

**THE DEBATE IS DEAD:  
HOW JOURNALISTS COVER CLIMATE CHANGE  
NOW THAT FALSE EQUIVALENCE IS UNCOMMON**

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by  
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## CHAPTER 1: INTRODUCTION

Early in my first semester I began reading research papers on the impacts of climate change. I hadn't thought hard about the problem before. As I learned more, fall to spring, spring to fall, fall to spring, big things broke in the news. The New York Times Magazine dedicated an entire issue to a climate-change fable called "Losing Earth" in August 2018. In September, a podcast dedicated to intimate, narrative stories of climate change, Threshold, aired its first episode of Season Two. In October, the international authority on climate research, the Intergovernmental Panel on Climate Change, released a dire report: unless we overhaul the global economy at a scale and speed that has "no documented historic precedent," we face catastrophe.

In my capstone project, I wanted to understand better why -- not climatologically but sociologically -- we face catastrophe. So I sought to examine a facet of climate-change denial in the media. I reviewed more than 2,000 news articles and spoke with nine environmental reporters to gauge whether journalists were still giving equal weight to deniers, doubters or the uninformed as they were to the scientific consensus that humans are causing climate change. This issue, coined "balance as bias" in a seminal 2004 study by Maxwell and Jules Boykoff, dominated U.S. prestige-press coverage of climate change between 1990 and 2005, but research since shows the problem has largely subsided. My research confirms the problem remains minimal. It also illuminates a shift in how environmental journalists today are framing climate change. Seventy percent of Americans polled in a 2018 Yale study believe the earth is warming (though 57 percent say humans are why, while 37 percent incorrectly attribute natural forces).

Many of the journalists I interviewed said they are transitioning from highlighting impacts to spotlighting possible solutions now that most of the public accepts climate change.

## **CHAPTER 2: LITERATURE REVIEW**

### **Theoretical framework**

One of the surest ways to deceive the public is to trick trusted media outlets into broadcasting a deception (Shoemaker, Vox, & Reese, 2009), and journalists writing about climate change are especially susceptible (Boykoff & Boykoff, 2004; McKewon, 2012; Brulle, Carmichael, & Jenkins, 2012; Mintz, 2005). When the public consumes these messages they are more likely to buy them because, even if they distrust the reporter's source, they do trust, to some degree, the media they consume (McKewon, 2012; Brulle, Carmichael, & Jenkins, 2012). News media are gatekeepers (Shoemaker, Vox, & Reese, 2009); they distill a universe of facts and opinions into coherent messages out of necessity and convenience for their audience (Şerban, 2015). And through this process, over and over, they set agendas: the more coverage an issues receives, the more important it becomes to its audience (Coleman et al., 2008). Media coverage of climate change, therefore, influences whether the public considers it a problem or nothing worth worrying about (McKewon, 2012).

### **Influencing the gatekeepers**

Efforts to influence the message that media broadcast on climate change have been successful, primarily, by exploiting the journalistic norm of balance – that is, the practice of giving equal weight to competing parties. Maxwell T. and Jules M. Boykoff (Boykoff & Boykoff, 2004) examined coverage of climate change in four large U.S. newspapers between 1988 and 2002 and found that despite the scientific consensus that climate change is serious and human-caused, beginning in 1990 many reporters were giving as much voice to sources who downplayed the crisis. Specifically, they found 53 percent of the stories they sampled contained

false balance and only 6 percent exclusively covered the human role in climate change. "(W)hen it comes to the coverage of global warming," they wrote, "balanced reporting can actually be a form of informational bias." When Maxwell T. Boykoff measured this problem again on his own, he found that it began subsiding in 2005 (Boykoff, 2007).

What, then, prompted the swell in false-balance reporting between 1990 and 2005? Researchers point primarily to two variables in explaining what shifts media coverage on climate change.

One is the influence of partisan organizations and their agents. Elaine McKewon found that Australian news media articles on climate change between 1989 and 2009 mirrored the communications of a think tank that dismissed climate change and climate science (McKewon, 2012). "This analysis shows that the Institute of Public Affairs, an Australian neoliberal think tank, has used its access to the media as a news source to influence the public discussion on climate change in Australia," she wrote (McKewon, 2012). Robert J. Brulle in 2013 examined the funding sources of 91 US organizations that, similar to the Institute of Public Affairs in Australia, discourage action on climate change using tactics that include broadcasting messages through the media; he found they had an annual income of more than \$900 million, and much of the funding that he was able to trace came from conservative foundations (Brulle, 2013). This network of conservative-funded think tanks lean primarily on sympathetic news media to broadcast their message to the public (Brulle, 2013), but their pipeline to distribution is the media at large (McKewon, 2012; Brulle, Carmichael, & Jenkins, 2012; Mintz, 2005).

Politics, shaped in part by think tanks and their agents, is the other major factor that has influenced media coverage of climate change. The same year the raft of false-balance reporting

emerged in the US – 1990 – a major international climate change report was released that found "emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases carbon dioxide, methane, chlorofluorocarbons (CFCs) and nitrous oxide" and that if steps were not taken to curb the emissions, the global average temperature could rise by 3 degrees Celsius above pre-industrial levels by 2100 (IPCC, 1990) -- news, in short, contrary to the messages of organizations that dismissed climate change. From 1990 forward, the shift to false-balance in the US "can be explained by the increasingly complex politicization of the global warming issue (sic), and the coalescence of a small group of influential spokespeople and scientists emerged in the news to refute these findings" (Boykoff & Boykoff, 2004). Most government officials had referenced climate scientists as authoritative sources when talking with reporters about climate change (Wilkins, 1993), but during the time period when false-balance reporting dominated, government officials were citing the findings of climate change doubters instead (Boykoff & Boykoff, 2004). In his 2004 book "Projections of Power: Framing News, Public Opinion, and U.S. Foreign Policy," Robert M. Entman showed that media tend to take their cues on how to frame issues from elite politicians (Entman, 2004) – although, recently, Entman has found that with the prevalence of digital forms of communication, the media are becoming increasingly less necessary to elites wishing to speak to the public (Entman & Usher, 2018).

But experience in covering climate change likely protects a journalist from many of the subject's pitfalls. Sara Shipley Hiles and Amanda Hinnant interviewed 11 journalists each with at least a decade of experience covering the environment and found they were unlikely to become victims of the false-balance trap when covering climate change, more likely to let the

preponderance of scientific evidence guide their coverage and often relied on their scientific expertise in evaluating sources (Hiles & Hinnant, 2014). One journalist in the study said, "If you covered a story on an avalanche, and people were buried under it, you wouldn't feel the need to balance it by quoting someone saying it didn't happen" (Hiles & Hinnant, 2014). A 2005 issue of *Neiman Reports*, a widely read journalism trade magazine published by Harvard University, devoted 22 pages to the issue of covering science and, in particular, climate change. The articles, written by journalists and communication scholars, stressed a need for more nuanced coverage of science and, with climate change, a weight-of-evidence approach (Nieman Reports, 2005).

But even veteran environmental journalists revert to the "he said, she said" framing of climate change when they code a story as political, opening them to the false-balance trap (Hiles & Hinnant, 2014) so common in the US between 1990 and 2005. And most reporters do not specialize in covering science or environmental topics but have to cover them anyway (Wilson, 2000). These reporters are more susceptible to the influence of agents spreading climate-change doubt: an analysis of British newspaper coverage between 2007 and 2011 found that messages dubious of climate change were more likely to be found in articles written by reporters who aren't specialists (Painter & Gavin, 2016).

### **Relevance**

The 2004 and 2007 Boykoff studies explained theoretically why journalists may succumb to the trap of false balance, but they didn't explain it empirically like Hiles and Hinnant did in their 2014 study examining how veteran environmental journalists cover climate change. But that study does not illuminate the practices of journalists who are novices in climate change. In

my review of literature for this proposal, I was unable to find any research that answered this question, which is why the study I am proposing is needed.

### **Methods**

I conducted semi-structured interviews with nine early-, mid- and late-career environmental reporter and asked the following questions:

1. How do you keep up with new developments on climate change?
2. How do you cover skepticism or denial of climate change? Why or why not?
- 3A. Do skeptic sources ever contact you seeking coverage? Would you use a source like that? (Please provide examples.)
- 3B. Do you ever see other journalists use these skeptic sources, and what do you think of that?
4. Do you frame climate change as a controversy? Why or why not?
5. How do you frame it (i.e. adaptation, solutions journalism, breaking news on new science, policy, funding)?
6. Are you aware of issues of "false balance"?
7. Have you heard the term "weight of evidence" as applied to climate coverage?  
How do you apply it?
8. How has your coverage evolved over time? Did you used to frame it differently?
9. What advice would you give to young journalists just starting to cover this for the first time?

In addition to the interviews, I conducted 159 queries using the databases Factiva and ProQuest Newsstand to search for U.S. news articles in nonpartisan, mainstream outlets that gave voice to sources who expressed denial or doubt of the existence or human cause of climate change. My queries consisted of the first and last name of a known climate-science denier alternatively combined with the phrases "climate change" and "global warming." See Appendix II.

## **CHAPTER 3: PROFESSIONAL ANALYSIS**

### **THE DEBATE IS DEAD: HOW JOURNALISTS COVER**

#### **CLIMATE CHANGE NOW THAT FALSE EQUIVALENCE IS UNCOMMON**

One of the surest ways to trick the public into thinking climate change isn't anything worth worrying about is to convince a trusted media outlet into broadcasting doubt. Hardly any doubt exists among scientists studying climate change that humans are driving it, to be clear — scientists confirmed the human factor in 1979 — but for years reporters have unwittingly distorted that fact by adhering to the journalistic norm of balance.

For example, on Oct. 7, 2018, in *The Wall Street Journal*: "While a large body of scientific work concludes emissions cause global warming, some dispute those conclusions."

"Some" represents fewer than 3 percent of publishing climate scientists, but a quarter of the words in that sentence are dedicated to doubt. (According to a 2016 paper, 97 percent of publishing climate scientists agree humans are responsible.)

There was a raft of false-balance coverage on climate change between 1990 and 2005 in four major U.S. newspapers, studies found. More than half of the articles sampled in one study gave as much voice to deniers, doubters and the uninformed as they did to the scientific consensus on climate change, and only six percent exclusively covered the dominant human role. The researchers coined the practice "balance as bias."

The raft has since sunk, though. A 2014 study found the preponderance of scientific evidence guided 11 veteran environmental journalists' coverage on climate change, not an instinct to seek all sides. And an effort made for this story to find examples of sources in

mainstream, nonpartisan news stories spreading doubt between 2006 and 2019 netted fewer than two dozen instances.

Environmental reporters interviewed for this story said false balance in reporting is largely dead — although, still, they said, it lingers in policy and business stories that quote conservative officials. None of the nine reporters frame climate change as a controversy anymore, and some, particularly those who came to journalism from other fields, never did. Many of them said evidence of climate change is now so obvious to much of the public that they spend less time spotlighting impacts and more time, because the country is reckoning with what to do, spotlighting possible solutions.

So what happened?

"It's about the science," and the arguments made by people who reject human-caused climate change aren't convincing, said Neela Banerjee, a reporter for InsideClimate News.

"Nobody's asking them to clear a bar that other climate scientists don't clear. They just have to clear it."

Banerjee, like many reporters, "much to our shame," used to cover climate change with a false balance. It wasn't her beat anyway. "I wouldn't say I was a climate denier," she said, "but it was like, climate change isn't really, you know — I'm covering this other stuff," which, between 1999 and 2008, was Russian business, energy, Baghdad and religion for the New York Times. But in 2010 she took a job covering energy and the environment for The L.A. Times and her editor, she remembers, told her, "Climate change is real. That's how we're going to cover it."

Banerjee's evolution is similar to other veteran environmental reporters: once they reach a certain level of expertise, they're more likely to ignore false balance. In the 2014 study that

interviewed veteran environmental journalists, researchers found they were unlikely to become victims of the balance-as-bias trap, more likely to follow the preponderance of evidence and often relied on their own scientific expertise in evaluating sources. They took, in short, a weight-of-evidence approach. Peer-reviewed research is often a primary source of information on climate change for the reporters interviewed for this story. To develop expertise further, some reporters seek a structured education. Laura Paskus, a freelancer in New Mexico, enrolled in a master's program in geology at the University of New Mexico. She's doing her thesis on the Rio Grande, which she's written about as a reporter.

Reporters who come to journalism from other backgrounds are more likely to consider the weight of evidence when reporting on climate change because they were less conditioned to give equal voice to all sides of an issue. Staci Matlock, editor of The Taos News in northern New Mexico and a former Santa Fe New Mexican reporter, said she was among the last reporters in her region to switch from false balance. Why? Because she was trained to present all sides. "We're way past that now," she said. Paskus, though, was an archaeologist before becoming a journalist. She made the decision when she started covering climate change in the early to mid 2000s that she wasn't going to give voice to sources who ignored the scientific consensus. Unlike her colleagues, who at times criticized her, she was not steeped in objectivity. "I just think when it comes to science or helping the public make better decisions for the future," she said, "the truths are pretty clear cut, in my mind."

But reporters are still susceptible to the balance-as-bias trap when writing stories centering on things other than the science of climate change, like policy or business stories that overlap the subject. Especially today with a White House administration that often rejects

climate science, politics can cover for doubt. This is how doubters make mainstream news nowadays: they're in power, Banerjee said. Rebecca Moss covers the environment for The Santa Fe New Mexican and often writes about state policy, and when public officials make statements on climate change that don't square with the scientific consensus, sometimes, she said, she has to cover "both sides." "You just can't ignore their voice," particularly when it's shaping policy, she said. "That's a really interesting aspect of public transparency."

Craig Welch, a senior National Geographic reporter, said what Moss is describing is different than false balance and is unavoidable. He doesn't write much about policy at Nat Geo, but if he were to cover, say, the Trump administration's decision to withdraw the U.S. from the international agreement to limit global warming to 1.5 degrees Celsius, known as the Paris climate accord, he would counterbalance misinformation with accurate context on climate change. But fact checking can be challenging when a reporter's deadline is looming and their resources are limited. Moss said she tries to fact check, but The New Mexican is a small daily. Sometimes, she said, she doesn't have time and the doubt goes unchallenged.

But reporters draw a fine line between policy and science or environment stories. Many of them interviewed for this story said they would do as Moss does and include doubting sources in politics stories when those sources drive policy, but they have no place in climate-science stories. They don't have the necessary expertise, Banerjee said. InsideClimate News has interviewed officials from The Heartland Institute, perhaps the country's most vehement, free-market denier of human-caused climate change; Myron Ebell, director of another free-market, climate-science-denying think tank called the Competitive Enterprise Institute; and others like them because the leader of the free world, Donald Trump, embraces their views.

Now that journalists have largely moved beyond false balance and the public and many policy makers are on board, too, they are working to evolve their coverage of climate change. Welch, the Nat Geo reporter, said he has spent much of his career identifying the impacts of climate change but feels it's time for more solutions journalism. The problem and its impacts are clear to most people, he said. "The question now is, 'What are we going to do and what is that going to look like?'" Staci Matlock, editor of The Taos News in northern New Mexico, is trying to shift the paper's coverage to highlight community resilience. She sees it as a public service. "Can we think about just pitching ideas for the direction maybe our community can head, so that if the worst portion of climate change comes to us, we're already ready to survive as best we can? I don't know," she said. "Maybe that's pie in the sky."

