous research that have shown that issues are much more likely to receive attention from news media once politicians and other public stakeholders become involved (47). This correlation creates an interesting dilemma for science. On the one hand, the scientific community can benefit greatly from partnerships with other stakeholders when trying to draw media attention to specific scientific initiatives or breakthroughs. Senator Orrin Hatch’s visible public support for federal funding of stem-cell research is a good example. On the other hand, stakeholders that can help increase the visibility of scientific issues in public discourse often have policy goals that differ from those of the academic community. The Nisbet et al. study, for instance, shows nicely that the same Capitol Hill testimonies and press releases that helped push stem-cell research onto the media agenda were also connected to the emerging political conflicts surrounding embryonic stem cell lines that eventually led to the restrictions on federal funding for stem-cell research implemented under the George W. Bush administration.

The third aspect of agenda building that is particularly relevant to science relates to the fact that lay publics who seek information about scientific topics increasingly turn to online sources (48, 49). However, web-based search engines and other automated tools for online information retrieval—which are now the most frequently used source by the public when seeking specific scientific information (38)—prioritize information very differently than professional news outlets do. In other words, the traditional notion of realities that are “mediated” by traditional news outlets is beginning to change.

Research has shown, for example, that the issue priorities that the automated algorithms of Google develop based on search traffic, user preferences, and a host of other factors provide search rankings that differ significantly from the types of content that are available online or the terms users initially searched for (50). Similarly, news outlets increasingly rely on algorithms and click rates to tailor news selection and placement based on the types of content that are most popular with users (51). In other words, we are moving toward information environments where issue priorities are built at least partly by search and news

algorithms. Given that only 16% of the US public reports in surveys that they follow news about science “very closely” (down from 22% in 1998) (38), an emerging media landscape that further tailors searches and news toward these popular preferences rather than the types of (scientific) content that citizens need to make sound policy choices is at least somewhat disconcerting.

How Coverage Can Prime Attitudes. The amount of scholarly attention that agenda building has received might—at first glance—be surprising. After all, agenda building is concerned only with which issues are being covered and tells us nothing about the tone of coverage or even factual accuracy of coverage.

Empirical work since the 1970s, however, has also examined how the emphasis or importance assigned to issues by mass media translates into perceptions of importance (or salience) of issues among audiences (52) and ultimately can alter attitudes on issues or political figures (53). The first step (i.e., the transfer of salience from news media to audiences) is called “agenda setting.” The second step (i.e., the influence that issues that are salient in people’s minds can have on public attitudes) is called “media priming.”

Media priming as a concept borrows from the more narrowly defined priming concept in cognitive psychology. It hypothesizes some of the same mechanisms and assumes that the more prominently an issue is being covered in mass media, the more likely it is to activate relevant areas in an audience member’s brain (54) and the easier it will be for the person to retrieve related considerations from memory when asked to form a judgment (55).

Applying this logic to media-effects research, previous empirical work was able to directly link the prominence with which particular issues were covered in news media to subsequent attitudinal judgments among audiences (53, 56–58). This work relies on memory-based models of information processing. Memory-based models assume that most attitudes we hold are not particularly stable, but instead are based on the considerations that are most easily retrievable from memory when we are asked to form a judgment (59). By increasing salience and retrieveability, media can therefore play an important role in shaping subsequent judgments.

One of the more recent illustrations of the important role that salience and retrievability from memory can play in shaping science attitudes, in particular, comes from survey-based work on public attitudes toward climate change. Merging national survey data and location-based climate data on temperature anomalies, Hamilton and Stampone (60) examined the relationship between weather patterns at the place of the interview and beliefs in anthropogenic climate change. Their findings show that, for strong ideologues at both ends of the political spectrum, real-world temperatures made little difference. Self-identified Democrats were likely to believe in climate change and Republicans were unlikely to do so. Among independents, however, salient considerations related to local temperatures on the day of the interview and the previous day were a significantly predictor of attitudes toward climate change. The more unseasonably warm the temperature was at the location of the respondent, the more he or she was likely to believe in climate change and vice versa. In other words, a simple priming effect based on short-term fluctuations in local weather patterns was enough to significantly alter views on climate change.

How We Talk About Science: The Framing of Scientific Debates

A second way in which model 3 in Fig. 1 expands on traditional engagement models is by modeling two-way interactions between various nonscientific publics and media. In fact, most current media-effects models are based on the idea that media effects are amplified or attenuated by particular audience characteristics that make it more or less likely for recipients to selectively process these messages (61) or for messages to resonate with long-term schemas held by audiences (57, 58).

Framing is one of the more prominent examples. It refers to the idea that the way a given piece of information is presented in media—either visually or textually—can significantly impact how audiences process the information. The mechanism behind media framing is known as applicability effects: i.e., a message has a significantly stronger effect if it resonates with (or is applicable to) underlying audience schemas than if it does not (62). The importance of framing for science communication has been documented extensively elsewhere (4, 16, 63). However, two considerations related to framing are worth highlighting when it comes to communicating science in political arenas.

First, there is no such thing as an unframed message. Framing is a tool for conveying meaning by tying the content of communication to existing cognitive schemas and helping the recipient make sense of the message. Framing is therefore inextricably linked to any effective form of human communication. And scientific discourse is no exception. Grant proposals and submissions to scientific journals, such as *PNAS*, *Nature*, or *Science*, present (or frame) findings in ways that convey their novelty and transformative nature.

The challenge for science communication, therefore, is not to debate whether we should find better frames with which we can present science to the public (which would be more in line of outdated deficit models). Instead, we should focus on what types of frames allow us to (i) present science in a way that opens two-way communication channels with audiences that science typically does not connect with, by offering presentations of science in mediated and online settings that resonate with their existing cognitive schemas, and (ii) present issues in a way that “resonates” and therefore is accessible to different groups of nonscientific audiences, regardless of their prior scientific training or interest.

Second, the socio-political contexts highlighted in model 3 create an environment in which the frames offered by the scientific community when communicating their work and its societal impacts (e.g., the potential of nanotechnology to produce new and effective ways of treating cancer) (10) to a broader audience will be met with a wide variety of competing frames offered by other stakeholders. Greenpeace’s “Frankenfood” reframing of genetically modified organisms (GMOs) is just one recent example. Similarly, the Discovery Institute has used the frames “teach the controversy” and “it’s just a theory” antievolution campaign to undermine perceived scientific consensus among lay audiences.

In fact, we know from previous research that most scientific issues go through a fairly predictable lifecycle of frames in public discourse, starting with initial excitement about the promise of social progress and the economic potential of new technologies, and then shifting to concerns about scientific uncertainties, risks, and moral concerns, into framing the technology in terms of the societal controversies surrounding it (63, 64). Understanding and anticipating this framing life cycle is critical for scientists to meaningfully communicate their research when it first enters the public arena and to continue to have their voices heard in the larger political debates about emerging technologies and their applications over time.

Perceptions of Our Social Environment—and Why They Matter for How We Communicate Science

A third way in which model 3 expands on traditional engagement models is by emphasizing the importance of social environments and socio-political cues for any form of successful communication about science.

Social science has long understood the importance of social cues for how we make decisions. In his seminal experiments on conformity, psychologist Solomon Asch (65) asked participants to judge the relative length of a line compared with three alternatives, one of which had the same length. Each participant faced a majority of confederates who posed as participants and unanimously identified one of the incorrect lines as being of equal length. With some variations—based on how unanimous

the majority groups were and how obvious their errors were in terms of length differences—Asch found systematically lower levels of willingness to pick the correct line for participants who faced public pressure to go with an incorrect judgment.

Asch's experiments provided some of the earliest empirical support for the idea that our social environment has powerful influences on our judgments and on the views we express publicly. Two aspects of his findings are particularly relevant to how we communicate science in social environments. First, Asch's experiments were based on the assumption that expressing views that are opposed by a large majority of people around us creates feelings of discomfort and or even fear. In fact, Asch's team collected qualitative responses after the experimental debriefing. In their answers, many participants talked about how painful it was to go against the majority view and how they feared being singled out or even ostracized. Respondents referred to the "stigma of being a non-conformist" or feeling "like a black sheep" (65). Others talked about feeling "the need to conform. . . . Mob psychology builds up on you. It was more pleasant to agree than to disagree" (65).

Second, although the influence of social pressure might be less surprising for expressions of subjective opinions, Asch's experiments tested people's willingness to express views that they knew to be incorrect simply because they were facing social pressure to conform with incorrect majority views. In other words, participants knowingly identified incorrect facts as correct ones when faced with majority pressure. Some of the comments in the post-experimental debriefing highlight the tension some respondents felt between knowing the correct answer and not wanting to go across the majority view. As one participant put it: "I agreed less because they were right than because I wanted to agree with them. It takes a lot of nerve to go in opposition" (65).

Asch's findings were the foundation for a body of work in the second half of the 20th century examining the influences of social environments on individual judgments and behaviors. One of the most interesting models for science communication was put forth by communication researcher Elizabeth Noelle-Neumann (66) in her theory of the "spiral of silence." The spiral of silence provides a conceptual blueprint for how public opinion dynamics on controversial issues are shaped—at least partly—by social pressure. Like Asch, Noelle-Neumann assumes that most people are to some degree fearful of isolating themselves in social settings and that this "fear of isolation"—as it is called in the spiral-of-silence model—makes them less likely to express unpopular opinions in public. In fact, Noelle-Neumann suggests that people's innate fear of isolation also makes them scan their social environment for cues on which viewpoints are shared by most people and which ones are not. As a result, people who see their own views in the minority are less likely to express them publicly, which in turn makes the minority less visible in public debate (or the "climate of opinion" as it is called in the spiral-of-silence model). The climate of opinion, of course, is what both media and individuals use to judge which viewpoints are in the minority or majority (66).

Fig. 1 outlines the resulting spiraling process using the issue of GMOs as an example. Individuals who see themselves in the minority with their viewpoints on GMOs are more likely to fall silent. This reluctance to express their opinions means that their view on GMOs is featured less prominently in public debates, which—in turn—shapes other people's and mass media's perceptions of what views are in the minority and which ones are in the majority. Over time, this spiraling process establishes one opinion as the predominant one as the other one falls more and more silent. Some of the spiral processes can be attenuated or exacerbated by reference groups (66). These homogenous social networks can accelerate spiraling processes when they are consistent with larger public opinion climates, or slow down or even counteract spiraling processes by slanting individuals' perceptions of larger opinion climates and shielding them from potential threats of isolation.

Different aspects of the spiral of silence have been tested in countless survey-based and experimental studies since the theory was first presented (67), and—despite both theoretical and operational critiques—its main predictions have been confirmed fairly consistently across political and scientific issues (68). Again, using GMOs as a case study, more recent work has operationalized willingness to express opinions among college students by asking them about their willingness to participate in a separate follow-up study that required them to have discussions about the issue with fellow students who held different opinions (69). Controlling for various demographic factors, issue involvement, and knowledge about the issue, students with higher levels of fear of isolation and perceptions of the overall opinion climate incongruent with their own were significantly less willing to engage in discussions with others on the topic of genetically modified organisms.

Science Communication as Political Communication: A Dual Use Technology?

Agenda building, priming, framing, and the spiral of silence are just a few concepts from different social scientific disciplines that have profound implications for how science gets communicated in democratic societies. Unfortunately, both bench scientists and social scientists have failed to ensure that empirical social science serves as the foundation of efforts to close science-public divides. On the bench sciences side, many efforts to better communicate science have relied on hunches and intuition, instead of building their efforts on insights from the social science presented here. However, social scientists are equally at fault for not being as proactive in many cases as they could be in doing research that offers policy-relevant insights and for not actively seeking out audiences outside their discipline to inform public debates.

This lack of intellectual cross-fertilization among the bench and social sciences has also resulted in a relatively narrow focus on two primary outcomes of science communication or public engagement of science: (i) levels of information among various publics and (ii) perceptions of risks and benefits. Both of these outcomes are crucially important variables in judging the societal value of emerging technologies, of course. However, the multi-layered public impacts that modern science brings with it require debates that go well beyond lay audiences' understanding of the science or the risks and benefits of a technology. There is not a scientific answer to the question of whether we as a society should, for example, try to create life in a scientific laboratory. Instead, the answer will require democratic decision making that draws on moral values, that weighs complex political options, and that includes debates about the ethical and legal aspects surrounding emerging technologies.

However, all of these debates should be based on the best scientific input available. Given this changing nature of scientific debates in the United States and elsewhere, science communication will therefore have to draw much more than in the past on theorizing and empirical work in political communication, public opinion research, and related fields. This reliance on empirical social science will be crucial to understand and participate in the processes that determine how science gets communicated and debated in real-world settings. Model 3 in Fig. 1 illustrates many of these complexities.

To a certain degree, the scientific community has no choice. Unless scientists want to increasingly have their voice drowned out by other stakeholders in the broader societal debates surrounding their work, they will have to realize that all of the theoretical models and findings outlined in this essay have dual uses. On the one hand, it may be disconcerting to some that public attitudes toward issues such as climate change are not always based on a comprehensive understanding of climate science and are highly susceptible to priming based on simple temperature anomalies. On the other hand, research insights from agenda building, priming, and framing also help us understand why it is so important for scientists to be involved in efforts to keep

issues on the public agenda, to pay attention to the language we use when talking about science, or to provide nonexpert publics with visible illustrations of particular applications of new technologies.

As outlined earlier, priming research tells us that, when asked for their opinions, audiences will rely on the most easily retrievable considerations to form their judgments. Work by Cacciatore et al., for instance, shows that the impact that risk judgments related to nanotechnology had on overall attitudes toward nanotechnology differed significantly, depending on the types of applications that were top-of-mind when respondents were asked to make these judgments (70). In other words, respondents who had the same level of concerns about potential risks translated those risk perceptions into different levels of support for more research or funding for nanotechnology, depending on which application of nanotechnology was most easily retrievable from memory for them when they were asked to make these judgments. Similar research in the area of biotechnology showed that alternate judgments can also depend on specific characteristics of the application. Bauer, for example, showed that publics were more willing to accept medical applications of biotechnology than agricultural ones (71).

Models, such as the spiral of silence, have equally wide-ranging implications for how we think about science communication. At first glance, of course, the spiral-of-silence model suggests a rather gloomy outlook for science communication. Building on the spiral-of-silence model, it is reasonable to expect that there are some conditions in which nonexpert audiences will likely hold on to and express incorrect views about science, even if the majority of the public may disagree with them. Opinion shifts may not occur, for instance, if the minority holding incorrect views—say about climate change—can take refuge in social environments or reference groups that provide enough reinforcement for their views. Asch's experimental work on conformity pressures, for instance, showed that the presence of even one additional person supporting the minority participant in the experiment "depleted the majority of much of its power" (72). This illustration of the power that reference groups can have in protecting individuals from larger opinion climates explains at least partly the persistent proportions of respondents in national surveys who believe President Obama is a Muslim or that climate change is a hoax.