Outside factors also determine how a reporter frames climate change. Reporters consider how the information will land with their audience. Paskus, who covers all of New Mexico, a purple state, has to report on climate change in a way that will connect with both democrats as well as republicans, who are more likely to balk. That might involve writing about the crisis without using the words "climate change." Readers of The Taos News, though, are generally more liberal. Cody Hooks, an environment reporter there, said he doesn't have to take the same precautions as Paskus. But independent of ideology, convincing an audience conditioned to a land of extremes that what they're living through isn't more of the same can be a challenge, he said. Drought is common in the Southwest. So are wildfires. Often to land a point, Matlock said, it's best to talk not about the current impacts but the future ones, like that New Mexico is projected to lose most of its forests by 2050.

Political shifts in government also influence how reporters frame climate change. New Mexico's current governor, Michelle Lujan Grisham, is a democrat. "Covering climate change for eight years under the (Susana) Martinez administration" — which was republican and had a bad record on the environment — "there was no shortage of what we weren't doing as a state," Paskus said. But now the state is taking action, people are talking about the problem and she's considering what to cover next. Nationally, the opposite is true. While the Obama administration accepted the science and took steps to address climate change, the Trump administration largely has not. The administration's inaction and obstruction has netted a slew of watchdog stories on climate change.

Climate change is far more than just a science story today, the reporters said. Amy Martin, founder and executive producer of the podcast Threshold, is nearly allergic to stories that cover climate change exclusively as a science issue. Climate change is a moral issue, an equality issue, a security issue, an innovation issue, a social-justice issue, a what-our-vision-is-as-a-nation-and-as-a-species issue, she said. And it's not a controversy. "Treat the realities of climate change just like you would treat any other important issue," she said. "The whole point of the denial movement, if you can call it that, is to make us think and rethink and question and stumble on ourselves."

While most journalists have moved beyond false balance, there still remain pitfalls. Reporters in conservative areas may be less likely to explicitly connect the impacts of climate change to the crisis itself, fearful of upsetting their audience. And reporters covering conservative policy makers may be more likely to broadcast doubt because they can't ignore their statements, even if science doesn't support their substance. But moving beyond false balance has

allowed journalists more bandwidth to cover climate change in different ways. They can move beyond controversy -- and many are moving beyond impacts -- to solutions.

## CHAPTER 4: EVIDENCE

*The following feature story was published in VICE Magazine's 2019 Profiles Issue.*

HED: The Holdouts

DEK: Propped up by a free-market-funded network, relied on by the Trump administration, the last climate deniers in academia linger as millennials protest inaction.

[https://www.vice.com/en\\_us/article/wjwawq/the-last-of-the-climate-deniers-hold-on-despite-your-protests-v26n4](https://www.vice.com/en_us/article/wjwawq/the-last-of-the-climate-deniers-hold-on-despite-your-protests-v26n4)

Late in the summer of 1989, John Christy discovered the earth wasn't warming. Satellites spinning through the atmosphere reported no upward trend line, and above the tropics, the University of Alabama atmospheric sciences professor and his research partner, the NASA scientist Roy Spencer, learned that the satellites had actually recorded cooling. The two men were the first to crunch the enormous volume of data captured by the satellites since their launch a decade earlier, the first to build a database that showed the surface readings depicting a warming earth were overblown. They were pioneers. They submitted a paper to Science magazine, and in March the following year, they became celebrities. NPR called. The Los Angeles Times called. Jay Leno made a joke about it on national TV.

Such attention today would not faze Christy. He's testified numerous times before federal lawmakers. He has done so many interviews with reporters that he's begun repeating himself. This year he began advising the director of the Environmental Protection Agency. He is now so widely seen as an obstacle to climate action that on Earth Day week in 2017, late at night, seven 5.7 mm rounds snapped through the office window next to his. The FBI told him the shooter had likely mistaken his neighbor's office for his. But in the spring of 1990, Christy was in his late

30s, without tenure and surprised, suddenly, by the attention. “It was the first time I had gone through something like that,” he said.

Two years earlier, in 1988, the country seemed to have come to the opposite conclusion. “The greenhouse effect has been detected,” the NASA scientist James Hansen told the U.S. Senate during that dry, hot summer when the Midwest plunged into Dust Bowl–like drought, “and it is changing our climate now.” He was “99 percent” certain that artificial greenhouse gases were warming the planet, he said, and government must sharply cut emissions to fight the crisis. The front page of the New York Times the next day announced global warming had begun. That fall, the United Nations and the World Meteorological Organization established the global authority on climate science—the Intergovernmental Panel on Climate Change (IPCC). Delegates from some 60 nations met in the Netherlands a year later, in 1989, to approve the outlines of a binding treaty to limit carbon emissions.

Global warming threatens every living thing on earth, but cutting the pollution that causes it threatens the profits of enough executives, the climate researcher Richard Heede told the Guardian, to fit on a couple of Greyhound buses. Some of those—though not all of them—decided money was more important, and to protect their money they invested in a network of free-market think tanks and advocacy groups to manufacture celebrities of academia like Christy. These were academics who, crucially, already believed the climate crisis was no crisis at all, academics so ideologically aligned with the free-market values of the polluters that they couldn’t be bothered with the damning data signaling a crisis. These academics were true believers.

While people around this warming earth protest inaction—locking legs and locking arms, blocking roads and blocking bridges, wielding signs that say there is no planet b and i’m sure the dinosaurs thought they had time too—the United States, which is the second largest emitter of carbon dioxide, actively represses climate science throughout federal agencies and slashes environmental regulations to the glee of the network that bolsters these contrarian celebrities. The Trump administration, infamous for alternative facts, has vigorously renewed demand for an alternative science that was losing salience. Many of the alternative scientists and nonscientists have died, retired, or gone quiet since Christy discovered the earth wasn’t warming. But I found eight other professors who linger—call them the holdouts.

\* \* \*

In 1998, months after countries finally adopted the first international agreement to cut carbon emissions, a coalition of some of the U.S.’s largest oil companies (including ExxonMobil and Chevron), industry trade groups, and free-market advocacy hubs convened the “Global Climate Science Team.” Their mission: recruit scientists to undercut climate science. “These will be individuals who do not have a long history of visibility and/or participation in the climate change debate. Rather,” the group’s plan stated, “this team will consist of new faces who will add their voices to those recognized scientists who are already vocal.” (Five years earlier, Western Fuels Association had already been recruiting scientists “who are skeptical about much of what seemed generally accepted about the potential for climate change,” according to a 1993 annual report, but the Global Climate Science Team refined the strategy.)

The year the team drafted the plan, ExxonMobil—then the world’s second largest emitter of carbon emissions, behind Chevron—began dumping money into a network of free-market

groups—often, unambiguously, for work on climate change, according to an analysis of data provided by the Climate Investigations Center and the database ExxonSecrets, an initiative led by the environmental group Greenpeace. For some of these groups, ExxonMobil would become the single largest corporate donor. The company, for example, had been making small donations of \$5,000 to \$20,000 in the mid-1990s to the Competitive Enterprise Institute (CEI), a free-market think tank, but in 1997 it gave the institute \$95,000 earmarked for climate change work. In 2000, Exxon gave CEI \$230,000 in non-climate-specific funds. (ExxonMobil’s corporate media office did not respond to requests for an interview, but CEI President Kent Lassman said in an email, “Alarmist policies to restructure American life pose a grave threat to human health and financial security.”)

Another ExxonMobil beneficiary was the Heartland Institute, which spent its early years in the 1980s focused on issues in its home state of Illinois; a decade later, Heartland entered the national stage with climate change as a core issue. It would be a profitable decision. Heartland’s public tax records compiled by Conservative Transparency, a group that aims “to dismantle false attacks on progressive policies,” reveal meager contributions through 1997, ranging from \$2,578 to \$25,000, but in 1998 the Barbara and Barre Seid Foundation made a \$150,000 grant, according to Media Matters. Two years later, ExxonMobil gave \$115,000 earmarked for work on climate change. (Heartland’s spokesperson said the notion that the think tank’s work on climate change is possible because of the fossil fuel industry, or done at the direction of it, is a lie and a smear. “It’s 100% false,” Jim Lakely said in an email to me.) The George C. Marshall Institute, founded in 1984 to assess scientific issues that influence public policy, also expanded thanks to ExxonMobil’s support, before it dissolved in 2015, spinning its climate change work off into the

CO2 Coalition. In 2001, the Marshall Institute received a \$60,000 grant for work on climate change and has received a total of half a million dollars from the company since. And the Committee For A Constructive Tomorrow (CFACT), a group that scrutinizes environmental issues through a free-market lens, started with modest \$5,000 grants in 1997 and 1998, which grew to \$110,000 in 2000 and another \$180,000 between 2003 and 2005 earmarked for climate work. (Marc Morano, CFACT's spokesman, declined to address the think tank's role in organizing the academics and defended the 1998 plan in an email. "It was a strategy meeting that was no different than what the political left does on a daily basis," he wrote.)

These groups—CEI, Heartland, the CO2 Coalition, and CFACT—are among the most active today in brokering skeptical academics. ExxonMobil's philanthropy was significant—giving more than \$5 million that is publicly traceable to 37 groups for work exclusively on climate change between 1997 and 2005, according to research by Greenpeace. But larger donations also came from family foundations. According to a 2013 study in the journal *Climate Change*, the three biggest climate-doubt donors between 2003 and 2010 were Scaife family foundations, financed by the late oil, banking, and industrial magnate Richard Mellon Scaife; the Lynde and Harry Bradley Foundation; and foundations affiliated with the Koch family, whose wealth, according to Jane Mayer's book *Dark Money*, originally came from constructing oil refineries for Adolf Hitler and Joseph Stalin. (I sought comment from the three foundations; only the Koch's responded, through a spokesperson, who said, "We have been grossly mischaracterized on this issue.") According to the 2013 study "Institutionalizing Delay," published in *Climatic Change*, funding to think tanks and advocacy groups rocketed from

sources whose transactions are impervious to public scrutiny, namely Donors Trust and Donors Capital Fund.

These think tanks and advocacy groups became brokers for a community of mostly older white male scientists and economists who all doubted the looming climate crisis. As the country considered the binding international treaty to cut carbon emissions in the late 90s and early 2000s, this network blasted the voices of these men into the nation's dialogue. Without their work, says Jerry Taylor, the president of the Niskanen Center, a libertarian think tank, lawmakers couldn't support inaction. Taylor is skeptical of the skeptics today, but he once fought with them against action and knows the landscape well. "It's not all that complicated," he said. "There is a political demand for climate skepticism out of the academic community," and by signaling it, lesser-known researchers can gain visibility and get private grants.

\* \* \*

Though Christy has the credentials to talk the climate talk, he's backed himself into a corner, shoulder to shoulder with eight other professors who sound a lot like climate deniers. This scrum of academics can be broken into two categories: those who are credentialed to have opinions about the atmosphere, like Christy, and those who aren't.

- David Legates is a University of Delaware climatology professor who was not available for comment but said at a 2018 Heartland Institute conference, "So the answer to my question: 'Is carbon dioxide a pollutant or a benefit?'—it clearly isn't a pollutant. It is definitely a benefit, and we can do with a little bit more of it."

- David Deming is a University of Oklahoma geophysics and geology professor who did not respond to multiple emails and calls, but a 2018 Heartland Institute climate change report

quoted him speculating apocalyptically about a future without fossil fuels, saying, “When the bottled water ran out, people would drink from streams and ponds and epidemic cholera would inevitably follow.”

- Tony Lupo is a Missouri University atmospheric sciences professor who gave me hours of his time and access to his classes, where, in April, he told his students the climate is changing. “The questions are why is it changing,” he said, “and to what degree are human activities playing a role?”

The five remaining professors have no higher-education background in earth sciences, but they nonetheless espouse doubt about very well established climate facts.

- Gerard Caneba is a Michigan Technological University chemical engineering professor who authored a 2018 book, *Debunking Anthropogenic Climate Change Hysteria: A Chemical Engineer’s Scientific Viewpoint*, and, in an email to me, said, “As I understand more and more the inner workings of the Earth system, it became evident to me that the current inexorable march of the anthropogenic global warming movement is unabashedly based not only on imperfect science but on an inferior form of science.”

- Larry Bell is a University of Houston space architecture professor who in an uninhibited hour-and-a-half-long phone call with me repeatedly returned to what he sees as the corruption of climate science. He spoke of “alarmist shit” and “funny business” and said climate regulations have always been about “social control.” “You reach a point when it’s tempting to attribute bad motive to people,” he said.

- Steven Hayward is a Berkeley Law visiting lecturer who declined to comment by email but said recently in a post for a conservative blog that climate science is a “fantasyland of

climate theology” and the 16-year-old Swedish climate activist Greta Thunberg will be forgotten by the media for the “next shiny new thing.”

- Thomas Rustici is a George Mason University economics professor who could not be reached for comment but has told students, flatly, that global warming is no catastrophe.

- Scott Armstrong is a marketing professor retiring from the University of Pennsylvania who gave a presentation in June at a Lehigh University reunion titled “Do We Face Dangerous Global Warming?” Heartland promoted it on its website, linking to the slides.

The opinions of all nine, driven either scientifically or ideologically, are difficult to disentangle from the free-market campaign that helped make them celebrities in contrarian circles. Speaking with them today, it appears most of them didn’t just begin doubting climate science in order to boost stock prices at oil companies.

Christy has always been about the science. At the table in his office, he flipped through a blue three-ring binder stuffed with sheets of yellowed paper. He stopped on a page with a spreadsheet meticulously etched by mechanical pencil: weather observations from 1969, when Christy was in high school in Fresno, California. “I was just in love with the weather and data and recording things. I mean,” he said, turning the page, “I used to be able to write four lines in a quarter of an inch.”

For the early part of his career, there was room in what Christy calls “the establishment” for work that questioned the severity or cause of climate change. “The first studies were welcomed and had a big impact,” recalls Kevin Trenberth, one of Christy’s graduate school supervisors and now a distinguished senior scientist at the National Center for Atmospheric Research. “At the time there was no political agenda attached.”

But as the cause of climate change became ever more conclusive and the dangers more real, Christy told me he became frustrated with a science that to him had become dogma. “Climate change was a danger to human kind,” he said, remembering the sentiment that alienated him from his colleagues, “and if you have evidence against that, we don’t want to see it, or there is something wrong with it.” He got up from the table and returned with a several-inch-thick report. The IPCC had published it in 2001, and Christy helped write it. He opened it and flipped by memory to a page with a squiggly, vibrant orange, blue, and red line: the hockey stick, the indelible image of climate change. The hockey stick is a line graph charting a shaft, as the de facto name implies, of relatively stable global average temperatures for almost a millennium until, abruptly, in the late 1900s, it hooks sharply up. The hockey stick is a slapshot in Christy’s face. He scowled at it. “It’s an improperly done piece of, uh,” he said, then paused, reconsidered, then finished, “mathematics.”

At 68, Christy is well established: He has taught and researched at the University of Alabama in Huntsville for 32 years. He is Alabama’s state climatologist, the interim dean of the university’s science college, and the director of a lab with some 60 researchers. The database he and Spencer created for their 1990 Science magazine paper spurred more research into satellite temperature monitoring, which found errors in his monitoring. (Christy told me he believes the errors found in his work have been minor.) I told him I’d emailed with Trenberth, who said he distanced himself from Christy around 2001, worried that every time a decision was called for in processing data, Christy was choosing values that gave little or no trend. Christy grimaced. “He doesn’t want to admit that my work stands on its own.” Christy, ethically in some ways, stands on his own, too. He’s not quoted as frequently or fervently in newspapers as the other eight

holdouts. He refuses to take money from oil, mining, or automotive companies. Notably, he avoids the semi-annual international conferences led by the Heartland Institute, today the hub of doubt. “There is a sense that some of those in the skeptical camp are...” he said, pausing to search the beige walls of his office for the right words, “not scientifically grounded. Appearing in those venues, you get tainted.”

But Christy does have mud on his boots. In a deposition, he recalled that CEI paid him some \$1,500 for writing a chapter in the 2002 book *Global Warming and Other Eco-Myths: How the Environmental Movement Uses False Science to Scare Us to Death*, just one of several indications that he’s part of a larger whole. (When pressed later by an attorney in the deposition, he admitted under oath that global warming wasn’t an “eco-myth.”) He says he has testified in congressional hearings on climate change about 20 times. His testimony in 2009, 2011, and 2016 appears to have given cover to bills crafted to suppress federal climate science or kneecap greenhouse gas regulations, though none became law. (Koch Industries, ExxonMobil, Chevron, America’s Natural Gas Alliance, Peabody Energy, Edison Electric Institute, and other fossil fuel giants lobbied for the 2011 bill.) For his connections on Capitol Hill, at least in part, Christy must thank the financiers of the vast network designed to broadcast his views—financiers who cared more about money than the earth.

\* \* \*

Though Christy may keep some distance from the network, Larry Bell, the University of Houston space architecture professor, does not. Bell made himself a kind of skeptic celebrity, writing the 2011 book, *Climate of Corruption: Politics and Power Behind the Global Warming Hoax*, which, he said, landed him a regular column for *Forbes.com* until 2014. He is an adviser

for CFACT and a member of the CO2 Coalition. He also advises the Heartland Institute, which has had a number of other affiliates at Forbes who've broadcasted doubt. Bell, now 81, established his career during the space race of the 1960s. He designed equipment that was used the first time an astronaut walked in space and founded the only graduate-degree program in space architecture. He has, in his own words, "a shitload of credibility in space," and in his writing on climate change he claims this credibility also extends to the atmosphere of this planet. In his Forbes column he advocated for carbon fuels and shot down green energy and environmental regulation, and a central theme was climate science cast as a conspiracy. When he left the site in early 2014—Bell said Forbes "got squishy"—he moved his column to the far-right website NewsMax.

Bell believes climate change is a cover for communism. The refrain is common among contrarians. They denigrate environmentalists as "communist, un-American fanatics and diametrically opposed to prosperity, jobs, and profit," according to a 2013 study of climate doubters, "Wise Contrarians," published in the journal *Celebrity Studies*. For Bell in particular, who was shaped by the Cold War, the "climate thing" has always been about communism. After the Berlin Wall fell, three decades ago, Bell flew to Russia to visit its space program and recalls being shocked at what communism had done to the Russians. He believes that climate regulations, like communism, are fundamentally about redistribution, and that without competition a nation cannot prosper. "I don't give a shit about climate," he said, "other than how it's being weaponized to frighten people."

This is a main point to anyone willing to listen: Climate change is a weapon. Thomas Rustici, the George Mason University economics professor, wants that to be clear. Rustici is not

a scientist. He is an economist who has done research for the Charles Koch Foundation, a major funder of doubt. Koch family foundations poured more than \$127 million into 92 organizations that attack climate science between 1997 and 2017, according to Greenpeace. Rustici, who has taught for nearly thirty years, has required students to read *The Science of Success* by Charles Koch; and he's recommended they read books by climate change contrarians such as Fred Singer, Robert Balling, and Patrick Michaels, who have all taken money from the oil and gas industry. Rustici also advised Ben Carson's presidential campaign. Repeated efforts to reach Rustici were unsuccessful, but hours of audio recordings made by a student in 2012 and shared with the advocacy group UnKoch My Campus open a window into his ideology.

Rustici's voice—the student who made the recordings confirmed it was him—sounds like a preacher's. In the recordings he can be heard telling his students we will never run out of clean water, that our air isn't getting dirtier, that there can be no famine in a land with private property rights and free trade, that agricultural productivity is boundless and those who doubt it are dumber than dirt, “and that's an insult to dirt.” “Socialism starves people,” he said. “People in capitalist societies don't starve.”

He goes on to call environmentalists “genetic liars” and “idiots” who “don't think.” He describes environmentalism as a religion—an “outright in-your-face fraud”—that damages society. He claims most climate models are wrong and that global warming is a mere hypothesis. “The evidence that global warming is some kind of looming environmental catastrophe is just stupid. Quote me on it!” he said. “Will debate anyone on this, any day of the week. It is absolutely retarded to believe this is a catastrophe around the corner.”

A George Mason University spokesperson said Rustici’s statements represent his views only, not those of his employers, but added that the University does “support his right to academic freedom.”

\* \* \*

For two decades now, this disparate group of professors, along with a squadron of other skeptics, has been united by a network of think tanks and advocacy groups, opening for each a deliberate community outside of the academy. As the climate counterattack unfolded in the early 2000s, Tony Lupo received an email from an affiliate of a libertarian website called Tech Central Station, he recalls, asking if he’d write for the site. Lupo was in his 30s and only a year or so into his job as an assistant professor of atmospheric sciences at Missouri University. The website was founded in 1999 and in part opaquely funded by ExxonMobil. Lupo said yes. “I’m guessing that that’s what got me in touch with skeptics,” he said. The website promptly recruited other academics, including David Legates and Steven Hayward, and Roy Spencer, Christy’s research partner from NASA, and began spinning articles mocking climate-change science, with headlines such as “Let’s Be Honest About the Real Consensus” and “Global Warming: The Satellite Saga Continues.”

Scott Armstrong, the marketing professor from the University of Pennsylvania, said his key connector to the network was Willie Soon, an aerospace engineer and prominent climate skeptic who has built his career outside of academia. Soon is affiliated with the core groups that anchor the campaign to sow climate doubt—the Heartland Institute, CEI, and the CO2 Coalition, among others. Armstrong said if not for Soon, he wouldn’t have had access to Capitol Hill or been a signatory on so many public letters giving political cover to doubt. “Actually, Willie is

sort of the quarterback for this thing,” Armstong said. “He keeps people informed about what’s happening, and there’s a number of email lists where we communicate.”

Documents obtained in 2015 by Greenpeace show Soon had accepted more than \$1.2 million from the fossil-fuel industry over the previous decade without disclosing the conflict of interest on most of his scientific papers; a 2018 lawsuit forced Soon to reveal some of the grants, from the ExxonMobil Foundation, the Charles G. Koch Foundation, and the coal giant Southern Company. Reached by phone, Soon said he shouldn’t speak with reporters. The revelations stymied Soon’s career in science, but not his role in facilitating a community. (The Heartland Institute has described the controversy as “phony.”)

Other Heartland Institute affiliates have played similar roles. A draft 2012 budget from the think tank noted that a senior editor there, Craig Idso, then being paid \$11,600 a month, was recruiting a “growing number” of contributing authors and editors—who would, in turn, be paid between \$125 and \$5,000 a month. One was Lupo, at \$750 a month. Lupo told me it was an email from a member of the Idso family, he believes, that recruited him to Tech Central Station. And Bell said Fred Singer, who spoke at “Global Environmental Crisis: Science or Politics?,” the earliest publicly known event devoted to doubt, in 1991, planted the seed of uncertainty in the early 2000s. Spurned by the broader academic community, many find a home in the network. The 2013 “Wise Contrarians” study interviewed attendees of a 2011 Heartland Institute conference and found that those who felt excluded from the academy felt part of a community in conservative think tanks. (Lakely, Heartland’s spokesperson, said they’re proud of that. Staffers on Capitol Hill often solicit advice from Heartland on whom to invite to testify at hearings, he said, and this year he arranged for the testimony of three skeptics, including Legates. Heartland

generally tries to coordinate opportunities for its skeptic affiliates to broadcast their messages through third parties, he said. “Heartland Institute did a lot to bring these people together,” Armstrong said.)

The network has done a lot to have its members heard.

In February 2001, ExxonMobil faxed a memo to the Bush White House’s Center for Environmental Quality with a number of recommendations: Boot all Clinton-era scientists with “aggressive agendas” from “any decisional activities” on the IPCC and move scientists with a history of doubting the climate crisis into positions of authority, including Christy. In May 2001, the Bush administration ordered a reassessment of the nation’s position on climate change, but the findings were no boon for ExxonMobil: “Temperatures are, in fact, rising,” the report stated. The Bush administration ordered a broader reassessment the following year, in part to square Christy’s ongoing work with satellites with those from thermometers on land, which were recording warming. It found errors in Christy’s work and, when accounted for, his data showed warming. (Although Christy co-wrote the executive summary and three chapters, later that month, in a deposition, he struggled with the word “error.”)

But ExxonMobil had already achieved a victory when the Bush administration announced in March of that year that it would not sign the U.S. on to the Kyoto Protocol, the binding international treaty to cut carbon emissions. The Guardian reported the administration balked in part due to pressure from the oil giant. And the network sparked by its largesse continued fighting for inaction throughout the Bush years.

In August 2004, the late Senator John McCain had flown with a clutch of other senators to the Arctic island of Svalbard to observe the changing climate there and be briefed on an

upcoming federal report, the first comprehensive peer-reviewed assessment on the impacts of climate change in the Arctic. When he returned, Tech Central Station wrote him a letter. It sought to undercut the report's findings and claimed warming in the Arctic was no evidence of human-caused global warming. Ten scientists signed the letter. Lupo was one of them.

In 2006, Legates, Lupo, Christy, and five other scientists filed a brief in a U.S. Supreme Court case that ultimately found greenhouse gases are dangerous pollutants the EPA must regulate; the scientists had argued they were not. CEI provided them with counsel.

In 2007, Steven Hayward, then a senior fellow at the conservative think tank the American Enterprise Institute, starred in a movie titled *An Inconvenient Truth... or Convenient Fiction?*, in which he polemicized against Al Gore's influential 2006 documentary *An Inconvenient Truth*. The film was produced by the Pacific Research Institute, another think tank backed by the ExxonMobile, Koch, and Scaife family foundations.

And when Barack Obama announced in 2008 on the campaign trail that, "Few challenges facing America and the world are more urgent than combating climate change," five months later, after he was sworn in, the Cato Institute, a libertarian think tank co-founded by Charles Koch, recruited Armstrong, Deming, Legates, and Lupo, along with more than 100 others dubious about the climate crisis, to sign a full-page ad in the *New York Times*, the *Washington Post*, the *Washington Times*, the *Los Angeles Times*, and the *Chicago Tribune*. "With all due respect, Mr. President," the ad read, "that is not true."

In 2015, the House Natural Resources Committee requested records detailing Legates' grant funding. Legates told the office to contact his private attorney, Noel Francisco. Two years later, Trump appointed Francisco solicitor general.

Battles won. Battles lost. “For the most part, these guys get that the game is up,” said Connor Gibson, a Greenpeace researcher, “but then you look over at Heartland.” In 2018, for instance, Heartland published another climate change report, titled “Climate Change Reconsidered II: Fossil Fuels.” Deming, Legates, and Lupo each served as authors or reviewers. Findings from that paper then made their way into policy debates by means of a public comment on the City of San Antonio’s Climate Action and Adaptation Plan. And a similar Heartland Report appeared on the Missouri Public Service Commission’s website. Both reports were produced by the Nongovernmental International Panel on Climate Change (NIPCC), designed to be easily mistaken for the IPCC. “An extreme minority of voices was elevated through artificial means, with corporate money, with think tanks, and this support structure,” says Kert Davies, the director of the Climate Investigations Center, “and it became way bigger than it actually was, in terms of scientific validity.” When it was designed, in 1998, it was the perfect battle plan, says Gibson; this community will fight to the death for the cause because they truly believe in it.

The campaign to ignore climate change began unwinding after the Bush administration, despite ExxonMobil’s urging, failed to rewrite the country’s position on climate change, Davies said, and the deniers have been losing slowly since. They failed to prevent Vermont from adopting California-style emission regulations in 2007, the first case in the country in which a judge ruled on a conflict between federal fuel economy laws and emission standards for new automobiles. Christy testified on behalf of the auto companies. And they failed in barring the EPA from regulating greenhouse gases as a pollutant in a 2007 case in which Legates, Lupo, and Christy, among other scientists, intervened. And with each IPCC report, the uncompromising

reality of climate change has gotten more and more concrete, pushing their alternative science further to the fringes.

“And then they’re reborn in 2016, out of the ashes,” Davies said. President Trump reinvigorated the scrum, in part with his freewheeling rhetoric. Trump has called climate change “bullshit,” a Chinese “hoax,” and a “very, very expensive form of tax,” though in a 2018 CBS interview he did acknowledge that “something’s changing.” Pressed in the interview on the human-trigger, he said, “We have scientists who disagree with that.”

He certainly does. Armstrong, Bell, Deming, Legates, and more than 100 others wrote to him in February 2017 after he won the election, urging him to pull the United States out of international efforts to stabilize carbon emissions. But Trump’s scientists are aging, and a younger generation is not replacing them. Instead, they’re protesting them and their generation’s inaction. Gibson calls it a culture war, and one the campaign is losing. Davies says the momentum for action has finally stuck. “Major networks are talking about it. Things are so unusual now and the extremes are everywhere. Everybody is getting the what-the-fuck weather once a year,” he said. The impeachment hearings will be a distraction, “but who knows how long that will last.” The dialogue has reached another level. There was the Bill McKibben level then the Al Gore level, he said. “Now we have the Greta [Thunberg] level.”

In the White House Rose Garden, five months after Armstrong, Bell, Deming, Legates, and the others wrote to Trump, the president announced he was withdrawing from the Paris Agreement. Armstrong and Legates and other doubters praised Trump on the contrarian blog WattsUpWithThat.com. People clapped and hooted in the garden. “Thank you,” Trump said, lips pursed in trademark solemnity. “Thank you.”

Armstrong described to me his battle over the public perception of climate change as a calling. He feels rather like a fireman, he said, fighting to extinguish a home engulfed in flames. He knew his battle would be a difficult one, but it was one he had to fight. In a speech at a 2017 Heartland conference, where he received a Lifetime Achievement Award in Climate Science, Armstrong returned to the hero metaphor. “We do science because that’s what we do. We do it because we have no choice. We do it because it’s our duty.”

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## **APPENDIX I: ACTIVITY LOGS**

Memo for the week of Jan. 21, 2019

PROMPT ONE: This past week I did not meet my expectations for reporting on my climate-change-denial story, and that's fine (in part because my expectations are often unrealistic). I did one phone interview about Anthony Lupo, the main character in my story, with a source who had a lot to say off the record. I think I could talk him into going on the record later, if I need him. I also found Lupo's young face in a college yearbook with two other meteorology students; now I need to contact the two classmates to see if they remember him, which, admittedly, is a longshot: the yearbook is 30 years old. But the biggest development this week? I pitched the story to a senior Mother Jones editor. And? She loved it! The pitch was "really smart" and "well-written," she said, "which frankly doesn't happen often!" She promised to advocate for the story at a Jan. 30 pitch meeting. The only problem, she said, is that the other editors will likely assign me the story at 2,500 or 1,800 words, not the 5,000 it, in my mind, needs. But I'm a no-name and amputation seems normal. It'd be foolish to kill this connection.