The mechanisms outlined in the spiral of silence are also the basis of the communication strategies of many interest groups and non-profits. Anti-GMO activists, for instance, often rely on activities with high public visibility, such as unregistered demonstrations that lead to arrests, to create media coverage. The hope is that the publicity that these activities create will lead to inflated public perceptions of how widespread the opposition is to a technology, such as GMOs, and potentially trigger spirals of silence in its wake. These mechanisms also highlight the need for scientists and universities to develop proactive communication strategies that accurately portray scientific consensus in public discourse (63). Such efforts will go a long way toward countering the development of spirals of silence based on misperceptions of public support or opposition.

In closing, however, one of the most important takeaways of this article is that many of the mechanisms outlined in model 3 in Fig. 1 are not inconsistent with the goals of models 1 or 2 (73). In fact, one of the most pronounced criticisms against knowledge-deficit models is the fact that empirical realities are often at odds with what they hope to achieve. As discussed earlier, we know from numerous studies that higher levels of knowledge do not

necessarily translate into more positive attitudes toward science. In fact, research into motivated reasoning (74, 75) suggests that all of us process information in biased ways—based on preexisting religious views (3, 76), cultural values (77), or ideologies (78). Motivated reasoning is partly a function of confirmation and disconfirmation biases: i.e., a tendency to confirm existing viewpoints by selectively giving more weight to information that supports our initial view and to discount information that does not.

At first glance, information processing based on preexisting values and beliefs does not bode well for science communication because it means that any given fact can be interpreted very differently by different audiences. However, more recent work by psychologist Philip Tetlock (79) suggests that the very same mechanisms that make us reluctant to express unpopular viewpoints in public might also serve an important corrective function when it comes to motivated reasoning. His experimental work shows that the possibility of having one's views challenged by others can significantly increase the cognitive effort that individuals invest in engaging with arguments on both sides and understanding the issue in all its complexity. Although this social accountability effect attenuates motivated reasoning only in some circumstances, it suggests that exposure to non-like-minded viewpoints (or just the anticipation of such encounters) ultimately promotes more rational decision making.

These findings are directly consistent with survey-based work in political communication that showed that citizens with more heterogenous networks (i.e., ones in social environments that routinely exposed them to views different from their own) also tended to be better informed about politics and more participatory in the political process (80, 81). Most recently, experimental work by communication researcher Michael Xenos et al. (82) examined the potential influences of anticipated interactions on information seeking about nanotechnology. Participants were faced with the prospect of being matched up with others in discussion settings that exposed them to like-minded others, non-like-minded others, or unknown others and then allowed to browse a gated online information environment with an equal number of articles from three genres: general news, science and medicine news, and editorial and opinion. Respondents in the non-like-minded condition were significantly more likely than those in any of the other experimental conditions and the control to go to editorial and opinion articles first, presumably to find arguments on both sides of the issue to use in subsequent discussions.

The findings of Xenos et al. (82) are directly consistent with Tetlock's explanation for why the anticipation of social interactions triggers more accuracy-oriented motivations among participants: "They attempted to anticipate the counterarguments and objections that potential critics could raise to their positions. This cognitive reaction can be viewed as an adaptive strategy for maintaining both one's self-esteem and one's social image" (79). In other words, the same social pressures that might distort perceptions and expressions of public opinion can also serve an important corrective function for what would otherwise be biased information processing. Understanding these mechanisms empirically and capitalizing on them for building a better societal discourse about science will be crucial as we go into an era where science and politics will continue to be inextricably linked.

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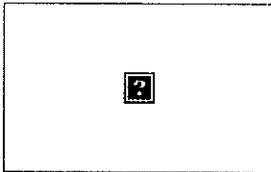
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From: Edward W Maibach
To: Kevin Trenberth; Cane Mark; J Shukla
Cc: John P. Holdren@ostp.eop.gov; Patricia M. McLaughlin@ostp.eop.gov; Paul A Dirmeyer; Professor Barry Klinger; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Robock Alan; Kalnay Eugenia; Kirtman Ben; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Biasutti Michela; Goddard Lisa; Dr. Alan Betts; Sheldon Whitehouse; Joseph Maikut; Lara Quint
Subject: Re: Letter to President, AG, and OSTP Director
Date: Thursday, September 17, 2015 5:19:43 PM

From Marc Morano at Climate Depot:

<http://www.climatedepot.com/2015/09/17/twenty-climate-scientists-including-top-un-scientist-call-for-rico-investigation-of-climate-skeptics-in-a-letter-to-obama-argue-skeptics-guilty-of-disinformation-like-tobacco-companies/>



Debate no more! Jailed for scientific dissent?! Twenty climate scientists, including Top UN scientist, call for RICO investigation of climate skeptics in letter to Obama | Climate Depot

Top UN scientist Dr. Kevin Trenberth and 19 other scientists have become so tired of debating global warming that they are now apparently seeking to jail those who disagree with them. One of the sc...

[Read more...](#)

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Kevin Trenberth <trenbert@ucar.edu>
Sent: Thursday, September 17, 2015 11:45 AM
To: Cane Mark; J Shukla
Cc: John_P._Holdren@ostp.eop.gov; Patricia_M._McLaughlin@ostp.eop.gov; Edward W Maibach; Paul A Dirmeyer; Professor Barry Klinger; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Robock Alan; Kalnay Eugenia; Kirtman Ben; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr.

Vasubandhu Misra; Dr. Robert Dickinson; Biasutti Michela; Goddard Lisa; Dr. Alan Betts; Sheldon Whitehouse; Joseph Majkut; Lara Quint

Subject: Re: Letter to President, AG, and OSTP Director

From Climate Nexus:

Documenting Dangers, Doing Nothing: Exxon supported scientists conducted pioneering research into fossil fuels' role in climate change back in the 1970s. But when scientists warned management that addressing climate issues through policy change could affect their profitability, Exxon began a decades-long campaign to discredit the research. The second in a multi-part series from InsideClimate News reveals how an early culture of elite scientific exploration was abandoned by a corporate agenda that sought to hide the truth and cover up the potentially catastrophic implications of business-as-usual. (News: [InsideClimate News](#), [The Hill](#), [Newsweek](#), [PBS](#), [Fortune](#)) **Commentary:** [New York Times](#), [Andrew Revkin column](#), [Inverse](#), [Jacqueline Ronson column](#), [Grist](#), [Katie Herzog column](#), [Wired](#), [Sarah Zhang column](#))

On 9/17/15 9:38 AM, Cane Mark wrote:

In case you missed this initial article on Exxon:

<http://insideclimatenews.org/news/15092015/frontline-video>

On Sep 14, 2015, at 11:18 AM, J Shukla <shukla@iges.org> wrote:

Dear Dr. Holdren,

It has been a long time since I have had email correspondence with you. I do hope this email will reach your office.

Please find enclosed a letter to the President, the Attorney General, and you, reiterating the position of an overwhelming majority of climate scientists about the potentially serious adverse effects of human-induced climate change. The letter also supports Senator Whitehouse's proposal that the Department of Justice begin a RICO investigation of the fossil-fuel industry, who according to Senator Whitehouse, have knowingly deceived the American people about the risks of climate change. The letter has been endorsed by a number of distinguished scientists whose names and affiliations are provided at the end of the letter.

We will be grateful if you can please bring this letter to the attention of the President. Thank you.

Regards,
J. Shukla

University Professor, George Mason University
President, Institute of Global Environment & Society
Research Hall, Room 105
George Mason University, MSN: 2B3
4400 University Drive
Fairfax, VA 22030 USA

Tel: 703-993-5700
E-mail: shukla@iges.org
http://www.iges.org/

<Letter to Pres, AG, Holdren_Final.docx>

On Sep 9, 2015, at 4:11 PM, J Shukla <shukla@iges.org>
wrote:

Dear Friends,

Please find enclosed a copy of the final letter. Thank you
for your support.

Regards,
Shukla

<Letter to Pres, AG, Holdren_Final.docx>

Mark A. Cane
G. Unger Vetlesen Professor of Earth and Climate Sciences
Lamont-Doherty Earth Observatory of Columbia University
61 Route 9W
Palisades, NY 10964-8000

mcane@ldeo.columbia.edu Secretary: Virginia DiBlasi
845 365 8344 (phone) 845 365 8667
845 365 8736 (fax) virginia@ldeo.columbia.edu
http://www.ldeo.columbia.edu/research/ocean-climate-physics

Department of Earth and Environmental Science http://eesc.columbia.edu/
Department of Applied Physics and Applied Math
Founder, Master of Arts Program in Climate and Society:
http://www.columbia.edu/cu/climatesociety/

--

Kevin E Trenberth
Distinguished Senior Scientist
Climate Analysis Section
National Center for Atmospheric Research
PO Box 3000
Boulder, CO 80307, USA

ph 303 497 1318

fax 303 497 1333

email trenbert@ucar.edu

From: [Edward W Maibach](#)
To: [Bob Inglis](#); [Alex Bozmoski](#)
Subject: op-ed + a needlessly self-inflicted headache
Date: Saturday, September 19, 2015 12:41:11 PM
Attachments: [Maibach Op-Ed Sept 2105 ewm.docx](#)
[Letter to Pres. AG, Holdren Final.docx](#)

Greetings gentlemen,

I am drafting the attached op-ed and will attempt to get it placed shortly after the Pope's departure. Any suggested improvements will be much appreciated.

Also, I somewhat foolishly signed on to the attached letter that -- thanks to Marc Morano -- has caused quite a stir among some Americans who are unconvinced that climate change is a problem. I expect the kerfuffle (hostile emails and voice messages arriving for me at Mason) will die down soon, but I did want to you to know that I am currently more of a liability to you than usual. BTW: The accusations against me and the other signers bear little resemblance to the actions we proposed in the letter. Oddly, many of them allege that we are proposing to have dissenting scientists locked up in prison. What we actually proposed was financial penalties against corporations than fund climate denial.

Lastly, any thoughts about my (blindingly brilliant) idea for you to lead a field trip to Greenland this summer? I am fairly sure we can raise the necessary funds rather easily.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

GOP Candidate's Position on Climate Change Could Cost them the White House

It would be easy for the current crop of Republican presidential contenders to believe they can reach the White House without taking climate change seriously. After all, in 2012, global warming didn't come up in any of the three debates between Mitt Romney and Barack Obama, and neither candidate paid a price. But times have changed. Today, Republicans shouldn't expect to win the presidency if they dismiss the risks of climate disruption.

Climate change is fueling record heat, rampant wildfires and historic droughts across wide swaths of America, threatening the health and safety of our friends and loved ones, if not us. Americans understand this, and they want the government to take action. While Republicans have made the Clean Power Plan their latest punching bag, they should take note that – in a poll conducted this spring by my colleagues and I at Yale and George Mason universities – 70 percent of Americans support placing strict limits on carbon dioxide emissions on existing coal-fired power plants. We also found that a whopping 75 percent of adults, including XX% of Republicans and YY% of Republicans under the age of 50, support regulating carbon dioxide as a pollutant.

Republican strategists may dismiss these findings, but they do so at their peril. In the primaries, appealing to the most conservative Republicans – who are the group most likely to oppose climate action – may be the safest route to winning the nomination, but in the general election, opposing climate action will cost the Republican candidate votes. In a poll conducted last year, we found that Americans are two times more likely to vote for a candidate who strongly supports action to reduce global warming, and three times more likely to vote against a political candidate who strongly opposes action to reduce global warming. Only conservative Republicans are, on balance, slightly more likely to vote for a candidate who strongly opposes action to reduce global warming.

The changing demographics of the electorate create a special imperative for the GOP to step forward on climate change. Mitt Romney's defeat sent party leaders scrambling for ways to woo Hispanic voters. Enter Jeb Bush and Marco Rubio, widely considered the most electable of the GOP presidential contenders, due in no small part to their ability to reach Latinos. Guess what? A recent poll from *The New York Times*, Stanford University and the nonpartisan think tank Resources for the Future, found that only 5 percent of Hispanics think the federal government should do nothing to tackle climate change. The Pope's recent visit to the U.S. – given his message on global warming – is likely to further strengthen Hispanics' resolve to address this issue.

Comment [OU1]: Or we could say: "only 22 percent of Hispanics think the federal government should do little or nothing to tackle climate change."

What does Marco Rubio think? He has taken the bold stance that "America is not a planet." Jeb Bush? He said, "For the people to say the science is decided on this is just really arrogant." (It's not.) This kind of rhetoric will not pay off. Our spring 2015 poll found that about twice as many Americans trust Barack Obama and Hilary Clinton as a

source of information about global warming than trust Jeb Bush and John Boehner.
Does the GOP want to keep hemorrhaging credibility on this issue?

Republicans have been groping for the right way to talk about global warming in a way that satisfies their big donors without frustrating or alienating voters. Until recently, this quandary yielded tortured statements like, "I'm not a scientist." More recently, some Republicans have opted for acknowledging the climate crisis while contending that it would cost too much to deal with the problem. Close, but no cigar. Most Americans, including most Republicans and most Latinos want to limit carbon pollution. There is only one winning position for the GOP: embrace climate change, and make a forceful case for the policies that they feel will be most effective at addressing the problem. Continuing to ignore climate change will likely make it harder for Republicans take back the White House in 2016.

Comment [OU2]: What does this mean??

Letter to President Obama, Attorney General Lynch, and OSTP Director Holdren

September 1, 2015

Dear President Obama, Attorney General Lynch, and OSTP Director Holdren,

As you know, an overwhelming majority of climate scientists are convinced about the potentially serious adverse effects of human-induced climate change on human health, agriculture, and biodiversity. We applaud your efforts to regulate emissions and the other steps you are taking. Nonetheless, as climate scientists we are exceedingly concerned that America's response to climate change – indeed, the world's response to climate change – is insufficient. The risks posed by climate change, including increasing extreme weather events, rising sea levels, and increasing ocean acidity – and potential strategies for addressing them – are detailed in the Third National Climate Assessment (2014), *Climate Change Impacts in the United States*. The stability of the Earth's climate over the past ten thousand years contributed to the growth of agriculture and therefore, a thriving human civilization. We are now at high risk of seriously destabilizing the Earth's climate and irreparably harming people around the world, especially the world's poorest people.

We appreciate that you are making aggressive and imaginative use of the limited tools available to you in the face of a recalcitrant Congress. One additional tool – recently proposed by Senator Sheldon Whitehouse – is a RICO (Racketeer Influenced and Corrupt Organizations Act) investigation of corporations and other organizations that have knowingly deceived the American people about the risks of climate change, as a means to forestall America's response to climate change. The actions of these organizations have been extensively documented in peer-reviewed academic research (Brulle, 2013) and in recent books including: *Doubt is their Product* (Michaels, 2008), *Climate Cover-Up* (Hoggan & Littlemore, 2009), *Merchants of Doubt* (Oreskes & Conway, 2010), *The Climate War* (Pooley, 2010), and in *The Climate Deception Dossiers* (Union of Concerned Scientists, 2015). We strongly endorse Senator Whitehouse's call for a RICO investigation.