I also began work on a contract I picked up the week before with The New Food Economy, an online magazine out of Manhattan. The gig is to fact check a 7,000-word investigative piece and is due Feb. 11. That's an awful deadline, for sure, but the editor's paying me \$35 an hour, is well connected and has a lot more work after I'm done. I signed an N.D.A.

I did not plan nor do any work on my "semi-structured" interviews.

I did apply for a fact-checker opening at The New Yorker, because why the hell not.

PROMPT TWO: The Mother Jones and The New Food Economy developments are, of course, fantastic. They're the bones of what I plan to turn into a career freelancing for magazines.

One thing in particular that I pondered this past week while doing my fact checking was the value of something I tend to overlook: I'm organized. Since I quit newspapering, I've developed a system -- a network of spreadsheets and deep, deep folder trees -- that I use to chronicle my reporting progress. This habit has made me an easier contractor to work with on past assignments, and I realize now that that's a big deal: if working with you is difficult, you probably won't get work.

PROMPT THREE: I need to solidify my reporting plan for the climate-change story. That keeps me up. But I'm going to set that goal aside until I hear back from Mother Jones. What they want will determine what I report. Besides, I'm not lollygagging in the time in between.

PROMPT FOUR: Still, I'm frustrated that I don't have a solid reporting plan for the story. Without one I fear that I'll waste time. I fear that I'll complicate the story narrative. I fear, essentially, failure. (Some of this fear -- how much? I don't know -- is unjustified; I expect too much out of a day.) I'll assemble a plan after I hear from Mother Jones.

PROMPT FIVE: As I mentioned above, my priorities for next week are, one, assembling a reporting plan after I hear from Mother Jones and, two, plugging away on my fact-checking gig. (After I complete the fact-checking contract, due Feb. 11, I'll begin identifying reporters to contact for my "semi-structured" interviews.) I'll also do a little reporting on the story.

Memo for the week of Jan. 28, 2019

PROMPT ONE: The Lupo story: This week I made some progress but was still hamstrung by my fact-checking gig. I spoke with the editor who gave me the job, though, and

told her I'll need to reduce the time I spend on the assignment, and she understood. So I'm shifting gears to devote my time to the story again.

I got a hold of Lupo by email and he reiterated his willingness to have me attend some of his undergraduate atmospheric sciences class, ATMS3600/GEOG3600, which he's teaching this spring, and he added me to its Canvas page. I'm going to go through his slides this weekend to figure out which classes I should attend. I'll coordinate with Reuben, too, before I book plane tickets.

I submitted two more records requests with MU this week, making for a total of four pending MU requests for this story. In order of oldest to newest, I've requested: one, among other documents, conflict of interest statements from the College of Agriculture, Food and Natural Resources; two, any and all emails and associated documents from dozens of email accounts (i.e., @cornwallalliance.org, @sepp.org, @kirkland.com) or that contain certain phrases (i.e., "denier", "epa", "pruitt"); three, all documents and correspondences on the Teacher Education Program; and four, nominating letters for various awards Lupo's received as well as reference materials and correspondences associated with his promotions. I expect Paula Barrett, MU's records custodian, is going to claim the second request will cost several thousand dollars, and I expect she'll deny the fourth request, citing "personnel" reasons.

I wasn't able to reach my climate change activist source to talk about possible sources in D.C. (such as lobbyists who understand the denier network), but I'll keep trying. He founded the Climate Investigations Center and has been helpful getting me in touch with useful people for this story.

The Mother Jones editor I pitched said they were meeting Wednesday to go over story ideas and that she'd let me know how it goes, but I haven't heard from her yet. I emailed her Friday afternoon to ask.

PROMPT TWO: I had a beer this week with a friend whom I met while freelancing at Vermont Digger before entering grad school. He was a staff writer at Digger but quit to begin freelancing in New York City. He's been here for about two years and is getting published, periodically, in The New York Times, among other big outlets. We talked for about two hours and he told me how, for the first few months here, it was bumbling hell but now, now that he's got contacts with editors and loads of sources on his beat, he's making it work, and it's fun. Perhaps because I had a few mean editors when I was a reporter, I assumed, without realizing it, that the media world was a tight circle of cold people. But, while talking with Jasper, my friend, reality settled on me. The world of media is much more supportive than I'd realized. It's possible -- probable, even -- for someone to carve their own path without a diploma from Columbia. (Perhaps I was naive.)

PROMPT THREE: This week I should have prioritized the Lupo story. My priority was the fact check. But now that I've 30.25 hours into that contract -- and anticipate enough money to get me through the next few months -- I'm going to reel it in. The editor understands that I'm a full-time student.

PROMPT FOUR: The fact checking was my only source of frustration this week -- namely because it kept me from the Lupo story. But, like I said, I'm easing off of that assignment. I'm also a little frustrated I haven't heard back from the Mother Jones editor, but I'm not the center of her universe; I know it's normal to wait.

PROMPT FIVE: This weekend I'm going to map out a minimum story based on the pitch I sent Mother Jones and enumerate necessary reporting steps. I'll also book airfare, in coordination with Reuben, and begin identifying reporters to contact for my academic project. Another thing I'm going to do -- something Jasper recommended -- is by Monday have written out, on paper, my week's goals. That, Jasper said, has helped him add more structure to his freelance schedule.

Memo for the week of Feb. 4, 2019

PROMPT ONE: This week, I submitted another revision of my pitch to the Mother Jones editor whom I've been working with. She's, graciously, been helping me narrow my angle for a smaller story (1,800 words instead of 5,000). Once the pitch is to her liking, she'll send it to the San Francisco editors for final approval. She told me she's pretty sure they'll go for it. This week, among myriad other incremental things, I also:

- identified seven teachers who took part in MU's Energy in Today's Classroom seminar, part of which you'll remember is the annual seminar intended to push climate-change misinformation into high school classrooms;

- contacted four of the seven teachers and heard back from one who said to call him next week;

- contacted one of Lupo's former students who, on LinkedIn, referring to climate change wrote, "I am willing to bat from both sides of the plate on this issue; each side has it's merits.";

- contacted four academics -- Nicky Sundt, Michael McCracken, Robert Brulle and Justin Farrell -- whom I hope can help me grasp the bigger picture angle in the Lupo story, and

Sundt and McCracken told me they'd be happy to meet in person (McCracken and I are meeting in DC Wednesday);

-- obtained a copy of the cover page of Lupo's dissertation and now have the names of his committee members and some friends whom he thanked in his acknowledgements section;

-- formally requested from Purdue documents associated with an award the university gave Lupo in 2013;

-- negotiated with MU's records custodian to, hopefully, speed up my pending requests with the university (\*more on one of the requests below);

-- played telephone tag with the PIO in the Alaska Department of Law: I expect to receive the final round of document on Lupo's lucrative consulting up there next week or the week following; and,

-- fact checked for most of Tuesday.

PROMPT TWO: What did I learn this week? Nothing noteworthy, really, which is fine. I got a lot of work done.

PROMPT THREE: I think this week went well. My only regret is that I wish I ran more, but I climbed a lot instead. Exercise -- aerobic and anaerobic -- is an important part of my don't-burn-out equation, and it's important to me to maintain my fitness for when, one day, I'm doing stories that take me to physically challenging places.

PROMPT FOUR: No notable issues or challenges or frustrations to speak of.

PROMPT FIVE: Objectives for next week include:

-- line up interviews with people in Columbia so that I can maximize my week there from Feb. 20 to 27;

-- identify five or so reporters to contact for my academic portion of the project;

-- outline the structure of my story using Sara's recommended template (i.e., think of the story in six 300-word chunks);

-- do DC interviews;

-- begin building out dossiers on professors like Lupo starting from my social network maps; and,

-- fact check most of Tuesday.

\* I wanted to flag my request for Lupo's emails. The first version of my request, immediately below, netted "thousands" of emails and would have cost me "thousands" of dollars, MU's records custodian told me on the phone in a pleasant conversation Friday. So, in an effort to reduce the volume and cost, I pared down the request, which you'll see below the first version.

For the email account lupoa@missouri.edu, between Jan. 1, 1997, and the date this request is completed, please provide all emails (cc, bcc, or within email body) in their full and native format as well as all associated attachments from (1) email accounts that end with @heartland.org, @hollandhart.com, @junkscience.com, @cornwallalliance.org, @sepp.org, @kirkland.com, @crowell.com, @srfblaw.com, @co2science.org, @fraserinstitute.ca, @fraserinstitute.org, @troutmansanders.com, @mcllaw.com, @icecap.us, @cpdlawyers.com, @clexit.net, @alaska.gov, @climatedepot.com, @kershaman.com, @co2coalition, @marshall.org, @southeasternlegal.org, @cfactcampus.org, @cfact.org, @oag.state.va.us, @cei.org, @cato.org, @aei.org, @sanderslpa.com, @hab-law.com, @lathropgage.com, @mcguirewoods.com, @shb.com, @bjpc.com, @ksag.org, @kmcllaw.com, @velaw.com or @mayerbrown.com and (2) emails, which may not necessarily be involved with said accounts,

that use the keywords "climate change", "global warming", "anthropogenic", "skeptical", "alarmist", "al gore", "deny", "denier", "epa", "pruitt", "climate exit", "clexit", "round table group", "teacher education program", "editorial", "letter to the editor", "op-ed", "op ed", "john mccain", "trump", "obama", "ipcc", "intergovernmental panel on climate change", "not evil, just wrong", "not evil just wrong", "gscsp", "bast", "regional climate center", "idso", "supreme court", "endangerment finding" or "milloy".

For the email account lupoa@missouri.edu, between the time frames of Jan. 1, 1997, to Jan. 1, 2000; Jan. 1, 2005, to Jan. 1, 2009; and Jan. 1, 2013, to the date this request is completed, please provide all emails (cc, bcc, or within email body) in their full and native format as well as all associated attachments from (1) email accounts that end with @heartland.org, @hollandhart.com, @junkscience.com, @cornwallalliance.org, @sepp.org, @kirkland.com, @crowell.com, @srfblaw.com, @co2science.org, @fraserinstitute.ca, @fraserinstitute.org, @troutmansanders.com, @mcllaw.com, @icecap.us, @cpdlawyers.com, @clexit.net, @alaska.gov, @climatedepot.com, @kershaman.com, @co2coalition, @marshall.org, @southeasternlegal.org, @cfactcampus.org, @cfact.org, @oag.state.va.us, @cei.org, @cato.org, @aei.org, @sanderslpa.com, @hab-law.com, @lathropgage.com, @mcguirewoods.com, @shb.com, @bjpc.com, @ksag.org, @kmcllaw.com, @velaw.com or @mayerbrown.com and (2) emails, which may not necessarily be associated with said accounts, that use the keywords "skeptical", "alarmist", "denier", "climate exit", "clexit", "round table group", "teacher education program", "editorial", "letter to the editor", "op-ed", "op ed", "not evil, just wrong", "not evil just wrong", "gscsp", "bast", "regional climate center", "idso", "endangerment finding" or "milloy".

Memo for the week of Feb. 11, 2019

PROMPT ONE: I mainly accomplished three things this week. One, I found contact information for five of the people Lupu mentioned in the cover page of his PhD dissertation and contacted them through email. I'll follow up with phone calls next week if no one agrees to speak with me. The goal here is to get an idea, from them, what Lupu's ideology was back in the day. Likely he was conservative: the first one he thanked in his cover letter was God. I also continued reaching out to people involved in the Energy in Today's Classroom seminar. Two, I made some progress on my academic project. I've ran some 60 queries through Factiva and US Newsstream (searching for articles on climate change written between Jan. 1, 2015, and Jan. 1, 2019, by reporters who quoted "experts" who deny the cause, severity or existence of the crisis), but none of the stories I found met my criteria. Which is interesting. (See Prompt Five for more on this.) Three, I fact checked, though not for very long.

PROMPT TWO: What did I learn this week? Well, I attended a live taping of the amazing Longform Podcast, a wonky show that interviews writers about writing. One of the hosts, Evan Ratliff, interviewed on stage Taffy Brodesser-Akner, a New York Times writer. Taffy was very funny, and she said two things that changed my mind. One is that, before she was hired by the Times, when she was freelancing, she would often write on the couch while her little kids next to her watching TV, and the other is that she'd sometimes bring her kids on assignment. Two little details, I know, but they tore down the \$8-billion-dollar wall I'd built in my head to divide work from family. I didn't know the two could mix.

PROMPT THREE: I'm probably going to have to work hard to get sources from the Energy in Today's Classroom and from Lupu's grad school days to talk with me. I haven't had

many people agree to speak with me yet. But I'll begin the second wave of pestering -- this time phone calls -- next week.

PROMPT FOUR: The only notable frustration I've had this week is that I haven't heard back from the Mother Jones editor, whom I made my amended pitch to last Friday. I'm not really worried because she's clearly taking the time to work with me to hone the pitch so that her editors will accept it, but still. She said they'd likely go for it once I tweaked it; I just can't help but feel like they're gonna turn me down. I followed up with her this morning. This is worse than dating.

PROMPT FIVE: Next week I fly to Columbia, on Wednesday. I'll be ice climbing most of Monday (writing from a train station right now on my way north!), so that gives me Tuesday to try and line up in-person interviews with Energy in Today's Classroom sources before I land. I've already lined one up with Leon Schumacher, who leads, or lead, the seminar, but I need more. Columbia Public Schools' science coordinator said he'd put me in touch with a teacher who attended the seminar in 2013, but I haven't heard from him yet. Lots of balls in the air right now. Oh, and on Friday -- this will be a lot of fun -- two of my friends in J-School are going to drive with me to Kansas City to go through court records. Field trip! Hopefully we find some depositions in which Lupo testified. I need dialogue.

On the academic project, I'm going to do another 60 or so queries with the names of other "experts" for the same timeframe just to be sure that I'm not missing something. If I still get no hits, I'll do the same keyword searches moving back by four-year-timeframe increments until I start netting results. Assuming I can't find any recent newspaper reports quoting these "experts," I'll likely search transcripts of polarizing TV stations like Fox News and MSNBC for quotes

from the "experts." But I'd talk with my committee before I so significantly shift gears. I won't get to all of this next week, obviously, but I'll get started.