The methods of these organizations are quite similar to those used earlier by the tobacco industry. A RICO investigation (1999 to 2006) played an important role in stopping the tobacco industry from continuing to deceive the American people about the dangers of smoking. If corporations in the fossil fuel industry and their supporters are guilty of the misdeeds that have been documented in books and journal articles, it is imperative that these misdeeds be stopped as soon as possible so that America and the world can get on with the critically important business of finding effective ways to restabilize the Earth's climate, before even more lasting damage is done.

Sincerely,

Jagadish Shukla, George Mason University, Fairfax, VA

Edward Maibach, George Mason University, Fairfax, VA

Paul Dirmeyer, George Mason University, Fairfax, VA

Barry Klinger, George Mason University, Fairfax, VA

Paul Schopf, George Mason University, Fairfax, VA

(continued on page 2)

Letter to President Obama, Attorney General Lynch, and OSTP Director Holdren

David Straus, George Mason University, Fairfax, VA

Edward Sarachik, University of Washington, Seattle, WA

Michael Wallace, University of Washington, Seattle, WA

Alan Robock, Rutgers University, New Brunswick, NJ

Eugenia Kalnay, University of Maryland, College Park, MD

William Lau, University of Maryland, College Park, MD

Kevin Trenberth, National Center for Atmospheric Research, Boulder, CO

T.N. Krishnamurti, Florida State University, Tallahassee, FL

Vasu Misra, Florida State University, Tallahassee, FL

Ben Kirtman, University of Miami, Miami, FL

Robert Dickinson, University of Texas, Austin, TX

Michela Biasutti, Earth Institute, Columbia University, New York, NY

Mark Cane, Columbia University, New York, NY

Lisa Goddard, Earth Institute, Columbia University, New York, NY

Alan Betts, Atmospheric Research, Pittsford, VT

From: [Edward W Maibach](#)
To: [Alex Bozmoski](#)
Cc: [Bob Inglis](#)
Subject: Re: op-ed + a needlessly self-inflicted headache
Date: Monday, September 21, 2015 1:46:54 PM

Re the op-ed, thanks for the kind words.

Re the the RICO letter, the attack against the signatories is getting more intense, but it is good to know that it isn't going to be a problem for republicEN.

p.s. I thought Eli was ED of R Street.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Alex Bozmoski <alex@republicen.org>
Sent: Monday, September 21, 2015 1:42 PM
To: Edward W Maibach
Cc: Bob Inglis
Subject: Re: op-ed + a needlessly self-inflicted headache

Ed,

Firstly, your op-ed is awesome! Can't wait to see that in print. Let us know please 5% of Americans of Hispanic decent are don't think we need climate action. Amazing!

Secondly, yea, the RICO stuff touches a sore spot with conservatives. Andrew Moylan the executive director of R Street stood-up at Whitehouse's AEI event and said something like 'how do you ever expect us to trust you when you're out there threatening RICO...' And he's for a carbon tax. But I doubt you'll cause us any trouble by being on that letter; our demographic isn't exactly the people who feel persecuted by hypothetical conspiracies.

Killer op-ed; and you're exactly the guy to write it too. Very cool

Alex

On Sat, Sep 19, 2015 at 12:41 PM, Edward W Maibach <emaibach@gmu.edu> wrote:

Greetings gentlemen,

I am drafting the attached op-ed and will attempt to get it placed shortly after the Pope's departure. Any suggested improvements will be much appreciated.

Also, I somewhat foolishly signed on to the attached letter that -- thanks to Marc Morano - has caused quite a stir among some Americans who are unconvinced that climate change is a problem. I expect the kerfuffle (hostile emails and voice messages arriving for me at Mason) will die down soon, but I did want to you to know that I am currently more of a liability to you than usual. BTW: The accusations against me and the other signers bear little resemblance to the actions we proposed in the letter. Oddly, many of them allege that we are proposing to have dissenting scientists locked up in prison. What we actually proposed was financial penalties against corporations than fund climate denial.

Lastly, any thoughts about my (blindingly brilliant) idea for you to lead a field trip to Greenland this summer? I am fairly sure we can raise the necessary funds rather easily.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W. Maibach](#)
To: [JN Media Team](#)
Subject: Re: Invitation for ClimateweekNYC Twitter Chat panel
Date: Monday, September 21, 2015 1:58:18 PM

Hi Esther,

In the past few days I -- and 19 other scientists who sent a letter to the POTUS endorsing a RICO investigation of climate denial activities by fossil-fuel companies -- have come under attack by climate denial organizations. If I participate in your event, there is a strong chance that they will hijack the event for their purposes. Thus, for everyone's sake, it is probably best that I not participate in your event.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: JN Media Team <jnesheiwatmedia@gmail.com>
Sent: Monday, September 21, 2015 9:10 AM
To: Edward W Maibach
Subject: Re: Invitation for ClimateweekNYC Twitter Chat panel

Great!

We would love to have to you. Please confirm if you are available that day and we will get started with promoting you as a panelist.

Thank you,

Esther Newman

On Sat, Sep 19, 2015 at 9:40 AM, Edward W Maibach <emaibach@gmu.edu> wrote:

I am not available on the 22nd but could possibly participate on the 24th.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: JN Media Team <jnesheiwatmedia@gmail.com>
Sent: Friday, September 18, 2015 4:25 PM
To: Edward W Maibach
Subject: Invitation for ClimateweekNYC Twitter Chat panel

Hello Edward Maibach,

Julia Nesheiwat would like to invite you to participate in a Twitter chat for Climate Week NYC (<http://www.climateweeknyc.org>). You will join a panel of climate change experts to discuss climate change solutions, energy security and the UN December talks. Your participation will involve answering the discussion questions and a Q&A session from the twitter audience. The chat will last for an hour from 5:00 pm to 6:00 pm EST on 09/22/2015 and 9/24/2015. Would you be available for the first chat on 9/22/15?

I understand this is last minute scheduling request, but your support on climate change will tremendously help. It would be great for the Climate Change educators and Department of State Representatives, can work together to assist in national climate change efforts.

You can find more information on the #ClimateChatNYC twitter chat here: <http://www.climateweeknyc.org/events/twitter-chat-series-climate-change-solutions-part-2>

Thank you and I hope you can participate in this event!

From: [Edward W Maibach](#)
To: [Bob Inglis](#)
Cc: [Alex Bozmoski](#)
Subject: Re: op-ed + a needlessly self-inflicted headache
Date: Tuesday, September 22, 2015 8:08:54 AM

Thanks Bob. Onward and upward indeed!

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Bob Inglis <bob.inglis@republicen.org>
Sent: Monday, September 21, 2015 5:38 PM
To: Edward W Maibach
Cc: Alex Bozmoski
Subject: Re: op-ed + a needlessly self-inflicted headache

Ed,

Sorry for taking so long to reply. I'm with Alex: the op-ed is good when coming from you. We would have made it sound like we were coming alongside the Rs to help them out. You are on the scene schooling them about the cliff that they are about to go over. They won't like being schooled, but their financial backers and the smart money may take your words to heart and reflect the warning back to the candidates. I like the comments embedded in the draft you sent--especially expanding the Hispanic number to 22% as it seems more appropriate to add "do little" to "do nothing."

As to the letter, it's provocative for sure. RICO is a sore subject and in the conservative mind it may be cast in the milieu of enforcing politically correct discourse in the academy, a regulation of speech.

The Greenland idea is blindingly brilliant for sure. It's the kind of thing that I suggested to Prince Charles--the he invite folks like George Will to accompany him to Antarctica, hosting the group at the Kiwi station there. (The Prince said he'd consider it, minding that he not get too far into policy and politics.) The challenge--which perhaps can be overcome--with members of Congress is fitting such a trip into the gift rules.

Onward!

Bob

On Mon, Sep 21, 2015 at 1:53 PM, Alex Bozmoski <alex@republicen.org> wrote:

Eli is President of R Street. Eli will someday be shadow president of America and presumably when that happens Andrew will steer the ship without a president for a while.

On Sep 21, 2015 1:46 PM, "Edward W Maibach" <emaibach@gmu.edu> wrote:

Re the op-ed, thanks for the kind words.

Re the the RICO letter, the attack against the signatories is getting more intense, but it is good to know that it isn't going to be a problem for republicEN.

p.s. I thought Eli was ED of R Street.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Alex Bozmoski <alex@republicen.org>
Sent: Monday, September 21, 2015 1:42 PM
To: Edward W Maibach
Cc: Bob Inglis
Subject: Re: op-ed + a needlessly self-inflicted headache

Ed,

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And he's for a carbon tax. But I doubt you'll cause us any trouble by being on that letter; our demographic isn't exactly the people who feel persecuted by hypothetical conspiracies.

Killer op-ed; and you're exactly the guy to write it too. Very cool

Alex

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Greetings gentlemen,

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Also, I somewhat foolishly signed on to the attached letter that -- thanks to Marc Morano -- has caused quite a stir among some Americans who are unconvinced that climate change is a problem. I expect the kerfuffle (hostile emails and voice messages arriving for me at Mason) will die down soon, but I did want to you to know that I am currently more of a liability to you than usual. BTW: The accusations against me and the other signers bear little resemblance to the actions we proposed in the letter. Oddly, many of them allege that we are proposing to have dissenting scientists locked up in prison. What we actually proposed was financial penalties against corporations than fund climate denial.

Lastly, any thoughts about my (blindingly brilliant) idea for you to lead a field trip to Greenland this summer? I am fairly sure we can raise the necessary funds rather easily.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W. Maibach](#)
To: [James L. Kinter III](#)
Cc: [J Shukla](#)
Subject: Re: rico letter
Date: Tuesday, September 22, 2015 10:01:58 AM

Thanks Jim.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: James L. Kinter III
Sent: Tuesday, September 22, 2015 9:46 AM
To: Edward W Maibach
Cc: J Shukla
Subject: Fwd: rico letter

Dear Ed - I heard from your friend Jason Samenow in regard to the letter about fossil fuel companies. I also shared this with Shukla, and he reminded me that you are a signatory. I agreed to speak to Jason off the record, but not before Thursday. Best regards. — Jim

Jim Kinter, Director
Center for Ocean-Land-Atmosphere Studies
Professor, Climate Dynamics
Dept. of Atmospheric, Oceanic & Earth Sciences
284 Research Hall, Mail Stop 6C5
George Mason University
4400 University Drive
Fairfax, VA 22030 USA

tel: (703) 993-5700 ***** fax: (703) 993-5770
email: jkinter@gmu.edu *** <http://www.iges.org>

Begin forwarded message:

From: "Samenow, Jason" <Jason.Samenow@washpost.com>
Subject: rico letter
Date: September 21, 2015 at 10:22:46 AM EDT
To: "jkinter@gmu.edu" <jkinter@gmu.edu>

Jim- Hope you're well. I was interested to see you were not among the signatories of

the RICO letter prepared and distributed by a number of your colleagues:
<http://www.iges.org/letter/LetterPresidentAG.pdf>

Would you be willing to speak to me off the record about this letter effort – what motivated it and why you chose not to participate...?

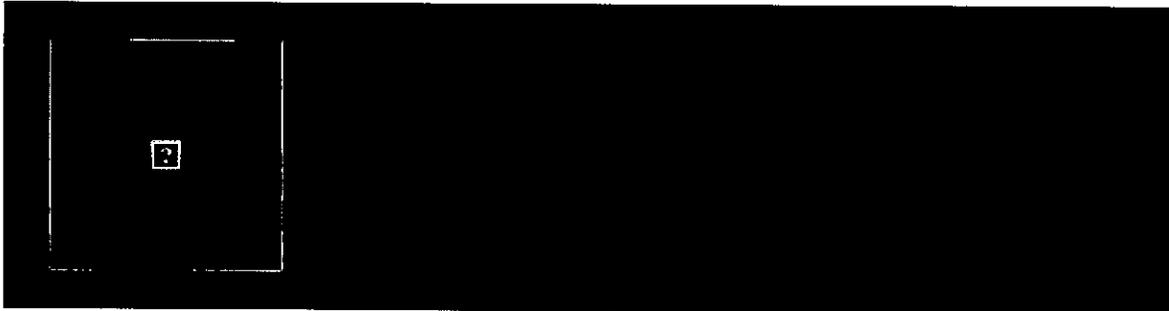
Best,
Jason Samenow

From: Edward W Maibach
To: Jagadish Shukla
Subject: Fw: Prosecute Exxon
Date: Tuesday, September 22, 2015 10:03:06 AM

FYI

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Brad Johnson <brad@climatehawkvote.com>
Sent: Tuesday, September 22, 2015 9:30 AM
To: Edward W Maibach
Subject: Prosecute Exxon



Tell Attorney General Loretta Lynch: Launch a RICO prosecution of Exxon for knowing climate deception.

Edward --

The headline says it all: "Exxon's Own Research Confirmed Fossil Fuels' Role in Global Warming Decades Ago."

The Pulitzer-winning *InsideClimate News* is running a blockbuster series with incontrovertible evidence -- pulled from Exxon's own archives -- that the oil giant's top executives were warned of possible catastrophe from greenhouse pollution, then led efforts to block solutions. Documents show that **Exxon's own scientists were aware of and studying the dangerous impacts of greenhouse gases in the 1970s and 1980s** -

- until Exxon's leadership decided to shut down the research and promote climate denial instead, in order to protect the company's unfathomably large profits. We've known for years that the oil industry finances the climate-denial network of politicians, think tanks, and right-wing media in order to protect their gargantuan profits,

but now we have sufficient evidence of deliberate deceit to make a federal investigation happen.

Tell the DOJ: **Prosecute Exxon's deliberate climate denial.**

The United States Department of Justice has the power to prosecute Exxon's deliberate deception under the Racketeer Influenced and Corrupt Organizations (RICO) Act - **just as DOJ sued the tobacco industry for knowingly lying about the dangers of cigarette smoking.**

Even before these smoking-gun documents were released, climate hawks have been making calls for a RICO investigation of fossil-fueled climate denial:

- Three weeks ago, a group of **top climate scientists** called for an investigation, saying, "**it is imperative that these misdeeds be stopped as soon as possible** so that America and the world can get on with the critically important business of finding effective ways to restabilize the Earth's climate, before even more lasting damage is done."
- Months earlier, climate hawk Senator **Sheldon Whitehouse** (D-RI), a former state Attorney General, called for a RICO investigation of Big Oil, saying, "I don't know whether the fossil fuel industry and its allies engaged in the same kind of racketeering activity as the tobacco industry. We don't have enough information to make that conclusion. Perhaps it's all smoke and no fire. **But there's an awful lot of smoke.**"

Thanks to the reporters at *InsideClimate News*, **now we have smoking-gun documents** found in public archives. And there's certain to be more. It's up to us to demand the U.S. government immediately launch an investigation that will lead to prosecution of Exxon's deliberate and deadly climate denial.

Please add your voice to tell U.S. Attorney General Loretta Lynch:

"Launch a RICO prosecution of Exxon and its fellow fossil-fuel companies for deliberate and malicious climate deception."

Your fellow climate hawk,

Brad Johnson

Climate Hawks Vote Political Director

References:

"Exxon's Own Research Confirmed Fossil Fuels' Role in Global Warming Decades Ago," *InsideClimate News*, September 16, 2015

<http://insideclimatenews.org/news/15092015/Exxons-own-research-confirmed-fossil-fuels-role-in-global-warming>

Climate scientists' letter to President Obama, Attorney General Lynch, and OSTP Director Holdren, September 1, 2015

<http://www.iges.org/letter/LetterPresidentAG.pdf>

"The fossil-fuel industry's campaign to mislead the American people," Sen. Sheldon Whitehouse, *Washington Post*, May 29, 2015

https://www.washingtonpost.com/opinions/the-fossil-fuel-industrys-campaign-to-mislead-the-american-people/2015/05/29/04a2c448-0574-11e5-8bda-c7b4e9a8f7ac_story.html

Climate Hawks Vote · United States

This email was sent to emaibach@gmu.edu. To stop receiving emails, [click here](#).

You can also keep up with Brad Johnson on [Twitter](#).

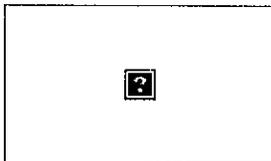
Created with [NationBuilder](#), software for leaders.

From: Edward W Maibach
To: J Shukla; Dr. Kevin Trenberth
Cc: Eugenia Kalnay; Edward Sarachik; Paul A Dirmeyer; Professor Barry Klinger; Andrew Light; Paul S Schopf; David M. Straus; Mike Wallace; Alan Robock; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; Dr. Alan Betts
Subject: Re: Letter to President and Attorney General
Date: Tuesday, September 22, 2015 10:28:30 AM

All,

Should you be inclined to take further action in support of Senator Whitehouse's proposal, one option is to sign on to this online petition that launched today (with an option to share the link on your social media accounts):

http://www.climatehawksvote.com/prosecute_exxon?recruiter_id=305519



Prosecute Exxon - Climate Hawks Vote

Sign now: Tell US Attorney General Loretta Lynch to launch a RICO investigation of Exxon's deliberate climate deception.

[Read more...](#)

For what it's worth, I signed.

Also, I encourage you to read the excellent investigative journalism pieces that have been written by Neela Banerjee, Lisa Song, David Hasemyer, and published this week by Inside Climate News: <http://insideclimatenews.org/>

Rumor has it that several more of their articles on Exxon's climate misdeeds will be published throughout this week, including one on Exxon's RICO liability.

Lastly, some closing words from my mentor Bill Novelli (who was Executive Director of the Campaign for Tobacco-Free Kids -- the organization that convinced the state AGs to prosecute the tobacco industry): Problems worthy of attack prove their worth by attacking back.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: J Shukla <shukla@iges.org>
Sent: Tuesday, September 22, 2015 10:04 AM
To: Dr. Kevin Trenberth
Cc: Eugenia Kalnay; Edward Sarachik; Edward W Maibach; Paul A Dirmeyer; Professor Barry Klinger; Andrew Light; Paul S Schopf; David M. Straus; Mike Wallace; Alan Robock; Dr. Bill Lau; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; Dr. Alan Betts
Subject: Re: Letter to President and Attorney General

Dear Friends,

As Sheldon Whitehouse mentioned in his email to us, this comes with the territory. The response is far more vicious than I had ever thought, but blissfully I do not read web postings (in fact I normally do not click on web links unless a friend tells me to do so). I have received a number of awful voicemails and hate emails (but I have read only emails from Peter Webster). I plan to continue to pursue this matter to its logical end.

I would just like to follow Kevin's suggestion to simply ignore it. A more important question is how do we get far more scientists to support our letter, while at the same time making absolutely clear that we consider healthy skepticism an integral part of creative science, and our letter was directed towards the fossil fuel industry. Somehow, very cleverly, some people have changed the narrative away from the fossil fuel industry and to climate skeptics. Your suggestions are welcome.

Regards,
Shukla

On Sep 21, 2015, at 12:13 PM, Kevin Trenberth <trenbert@ucar.edu> wrote:

Dear all
FYI

Shukla and his wife are now under major attack, spearheaded by Roger Pielke Jr

From: [Edward W Maibach](#)
To: [michael mcdonald](#)
Cc: [Michael Gerrard](#)
Subject: Re: Investigation Finds Exxon Ignored Its Own Early Climate Change Warnings
Date: Tuesday, September 22, 2015 10:35:20 AM

I don't know Michael, but I hope to see you both that weekend.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: michael mcdonald <michael.d.mcdonald@mac.com>
Sent: Tuesday, September 22, 2015 8:34 AM
To: Edward W Maibach
Cc: Michael Gerrard
Subject: Investigation Finds Exxon Ignored Its Own Early Climate Change Warnings

Ed,

Thank you for your good work with this letter to the President and the Attorney General. I have also be communicating with Senator Whitehouse's office. I should know after our Friday session in the UN General Assembly, whether or not I will be in West Africa on October 17.

Do you know Michael Gerrard, who leads the Center for Climate Change Law at Columbia University. Given your interactions with President Obama and the Attorney General, you should probably also combine efforts with Michael on addressing the petrochemical companies violation of the RICO laws.

Let's plan toward connecting in New York in the October 17 timeframe and see if Michael might join us for meal and discussion regarding the status of the preparations for the RICO suits against EXXON and other petrochemical companies.

Mike

Michael D. McDonald, Dr.P.H.

Coordinator
Global Health Response and Resilience Alliance

Chairman
Oviar Global Resilience Systems, Inc.

Executive Director
Health Initiatives Foundation, Inc.

Cell: 202-468-7899
Michael.D.McDonald@mac.com

<http://resiliencesystem.org>

On Sep 22, 2015, at 8:04 AM, Edward W Maibach <emaibach@gmu.edu> wrote:

Miguel,

Aaron is in NYC at present -- looking for a place to stay for a few months while he takes a training course and looks for work. I will likely visit the weekend of Oct 17th in an effort to be helpful to him. Will you be around then?

I am very much in the middle of the Exxon issue at present:

<http://www.iges.org/letter/LetterPresidentAG.pdf>

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Edward W Maibach
To: lowell@raisingkaine.com; Barry A Klinger; pdirmeye~gmu.edu@email.fatcow.com; Paul S Schopf; Jagadish Shukla
Subject: Re:
Date: Tuesday, September 22, 2015 1:16:28 PM

Hi Lowell,

Neither I nor my climate science colleagues at Mason are RICO experts, so we won't be of much use to you on this issue.

Michael Gerrard at Columbia Law School is, however, an expert on this issue:

http://www.law.columbia.edu/fac/Michael_Gerrard

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: lowell@raisingkaine.com <lowell@raisingkaine.com>
Sent: Tuesday, September 22, 2015 12:56 PM
To: Barry A Klinger; pdirmeye~gmu.edu@email.fatcow.com; Paul S Schopf; Jagadish Shukla; Edward W Maibach
Subject:

Professors Shukla, Maibach, Dirmeyer, Klinger, Schopf, Straus:

Hi, my name is Lowell Feld and I edit the progressive political blog, Blue Virginia (www.bluevirginia.us). I also have a long background in energy and energy-related environmental issues, from my 17 years at the US Energy Information Administration and my 5 years as a consultant to a Virginia-based clean energy public relations firm (Tigercomm).

I saw your signatures on the letter to President Obama and AG Lynch (<http://www.iges.org/letter/LetterPresidentAG.pdf>) regarding the idea of using RICO to go after "corporations and other organizations that have knowingly deceived the American people about the risks of climate change, as a means to forestall America's response to climate change." I find this to be a fascinating idea, but am not an attorney or an expert on RICO so don't feel confident judging it beyond that in terms of how effective it might be. All I can say is, as someone who cares deeply about stopping dangerous anthropogenic global warming/climate chaos, and who is very angry at Exxon and others who have worked to discredit climate science/scientists, I hope that RICO can be used against the "bad guys."

My question has to do with Virginia's own RICO law (<https://vacode.org/18.2/13/>) and whether that might be applied at the state level, by Attorney General Herring in this case, against coal

companies, Dominion Power, or others in Virginia who might have engaged in an organized, coordinated, well-funded effort to discredit climate science. I was considering writing about this, but first wanted to check with people who almost certainly know a lot more than I do about RICO laws.

Thanks, and feel free to call me if you'd prefer chatting (off the record/on background or however you prefer).

Best,

Lowell Feld
Blue Virginia
Arlington, VA
703-465-0075

From: [Edward W Maibach](#)
To: [Bob Inglis](#)
Cc: [Alex Bozmoski](#)
Subject: Re: op-ed + a needlessly self-inflicted headache
Date: Tuesday, September 22, 2015 8:45:42 PM

Bob,

Re Greenland, would the trip be permissible if a charitable foundation paid the expenses? Jeff Nesbit (Climate Nexux) thinks he can convince a new foundation to provide the funding, if you and republicEN are willing to be the trip leader (with University of Colorado). Just say the word, and I will have Jeff make the ask.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Edward W Maibach
Sent: Tuesday, September 22, 2015 8:08 AM
To: Bob Inglis
Cc: Alex Bozmoski
Subject: Re: op-ed + a needlessly self-inflicted headache

Thanks Bob. Onward and upward indeed!

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Bob Inglis <bob.inglis@republicen.org>
Sent: Monday, September 21, 2015 5:38 PM
To: Edward W Maibach
Cc: Alex Bozmoski
Subject: Re: op-ed + a needlessly self-inflicted headache

Ed,

Sorry for taking so long to reply. I'm with Alex: the op-ed is good when coming from you. We would have made it sound like we were coming alongside the Rs to help them out. You are on the scene schooling them about the cliff that they are about to go over. They won't like being schooled, but their financial backers and the smart money may take your words to heart and reflect the warning back to the candidates. I like the comments embedded in the draft you sent--especially expanding the Hispanic number to 22% as it seems more appropriate to add "do little" to "do nothing."

As to the letter, it's provocative for sure. RICO is a sore subject and in the conservative mind it may be cast in the milieu of enforcing politically correct discourse in the academy, a regulation of speech.

The Greenland idea is blindingly brilliant for sure. It's the kind of thing that I suggested to Prince Charles--the he invite folks like George Will to accompany him to Antarctica, hosting the group at the Kiwi station there. (The Prince said he'd consider it, minding that he not get too far into policy and politics.) The challenge--which perhaps can be overcome--with members of Congress is fitting such a trip into the gift rules.

Onward!

Bob

On Mon, Sep 21, 2015 at 1:53 PM, Alex Bozmoski <alex@republicen.org> wrote:

Eli is President of R Street. Eli will someday be shadow president of America and presumably when that happens Andrew will steer the ship without a president for a while.

On Sep 21, 2015 1:46 PM, "Edward W Maibach" <emaibach@gmu.edu> wrote:

Re the op-ed, thanks for the kind words.

Re the the RICO letter, the attack against the signatories is getting more intense, but it is good to know that it isn't going to be a problem for republicEN.

p.s. I thought Eli was ED of R Street.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Alex Bozmoski <alex@republicen.org>
Sent: Monday, September 21, 2015 1:42 PM
To: Edward W Maibach
Cc: Bob Inglis
Subject: Re: op-ed + a needlessly self-inflicted headache

Ed,

Firstly, your op-ed is awesome! Can't wait to see that in print. Let us know please 5% of Americans of Hispanic decent are don't think we need climate action. Amazing!

Secondly, yea, the RICO stuff touches a sore spot with conservatives. Andrew Moylan the executive director of R Street stood-up at Whitehouse's AEI event and said something like 'how do you ever expect us to trust you when you're out there threatening RICO...'
And he's for a carbon tax. But I doubt you'll cause us any trouble by being on that letter; our demographic isn't exactly the people who feel persecuted by hypothetical conspiracies.

Killer op-ed; and you're exactly the guy to write it too. Very cool

Alex

On Sat, Sep 19, 2015 at 12:41 PM, Edward W Maibach <emaibach@gmu.edu> wrote:

Greetings gentlemen,

I am drafting the attached op-ed and will attempt to get it placed shortly after the Pope's departure. Any suggested improvements will be much appreciated.

Also, I somewhat foolishly signed on to the attached letter that -- thanks to Marc Morano -- has caused quite a stir among some Americans who are unconvinced that climate change is a problem. I expect the kerfuffle (hostile emails and voice messages arriving for me at Mason) will die down soon, but I did want to you to know that I am currently more of a liability to you than usual. BTW: The accusations against me and the other signers bear little resemblance to the actions we proposed in the letter. Oddly, many of them allege that we are proposing to have dissenting scientists locked up in prison. What we actually proposed was financial penalties against corporations than fund climate denial.

Lastly, any thoughts about my (blindingly brilliant) idea for you to lead a field trip to

Greenland this summer? I am fairly sure we can raise the necessary funds rather easily.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W Maibach](#)
To: [James L. Kinter III](#); [Jagadish Shukla](#)
Subject: The real climate deniers
Date: Wednesday, September 23, 2015 3:40:24 PM

Hi Jim and Shukla,

The former chief of staff of Senator Russell Long (Louisiana - long since deceased) left me multiple voice mails about the RICO letter. Although he has all his facts wrong, because his VM's were polite, and because Senator Long was from my home state of Louisiana, I decided to call him back. We had a pleasant chat.

He wanted to bring his essay on the real climate deniers (us) to our attention:

<http://www.truespeak.org/contents/view/deniersofactualclimatescience>

I bring it to your attention for one reason only....perhaps you should have Clim 100 students read and debunk his points as a group exercise.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W Maibach](#)
To: [Jeff Nesbit](#)
Subject: respond?
Date: Thursday, September 24, 2015 6:49:56 AM

Jeff,

Should Shukla respond to Fox News? There were no improprieties. Like many research institute employees, some (or at times most) of his salary is paid through government grants.

Ed

Hi Dr. Shukla,

I am writing an article for [FoxNews.com](#) regarding allegations that you funnelled government research grants to your own salary through a non-profit: <http://www.climatedepot.com/2015/09/20/update-leader-of-effort-to-prosecute-skeptics-under-rico-paid-himself-his-wife-1-5-million-from-govt-climate-grants-for-part-time-work/>

Would you like to address those claims? Critics say they are relevant especially in light of the call for RICO charges against climate “deniers” because, in their view, it shows that government research grants can also bias scientists.

Please let me know today if you would like to respond. Thank you,

Maxim Lott
Producer
Fox News and Fox Business

Sent from my iGlasses

From: Edward W Maibach
To: shukla@iges.org
Subject: Fwd: respond?
Date: Thursday, September 24, 2015 8:18:19 AM

Jeff Nesbit advises against responding.

Sent from my shoe phone

Begin forwarded message:

From: Jeff Nesbit <jnesbit@climatenexus.org>
Date: September 24, 2015 at 7:30:56 AM EDT
To: Edward W Maibach <emaibach@gmu.edu>
Subject: Re: respond?