Memo for the week of Feb. 18, 2019

PROMPT ONE: I spent this week mostly in transit, but I still got some things done. I heard back from the former chair of Lupo's master's and PhD committee and he said he'd be happy to talk about those days. So this'll be great for nuance, great for showing that Lupo, a human, is complicated. I sat in on one of Lupo's classes Thursday. It was the fourth class I've attended and I've witnessed nothing dubious, just a jovial professor doing his work well. So more nuance here too. After that class I interviewed Dr. Leon Schumacher, another MU professor who teaches in the Ag department. He runs the Energy in Today's Classroom seminar. He told me they cut Lupo from the class after the Huffington Post torpedoed them for Lupo's climate change presentation in 2014 (I read the story; it was harsh). Lupo's presentation was just too controversial, he said (I also have the presentation; I can see why he'd say that). It's a shame they had to cut Lupo, he said, because he thought the presentation was factual and balanced. And without it, he said, where will people get both sides of the story? It's important to debate both sides of climate change, he said. Before I left he gave me the class syllabus, which contained nothing useful, but hopefully one of my pending records requests with the university will get me more on the seminar. On Friday I received an email from Paula Barrett concerning my other records request, this one for Lupo's emails. She informed me that if I wanted them I'd need to pay \$450.70 and then wait about four weeks. And she's not willing to waive the fees. These emails are important, for a lot of reasons, foremost because they are likely going to fill the holes

left by more records I received, on Thursday, from Alaska. These records reveal more details on the climate model consulting work Lupo's done for the AG's office up there, but they stop short on revealing the actual work he produced for the office. The AG's office considers this, if I remember correctly, confidential work product. But there's no way MU can, and Lupo corresponded with the AG's office entirely on his university email address. The consulting Lupo's done for that office has helped it tear down the Endangered Species Act (likely, a source says, to pave the path for a pipeline), but his other consulting work for lawyers seems more benign. With the help of my friend Steve, who's replaced me in the IRE research library (which I now owe \$175), I know, in two instances, all Lupo's done as a consultant was tell a judge whether it rained on a day when a plaintiff said they'd fallen or which way the wind was blowing on a day when dozens of plaintiffs said they could smell effluent from a hog farm. That's not sinister; that's savvy. So more nuance here also.

And another thing (which I'm adding after the fact) that I'd like to run by you all is this: I've been thinking about how I should structure the story and have decided on a rough template. I'm going to start with where Lupo is now in his timeline, likely with a scene in class, then move to a kind of nutgraph section getting into what he and the other professors are up to on climate change. Then I'll jump back to the beginning of Lupo's timeline, which, for this story, is his time in grad school, and work my way back to the present, along the way hitting the major plot points. The New Yorker uses this structure a bunch. I think it could work well here, especially because this story is more about ideas than events. By introducing him in class the reader will see him as an affable guy; then the reader will feel conflicted when she sees what he's up to. By ending in class, or ending on some scene showing Lupo's personality, the reader will be forced to weigh

their initial impression of him against everything they now know. (This may not make any sense; I can explain it better with a pen on paper.)

PROMPT TWO: Mark's told me this several times, and it's starting to sink in: nuance is good. That's probably my takeaway from this week: nuance is good. Nuance is human. Nuance make a story better, and Lupo, certainly, is nuanced.

PROMPT THREE: What could I've done better? I could have worked more while in transit. I could have exercised more before and after transit. I could have spent less money. (City living, I'm afraid, is already old.)

PROMPT FOUR: Issues, challenges, frustrations? Yeah, some. It's been two weeks since I've heard from the Mother Jones editor. That's frustrating, and frightening. But mostly it's confusing. Half my brain says she's just busy, because doesn't that make sense? The other half says I fucked up somewhere along the way and now she's ignoring me because I'm not worth the time to brush off. I followed up a week ago. Not sure when I should follow up next. The other thing that's been frustrating me, about this story, is how much document reporting it's required and how little interviewing I've done. But I think that'll change once I've identified all the other professors like Lupo whom I need to call.

PROMPT FIVE: Between Saturday and next Friday, I'm aiming to: fact check for at least six hours, which will include probably an hour on the phone with the reporters; interview the former head of Lupo's master's and PhD committee; drop facts into my story outline; do more queries for my academic project; respond to Paula Barrett re. my Lupo-email records request; begin building out a dossier on other professors like Lupo; attend another Lupo class; and try to

nail down in-person interviews with teachers who attended the Teacher Education Class before I fly back to New York.

Memo for the week of Feb. 24, 2019

PROMPT ONE: This past week I accomplished the following:

-- another fly-on-the-wall session in Lupo's classes while I was in Missouri (the week before I attended another one of his classes and interviewed the professor who created the Energy in Today's Classroom seminar);

-- a long Skype interview with a D.C.-based scientist who's very familiar with climate-science denial;

-- six hours of fact checking and an hour-and-a-half phone call with the reporters who wrote the story I'm fact checking; and,

-- built out my dossier on other professors like Lupo.

PROMPT TWO: I didn't add this to the list above because it's not related to the New York Program or my final project, but this week, through this work, I learned something significant. I've been trying to shape a story pitch for the Smith/Patterson Science Journalism Fellowship through the Pulitzer Center -- which awards one MU student \$5,000 to report a science, environmental or health story outside the U.S. -- and I think I've finally landed on a good idea, and one that's been hardly covered. Here's the line in a study that lead me to the story: "The Quechua people in Peru living near the glacier on Mount Ausangate associate the decline of the glacier with God's departure and have lost traditional customs associated with the glacier." And here's my point: This single sentence could be the genesis of a good story, one that brings

me to the kind of outdoor places I want to write about, and the idea came to me through reading stuff on the internet. I know how to develop an idea into a story and report the hell out of it, but, now that I'm no longer on a newspaper beat, coming up with story ideas is the hard part. It's the daunting part. But coming up with this idea -- and realizing how effortless it was -- is a huge boost in confidence.

PROMPT THREE: What could I've done better? I don't think I could have worked harder or more efficiently this week.

PROMPT FOUR: Issues, challenges or frustrations? Nothing notable. I mean, it's tough juggling all these assignments -- New York Program homework; Lupo; fact checking; searching for other stories; life: taxes, exercise, groceries; et cetera -- but I'm getting better and will continue to learn.

PROMPT FIVE: Next week, my goals are simple:

- any Lupo interviews that crop up;
- build out dossier on professors like Lupo (my priority);
- follow up Monday with the Mother Jones editor, who said she took my pitch to the other editors Wednesday and so should know by now whether it's a go (has said she's pretty sure it'll be a go);
- actually spend 10 hours on my academic project; and,
- fact check for six hours.

Memo for the week of March 3, 2019

PROMPT ONE: I juggled a bunch of projects this week but still, I think, stayed on track. I've now got 15 U.S. professors who have run and appear to still run within the climate-science-denial network. Some of their actions are plainly outrageous; all of them are dubious. I should have enough names on the dossiers in a few weeks to satisfy my promise to Mother Jones of delivering "dozens" of names. So there's that. The other part of my project isn't going as well, and I hope we can talk about that during our scheduled video conference on March 14. I'm worried that I'm falling behind. I won't get into it fully here, but I'm not finding any articles on Factiva that meet my criteria (i.e., articles involving climate change written by reporters who quote climate doubters). This could be very significant -- and newsworthy -- but I'm worried these results are the outgrowth of bad mythology and not a shift in the denial network's tactics. And because this is taking me longer than I anticipated, I fear I'll run out of time to do the requisite interviews. On top of my project, this week I also fact checked for some seven hours and contacted a number of sources in Peru for a story I'm pitching the Pulitzer Center. My deadline for this, a \$5,000 fellowship, is, frighteningly, March 15 (if I don't get it I'll have to eat the \$500 I've promised a fixer who's gathering string for me).

PROMPT TWO: I learned a lot this week, but the thing I keep coming back to is something the editor at the magazine where I'm fact checking told me. We were sitting down to discuss my progress on the fact-check and she mentioned they were soon doubling their staff. How? I asked. Well, she said, donor support. Aside from that, she wings it, everyday. She said it with a sense of, I don't know, pride, maybe? Or glee? Closer to that, I think. Regardless, something about how she said it registered with me. (I realize now that I'm not sure exactly why.) But what she said was also significant. She wings it, and she's successful. I suppose I'd

know it already, but our conversation was a good reminder: there's no formula; you have to be brave and fly blind.

PROMPT THREE: My girlfriend was in town this week. I still completed the work I needed to do, but I got a little cranky a few times when she asked me my plans for the night. I try to constantly work on my temper -- to be a better boyfriend and journalist.

PROMPT FOUR: I'm frustrated with two things. One, the project, and how slowly it's going. And two, the Pulitzer Center application. Last year, after submitting a half-baked proposal, I told myself that I'd schedule more time to polish my pitch, but I'm still scrambling and fear I won't have everything the committee needs by the March 15 deadline. (I know this is the nature of the work I do.) Oh, and I'm also frustrated with Mother Jones. I need the editor to give me a deadline so I can schedule projects for the summer.

PROMPT FIVE: Next week I plan to:

- add another eight to 10 professors to my dossier;
- gently explain to the Mother Jones editor that I'm trying to schedule reporting trips for the summer and need to know my deadline for the Lupo story;
- complete my Pulitzer Center application;
- do more queries for my academic project; and,
- get a clear directive from my committee on the direction I need to take with that academic project.

Memo for the week of March 10, 2019

PROMPT ONE: I spent most of this past week working on an application for a Pulitzer Center fellowship that would allow me to pursue a climate-change story in Peru. But I inched forward by my master's projects. I had a good conference call with my committee earlier in the week that answered two troubling questions: One, what the hell's going on with Mother Jones and what should I do? Two, which new tack should I take with my academic project?

PROMPT TWO: This week was full of work, not introspection. If I were to reach for something that I learned, I'd grab onto a phone call I had Sunday with the reporters who wrote the 7,000-word story I'm still fact checking. They're leaving for vacation soon, and my deadline is approaching. I told them I would double-down my checking for the coming week so that I could bug them with questions before they leave for vacation, not after. What's the point? Be flexible, when you can.

PROMPT THREE: I should try to write faster, but, then again, what I'm doing is working.

PROMPT FOUR: Issues, challenges, frustrations? Yeah. Mother Jones (the editor there, after leading me on for months, passed on my pitch). But I dealt with it.

PROMPT FIVE: Next week, I plan to fact check for 15 hours, revise my list of questions, email the reporters I plan to interview, if I get my tax refund book a flight back to Columbia and contact another publication in hope of finding a home for my story.

Memo for the week of March 17

Sorry for the hasty memo. Last week was a black hole.

I spent just shy of 40 hours trying to finish the fact check that I began in January. And I'm still not done -- but so, so, so close. (One of the reporters, also a lawyer, is prone to fact-evading superlatives, or complicated data analysis supported by only a pdf of rows and rows of census figures.)

I spent about 5 hours, give or take (probably give), confirming and attempting to schedule eight interviews for my academic project. Yes, I'm getting The Times! I interviewed Neela Banerjee with InsideClimate News on Thursday, and I have two more interviews today.

And I spent maybe another 5 hours working on stories not related to my master's program.

I also told the editors I've been fact checking for about my MoJo plight. After reviewing my pitch, they suggested a number of places I might contact and offered to make an introduction for me if they could. One of the places was The Nation, which a bunch of people have suggested and offered to help connect me, but another was Pacific Standard, which is a new suggestion and a magazine where I have no contacts. But this story squarely falls into what Pacific Standard is looking for: it's got an academic angle (in more ways than one), has strong narrative potential and is environmental focused. So I'm going to polish up my first pitch and send it to them early this week, after I get your thoughts. I'd mentioned, you'll remember, that the MoJo editor said she'd put me in touch with High Country News or Grist. Well -- surprise! -- she hasn't. I'm not holding my breath.

In summary, things are well, but I'm tired.

Memo for the week of April 1

PROMPT ONE: This past week was a blur. I completed one or two interviews with journalists for my project (bringing me up to eight interviews total), nailed a great sit-down interview with Lupo in Missouri and spoke with a few other sources for that story and began transcribing some notes for my project.

PROMPT TWO: Also, on Thursday, I learned from Sara that I won -- drum roll, please -- a \$5,000 Pulitzer Center on Crisis Reporting fellowship! I'm very excited. I'll now be going to Peru this summer to do a story on climate change. I told Amy Martin -- she leads the climate-change podcast Threshold and is another Pulitzer Center fellow -- about the news and now we're talking Tuesday about, one, possibly teaming up to do some work while I'm in Peru (!!!) and, two, potentially contracting with me to help her write grants (!!!!!!!!!). And in this news lies my weekly lesson -- actually, lessons: apply for grants, even when you think you're a longshot, and keep in touch with journalists you meet.

PROMPT THREE: I could have transcribed more interviews. Other than that, this week went exceptionally well: solid interview with Lupo; got the fellowship; Amy Martin wants to work with me.

PROMPT FOUR: No challenges or frustrations worth mentioning.

PROMPT FIVE: This week I'm only doing three things. I'm going to transcribe the necessary portions of my interviews for my project. I'm going to continue outlining my Lupo story. And I'm going to resume reporting for my application to the O.O. McIntyre Postgraduate Fellowship, which is due April 23. I have a solid story idea; I just need to nail a few key interviews to shore it up.

Memo for week of April 7, 2019

PROMPT ONE: This week, my main accomplishment was completing a first draft of my professional analysis, that research paper that ended up not being a research paper, which I was dreading. The draft is pretty lousy, but it's a start. Mark and I are going to talk early this coming week and with some feedback I'm certain I can turn the draft around quickly. I also did some great interviews -- about four or five -- for a story I'm pitching as part of my O.O. McIntyre Postgraduate Fellowship application. The story is shaping up. I feel good about my chances. (In other news, my girlfriend visited. She had an obstacle-course race in the Citi Field Stadium. She won!)

PROMPT TWO: I screwed myself a bit by thinking of my professional analysis as a "research" project. I thought "research" meant I needed to be rigid, stick to my "semi-structured" script. So, with that unnatural mentality, I conducted my eight interviews broadly, wanting but refusing to follow up on interesting points the journalists made. Had to stick to the script. Except, I didn't. Not at all. What I learned here is not to let highfalutin academic doctrine rattle my reporter sensibilities. Fact gathering is fact gathering. Doesn't matter how you dress the pig.

PROMPT THREE: If I'm nitpicking, I could have written the first draft of my analysis better. But I was -- and am -- battling the fog of a cold and the distraction of my girlfriend, and I think I did a pretty good job plugging away. So, no meaningful criticism for myself this week.

PROMPT FOUR: No noteworthy issues or challenges or frustrations (except for all the misinformation I received on how to conduct and write the analysis, but I'm square now).

PROMPT FIVE: This coming week, these are my goals:

-- turn around a second draft of my analysis after I get feedback from Mark;

-- write at least half of my Lupo first draft;

-- wrap up interviews for the story I'm pitching with the O.O. McIntyre application and crank out a first draft of the application;

-- speak with Craig Welch, a Nat Geo writer I was going to speak with for my analysis but now just want to chat with about the Pulitzer Center on Crisis Reporting Fellowship, which he brought, kind of, to the Missouri School of Journalism; and,

-- confirm a time to grab coffee with Carolyn Kormann, a New Yorker writer I'm speaking with, in part, to meet a requirement of Reuben's class.