I wouldn't advise him to do so. Same problem.

Sent from my iPhone

On Sep 24, 2015, at 6:50 AM, Edward W Maibach <emaibach@gmu.edu> wrote:

Jeff,

Should Shukla respond to Fox News? There were no improprieties. Like many research institute employees, some (or at times most) of his salary is paid through government grants.

Ed

Hi Dr. Shukla,

I am writing an article for [FoxNews.com](http://www.FoxNews.com) regarding allegations that you funnelled government research grants to your own salary through a non-profit: <http://www.climatedepot.com/2015/09/20/update-leader-of-effort-to-prosecute-skeptics-under-rico-paid-himself-his-wife-1-5-million-from-govt-climate-grants-for-part-time-work/>

Would you like to address those claims? Critics say they are relevant especially in light of the call for RICO charges against climate "deniers" because, in their view, it shows that government research grants can also bias

scientists.

Please let me know today if you would like to respond.

Thank you,

Maxim Lott

Producer

Fox News and Fox Business

Sent from my iGlasses

From: Edward W Maibach
To: Jeff Nesbit
Subject: Re: respond?
Date: Thursday, September 24, 2015 8:41:00 AM

How about an interview with Chris Mooney?

Sent from my shoe phone

On Sep 24, 2015, at 7:31 AM, Jeff Nesbit <jnesbit@climatenexus.org> wrote:

I wouldn't advise him to do so. Same problem.

Sent from my iPhone

On Sep 24, 2015, at 6:50 AM, Edward W Maibach <emaibach@gmu.edu> wrote:

Jeff,

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Ed

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Please let me know today if you would like to respond.
Thank you,

Maxim Lott

Producer
Fox News and Fox Business

Sent from my iGlasses

From: [Edward W Maibach](#)
To: Moonecc@gmail.com
Subject: Mason climate scientist Jagadish Shulka
Date: Thursday, September 24, 2015 11:09:11 AM

Hi Chris

Are you following the attacks on Shukla as a result of our RICO letter? Would you be willing to do a story on it?

Ed

301-461-8601

Sent from my shoe phone

From: Edward W Maibach
To: Shukla
Subject: Re: Media question on alleged funneling of climate funding Fox News
Date: Thursday, September 24, 2015 9:05:37 AM

I suggest giving an interview to Chris Mooney at Washington post. I can try to arrange it. Ok?

Sent from my shoe phone

On Sep 24, 2015, at 6:42 AM, Shukla <shukla@iges.org> wrote:

Dear Ed,
Any suggestions on how to respond?

Regards,
Shukla

University Professor, George Mason University
President, Institute of Global Environment & Society
Research Hall, Room 105
George Mason University, MSN: 2B3
4400 University Drive
Fairfax, VA 22030 USA

Tel: 703-993-5700
E-mail: shukla@iges.org
<http://www.iges.org/>

Begin forwarded message:

From: "Lott, Maxim" <Maxim.lott@FOXNEWS.COM>
Date: September 24, 2015 at 5:40:17 AM EDT
To: "shukla@cola.iges.org" <shukla@cola.iges.org>
Subject: Media question on alleged funneling of climate funding

Hi Dr. Shukla,

I am writing an article for [FoxNews.com](http://www.foxnews.com) regarding allegations that you funnelled government research grants to your own salary through a non-profit: <http://www.climatedepot.com/2015/09/20/update-leader-of-effort-to-prosecute-skeptics-under-rico-paid-himself-his-wife-1-5-million-from-govt-climate-grants-for-part-time-work/>

Would you like to address those claims? Critics say they are relevant especially in light of the call for RICO charges against climate

“deniers” because, in their view, it shows that government research grants can also bias scientists.

Please let me know today if you would like to respond. Thank you,

Maxim Lott
Producer
Fox News and Fox Business
O: 212-301-5765
C: 610-457-2022

This message and its attachments may contain legally privileged or confidential information. It is intended solely for the named addressee. If you are not the addressee indicated in this message (or responsible for delivery of the message to the addressee), you may not copy or deliver this message or its attachments to anyone. Rather, you should permanently delete this message and its attachments and kindly notify the sender by reply e-mail. Any content of this message and its attachments that does not relate to the official business of Fox News or Fox Business must not be taken to have been sent or endorsed by either of them. No representation is made that this email or its attachments are without defect.

From: Edward W Maibach
To: Chris Mooney
Subject: Re: Mason climate scientist Jagadish Shukla
Date: Thursday, September 24, 2015 4:24:09 PM

Chris,

Click on the Climate Depot link to see the "story" that Fox now wishes to report on. Shukla will not be speaking with Fox, but he would like to speak to a credible reporter to explain how professors get paid (by writing grant proposals that survive peer review, the funds of which are then used to pay our salaries). Shukla is honest and honorable, and a dedicated servant to humanity. It is an outrage that he is being smeared so as to divert attention from the truth of the matter, i.e., the climate deceptions of fossil fuel companies.

Ed

p.s. To see our RICO letter, just google Shukla RICO IGES (IGES was the non-profit that Shukla founded and is now being folded into Mason) and it will pop up.

Subject: Media question on alleged funneling of climate funding

Hi Dr. Shukla,

I am writing an article for [FoxNews.com](http://www.foxnews.com) regarding allegations that you funnelled government research grants to your own salary through a non-profit: <http://www.climatedepot.com/2015/09/20/update-leader-of-effort-to-prosecute-skeptics-under-rico-paid-himself-his-wife-1-5-million-from-govt-climate-grants-for-part-time-work/>

Would you like to address those claims? Critics say they are relevant especially in light of the call for RICO charges against climate "deniers" because, in their view, it shows that government research grants can also bias scientists.

Please let me know today if you would like to respond.
Thank you,

Maxim Lott
Producer
Fox News and Fox Business

Sent from my iGlasses

On Sep 24, 2015, at 12:48 PM, Chris Mooney <moonecc@gmail.com> wrote:

Hi Ed,

I wasn't aware of this -- i'm in NYC covering the Pope, so pretty tied up
cm

On Thu, Sep 24, 2015 at 11:09 AM, Edward W Maibach <emaibach@gmu.edu>
wrote:

Hi Chris

Are you following the attacks on Shukla as a result of our RICO letter? Would
you be willing to do a story on it?

Ed

[301-461-8601](tel:301-461-8601)

Sent from my shoe phone

From: Edward W Maibach
To: Jeff Nesbit
Subject: Re: respond?
Date: Thursday, September 24, 2015 4:26:54 PM

Chris is on assignment in NYC (covering the Pope), but will try to find me someone interested in the story. Any ideas of people I should pitch to?

Sent from my iGlasses

On Sep 24, 2015, at 8:52 AM, Jeff Nesbit <jnesbit@climatenexus.org> wrote:

Ah, I like that. Get one grounded piece out there that isn't defensive. Drop Chris a note. Let me know if I can help – I can circle back with him.

From: "emaibach@gmu.edu" <emaibach@gmu.edu>
Date: Thursday, September 24, 2015 5:40 AM
To: Jeff Nesbit <jnesbit@climatenexus.org>
Subject: Re: respond?

How about an interview with Chris Mooney?

Sent from my shoe phone

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Sent from my iPhone

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Ed

Hi Dr. Shukla,

I am writing an article
for [FoxNews.com](http://www.FoxNews.com) regarding allegations that
you funnelled government research grants
to your own salary through a non-
profit: [http://www.climatedepot.com/2015/09/20/update-
leader-of-effort-to-prosecute-skeptics-under-
rico-paid-himself-his-wife-1-5-million-
from-govt-climate-grants-for-part-time-
work/](http://www.climatedepot.com/2015/09/20/update-leader-of-effort-to-prosecute-skeptics-under-rico-paid-himself-his-wife-1-5-million-from-govt-climate-grants-for-part-time-work/)

Would you like to address those claims?
Critics say they are relevant especially in
light of the call for RICO charges against
climate “deniers” because, in their view, it
shows that government research grants can
also bias scientists.

Please let me know today if you would like
to respond. Thank you,

Maxim Lott
Producer
Fox News and Fox Business

Sent from my iGlasses

From: [Edward W Maibach](#)
To: [James L. Kinter III](#)
Subject: Re: The real climate deniers
Date: Friday, September 25, 2015 4:39:30 PM

#27 is on of my favorite jokes too, and you told it so well. ROFL

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: James L. Kinter III
Sent: Friday, September 25, 2015 4:31 PM
To: Edward W Maibach
Cc: Jagadish Shukla
Subject: Re: The real climate deniers

Dear Ed - Thanks for letting me know about the essay. I like your suggestion for CLIM 101 homework, but I have to say I didn't see any "facts" or "points" to refute. There was a lot of diatribe and some screed, but no actual points. He refers to many common global warming myths in shorthand form (sort of like the way they tell jokes in prison ... "#27 - ha ha ha"), but these have all been heard and debunked before (e.g. <https://www.skepticalscience.com/argument.php>).

Maybe Shukla has an idea for how to use this as a class exercise. Best regards. — Jim

Jim Kinter, Director
Center for Ocean-Land-Atmosphere Studies
Professor, Climate Dynamics
Dept. of Atmospheric, Oceanic & Earth Sciences
284 Research Hall, Mail Stop 6C5
George Mason University
4400 University Drive
Fairfax, VA 22030 USA

tel: (703) 993-5700 ***** fax: (703) 993-5770
email: jkinter@gmu.edu *** <http://www.iges.org>

On 23Sep2015, at 3:40 PM, Edward W Maibach <emaibach@gmu.edu> wrote:

Hi Jim and Shukla,

The former chief of staff of Senator Russell Long (Louisiana - long since deceased) left me multiple voice mails about the RICO letter. Although he has all his facts wrong, because his VM's were polite, and because Senator Long was from my home state of Louisiana, I decided to call him back. We had a pleasant chat.

He wanted to bring his essay on the real climate deniers (us) to our attention:

<http://www.truespeak.org/contents/view/deniersofactualclimatescience>

I bring it to your attention for one reason only....perhaps you should have Clim 100 students read and debunk his points as a group exercise.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W Maibach](#)
To: [Jeff Nesbit](#)
Subject: your counsel is needed
Date: Saturday, September 26, 2015 11:34:55 AM

The situation with the RICO letter continues to escalate rapidly.

GA Tech climatologist Peter Webster (husband of Judy Curry) is a long-time friend of Shukla. He sent Shukla several emails asking Shukla to retract the letter. In those emails he states that Curry, Pat Michaels and Roger Pielke are actively collaborating with Marc Morano and well-funded groups to come after us. Curry, Michaels and Pielke apparently feel that our letter made them targets - so they are fighting back.

Univ. of Washington has already received a demand for release of all emails from the accounts of letter signers.

Shukla wants to retract the letter, or at least to propose the possibility in an email to the signatories. I advised him that retraction is unlikely to make the pain go away for the signers, and it is likely to help (and embolden) climate denial organizations at precisely the moment when they are against the ropes.

Are you willing to offer this group your counsel? If so, are you willing to have me insert you into the ongoing email steam among the signatories?

Or, if not you, who? We clearly need the best possible communication and legal counsel.

Shukla has spoke with Lauren from the Climate Science Legal Defense Fund, and he is now asking her if she is willing to be inserted into the email stream to offer her legal counsel.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W Maibach](mailto:Edward.W.Maibach@climatenexus.org)
To: [Jeff Nesbit](mailto:Jeff.Nesbit@climatenexus.org)
Subject: Re: your counsel is needed
Date: Saturday, September 26, 2015 12:07:00 PM

Thank you!

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Jeff Nesbit <jnesbit@climatenexus.org>
Sent: Saturday, September 26, 2015 11:50 AM
To: Edward W Maibach
Subject: Re: your counsel is needed

Yes, introduce me to the group. I will help. If need be, I'll organize an op ed or foundational media piece that draws the direct connection to the success of the RICO efforts against the tobacco industry to efforts to expose corporate and organizational collusion to deceive the public on climate science. This isn't about Mickey Mouse tattletale deniers who write conspiracy blog posts. This has nothing to do with Curry, Michaels and Pielke. They're just diverting it in that direction because they like the public attention.

From: "emaibach@gmu.edu" <emaibach@gmu.edu>
Date: Saturday, September 26, 2015 8:34 AM
To: Jeff Nesbit <jnesbit@climatenexus.org>
Subject: your counsel is needed

The situation with the RICO letter continues to escalate rapidly.

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Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: [Edward W Maibach](#)
To: [Jagadish Shukla](#)
Subject: Fw: ICN is coming out with part 6 (RICO/legal liability) soon
Date: Tuesday, September 29, 2015 10:35:41 AM

Hi Shukla,

Please see the article below.

The article purports to link to our letter, but the link is not live.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Jeff Nesbit <jnesbit@climatenexus.org>
Sent: Tuesday, September 29, 2015 10:26 AM
To: Edward W Maibach
Subject: ICN is coming out with part 6 (RICO/legal liability) soon

Get ready. They're jumping it before parts 4 and 5.

<http://www.theguardian.com/environment/climate-consensus-97-per-cent/2015/sep/29/is-the-fossil-fuel-industry-like-the-tobacco-industry-guilty-of-racketeering>



Is the fossil fuel industry, like the tobacco industry, guilty of racketeering? | Dana Nuccitelli

Dana Nuccitelli: Journalists investigated Exxon's rejection of its own science to deceive the public. Scientists call for the Justice Department to investigate

[Read more...](#)

From: [Edward W Maibach](#)
To: [Jeff Nesbit](#)
Subject: Re: ICN is coming out with part 6 (RICO/legal liability) soon
Date: Tuesday, September 29, 2015 10:36:02 AM

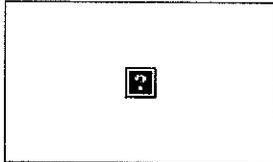
Thanks for the heads up.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Jeff Nesbit <jnesbit@climatenexus.org>
Sent: Tuesday, September 29, 2015 10:26 AM
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<http://www.theguardian.com/environment/climate-consensus-97-per-cent/2015/sep/29/is-the-fossil-fuel-industry-like-the-tobacco-industry-guilty-of-racketeering>



Is the fossil fuel industry, like the tobacco industry, guilty of racketeering? | Dana Nuccitelli

Dana Nuccitelli: Journalists investigated Exxon's rejection of its own science to deceive the public. Scientists call for the Justice Department to investigate

[Read more...](#)

From: [Edward W. Maibach](#)
To: [Elizabeth I. Woodley](#); [Jagadish Shukla](#); [Paul A. Dirmeyer](#); [Barry A. Klinger](#); [Paul S. Schopf](#); [David M. Straus](#)
Cc: [Edwin K. Schneider](#)
Subject: Re: FOIA Request for E-mails
Date: Tuesday, September 29, 2015 4:00:34 PM

Hi Elizabeth,

Two questions of clarification, the easy one first:

- 1) How would you like us to share these emails with you? Printed documents?
- 2) The exemptions criteria seems quite narrow (private information, personnel records, student information, and proprietary information) but the "in the course of public business" criteria seems quite broad. How should we reconcile the difference?

In my view, I was not paid by Mason to create the document (a letter) that is of interest to the requester, nor does the document directly relate to my job description in that it is neither teaching, research nor service -- activities which consume far more than 40 hours of my time each week during the school year. Rather, it was written in my capacity as a concerned citizen, in my spare time. Moreover, it was written almost entirely (if not entirely) during summer term, a period when I am employed by Mason only a part-time.

Thanks for any additional guidance that you can provide.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Elizabeth I Woodley
Sent: Tuesday, September 29, 2015 2:27 PM
To: Jagadish Shukla; Paul A Dirmeyer; Edward W Maibach; Barry A Klinger; Paul S Schopf; David M. Straus
Cc: Edwin K Schneider
Subject: FOIA Request for E-mails

Good afternoon Professors Shukla, Dirmeyer, Maibach, Klinger, Schopf, and Straus,

My name is Elizabeth Woodley. I am George Mason University's Freedom of Information Act Compliance Officer. I wanted to let you know that I have received a FOIA request for e-mail communications which you may have sent or received from your Mason e-mail address in your capacity as Mason employees from June 1, 2015 to the present which include the keywords "RICO, racketeer, racketeering, DOJ, prosecute, or prosecution".

The FOIA statute covers records which were created "in the course of public business", in your capacity as Mason employees. Good questions to ask yourself to help determine whether a record was created in the transaction of public business are: "Was I paid by George Mason to create this document?" and "Does the document relate to the duties listed in my job description?"

Outside of some narrowly-defined exemptions, all public records are subject to FOIA. Exemptions include: private information, personnel records, student information, and proprietary information.

If you believe you may possess responsive documents, please let me know and send me an estimate of the cost to produce the documents. Please estimate the amount of time you (or another Mason employee as your designee) would spend responding to this request (searching for documents and reviewing them for possible exemptions). Please also tell me your (or your designee's) hourly rate, so that I may charge the requester for your time. Hourly rate is calculated by dividing base salary (without benefits) by 2080 for 12-month employees or 1560 for 9-month employees.

Please do not begin responding to the request until you hear from me. If the cost estimate is high enough I will require the requester to pay a deposit before we begin the response.

Please let me know if you have any questions about this request. I am available by e-mail or phone- my direct line is 703-993-5115. For more information, Mason's FOIA Policy is available here: http://universitypolicy.gmu.edu/policies/responding-to-virginia-freedom-of-information-act-foia-requests-for-records/?_ga=1.13439028.201496376.1363277436

Thank you,

Elizabeth

Elizabeth Woodley, J.D.
FOIA Compliance Officer
George Mason University
Compliance, Diversity, and Ethics
Phone: (703) 993-5115

From: [Edward W. Maibach](#)
To: [Elizabeth I. Woodley](#)
Subject: Re: FOIA Request for E-mails
Date: Wednesday, September 30, 2015 3:02:28 PM

I estimate that it will take me 4 hours to comply, at a rate of \$86.50 per hour.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Elizabeth I Woodley
Sent: Tuesday, September 29, 2015 2:27 PM
To: Jagadish Shukla; Paul A Dirmeyer; Edward W Maibach; Barry A Klinger; Paul S Schopf; David M. Straus
Cc: Edwin K Schneider
Subject: FOIA Request for E-mails

Good afternoon Professors Shukla, Dirmeyer, Maibach, Klinger, Schopf, and Straus,

My name is Elizabeth Woodley. I am George Mason University's Freedom of Information Act Compliance Officer. I wanted to let you know that I have received a FOIA request for e-mail communications which you may have sent or received from your Mason e-mail address in your capacity as Mason employees from June 1, 2015 to the present which include the keywords "RICO, racketeer, racketeering, DOJ, prosecute, or prosecution".

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Thank you,

Elizabeth

Elizabeth Woodley, J.D.
FOIA Compliance Officer
George Mason University
Compliance, Diversity, and Ethics
Phone: (703) 993-5115

From: [Edward W Maibach](#)
To: [J Shukla](#)
Cc: [Professor Barry Klinger](#); [Mike Wallace](#); [Dr. Ben Kirtman](#); [Dr. Kevin Trenberth](#); [Dr. Robert Dickinson](#); [Dr. Michela Biasutti](#); [Dr. Mark Cane](#); [Dr. Lisa Goddard](#); vmisra@fsu.edu
Subject: An important request
Date: Friday, October 02, 2015 7:15:06 PM

Dear fellow letter signers.

Shukla and I respectfully request that you send us your private email address.

If you prefer to leave it in a voice message, call me at 703-993-1587.

Thank you,

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Holdren, John P. <John_P._Holdren@ostp.eop.gov>
Sent: Wednesday, September 30, 2015 8:01 PM
To: J Shukla
Cc: Edward W Maibach; Paul A Dirmeyer; Professor Barry Klinger; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Alan Robock; Professor Eugenia Kalnay; Dr. Ben Kirtman; Dr. Bill Lau; Dr. Kevin Trenberth; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; Dr. Alan Betts; Sheldon Whitehouse; Joseph Majkut; Lara Quint
Subject: RE: Letter to President, AG, and OSTP Director

Dear Professor Shukla,

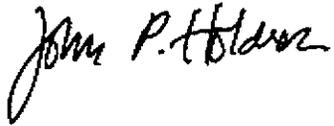
Thank you for your email and letter of a couple of weeks ago. I apologize for my delay in responding. These two weeks have been even more demanding than usual here.

As you know, the Administration shares the concern expressed in the letter about the seriousness of the threat posed by climate change. The President has made addressing that threat a top priority, and, as you also know, it has long been a top priority of mine.

Regarding the letter's proposal of a RICO investigation, though, neither the White House Office nor the Office of Science and Technology Policy determines or directs the Department of Justice's prosecutorial or investigative decisions.

I and my colleagues here do very much value views from the wider scientific community on reducing the risk of climate change, and we look forward to continuing to find ways to work together to address this critical issue.

Sincerely,



JOHN P. HOLDREN, PhD
Assistant to the President for Science and Technology
Director, Office of Science and Technology Policy
Co-Chair, President's Council of Advisors on Science and Technology
Executive Office of the President of the United States

E-mail: jholdren@ostp.eop.gov
Assistant: [Billie S. McGrane@ostp.eop.gov](mailto:Billie_S_McGrane@ostp.eop.gov), 202-456-6064
Web: <http://www.ostp.gov>

From: J Shukla [mailto:shukla@iges.org]
Sent: Monday, September 14, 2015 11:18 AM
To: Holdren, John P.; McLaughlin, Pat
Cc: Dr. Edward Maibach; Paul Dirmeyer; Professor Barry Klinger; Dr. Paul Schopf; Dr. David M. Straus; Edward Sarachik; Mike Wallace; Alan Robock; Professor Eugenia Kalnay; Dr. Ben Kirtman; Dr. Bill Lau; Dr. Kevin Trenberth; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; Dr. Alan Betts; Sheldon Whitehouse; Joseph Majkut; Lara Quint
Subject: Letter to President, AG, and OSTP Director

Dear Dr. Holdren,

It has been a long time since I have had email correspondence with you. I do hope this email will reach your office.

Please find enclosed a letter to the President, the Attorney General, and you, reiterating the position of an overwhelming majority of climate scientists about the potentially serious adverse effects of human-induced climate change. The letter also supports Senator Whitehouse's proposal that the Department of Justice begin a RICO investigation of the fossil-fuel industry, who according to Senator Whitehouse, have knowingly deceived the American people about the risks of climate change. The letter has been endorsed by a number of distinguished scientists whose names and affiliations are provided at the end of the letter. We will be grateful if you can please bring this letter to the attention of the President. Thank you.

Regards,

J. Shukla

University Professor, George Mason University
President, Institute of Global Environment & Society
Research Hall, Room 105
George Mason University, MSN: 2B3
4400 University Drive
Fairfax, VA 22030 USA

Tel: 703-993-5700

E-mail: shukla@iges.org

>http://www.iges.org/<

On Sep 9, 2015, at 4:11 PM, J Shukla <shukla@iges.org> wrote:

Dear Friends,

Please find enclosed a copy of the final letter. Thank you for your support.

Regards,
Shukla

<Letter to Pres, AG, Holdren_Final.docx>

From: [Edward W. Maibach](#)
To: [J Shukla](#)
Cc: [Professor Barry Klinger](#); [Mike Wallace](#); [Dr. Ben Kirtman](#); [Dr. Kevin Trenberth](#); [Dr. Robert Dickinson](#); [Dr. Michela Biasutti](#); [Dr. Mark Cane](#); [Dr. Lisa Goddard](#); vmisra@fsu.edu
Subject: Re: Another important request
Date: Friday, October 02, 2015 7:18:19 PM
Attachments: [Additional letter v2.docx](#)

Dear fellow letter signers,

Shukla and I have drafted the attached statement with the aim of setting the record straight on a number of important misunderstandings associated with our original letter.

We intend to release this statement early next week, although the exact mechanism is TBD.

Please review the draft and reply to Shukla and me with your assent to be listed.

Thank you,

Ed Maibach

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Edward W Maibach
Sent: Friday, October 2, 2015 7:15 PM
To: J Shukla
Cc: Professor Barry Klinger; Mike Wallace; Dr. Ben Kirtman; Dr. Kevin Trenberth; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; vmisra@fsu.edu
Subject: An important request

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Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Holdren, John P. <John_P._Holdren@ostp.eop.gov>

Sent: Wednesday, September 30, 2015 8:01 PM

To: J Shukla

Cc: Edward W Maibach; Paul A Dirmeyer; Professor Barry Klinger; Paul S Schopf; David M. Straus; Edward Sarachik; Mike Wallace; Alan Robock; Professor Eugenia Kalnay; Dr. Ben Kirtman; Dr. Bill Lau; Dr. Kevin Trenberth; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; Dr. Alan Betts; Sheldon Whitehouse; Joseph Majkut; Lara Quint

Subject: RE: Letter to President, AG, and OSTP Director

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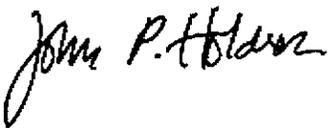
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JOHN P. HOLDREN, PhD
Assistant to the President for Science and Technology
Director, Office of Science and Technology Policy

Co-Chair, President's Council of Advisors on Science and Technology
Executive Office of the President of the United States

E-mail: jholdren@ostp.eop.gov
Assistant: [Billie S. McGrane@ostp.eop.gov](mailto:Billie_S_McGrane@ostp.eop.gov), 202-456-6064
Web: <http://www.ostp.gov>

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Sent: Monday, September 14, 2015 11:18 AM
To: Holdren, John P.; McLaughlin, Pat
Cc: Dr. Edward Maibach; Paul Dirmeyer; Professor Barry Klinger; Dr. Paul Schopf; Dr. David M. Straus; Edward Sarachik; Mike Wallace; Alan Robock; Professor Eugenia Kalnay; Dr. Ben Kirtman; Dr. Bill Lau; Dr. Kevin Trenberth; Professor T.N. Krishnamurti; Dr. Vasubandhu Misra; Dr. Robert Dickinson; Dr. Michela Biasutti; Dr. Mark Cane; Dr. Lisa Goddard; Dr. Alan Betts; Sheldon Whitehouse; Joseph Majkut; Lara Quint
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Regards,
J. Shukla

University Professor, George Mason University
President, Institute of Global Environment & Society
Research Hall, Room 105
George Mason University, MSN: 2B3
[4400 University Drive](http://www.iges.org)
[Fairfax, VA 22030 USA](http://www.iges.org)

Tel: 703-993-5700
E-mail: shukla@iges.org
><http://www.iges.org/><

On Sep 9, 2015, at 4:11 PM, J Shukla <shukla@iges.org> wrote:

Dear Friends,

Please find enclosed a copy of the final letter. Thank you for your support.

Regards,
Shukla

<Letter to Pres, AG, Holdren_Final.docx>

October 2, 2015

On September 1st, 2015, we sent a letter to the President and the Attorney General endorsing Senator Sheldon Whitehouse's call for a RICO investigation "of corporations and other organizations that have knowingly deceived the American people about the risk of climate change, as a means to forestall America's response to climate change." In this letter, we cited six credible source documents – books, an academic journal articles and a report from Union of Concerned Scientists – that carefully document the sustained, strategic and intentional deceptions of many organizations about climate science and climate change.

Shortly thereafter, one of us posted the letter to the website of the Institute for Global Environment and Society (IGES), a non-profit organization started in 1993 to conduct research with the aim of improving scientific understanding and prediction of the variations in the earth's climate. Posting the letter on the IGES website was regrettable, as it needlessly complicated the dissolution of IGES that is scheduled for December 31st, 2015. The plan to dissolve IGES was made more than three years ago. Posting our letter to the President on the IGES website was an error in judgment, as it needlessly embroiled IGES in an action that we undertook as concerned citizens. The letter has been removed from the IGES website, and we are working to identify another website where it can be re-posted.

This letter has caused concern among some scientists who do not agree with the scientific consensus on human-caused climate change, including some who we consider to be friends, because they misinterpreted our letter. Somehow – perhaps as a result of gross mischaracterizations of our letter by climate denial bloggers – these scientists came to see our letter as calling for criminal investigation of scientists who reject the scientific consensus on climate change. This is not at all the case. Our letter never once makes reference to individuals, be they scientists or bloggers, instead suggested an "investigation of corporations and other organizations" such as oil and coal lobby groups. We are not calling for contrarian scientists or bloggers to be investigated for expressing their beliefs about climate change. Freedom of speech and freedom of scientific exploration are critical rights that should always be respected. We wish to apologize to any scientist or blogger who mistakenly concluded that we were calling for an investigation into their activities.

There is much published credible evidence suggesting that some fossil fuel companies and other organizations broke the law by lying to the public about climate risk. We ask our government to investigate this evidence. Organizations that knowingly mislead the public about a clear and present danger – thereby robbing many innocent people of their lives and livelihoods – should be held accountable for their actions. Our government's investigation into the deadly lies of the tobacco industry provides a clear precedent for this sort of investigation.

In conclusion, we stand by our request that corporations and other organizations that have knowingly deceived the American people about the risk of climate change be investigated to determine if they knowingly deceived the public about climate science. And we wish to be clear that we are not suggesting that scientists or bloggers should be investigated for expressing their beliefs.