## APPENDIX II: QUERIES

<b>terms searched</b>	<b>results</b>	<b>positive hits</b>	<b>date range</b>	<b>database searched</b>
"tony lupu" and "climate change"	6	3	01/01/2006 -- 12/31/2010	factiva
"anthony lupu" and "global warming"	2	2	01/01/2006 -- 12/31/2010	factiva
"tony lupu" and "global warming"	3	2	01/01/2006 -- 12/31/2010	factiva
"kenneth chilton" and "global warming"	5	2	01/01/2006 -- 12/31/2010	factiva
"anthony lupu" and "climate change"	1	1	01/01/2006 -- 12/31/2010	factiva
"robert balling" and "climate change"	15	1	01/01/2006 -- 12/31/2010	factiva
"robert balling" and "global warming"	16	1	01/01/2006 -- 12/31/2010	factiva
"kenneth chilton" and "climate change"	1	1	01/01/2006 -- 12/31/2010	factiva
"james wanliss" and "climate change"	1	1	01/01/2006 -- 12/31/2010	factiva
"james wanliss" and "global warming"	1	1	01/01/2006 -- 12/31/2010	factiva
"bruce ames" and "global warming"	2	1	01/01/2006 -- 12/31/2010	factiva
"craig idso" and	8	1	01/01/2006 --	factiva

"climate change"			12/31/2010	
"terry anderson" and "climate change"	10		01/01/2006 -- 0 12/31/2010	factiva
"terry anderson" and "global warming"	21		01/01/2006 -- 0 12/31/2010	factiva
"roger meiners" and "climate change"	4		01/01/2006 -- 0 12/31/2010	factiva
"roger meiners" and "global warming"	2		01/01/2006 -- 0 12/31/2010	factiva
"bruce yandle" and "climate change"	12		01/01/2006 -- 0 12/31/2010	factiva
"bruce yandle" and "global warming"	11		01/01/2006 -- 0 12/31/2010	factiva
"ken chilton" and "climate change"	0		01/01/2006 -- 0 12/31/2010	factiva
"ken chilton" and "global warming"	1		01/01/2006 -- 0 12/31/2010	factiva
"tracy miller" and "climate change"	2		01/01/2006 -- 0 12/31/2010	factiva
"tracy miller" and "global warming"	1		01/01/2006 -- 0 12/31/2010	factiva
"timothy terrell" and "climate change"	0		01/01/2006 -- 0 12/31/2010	factiva
"timothy terrell" and "global warming"	0		01/01/2006 -- 0 12/31/2010	factiva
"gordon edwards" and	4		01/01/2006 -- 0 12/31/2010	factiva

"climate change"				
"gordon edwards" and "global warming"	5	0	01/01/2006 -- 12/31/2010	factiva
"bruce ames" and "climate change"	1	0	01/01/2006 -- 12/31/2010	factiva
"jane orient" and "climate change"	1	0	01/01/2006 -- 12/31/2010	factiva
"jane orient" and "global warming"	1	0	01/01/2006 -- 12/31/2010	factiva
"margaret maxey" and "climate change"	0	0	01/01/2006 -- 12/31/2010	factiva
"margaret maxey" and "global warming"	0	0	01/01/2006 -- 12/31/2010	factiva
"john mcketta" and "climate change"	0	0	01/01/2006 -- 12/31/2010	factiva
"john mcketta" and "global warming"	0	0	01/01/2006 -- 12/31/2010	factiva
"robert nelson" and "climate change"	12	0	01/01/2006 -- 12/31/2010	factiva
"robert nelson" and "global warming"	15	0	01/01/2006 -- 12/31/2010	factiva
"roger meiners" and "climate change"	4	0	01/01/2006 -- 12/31/2010	factiva
"roger meiners" and "global"	2	0	01/01/2006 -- 12/31/2010	factiva

warming"				
"fred singer" and "climate change"	80	3	01/01/2011 -- 12/31/2014	factiva
"anthony lupu" and "climate change"	3	0	01/01/2011 -- 12/31/2014	factiva
"anthony lupu" and "global warming"	3	0	01/01/2011 -- 12/31/2014	factiva
"tony lupu" and "global warming"	2	0	01/01/2011 -- 12/31/2014	factiva
"tony lupu" and "climate change"	3	0	01/01/2011 -- 12/31/2014	factiva
"robert balling" and "climate change"	2	0	01/01/2011 -- 12/31/2014	factiva
"robert balling" and "global warming"	2	0	01/01/2011 -- 12/31/2014	factiva
"terry anderson" and "climate change"	5	0	01/01/2011 -- 12/31/2014	factiva
"terry anderson" and "global warming"	3	0	01/01/2011 -- 12/31/2014	factiva
"roger meiners" and "climate change"	4	0	01/01/2011 -- 12/31/2014	factiva
"roger meiners" and "global warming"	1	0	01/01/2011 -- 12/31/2014	factiva
"bruce yandle" and "climate change"	6	0	01/01/2011 -- 12/31/2014	factiva
"bruce yandle" and "global warming"	4	0	01/01/2011 -- 12/31/2014	factiva

"kenneth chilton" and "climate change"	0	0	01/01/2011 -- 12/31/2014	factiva
"ken chilton" and "climate change"	0	0	01/01/2011 -- 12/31/2014	factiva
"kenneth chilton" and "global warming"	0	0	01/01/2011 -- 12/31/2014	factiva
"ken chilton" and "global warming"	0	0	01/01/2011 -- 12/31/2014	factiva
"tracy miller" and "climate change"	0	0	01/01/2011 -- 12/31/2014	factiva
"tracy miller" and "global warming"	2	0	01/01/2011 -- 12/31/2014	factiva
"timothy terrell" and "climate change"	1	0	01/01/2011 -- 12/31/2014	factiva
"timothy terrell" and "global warming"	1	0	01/01/2011 -- 12/31/2014	factiva
"james wanliss" and "climate change"	0	0	01/01/2011 -- 12/31/2014	factiva
"james wanliss" and "global warming"	1	0	01/01/2011 -- 12/31/2014	factiva
"gordon edwards" and "climate change"	6	0	01/01/2011 -- 12/31/2014	factiva
"gordon edwards" and "global warming"	1	0	01/01/2011 -- 12/31/2014	factiva

"bruce ames" and "climate change"	3		01/01/2011 -- 0 12/31/2014	factiva
"bruce ames" and "global warming"	2		01/01/2011 -- 0 12/31/2014	factiva
"jane orient" and "climate change"	9		01/01/2011 -- 0 12/31/2014	factiva
"jane orient" and "global warming"	6		01/01/2011 -- 0 12/31/2014	factiva
"margaret maxey" and "climate change"	0		01/01/2011 -- 0 12/31/2014	factiva
"margaret maxey" and "global warming"	0		01/01/2011 -- 0 12/31/2014	factiva
"john mcketta" and "climate change"	0		01/01/2011 -- 0 12/31/2014	factiva
"john mcketta" and "global warming"	0		01/01/2011 -- 0 12/31/2014	factiva
"robert nelson" and "climate change"	5		01/01/2011 -- 0 12/31/2014	factiva
"robert nelson" and "global warming"	2		01/01/2011 -- 0 12/31/2014	factiva
"roger meiners" and "climate change"	4		01/01/2011 -- 0 12/31/2014	factiva
"roger meiners" and "global warming"	1		01/01/2011 -- 0 12/31/2014	factiva
"willie soon" and "climate"	135	too many; an outlier	01/01/2015 -- 01/01/2019	factiva

change"				
"patrick michaels" and "climate change"	59		1 01/01/2015 -- 01/01/2019	factiva
"anthony lupu" and "climate change"	3		0 01/01/2015 -- 01/01/2019	factiva
"anthony lupu" and "global warming"	2		0 01/01/2015 -- 01/01/2019	factiva
"tony lupu" and "global warming"	0		0 01/01/2015 -- 01/01/2019	factiva
"tony lupu" and "climate change"	0		0 01/01/2015 -- 01/01/2019	factiva
"robert balling" and "climate change"	4		0 01/01/2015 -- 01/01/2019	factiva
"robert balling" and "global warming"	3		0 01/01/2015 -- 01/01/2019	factiva
"terry anderson" and "climate change"	10		0 01/01/2015 -- 01/01/2019	factiva
"terry anderson" and "global warming"	8		0 01/01/2015 -- 01/01/2019	factiva
"roger meiners" and "climate change"	1		0 01/01/2015 -- 01/01/2019	factiva
"roger meiners" and "global warming"	0		0 01/01/2015 -- 01/01/2019	factiva
"bruce yandle" and "climate change"	4		0 01/01/2015 -- 01/01/2019	factiva
"bruce yandle" and "global	4		0 01/01/2015 -- 01/01/2019	factiva

warming"				
"kenneth chilton" and "climate change"	0	0	01/01/2015 -- 01/01/2019	factiva
"ken chilton" and "climate change"	0	0	01/01/2015 -- 01/01/2019	factiva
"kenneth chilton" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"ken chilton" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"tracy miller" and "climate change"	0	0	01/01/2015 -- 01/01/2019	factiva
"tracy miller" and "global warming"	1	0	01/01/2015 -- 01/01/2019	factiva
"anthony lupu" and "climate change"	2	0	01/01/2015 -- 01/01/2019	factiva
"anthony lupu" and "global warming"	2	0	01/01/2015 -- 01/01/2019	factiva
"tony lupu" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"tony lupu" and "climate change"	0	0	01/01/2015 -- 01/01/2019	proquest
"robert balling" and "climate change"	8	0	01/01/2015 -- 01/01/2019	proquest
"robert balling" and "global warming"	4	0	01/01/2015 -- 01/01/2019	proquest
"terry anderson"	13	0	01/01/2015 --	proquest

and "climate change"			01/01/2019	
"terry anderson" and "global warming"	8		01/01/2015 -- 0 01/01/2019	proquest
"roger meiners" and "climate change"	1		01/01/2015 -- 0 01/01/2019	proquest
"roger meiners" and "global warming"	0		01/01/2015 -- 0 01/01/2019	proquest
"bruce yandle" and "climate change"	0		01/01/2015 -- 0 01/01/2019	proquest
"bruce yandle" and "global warming"	2		01/01/2015 -- 0 01/01/2019	proquest
"kenneth chilton" and "climate change"	0		01/01/2015 -- 0 01/01/2019	proquest
"ken chilton" and "climate change"	0		01/01/2015 -- 0 01/01/2019	proquest
"kenneth chilton" and "global warming"	0		01/01/2015 -- 0 01/01/2019	proquest
"ken chilton" and "global warming"	0		01/01/2015 -- 0 01/01/2019	proquest
"tracy miller" and "climate change"	0		01/01/2015 -- 0 01/01/2019	proquest
"tracy miller" and "global warming"	2		01/01/2015 -- 0 01/01/2019	proquest
"timothy terrell" and "climate change"	1		01/01/2015 -- 0 01/01/2019	factiva

"timothy terrell" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"timothy terrell" and "climate change"	0	0	01/01/2015 -- 01/01/2019	proquest
"timothy terrell" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"james wanliss" and "climate change"	2	0	01/01/2015 -- 01/01/2019	factiva
"james wanliss" and "global warming"	1	0	01/01/2015 -- 01/01/2019	factiva
"james wanliss" and "climate change"	1	0	01/01/2015 -- 01/01/2019	proquest
"james wanliss" and "global warming"	1	0	01/01/2015 -- 01/01/2019	proquest
"gordon edwards" and "climate change"	6	0	01/01/2015 -- 01/01/2019	factiva
"gordon edwards" and "global warming"	1	0	01/01/2015 -- 01/01/2019	factiva
"gordon edwards" and "climate change"	1	0	01/01/2015 -- 01/01/2019	proquest
"gordon edwards" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"bruce ames" and "climate change"	1	0	01/01/2015 -- 01/01/2019	factiva

"bruce ames" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"bruce ames" and "climate change"	0	0	01/01/2015 -- 01/01/2019	proquest
"bruce ames" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"jane orient" and "climate change"	3	0	01/01/2015 -- 01/01/2019	factiva
"jane orient" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"jane orient" and "climate change"	1	0	01/01/2015 -- 01/01/2019	proquest
"jane orient" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"margaret maxey" and "climate change"	0	0	01/01/2015 -- 01/01/2019	factiva
"margaret maxey" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"margaret maxey" and "climate change"	0	0	01/01/2015 -- 01/01/2019	proquest
"margaret maxey" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"john mcketta" and "climate change"	0	0	01/01/2015 -- 01/01/2019	factiva

"john mcketta" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"john mcketta" and "climate change"	0	0	01/01/2015 -- 01/01/2019	proquest
"john mcketta" and "global warming"	0	0	01/01/2015 -- 01/01/2019	proquest
"robert nelson" and "climate change"	13	0	01/01/2015 -- 01/01/2019	factiva
"robert nelson" and "global warming"	6	0	01/01/2015 -- 01/01/2019	factiva
"robert nelson" and "climate change"	11	0	01/01/2015 -- 01/01/2019	proquest
"robert nelson" and "global warming"	6	0	01/01/2015 -- 01/01/2019	proquest
"roger meiners" and "climate change"	1	0	01/01/2015 -- 01/01/2019	factiva
"roger meiners" and "global warming"	0	0	01/01/2015 -- 01/01/2019	factiva
"fred singer" and "climate change"	53	0	01/01/2015 -- 01/01/2019	factiva
"fred singer" and "global warming"	38	0	01/01/2015 -- 01/01/2019	factiva
"roy spencer" and "climate change"	69	0	01/01/2015 -- 01/01/2019	factiva
"craig idso" and "climate change"	17	0	01/01/2015 -- 01/01/2019	factiva
<b>grand total:</b>	<b>grand total</b>			

	841	21		
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## APPENDIX III: THE 1998 GLOBAL CLIMATE SCIENCE COMMUNICATIONS PLAN

**Joe Walker**

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**To:** Global Climate Science Team  
**Cc:** Michelle Floss; Susan Moya  
**Subject:** Draft Global Climate Science Communications Plan

As promised, attached is the draft Global Climate Science Communications Plan that we developed during our workshop last Friday. Thanks especially to those of you who participated in the workshop, and in particular to John Adams for his very helpful thoughts following up our meeting, and Alan Caudill for turning around the notes from our workshop so quickly.

Please review the plan and get back to me with your comments as soon as possible.

As those of you who were at the workshop know, we have scheduled a follow-up team meeting to review the plan in person on Friday, April 17, from 1 to 3 p.m. at the API headquarters. After that, we hope to have a "plan champion" help us move it forward to potential funding sources, perhaps starting with the global climate "Coordinating Council." That will be an item for discussion on April 17.

Again, thanks for your hard work on this project. Please e-mail, call or fax me with your comments. Thanks.

Regards,  
Joe Walker

## Global Climate Science Communications

### Action Plan

#### Project Goal

A majority of the American public, including industry leadership, recognizes that significant uncertainties exist in climate science, and therefore raises questions among those (e.g., Congress) who chart the future U.S. course on global climate change.

Progress will be measured toward the goal. A measurement of the public's perspective on climate science will be taken before the plan is launched, and the same measurement will be taken at one or more as-yet-to-be-determined intervals as the plan is implemented.

#### Victory Will Be Achieved When

- Average citizens "understand" (recognize) uncertainties in climate science; recognition of uncertainties becomes part of the "conventional wisdom"
- Media "understands" (recognizes) uncertainties in climate science.
- Media coverage reflects balance on climate science and recognition of the validity of viewpoints that challenge the current "conventional wisdom"
- Industry senior leadership understands uncertainties in climate science, making them stronger ambassadors to those who shape climate policy
- Those promoting the Kyoto treaty on the basis of extant science appear to be out of touch with reality.

#### Current Reality

Unless "climate change" becomes a non-issue, meaning that the Kyoto proposal is defeated and there are no further initiatives to thwart the threat of climate change, there may be no moment when we can declare victory for our efforts. It will be necessary to establish measurements for the science effort to track progress toward achieving the goal and strategic success.

Because the science underpinning the global climate change theory has not been challenged effectively in the media or through other vehicles reaching the American public, there is widespread ignorance, which works in favor of the Kyoto treaty and against the best interests of the United States. Indeed, the public has been highly receptive to the Clinton Administration's plans. There has been little, if any, public resistance or pressure applied to Congress to reject the treaty, except by those "inside the Beltway" with vested interests.

Moreover, from the political viewpoint, it is difficult for the United States to oppose the treaty solely on economic grounds, valid as the economic issues are. It makes it too easy for others to portray the United States as putting preservation of its own lifestyle above the greater concerns of mankind. This argument, in turn, forces our negotiators to make concessions that have not been well thought through, and in the end may do far more harm than good. This is the process that unfolded at Kyoto, and is very likely to be repeated in Buenos Aires in November 1998.

The advocates of global warming have been successful on the basis of skillfully misrepresenting the science and the extent of agreement on the science, while industry and its partners ceded the science and fought on the economic issues. Yet if we can show that science does not support the Kyoto treaty — which most true climate scientists believe to be the case — this puts the United States in a stronger moral position and frees its negotiators from the need to make concessions as a defense against perceived selfish economic concerns.

Upon this tableau, the Global Climate Science Communications Team (GCST) developed an action plan to inform the American public that science does not support the precipitous actions Kyoto would dictate, thereby providing a climate for the right policy decisions to be made. The team considered results from a new public opinion survey in developing the plan.

Charlton Research's survey of 1,100 "informed Americans" suggests that while Americans currently perceive climate change to be a great threat, public opinion is open to change on climate science. When informed that "some scientists believe there is not enough evidence to suggest that [what is called global climate change] is a long-term change due to human behavior and activities," 58 percent of those surveyed said they were more likely to oppose the Kyoto treaty. Moreover, half the respondents harbored doubts about climate science.

GCST members who contributed to the development of the plan are A. John Adams, John Adams Associates; Candace Crandall, Science and Environmental Policy Project; David Rothbard, Committee For A Constructive Tomorrow; Jeffrey Salmon, The Marshall Institute; Lee Garrigan, Environmental Issues Council; Lynn Bouchey and Myron Ebell, Frontiers of Freedom; Peter Cleary, Americans for Tax Reform; Randy Randol, Exxon Corp.; Robert Gehri, The Southern Company; Sharon Kneiss, Chevron Corp.; Steve Milloy, The Advancement of Sound Science Coalition; and Joseph Walker, American Petroleum Institute.

→ The action plan is detailed on the following pages.

April 3, 1998

## Global Climate Science Communications Action Plan

### Situation Analysis

In December 1997, the Clinton Administration agreed in Kyoto, Japan, to a treaty to reduce greenhouse gas emissions to prevent what it purports to be changes in the global climate caused by the continuing release of such emissions. The so-called greenhouse gases have many sources. For example, water vapor is a greenhouse gas. But the Clinton Administration's action, if eventually approved by the U.S. Senate, will mainly affect emissions from fossil fuel (gasoline, coal, natural gas, etc.) combustion.

As the climate change debate has evolved, those who oppose action have argued mainly that signing such a treaty will place the U.S. at a competitive disadvantage with most other nations, and will be extremely expensive to implement. Much of the cost will be borne by American consumers who will pay higher prices for most energy and transportation.

The climate change theory being advanced by the treaty supporters is based primarily on forecasting models with a very high degree of uncertainty. In fact, it not known for sure whether (a) climate change actually is occurring, or (b) if it is, whether humans really have any influence on it.

Despite these weaknesses in scientific understanding, those who oppose the treaty have done little to build a case against precipitous action on climate change based on the scientific uncertainty. As a result, the Clinton Administration and environmental groups essentially have had the field to themselves. They have conducted an effective public relations program to convince the American public that the climate is changing, we humans are at fault, and we must do something about it before calamity strikes.

The environmental groups know they have been successful. Commenting after the Kyoto negotiations about recent media coverage of climate change, Tom Wathen, executive vice president of the National Environmental Trust, wrote:

"...As important as the extent of the coverage was the tone and tenor of it. In a change from just six months ago, most media stories no longer presented global warming as just a theory over which reasonable scientists could differ. Most stories described predictions of global warming as the position of the overwhelming number of mainstream scientists. That the environmental community had, to a great extent, settled the scientific issue with the U.S. media is the other great success that began perhaps several months earlier but became apparent during Kyoto."

## Strategies and Tactics

- I. **National Media Relations Program:** Develop and implement a national media relations program to inform the media about uncertainties in climate science; to generate national, regional and local media coverage on the scientific uncertainties, and thereby educate and inform the public, stimulating them to raise questions with policy makers.

**Tactics:** These tactics will be undertaken between now and the next climate meeting in Buenos Aires, Argentina, in November 1998, and will be continued thereafter, as appropriate. Activities will be launched as soon as the plan is approved, funding obtained, and the necessary resources (e.g., public relations counsel) arranged and deployed. In all cases, tactical implementation will be fully integrated with other elements of this action plan, most especially Strategy II (National Climate Science Data Center).

- Identify, recruit and train a team of five independent scientists to participate in media outreach. These will be individuals who do not have a long history of visibility and/or participation in the climate change debate. Rather, this team will consist of new faces who will add their voices to those recognized scientists who already are vocal.
- Develop a global climate science information kit for media including peer-reviewed papers that undercut the "conventional wisdom" on climate science. This kit also will include understandable communications, including simple fact sheets that present scientific uncertainties in language that the media and public can understand.
- Conduct briefings by media-trained scientists for science writers in the top 20 media markets, using the information kits. Distribute the information kits to daily newspapers nationwide with offer of scientists to brief reporters at each paper. Develop, disseminate radio news releases featuring scientists nationwide, and offer scientists to appear on radio talk shows across the country.
- Produce, distribute a steady stream of climate science information via facsimile and e-mail to science writers around the country.
- Produce, distribute via syndicate and directly to newspapers nationwide a steady stream of op-ed columns and letters to the editor authored by scientists.
- Convince one of the major news national TV journalists (e.g., John Stossel) to produce a report examining the scientific underpinnings of the Kyoto treaty.
- Organize, promote and conduct through grassroots organizations a series of campus/community workshops/debates on climate science in 10 most important states during the period mid-August through October, 1998.

- Consider advertising the scientific uncertainties in select markets to support national, regional and local (e.g., workshops/debates), as appropriate.

National Media Program Budget — \$600,000 plus paid advertising

- II. **Global Climate Science Information Source:** Develop and implement a program to inject credible science and scientific accountability into the global climate debate, thereby raising questions about and undercutting the "prevailing scientific wisdom." The strategy will have the added benefit of providing a platform for credible, constructive criticism of the opposition's position on the science.

**Tactics:** As with the National Media Relations Program, these activities will be undertaken between now and the next climate meeting in Buenos Aires, Argentina, in November 1998, and will continue thereafter. Initiatives will be launched as soon as the plan is approved, funding obtained, and the necessary resources arranged and deployed.

- Establish a Global Climate Science Data Center. The GCSDC will be established in Washington as a non-profit educational foundation with an advisory board of respected climate scientists. It will be staffed initially with professionals on loan from various companies and associations with a major interest in the climate issue. These executives will bring with them knowledge and experience in the following areas:
  - Overall history of climate research and the IPCC process;
  - Congressional relations and knowledge of where individual Senators stand on the climate issue;
  - Knowledge of key climate scientists and where they stand;
  - Ability to identify and recruit as many as 20 respected climate scientists to serve on the science advisory board;
  - Knowledge and expertise in media relations and with established relationships with science and energy writers, columnists and editorial writers;
  - Expertise in grassroots organization; and
  - Campaign organization and administration.

The GCSDC will be led by a dynamic senior executive with a major personal commitment to the goals of the campaign and easy access to business leaders at the CEO level. The Center will be run on a day-to-day basis by an executive director with responsibility for ensuring targets are met. The Center will be funded at a level that will permit it to succeed, including funding for research contracts that may be deemed appropriate to fill gaps in climate science (e.g., a complete scientific critique of the IPCC research and its conclusions).

- The GCSDC will become a one-stop resource on climate science for members of Congress, the media, industry and all others concerned. It will be in constant contact with the best climate scientists and ensure that their findings and views receive appropriate attention. It will provide them with the logistical and moral support they have been lacking. In short, it will be a sound scientific alternative to the IPCC. Its functions will include:
  - Providing as an easily accessible database (including a website) of all mainstream climate science information.
  - Identifying and establishing cooperative relationships with all major scientists whose research in this field supports our position.
  - Establishing cooperative relationships with other mainstream scientific organizations (e.g., meteorologists, geophysicists) to bring their perspectives to bear on the debate, as appropriate.
  - Developing opportunities to maximize the impact of scientific views consistent with ours with Congress, the media and other key audiences.
  - Monitoring and serving as an early warning system for scientific developments with the potential to impact on the climate science debate, pro and con.
  - Responding to claims from the scientific alarmists and media.
  - Providing grants for advocacy on climate science, as deemed appropriate.

Global Climate Science Data Center Budget — \$5,000,000 (spread over two years minimum)

- III National Direct Outreach and Education:** Develop and implement a direct outreach program to inform and educate members of Congress, state officials, industry leadership, and school teachers/students about uncertainties in climate science. This strategy will enable Congress, state officials and industry leaders will be able to raise such serious questions about the Kyoto treaty's scientific underpinnings that American policy-makers not only will refuse to endorse it, they will seek to prevent progress toward implementation at the Buenos Aires meeting in November or through other ways. Informing teachers/students about uncertainties in climate science will begin to erect a barrier against further efforts to impose Kyoto-like measures in the future.

**Tactics:** Informing and educating members of Congress, state officials and industry leaders will be undertaken as soon as the plan is approved, funding is obtained, and the necessary resources are arrayed and will continue through Buenos Aires and for the foreseeable future. The teachers/students outreach program will be developed and launched in early 1999. In all cases, tactical implementation will be fully integrated with other elements of this action plan.

- Develop and conduct through the Global Climate Science Data Center science briefings for Congress, governors, state legislators, and industry leaders by August 1998.
- Develop information kits on climate science targeted specifically at the needs of government officials and industry leaders, to be used in conjunction with and separately from the in-person briefings to further disseminate information on climate science uncertainties and thereby arm these influentials to raise serious questions on the science issue.

- Organize under the GCSDC a "Science Education Task Group" that will serve as the point of outreach to the National Science Teachers Association (NSTA) and other influential science education organizations. Work with NSTA to develop school materials that present a credible, balanced picture of climate science for use in classrooms nationwide.
- Distribute educational materials directly to schools and through grassroots organizations of climate science partners (companies, organizations that participate in this effort).

National Direct Outreach Program Budget — \$300,000

IV. Funding/Fund Allocation: Develop and implement program to obtain funding, and to allocate funds to ensure that the program is carried out effectively.

Tactics: This strategy will be implemented as soon as we have the go-ahead to proceed.

- Potential funding sources were identified as American Petroleum Institute (API) and its members; Business Round Table (BRT) and its members, Edison Electric Institute (EEI) and its members; Independent Petroleum Association of America (IPAA) and its members; and the National Mining Association (NMA) and its members.
- Potential fund allocators were identified as the American Legislative Exchange Council (ALEC), Committee For A Constructive Tomorrow (CFAT), Competitive Enterprise Institute, Frontiers of Freedom and The Marshall Institute.

Total Funds Required to Implement Program through November 1998 — \$2,000,000 (A significant portion of funding for the GCSDC will be deferred until 1999 and beyond)

### Measurements

Various metrics will be used to track progress. These measurements will have to be determined in fleshing out the action plan and may include:

- Baseline public/government official opinion surveys and periodic follow-up surveys on the percentage of Americans and government officials who recognize significant uncertainties in climate science.
- Tracking the percent of media articles that raise questions about climate science.
- Number of Members of Congress exposed to our materials on climate science.
- Number of communications on climate science received by Members of Congress from their constituents.
- Number of radio talk show appearances by scientists questioning the "prevailing

- Number of school teachers/students reached with our information on climate science.
- Number of science writers briefed and who report upon climate science uncertainties.
- Total audience exposed to newspaper, radio, television coverage of science uncertainties.

#### **APPENDIX IV: LUPO'S ACTIONS AND ACCOLADES**

- Dec. 21, 1995: The date of a Mobil Corporation memo in which a company scientists writes, "The scientific basis for Greenhouse Effect and the potential impact of human emissions of greenhouse gases such as CO<sub>2</sub> on climate is well established and cannot be denied."
- December 1997: International leaders meet in Kyoto, Japan, to adopt the Kyoto Protocol, which lead to the United Nations Framework Convention on Climate Change, a target of industry-funded attacks ever since.
- 1997: Lupo completes his postdoctoral research at the University of Albany and lands a job as an assistant professor at MU. He's been here since.
- April 17, 1998: The date of a draft of the Global Climate Science Communications Plan (GCSCP) that, in part, called for recruiting scientists new to the climate change "debate" in an effort to shift the narrative on climate change. It also called for creating a repository of climate data that policy makers and the public can use. The plan lamented at length the Kyoto Protocol adopted only a year earlier.
- May 9, 1998: The St. Louis Post Dispatch published the first (as far as I can tell) public statement by Lupo on climate change. Lupo, rather viciously, questions the existence of climate change in the letter to the editor and calls for holding off on taking action for 20 years so climate change, if it exists, can be studied better (exactly 20 years have passed). (He's authored, co-authored and been interviewed in lots of other news articles in which he questions either the existence, severity or cause of climate change. I have left many of those out of this list.)

- Time unknown as of proposal: Lupo is invited to join "Round Table Group, the Expert Witness Search and Referral Firm," a DC group of expert witnesses and consultants.
- 2004: The law offices of Schreimann, Rackers, Fracka & Blunt, LLC, in Jefferson City, hire Lupo to provide expert testimony. (On what, I don't yet know.) The firm hires him again in 2006 and 2008.
- Nov. 16, 2004: Lupo and 10 other "climate experts" send a letter to John McCain, who, that morning, was scheduled to hear testimony on the Arctic Climate Impact Assessment. In part: "A comprehensive study of Arctic temperature records(7) found that 'in the Arctic in the period 1951-90, no tangible manifestations of the greenhouse effect can be identified.'"
- April 2005: Lupo wins the MU Chapter of Gamma Sigma Delta Teaching Award of Merit.
- 2006: The law offices of Robert J. Hayes in Saint Louis hire Lupo to provide expert testimony. (Also unclear of the nature of Lupo's testimony.)
- April 2006: Lupo wins the College of Agriculture Food and Natural Resources Senior Level Teaching Award, and \$1,000.
- June 27, 2006: Lupo gives a talk at the George C. Marshall Institute, now known as The CO2 Coalition. (I have the transcript. It's long. I haven't read it.)
- September 2007: The law offices of Lathrop and Gage hire Lupo to provide expert testimony. (Unclear of the nature of his testimony.) He provided 31 hours of consulting, was deposed and testified for the defense, which won on all counts.