Jagadish Shukla, George Mason University, Fairfax, VA

Edward Maibach, George Mason University, Fairfax, VA
Paul Dirmeyer, George Mason University, Fairfax, VA
Barry Klinger, George Mason University, Fairfax, VA
Paul Schopf, George Mason University, Fairfax, VA
David Straus, George Mason University, Fairfax, VA
Edward Sarachik, University of Washington, Seattle, WA
Michael Wallace, University of Washington, Seattle, WA
Alan Robock, Rutgers University, New Brunswick, NJ
Eugenia Kalnay, University of Maryland, College Park, MD
William Lau, University of Maryland, College Park, MD
Kevin Trenberth, National Center for Atmospheric Research, Boulder, CO
T.N. Krishnamurti, Florida State University, Tallahassee, FL
Vasu Misra, Florida State University, Tallahassee, FL
Ben Kirtman, University of Miami, Miami, FL
Robert Dickinson, University of Texas, Austin, TX
Michela Biasutti, Earth Institute, Columbia University, New York, NY
Mark Cane, Columbia University, New York, NY
Lisa Goddard, Earth Institute, Columbia University, New York, NY
Alan Betts, Atmospheric Research, Pittsford, VT

From: [Edward W Maibach](#)
To: [Elizabeth I Woodley](#); [Jagadish Shukla](#)
Subject: Re: FOIA Request for E-mails
Date: Thursday, October 08, 2015 11:02:21 AM

Hi Elizabeth,

It is my position that the time I spent preparing our letter was not conducted in the course of public business. Rather, it was conducted in my capacity as a private citizen, on my own time. I was not paid by George Mason to create this document, nor does the document relate to the duties listed in my job description. Therefore, I do not believe we have an obligation to disclose my emails related to the RICO letter.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Elizabeth I Woodley
Sent: Wednesday, October 7, 2015 9:57 AM
To: Jagadish Shukla; Paul A Dirmeyer; Edward W Maibach; Barry A Klinger; Paul S Schopf; David M. Straus
Cc: Edwin K Schneider
Subject: RE: FOIA Request for E-mails

Good morning all,

I have just heard back from the requester and he has limited his request to only Professor Shukla's and Professor Maibach's records.

Professors Dirmeyer, Klinger, Schopf, and Straus, thank you for your estimates. You do not need to take any further action on this FOIA request. (However, I want to let you know that University Counsel thinks we may receive additional FOIA requests for similar information.)

Professor Shukla and Professor Maibach, please begin your FOIA response, and as you go through the emails, flag any information you believe to be private information, personnel information, student information, proprietary research information, or confidential donor information. I will review the flagged information and decide whether it qualifies for an exemption. Again, the

request was for e-mail communications which you may have sent or received from your Mason e-mail address in your capacity as Mason employees from June 1, 2015 to the present which include the keywords "RICO, racketeer, racketeering, DoJ, prosecute, or prosecution". Remember that our response may be challenged in court, that we will have to explain any exemptions we asserted, and that state employees face personal civil liability for willful violations of the FOIA statute. I would like to receive your responses before Wednesday, October 21.

Again, please let me know if you have any questions!

Thank you all,

Elizabeth

From: Elizabeth I Woodley
Sent: Monday, October 05, 2015 10:42 AM
To: Jagadish Shukla; Paul A Dirmeyer; Edward W Maibach; Barry A Klinger; Paul S Schopf; David M. Straus
Cc: Edwin K Schneider
Subject: RE: FOIA Request for E-mails

Good morning all,

I have received estimates from Professors Schopf, Maibach, and Dirmeyer, but not yet from Professors Shukla, Straus, or Klinger. Please send them to me as soon as possible.

I have also consulted with Tom Moncure, the University Counsel, and he advises that when you estimate, you should make a reasonable estimate, as if you are in court, under oath. State employees can be held individually civilly liable for knowing violations of the Virginia FOIA statute. He also advises that outside recipients of emails may disclose emails as well, and if they disclose something that we did not, but should have, that could be used as evidence that we did not fully respond to the request.

Tom also believes that we may receive more FOIA requests for this same information, so he advises that you search for and produce the emails right away and do not wait for me to receive the deposit. That way you can gather them at once and be done.

If you have any questions, please contact me.

Thank you,

Elizabeth

Elizabeth Woodley, J.D.
FOIA Compliance Officer
George Mason University
Compliance, Diversity, and Ethics

Phone: (703) 993-5115

From: Elizabeth I Woodley
Sent: Tuesday, September 29, 2015 2:28 PM
To: Jagadish Shukla; Paul A Dirmeyer; Edward W Maibach; Barry A Klinger; Paul S Schopf; David M. Straus
Cc: Edwin K Schneider
Subject: FOIA Request for E-mails

Good afternoon Professors Shukla, Dirmeyer, Maibach, Klinger, Schopf, and Straus,

My name is Elizabeth Woodley. I am George Mason University's Freedom of Information Act Compliance Officer. I wanted to let you know that I have received a FOIA request for e-mail communications which you may have sent or received from your Mason e-mail address in your capacity as Mason employees from June 1, 2015 to the present which include the keywords "RICO, racketeer, racketeering, DOJ, prosecute, or prosecution".

The FOIA statute covers records which were created "in the course of public business", in your capacity as Mason employees. Good questions to ask yourself to help determine whether a record was created in the transaction of public business are: "Was I paid by George Mason to create this document?" and "Does the document relate to the duties listed in my job description?"

Outside of some narrowly-defined exemptions, all public records are subject to FOIA. Exemptions include: private information, personnel records, student information, and proprietary information.

If you believe you may possess responsive documents, please let me know and send me an estimate of the cost to produce the documents. Please estimate the amount of time you (or another Mason employee as your designee) would spend responding to this request (searching for documents and reviewing them for possible exemptions). Please also tell me your (or your designee's) hourly rate, so that I may charge the requester for your time. Hourly rate is calculated by dividing base salary (without benefits) by 2080 for 12-month employees or 1560 for 9-month employees.

Please do not begin responding to the request until you hear from me. If the cost estimate is high enough I will require the requester to pay a deposit before we begin the response.

Please let me know if you have any questions about this request. I am available by e-mail or phone- my direct line is 703-993-5115. For more information, Mason's FOIA Policy is available here: http://universitypolicy.gmu.edu/policies/responding-to-virginia-freedom-of-information-act-foia-requests-for-records/?_ga=1.13439028.201496376.1363277436

Thank you,

Elizabeth

Elizabeth Woodley, J.D.
FOIA Compliance Officer
George Mason University
Compliance, Diversity, and Ethics
Phone: (703) 993-5115

From: [Edward W Maibach](#)
To: [Peter Frumhoff](#)
Subject: Re: following up
Date: Friday, October 09, 2015 4:30:19 PM

Hi Peter,

By all means, let's get together while you are here. I presume you will be downtown, yes?

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Peter Frumhoff <PFrumhoff@ucsusa.org>
Sent: Friday, October 9, 2015 2:53 PM
To: Edward W Maibach
Subject: following up

Hi Ed

I will be in DC Oct 22-23, do you have a window during that stretch to meet up?

Sorry to see the outrageous response to your letter.

Let's talk.

Peter

From: Edward W Maibach [<mailto:emaibach@gmu.edu>]
Sent: Friday, July 31, 2015 3:01 PM
To: Peter Frumhoff
Cc: Nancy Cole; Alden Meyer; Aaron Huertas; Jagadish Shukla
Subject: Re: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Peter,

Thanks for closing the loop with me so quickly.

Shukla has been consulting with lawyers so it is possible that -- with their input -- we too may decide that Senator Whitehouse's proposal is not viable. We'll let you know what we decide to do.

Regardless, our real intent is to rally the climate science community around useful proposals -- focused on solutions, and on removal of barriers. Please keep us in the loop on your plans to promote accountability in the fossil fuel industry, as we would like to be of service. I would be delighted to get involved in assessing (and helping to shape) public opinion on this issue. I am confident that a concerted "truth" campaign can generate public indignation over the deceptions sponsored by the fossil fuel industry.

BTW: My dear friend Rob Gould -- former GM of Porter Novelli's DC office, and one of the creators of the highly successful "truth" teen anti-tobacco campaign -- would surely enjoy brainstorming with us about how to mount a similar trust campaign aimed at fossil fuel companies.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org



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From: Peter Frumhoff <PFrumhoff@ucsusa.org>
Sent: Friday, July 31, 2015 1:03 PM
To: Edward W Maibach
Cc: Nancy Cole; Alden Meyer; Aaron Huertas
Subject: FW: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Ed,

I'm following up on the scientists letter proposal that you shared with Nancy and Alden earlier this week to let you know that (1) it prompted a lot of discussion among our staff, including with UCS president Ken Kimmell and (2) after taking a close look, we've decided to not pursue this opportunity with you.

Here's why: In reaching out to climate scientists to sign on, we feel that we'd need to give them some firmer grounding for believing that a federal investigation under the RICO statute is warranted - enough so that they'd be able to explain their rationale for signing on to reporters and others. As you know, deception/disinformation isn't itself a basis for criminal prosecution under RICO. We don't think that Sen Whitehouse's call gives enough of a basis for scientists to sign on to this as a solid approach at this point.

Just so you know, we're also in the process of exploring other state-based approaches to holding fossil fuel companies legally accountable - we think there'll likely be a strong basis for encouraging state (e.g. AG) action forward and, in that context, opportunities for climate scientists to weigh in. It would be interesting - and perhaps very useful - to consider how calls for legal accountability will play out in the court of public opinion in different states/with different subsets of the American public - something perhaps we could work with you all on as this unfolds.

So, I am sorry to decline this particular opportunity. Thanks for proposing this and please keep us in the loop on how this plays out.

Thanks, Ed.

All best,

Peter

Peter C. Frumhoff Ph.D.
Director of Science and Policy
Chief Scientist, Climate Campaign
Union of Concerned Scientists
Cambridge MA

617.301.8035
@peterfrumhoff

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From: Edward W Maibach [<mailto:emaibach@gmu.edu>]
Sent: Monday, July 27, 2015 10:36 AM
To: Nancy Cole
Cc: Aaron Huertas; Alden Meyer
Subject: Fw: Senator Whitehouse's call for a RICO investigation of the fossil fuel industry

Hi Alden and Nancy,

Jagdish Shukla -- Mason's most senior climate scientist -- and I are planning on sending a letter to the POTUS and AG (with a cc to our members of Congress) to encourage them to act on Senator Whitehouse's proposal. We can easily get a couple of dozen additional climate scientists to co-sign (with a cc to all of their members of Congress too).

With a bit of extra work -- and this is why I am writing you -- perhaps we could get at least one climate scientist from all 435 congressional districts to co-sign the letter, which would allow us to cc every member of Congress (and would become a big media story).

Can UCS help us with this?

A draft of the letter is attached (although Shukla is going to make a few small edits this morning).

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication

George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Connie Roser-Renouf
To: Anne Nicotera; Edward W Maibach
Subject: Re: annual review
Date: Monday, August 17, 2015 12:27:58 AM
Attachments: roser-renouf_2014-15_annual_review.docx

Hi Anne & Ed, I'm attaching the review, but haven't updated my 5-year vita yet. It won't take long, but I'm too tired to do it tonight, so you can expect it tomorrow. Connie

Connie Roser-Renouf, PhD
Associate Research Professor
Center for Climate Change Communication
George Mason University
707.825.0601

From: Anne Nicotera
Sent: Monday, August 3, 2015 3:03 PM
To: Karen Louise Akerlof; Teresa A Myers; Connie Roser-Renouf
Cc: Edward W Maibach
Subject: annual review

Hello 4C research faculty! The time has come to conduct annual reviews. If you have not already done so, please fill out the attached activity report. You should fill in only the portion for research activities, as your position is defined as 100% research.

Please return the form to both Ed Maibach and to me by August 15.

Thank you!
Anne

--

Anne M. Nicotera, Ph.D.
Professor
Chair, Dept. of Communication
George Mason University, MSN 3D6
Fairfax, VA 22030
703-993-8296

From: [Mohamed H Ahmed](#)
To: [Joan Mlotkowski](#)
Cc: [Edward W Maibach](#); [Karen Louise Akerlof](#)
Subject: New Hire packets: Perkins and Rohring
Date: Monday, August 03, 2015 5:10:34 PM
Attachments: [Elizabeth Rohring Faculty-Hiring-Proposal.pdf](#)
[Elizabeth Rohring Administrative-Professional-Faculty-Appointment-Offer-Letter.pdf](#)
[Rohring CV E_072115.pdf](#)
[David Perkins Contract 15-16.pdf](#)
[David Perkins CV.pdf](#)
[David Perkins Hiring Proposal.pdf](#)

Hi Joan,

Attached are the hiring packet documents for the following positions:

- Outreach Coordinator FA49Dz- Elizabeth Rohring
- Postdoctoral Research Fellow F9860z- David Perkins

Please let me know if anything else is needed for their approval.

Thanks,

Moe

--

Mohamed H. Ahmed

Financial Manager

Center for Climate Change Communication, Research Hall Rm 246

George Mason University, MS 6A8

Fairfax, VA 22030

P: (703) 993-5451

E-mail: mahmed8@gmu.edu

From: [Edward W Maibach](#)
To: [Mohamed H Ahmed](#)
Subject: Re: Post-doc hire
Date: Friday, July 31, 2015 10:40:11 AM
Attachments: [David Perkins CV.pdf](#)
[David Perkins cover letter.pdf](#)

Hi Moe,

Sorry for the delay in responding.

The salary will be \$55K.

Here are his CV and cover letter.

Thanks,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Mohamed H Ahmed
Sent: Friday, July 31, 2015 7:50 AM
To: Edward W Maibach
Subject: FW: Post-doc hire

Hi Ed,

Please advise on David Perkins employment status and I'll continue the paperwork process.

Thanks,

Moe

--

Mohamed H. Ahmed
Financial Manager
Center for Climate Change Communication, Research Hall Rm 246
George Mason University, MS 6A8
Fairfax, VA 22030
P: (703) 993-5451
E-mail: mahmed8@gmu.edu

From: Mohamed H Ahmed
Sent: Wednesday, July 29, 2015 6:54 PM
To: Edward W Maibach <emaibach@gmu.edu>
Subject: RE: Post-doc hire

Hi Ed,

I'll be putting together the hiring packet for David. Do you have a proposed salary in mind? Also, is it possible to send over his full application so I can use his current address and such for the documents I'm filling out?

Thanks,
Moe

--

Mohamed H. Ahmed
Financial Manager
Center for Climate Change Communication, Research Hall Rm 246
George Mason University, MS 6A8
Fairfax, VA 22030
P: (703) 993-5451
E-mail: mahmed8@gmu.edu

From: Joan Mlotkowski
Sent: Tuesday, July 28, 2015 4:54 PM
To: Edward W Maibach; Mohamed H Ahmed
Subject: RE: Post-doc hire

Ed,

This is the post-doc position that's been posted for almost two years now (position #F9452z). Both Robert and David applied through the posting. The access information is further down in this email string (I also resent it to you a few weeks ago). I hope we're both talking about the same position, this is starting to get a little confusing!

If you decide to close the posting, let me know and we can do it while we hire David.

Joan

From: Edward W Maibach
Sent: Tuesday, July 28, 2015 4:41 PM
To: Joan Mlotkowski; Mohamed H Ahmed
Subject: Re: Post-doc hire

I actually didn't know that this position was still posted. What is the access information so I can see who applied?

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Joan Mlotkowski
Sent: Tuesday, July 28, 2015 4:06 PM
To: Edward W Maibach; Mohamed H Ahmed
Subject: RE: Post-doc hire

In that case, let's use Robert's position number F9860z. Do you want to keep the advertisement posted?

From: Edward W Maibach
Sent: Tuesday, July 28, 2015 3:47 PM
To: Joan Mlotkowski; Mohamed H Ahmed
Subject: Re: Post-doc hire

David Perkins will be Bob's replacement.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Joan Mlotkowski
Sent: Tuesday, July 28, 2015 3:23 PM
To: Mohamed H Ahmed; Edward W Maibach
Subject: RE: Post-doc hire

Ed and Moe,

Can we use Robert Drost's position number, or are you planning on replacing him? If not, then Moe will need to complete a Position Maintenance Form, unless Ed plans to close the posting, then we can use that number.

Joan

From: Mohamed H Ahmed
Sent: Tuesday, July 28, 2015 2:46 PM
To: Joan Mlotkowski; Edward W Maibach; Leslie Dyre
Subject: RE: Post-doc hire

Hi Ed and Joan,

Are we hiring from the position posted (F9452z) or will we continue to leave that position posted and request a new position number for David?

If that's the case then I'll need David's CV and I can prepare the offer letter contract, faculty hiring proposal and position maintenance form.

Best,
Moe

--

Mohamed H. Ahmed
Financial Manager
Center for Climate Change Communication, Research Hall Rm 246
George Mason University, MS 6A8
Fairfax, VA 22030
P: (703) 993-5451
E-mail: mahmed8@gmu.edu

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From: Joan Mlotkowski
Sent: Tuesday, July 28, 2015 2:27 PM
To: Edward W Maibach; Leslie Dyre
Cc: Mohamed H Ahmed
Subject: RE: Post-doc hire

Ed,

Since David applied to the ad, there is no problem with an August 24 start date. Moe should prepare the new hire packet and forward it to me. It should only take around a week to get final approvals once I receive the packet from Moe.

Joan

From: Edward W Maibach
Sent: Tuesday, July 28, 2015 2:14 PM
To: Joan Mlotkowski; Leslie Dyre

Cc: Mohamed H Ahmed
Subject: Post-doc hire

Hi Joan,

I am cc'ing Leslie too, because I know she is in the office today and I don't know if you are.

We have a late-breaking development in my decision to make a post-doc offer to David Jenkins. He has a competing (teaching) offer to which he needs to respond tomorrow. See below for details. He would prefer to have a post-doc with us, rather than teach for a year at USC, but he does not want to turn them down if an offer is not forthcoming from us.

Are there any potential roadblocks to our making an offer to David? I realize that it will take a few weeks to get an official offer letter to him, but if I can assure him it is coming, then I am confident he will wait for it.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

Dear Ed,

I have spoken with the people at USC regarding my job offer and they are asking me to let them know of my decision for that job by Wednesday. Can you please give me an update regarding the postdoc position? I will need to know what to tell the people at USC very soon.

Best,

David R. Perkins IV, Ph.D

National Science Foundation GK-12 Resident Scientist
Co-chair, ISB Commission on Climate, Tourism, & Recreation
Department of Geography
127 Graham Building
University of North Carolina at Greensboro

From: Edward W Maibach

Sent: Tuesday, July 28, 2015 12:12 PM

To: Joan Mlotkowski
Cc: Mohamed H Ahmed
Subject: Re: Guest User Activated

Hi Joan,

New plan. Irina decided she is going in a different direction, therefore I back to Plan A....hiring a post-doc.

I wish to make an offer of \$55,000 to David Perkins, who recently applied for the post-doc position. The ideal start date is August 24th.

Will that be feasible?

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Joan Mlotkowski
Sent: Tuesday, July 7, 2015 9:03 AM
To: Edward W Maibach
Cc: Mohamed H Ahmed
Subject: RE: Guest User Activated

Ok, I think the best way to do this is to first get the direct hire approved by Equity. Then, once (if) approved, Moe can prepare the Position Maintenance Form to request the position number for a Research Assistant Professor..

It sounds like you and Anne are working on the direct hire request, but I'll touch base with her also.

Joan

From: Edward W Maibach
Sent: Monday, July 06, 2015 5:01 PM
To: Joan Mlotkowski
Subject: Re: Guest User Activated

Thanks. I did not see this reply when I wrote the other email.

Yes, I want to hire Irina to replace Bob. She has already had a post-doc elsewhere, currently works at the White House, and will be unwilling to take the position as a post-doc. Thus I am trying to find a way to hire her as a Term or Visiting Research Assistant Professor.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Joan Mlotkowski
Sent: Monday, July 6, 2015 3:53 PM
To: Edward W Maibach
Subject: FW: Guest User Activated

Ed,

Below are the passwords and link to access the applications. So, will Irina replace Robert Drost? Will Irina's position fall under the same posting that Robert applied to (link below)? If that's the case, then Irina could simply apply for the position that's still posted and use Robert's current position number. But, if you want to use the Research Assistant Professor title, then I don't think she could apply for the post doc position.

Joan

From: jobs@gmu.edu [mailto:jobs@gmu.edu]
Sent: Thursday, February 12, 2015 9:25 AM
To: Joan Mlotkowski
Subject: Guest User Activated

Dear Search Committee Member:

Job Title: Postdoctoral Research Fellow, Center for Climate Change Communication

Position Number: F9452z Recruit Number: Faculty - 5645

Department: Communication

To review the applicant pool, please log into <http://jobs.gmu.edu/hr> with the following user name and password:

User Name: gu552934

Password: 14d7a8

If you have any issues logging in using the guest user account information above, please forward the above email to jobs@gmu.edu with your particular question or concern.

Click on the link below to view the Quick Guide for Guest Users:

<http://hr.gmu.edu/employment/docs/AQuickGuideForGuestUsers.pdf>

Thank you,

Talent Acquisition Team
Human Resources and Payroll
George Mason University
4400 University Drive
Fairfax, VA 22030

<http://hr.gmu.edu/employment>

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From: [Edward W Maibach](#)
To: [Mohamed H Ahmed](#); [Joan Mlotkowski](#)
Subject: Re: Post-doc hire
Date: Tuesday, July 28, 2015 2:48:59 PM
Attachments: [David Perkins CV.pdf](#)

Moe,

Here is David's CV.

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Mohamed H Ahmed
Sent: Tuesday, July 28, 2015 2:45 PM
To: Joan Mlotkowski; Edward W Maibach; Leslie Dyre
Subject: RE: Post-doc hire

Hi Ed and Joan,

Are we hiring from the position posted (F9452z) or will we continue to leave that position posted and request a new position number for David?

If that's the case then I'll need David's CV and I can prepare the offer letter contract, faculty hiring proposal and position maintenance form.

Best,
Moe

Mohamed H. Ahmed
Financial Manager
Center for Climate Change Communication, Research Hall Rm 246
George Mason University, MS 6A8
Fairfax, VA 22030
P: (703) 993-5451
E-mail: mahmed8@gmu.edu

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From: Joan Mlotkowski
Sent: Tuesday, July 28, 2015 2:27 PM
To: Edward W Maibach; Leslie Dyre
Cc: Mohamed H Ahmed
Subject: RE: Post-doc hire

Ed,

Since David applied to the ad, there is no problem with an August 24 start date. Moe should prepare the new hire packet and forward it to me. It should only take around a week to get final approvals once I receive the packet from Moe.

Joan

From: Edward W Maibach
Sent: Tuesday, July 28, 2015 2:14 PM
To: Joan Mlotkowski; Leslie Dyre
Cc: Mohamed H Ahmed
Subject: Post-doc hire

Hi Joan,

I am cc'ing Leslie too, because I know she is in the office today and I don't know if you are.

We have a late-breaking development in my decision to make a post-doc offer to David Jenkins. He has a competing (teaching) offer to which he needs to respond tomorrow. See below for details. He would prefer to have a post-doc with us, rather than teach for a year at USC, but he does not want to turn them down if an offer is not forthcoming from us.

Are there any potential roadblocks to our making an offer to David? I realize that it will take a few weeks to get an official offer letter to him, but if I can assure him it is coming, then I am confident he will wait for it.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

Dear Ed,

I have spoken with the people at USC regarding my job offer and they are asking me to let them know of my decision for that job by Wednesday. Can you please give me an update regarding the postdoc position? I will need to know what to tell the people at USC very soon.

Best,

David R. Perkins IV, Ph.D

National Science Foundation GK-12 Resident Scientist
Co-chair, ISB Commission on Climate, Tourism, & Recreation
Department of Geography
127 Graham Building
University of North Carolina at Greensboro

From: Edward W Maibach
Sent: Tuesday, July 28, 2015 12:12 PM
To: Joan Mlotkowski
Cc: Mohamed H Ahmed
Subject: Re: Guest User Activated

Hi Joan,

New plan. Irina decided she is going in a different direction, therefore I back to Plan A....hiring a post-doc.

I wish to make an offer of \$55,000 to David Perkins, who recently applied for the post-doc position. The ideal start date is August 24th.

Will that be feasible?

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Joan Mlotkowski
Sent: Tuesday, July 7, 2015 9:03 AM

To: Edward W Maibach
Cc: Mohamed H Ahmed
Subject: RE: Guest User Activated

Ok, I think the best way to do this is to first get the direct hire approved by Equity. Then, once (if) approved, Moe can prepare the Position Maintenance Form to request the position number for a Research Assistant Professor..

It sounds like you and Anne are working on the direct hire request, but I'll touch base with her also.

Joan

From: Edward W Maibach
Sent: Monday, July 06, 2015 5:01 PM
To: Joan Mlotkowski
Subject: Re: Guest User Activated

Thanks. I did not see this reply when I wrote the other email.

Yes, I want to hire Irina to replace Bob. She has already had a post-doc elsewhere, currently works at the White House, and will be unwilling to take the position as a post-doc. Thus I am trying to find a way to hire her as a Term or Visiting Research Assistant Professor.

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Joan Mlotkowski
Sent: Monday, July 6, 2015 3:53 PM
To: Edward W Maibach
Subject: FW: Guest User Activated

Ed,

Below are the passwords and link to access the applications. So, will Irina replace Robert Drost? Will Irina's position fall under the same posting that Robert applied to (link below)? If that's the case, then Irina could simply apply for the position that's still posted and use Robert's current position number. But, if you want to use the Research Assistant Professor title, then I don't think she could apply for the post doc position.

Joan

From: jobs@gmu.edu [mailto:jobs@gmu.edu]
Sent: Thursday, February 12, 2015 9:25 AM
To: Joan Mlotkowski
Subject: Guest User Activated

Dear Search Committee Member:

Job Title: Postdoctoral Research Fellow, Center for Climate Change Communication

Position Number: F9452z Recruit Number: Faculty - 5645

Department: Communication

To review the applicant pool, please log into <http://jobs.gmu.edu/hr> with the following user name and password:

User Name: gu552934

Password: 14d7a8

If you have any issues logging in using the guest user account information above, please forward the above email to jobs@gmu.edu with your particular question or concern.

Click on the link below to view the Quick Guide for Guest Users:

<http://hr.gmu.edu/employment/docs/AQuickGuideForGuestUsers.pdf>

Thank you,

Talent Acquisition Team
Human Resources and Payroll
George Mason University
4400 University Drive
Fairfax, VA 22030

<http://hr.gmu.edu/employment>

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From: [Edward W. Maibach](#)
To: [Bernadette Woods Placky](#); [Sean Sublette](#); [Heidi Cullen](#); [Joe Witte](#); [Bud Ward](#); [Ned Gardiner - NOAA Affiliate](#)
Cc: [Teresa A Myers](#)
Subject: Personnel changes
Date: Wednesday, August 12, 2015 8:16:44 AM
Attachments: [David Perkins CV.pdf](#)

Hi all,

Over the next week or two, post-doc Bob Drost and GRA Raphael Mazzone will be winding down their involvement with Climate Matters.

At the end of the month, David Perkins (CV attached) will be starting as our new post-doc on the project. We will introduce you to him when he starts.

We have also identified a promising young African-American man to serve as a GRA on the project, but hiring him entails first getting him admitted to Mason as a grad student. His recent MA thesis (U. Delaware) focused on tornado warning systems in Oklahoma school systems, and he is interested in pursuing a PhD focused on disaster communication. We hope to be able to hire him soon.

All the best,

Ed

Edward Maibach, MPH, PhD
University Professor, Department of Communication
Director, Center for Climate Change Communication
George Mason University, MS 6A8
Fairfax, VA 22030
www.climatechangecommunication.org

From: Gary Kreps
To: Anne Nicotera; Edward W. Malbach; Carl Botan
Subject: Director of the Nicholson School of Communication
Date: Monday, September 21, 2015 2:09:28 PM
Attachments: [Professor and Director of the Nicholson School of Communication.docx](#)
[UCF NSC Director Application Letter, 7-8-15.pdf](#)
[GLK CV, September, 2015.docx](#)
[7-1-2015, GLK Bio Sketch, with photo on Letterhead 2015.doc](#)

Dear Anne, Ed, and Carl,

I've been invited to interview for the position of Director of the Nicholson School of Communication at the University of Central Florida and I listed each of you as a professional reference for me. I would appreciate it very much if you would send a sweet letter of support for me to:

**Dr. Arlen Chase, Associate Dean of the College of Science
Interim School Director and Director Search Chair
Nicholson School of Communication
University of Central Florida
Orlando, Florida 32816**

I am attaching the position description, my letter of application, my current full CV, and a one-page bio sketch. Sorry to inconvenience you with this! Thanks so much for your help and support!

Wishing you the very best,

Gary

Gary L. Kreps, Ph.D., FAAHB
University Distinguished Professor, Department of Communication
Director, Center for Health and Risk Communication
George Mason University
4400 University Drive, MS 3D6
Fairfax, VA 22030

703 993-1094 (office)
703 993-1096 (FAX)
gkreps@gmu.edu

From: Gary Kreps
To: Gary Kreps
Subject: You are likely to receive a reference call for me soon.
Date: Tuesday, September 29, 2015 1:24:15 PM
Attachments: [CSUFDeanofCommunicationsAd.pdf](#)
[CSUF Dean College of Communications Application 12-6-2014.doc](#)
[CSUFDeanofCommunicationsProfile.pdf](#)
[GLK CV, September, 2015.docx](#)
[7-1-2015, GLK Bio Sketch, with photo on Letterhead 2015.doc](#)

Dear Friends,

I just learned that I will be interviewed for the position of Dean of the College of Communication at Cal State Fullerton. They asked me to alert my references (each of you!) that the search committee would be calling them in the next week or so. I am attaching the job description, my application letter, a profile of the college, and my current CV/bio to assist you in responding to their questions. Thanks so much for your kind support! I am in your debt!

Wishing you the very best,

Gary

Gary L. Kreps, Ph.D., FAAHB
University Distinguished Professor, Department of Communication
Director, Center for Health and Risk Communication
George Mason University
4400 University Drive, MS 3D6
Fairfax, VA 22030

703 993-1094 (office)
703 993-1096 (FAX)
gkreps@gmu.edu