- November 2007: McGuire-Woods in Richmond, Va., hires Lupo to provide expert testimony. (Unclear of nature.)
- Dec. 13, 2007: Lupo and 102 other "independent scientists, engineers and economists active in the research of climate-related areas" sign onto a letter to the UN's then secretary general, Ban Ki-Moon, opposing actions to address climate change.
- Jan. 22, 2007: Lupo was one of dozens of expert reviewers for a report produced by the Canadian free-market think tank The Fraser Institute. The report, its tone dubious, is titled "Independent Summary for Policymakers IPCC Court Assessment Report."
- October 2007: Lupo is acknowledged as part of the massive team of scientists who reviewed an Intergovernmental Panel on Climate Change report and won a Nobel Peace Prize with Al Gore, Jr.
- Jan. 1, 2008: Lupo authors a paper or article titled "How should physicians view the environment?" I haven't found a copy as of the date of this proposal.
- April 2008: Lupo wins the Kemper Teaching Award – and \$10,000. It is, according to his resume, the highest college-level award a teacher can win in Missouri.
- April 2008: Lupo also wins the College of Agriculture Food and Natural Resources Outstanding Undergraduate Advisor Award, and \$1,000.
- June 2008: Shook, Hardy and Bacon Law Firm hires Lupo for consulting. This firm has lobbied for companies like Peabody Energy, Emerson Electric and Pfizer Inc. (which helped found the 1998 GCSCP). This firm recently lost its defense of Sherwin-Williams, et al, and now its clients must pay \$400 million for damage its lead paint, among a few other things, caused.

- June 16, 2008: Lupo co-authors a letter to the editor in American Medical News titled "Health threat from climate change is not supported by the evidence."
- Sept. 14-16, 2008: Lupo attends a private event at the George C. Marshal Institute, which now goes by The CO2 Coalition.
- April 2009: Lupo wins the Missouri Academy of Science Most Distinguished Scientist Award.
- March 8 and 9, 2009: Lupo presents at The Heartland Institute's second International Conference on Climate Change (ICCC-2). The theme? "Global Warming: Was It Ever Really a Crisis?" I have video of his talk. In it, he points to global temperature swings, presents data that shows consistent temperatures and pokes holes in anthropogenic climate change research. To underscore part of his argument, he uses data one of his students at the time, Kevin Birk, helped collect.
- March 9, 2009: Lupo downplays climate change in The Missourian: "The Earth goes through phases of warming and cooling, and though all the computer models we have show that we are in a warming phase, there is no way to differentiate between a natural warming and one that is human-caused." (Did Lupo do this interview by phone from Heartland's ICCC event?)
- April 2009: Lupo wins the Missouri Academy of Science Most Distinguished Scientist Award.
- July 2009: The Benson Law Firm out of Kirksville hires Lupo to provide expert testimony. (Unclear of nature of testimony.)

- Dec. 22, 2010: Lupo begins a year-long contract with The Heartland Institute for "consultant/advisor" work, according to an "Outside Interest Disclosure Form" Greenpeace got from MU. The documents reveal that Lupo was paid \$9,000 for his work. A 2017 version of his resume shows he had contracts in 2011 and 2013 as well.
- January 2010: Lupo reviewed a paper for the Cornwall Alliance, a think tank that denies climate change from a Christian perspective. From Lupo's resume: "Cornwall Alliance (Jan 2010): A renewed Call to Truth, Prudence, and Protection of the poor: An Evangelical examination of the Theology, Science, and Economics of Global Warming. (Chapter 2 primarily) 76pp."
- Feb. 7, 2010: Lupo writes an article for napsnet.com (North American Precipitation Syndicate) titled "Global Warming Is Natural, Not Man-Made."
- Feb. 15, 2010: Lupo promoted a climate-change denial film called "Not Evil, Just Wrong" here in Columbia.
- May 2010: Lupo wins the MU Professor of the Year Award.
- May 12, 2010: The Troy County, Mo., public defender hires Lupo to provide testimony. (Unclear.)
- Aug. 16, 2010: A LexisNexis background report that I ran in November 2010 shows documents were filed with the Boone County Pachyderm Club with Lupo as its president.
- October 2010: Ford, Parshall and Baker hire Lupo to provide expert testimony. (Also unclear.)
- Nov. 9, 2010: The Missourian reports that on Wednesday "a group of experts from across disciplines will meet to discuss the possibility of a regional climate center at MU," and

Lupo "will be on hand to discuss the proposal." Lupo said, "The goal of this is to develop a regional center where decision makers in society at large can get climate information. We know that climate change is an issue." This is notable: the 1998 GCSCP called for creating a repository of climate data for policy makers, and that's exactly what this appears to be.

- November 2010: Horn, Aylward and Brandy hire Lupo to provide expert testimony. (Unclear.)
- 2011: The Heartland Institute hires Lupo as a lead author for the modeling chapter of one of its publications. This work ran into 2013.
- Feb. 8, 2011: Lupo signs onto a letter addressed to the U.S. House and Senate that denies the existence of anthropogenic climate change.
- May 27, 2011: Lupo was a party in an Amicus Brief filed in the U.S. Court of Appeals that urged the court to vacate the EPA's endangerment rule.
- Time unknown as of proposal: Lupo was a party in another Amicus Brief filed in the U.S. Supreme Court on behalf of the Competitive Enterprise Institute, a free-market, anthropogenic-climate-change-denying think tank, that appears to also attack the EPA's endangerment finding.
- 2012: Pedroli and Associates in Saint Louis hire Lupo. (Unclear why.)
- Jan. 15, 2012: A leaked draft of a 2012 proposed Heartland Institute budget says, "A growing number of scientists have been recruited by Craig Idso to be contributing authors and editors of NIPCC's major reports, a series titled Climate Change Reconsidered." Perhaps one of the Idso's recruited Lupo.

- March 5, 2012: Lupo tells The Missourian, "There's no doubt the climate is changing; that's a given. But the question is: What's causing it? Is it mankind alone, which a lot of people say? Is it some mix of man and nature? Or is it nature? I would say nature is mostly responsible. There may be a role for man in there somewhere, but how much, I don't know."
- May 22, 2012: Heartland launched a billboard campaign that ostracizes many of its big funders. As an example of the boldness of the campaign, in Chicago the think tank paid for a billboard with a picture of Ted Kaczynski's scruffy, mopey face next to the bold, red words "I still believe in Global Warming. Do you?"
- May 23, 2012: Lupo presents at Heartland's seventh International Conference on Climate Change (ICCC7). The theme? "Real Science, Real Choices." There's a video.
- June 6, 2012: Lupo and other local scientists presented at an MU conference called "Adapting to Climate Change: Gaining the Advantage."
- 2013: Ford, Parshall and Baker in Columbia, Mo., hire Lupo as a climate expert.
- 2013: The state of Alaska hires Lupo as a climate modeling expert. His work runs into 2019.
- 2013: Lupo participated in the Teacher Education Program held at MU. The purpose of the program appears to be to spread the kind of misinformation on electricity generation and climate change that benefits the energy industry.
- March 2013: Shurtleff, Froeschner and Harris hire Lupo for expert testimony. His work runs into February 2014. (The nature of his work is unclear.)

- May 23, 2013: Lupo and 10 other scientists filed another amicus brief with the Supreme Court protesting, I think, the EPA's endangerment finding.
- Nov. 29, 2013: On the website Junkscience.com, its founder and publisher and a contributing founder of the 1998 GCSP, Steve Milloy, refers to Lupo as one of his "friends." He includes prominent climate doubter Roy Spender in that group.
- 2014: Missouri Rep. Tim Remole hires Lupo for "expert support" for help with H.B. 1302. The bill – it passed – kneecapped regulations aimed at the wood-burning industry.
- 2014: Lupo participated again in the Teacher Education Program at MU.
- Feb. 19, 2014: Milloy refers to Lupo as his "very high flying climate and atmospheric science colleague" in a JunkScience.com post. In the post, titled "Extreme Weather Events Tony Lupo is da man," he says Tony said global warming would have to be far more dramatic to increase the frequency of "killer heat waves." "YEEEEEEEEAAAAAH Tony," he writes.
- March 6, 2014: In JunkScience.com, Milloy refers to Lupo as one of the "big boys," a category that to him includes many prominent climate doubters. He lists them by last name.
- April 8, 2014: In another JunkScience.com blog post, Milloy again refers to Lupo as "my friend" and as a "great Italian climate and meteorology scientist from U of Mizzou."
- May 6, 2014: A KOMU headline: "MU Professor Says Climate Change Is Not Caused by Human Impact." The professor is Lupo.

- Have not nailed date as of proposal, but likely 2014: Lupo presents at Heartland's ninth International Conference on Climate Change (ICCC9) in Vegas. The theme: "New Estimates of Climate Sensitivity." There's a video of his talk.
- 2015: Sanders and Associates in Ohio hires Lupo for expert testimony. (Unclear on nature of his work.)
- February 2015: Greenpeace reveals that Willie Soon, a prominent climate doubter, received more than \$1.2 million from oil and gas companies in the last decade. (An indication of what there's to gain from being part of the network.)
- Jan. 15, 2016: Lupo's name appears on this open letter, authored by prominent climate doubter Will Happer (who two years later will be appointed by Trump as a top White House advisor). The letter was addressed to the U.S. House and seemed to be saying that certain federal agencies were overreaching in their actions related to climate change.
- June 10, 2016: Lupo signs onto a condescending open letter to state attorneys general written by E. Calvin Beisner, Cornwall Alliance founder and spokesman, that was dubious of climate science and began with "You're not stupid."
- 2016: Lupo helps found Clexit.net (Climate Exit), a climate-change denial website created shortly after Brexit.
- Sept. 25, 2016: Lupo and a number of other climate doubters publish a story in Breitbart: "Political Science: A Reply to the 375 Concerned Members of the National Academy of Sciences."
- 2017: Lupo is nominated for the EPA's Science Advisory Board.

- Jan. 5, 2017: Lupo's name and 134 others appear on a letter supporting Scott Pruitt for EPA administrator.
- March 9, 2017: Lupo and dozens of other scientists sign onto a letter on MIT stationery addressed to the White House asking Trump to pull out of the United Nations Framework Convention on Climate Change (the main policy punching bag for the network).
- April 10, 2017: The Heartland Institute distributes climate change propaganda to American teachers.
- June 1, 2017: Heartland CEO Joseph Bast is invited to the White House Rose Garden as Trump announces he's withdrawing the US from the Paris climate agreement. In an email to Heartland supporters later, Bast wrote, "We are winning in the global warming war."
- July 17, 2017: Steve Milloy, on his Junkscience.com blog, published a long list of people he recommended for the EPA's Science Advisory Board. Lupo's on the list. (One year and a few months later – also noted below – Lupo is a finalist for the spot.)
- August 2017: a news story: "Harvard Study Finds Exxon Misled Public about Climate Change."
- Oct. 12, 2017: An internal Heartland email from its CEO, Joseph Bast, says, "On September 28, The Heartland Institute hosted a meeting of about 40 climate scientists, economists, lawyers, and other experts to discuss the possible creation by the Trump administration of a Red Team – Blue Team exercise on climate change. My notes from that meeting appear below." (I haven't read the email in detail, but I suspect that Heartland created the Red Team-Blue Team talking that Pruitt bandied about.)

- Nov. 9, 2017: Lupo presents at another Heartland event, the American First Energy Conference. There's video.
- Jan. 1, 2018: In response to pressures on teachers to pare back their climate change materials, the National Science Teachers Association issued a statement that read, in part: NSTA "acknowledges that decades of research and overwhelming scientific consensus indicate with increasing certainty that Earth's climate is changing, largely due to human-induced increases in the concentrations of heat-absorbing gases."
- Jan. 16, 2018: Atmosphere, an open-access journal, publishes a study Lupo co-lead that found weather should remain predictable despite climate change. Many media outlets did stories on the study, including Science Daily, and MU promoted it: "... even as rising carbon dioxide levels in the atmosphere drive the climate toward warmer temperatures, the weather will remain predictable." A student with the MU News Bureau also did a video on the study.
- May 2018: Lupo reviews a paper written by three prominent network actors that is dubious climate change.
- Sept. 5, 2018: Trump makes prominent climate doubter Will Happer the National Security Council's senior director for emerging technologies.
- Oct. 7, 2018: The Intergovernmental Panel on Climate Change (IPCC) releases a report that scares the hell out of the world.
- Oct. 11, 2018: Trump makes "BP Oil Spill Lawyer, Climate Policy Foe" Jeffrey Bossert Clark the head of the Justice Department's Environmental and Natural Resources Division.

- Oct. 18, 2018: Lupo is a finalist for the EPA's Science Advisory Board.
- Oct. 24, 2018: New York's AG filed a lawsuit against Exxon Mobil saying that it deceived shareholders by downplaying climate change.

**APPENDIX V: PROJECT PROPOSAL**

**Project Proposal**

**A NETWORK OF CLIMATE CHANGE DECEPTION  
IN SMALL-TOWN AMERICA, AND NON-EXPERT  
REPORTERS WHO BROADCAST DOUBT**

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A Project

Presented to

the Faculty of the Graduate School

at the University of Missouri-Columbia

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In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

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by

DAN SCHWARTZ

Mark Horvit, Chair

Sara Shipley Hiles

Reuben Stern

DECEMBER 2018

## Introduction

I am spending the bulk of my final semester this spring in New York City working at least 30 hours a week on an investigative story on climate-change deception and around 10 hours a week on an academic analysis of the same subject. I will address the story here.

In 1971, a newly appointed associate justice of the Supreme Court, Lewis F. Powell Jr., sent a letter to the U.S. Chamber of Commerce that claimed liberals had captured the government. “No thoughtful person,” it said, “can question that the American economic system is under broad attack.”

The letter was call to arms and an army of free-market think tanks began mobilizing around the country. The people behind the push to de-liberalize the government, billionaires described in Jane Mayer's book "Dark Money," bankrolled the think tanks, which began broadly fighting government regulation. Then in the 1980s, as greenhouse-gas fears gripped the world, the think tanks and their donors realized their greatest foe: climate change, the mother of all regulation.

But the free-market network felt it was losing the global warming war by 1998 – a year earlier, in Japan, the U.S. had entered into the Kyoto Protocol, an international agreement to reduce greenhouse gas emissions – so that year officials met at the American Petroleum Institute headquarters in Washington to devise a better plan. For a draft of the manifesto, please see Appendix I, but in part, it called for recruiting a team of scientists new to the so-called "climate change debate" who would be trained in PR, develop and distribute to reporters contrarian research and speak at community events.

Many news outlets have written about the network operatives spreading doubt from ivory towers such as Harvard and Princeton and MIT and the White House, but the network is active in small-town America, too. That story, under reported, is the one I aim to tell by chronicling the rise of one network actor named Anthony Lupo.

Lupo, an atmospheric sciences professor here at the University of Missouri, has been active in the network for at least two decades. For a lengthy account of his activities and accolades please see Appendix II; the following are but a few representative examples:

- In 1997, Lupo completed his PhD at Purdue University and began teaching at MU.
- In 1998, one month after the climate change manifesto was drafted and the network was subsequently honed, the St. Louis Post-Dispatch published an editorial by Lupo in which he questioned the existence of climate change and discouraged action.
- In 2005, Lupo won the MU Chapter of Gamma Sigma Delta Teaching Award of Merit. It is the first of seven prestigious teaching awards he has won.
- In 2006, Lupo gave a talk on drought in the Midwest that denigrated climate science at the George C. Marshall Institute, now known as the CO2 Coalition, a prominent climate-science denying think tank funded by conservatives.
- In 2009, Lupo gave a similar talk during the second International Conference on Climate Change hosted by The Heartland Institute, one of the country's most vitriolic deniers of human-caused climate change. (That same day he told a Missourian reporter, "The Earth goes through phases of warming and cooling, and though all the computer models we have show that we are in a warming phase, there is no way to differentiate between a natural warming and one that is human-caused.")

- In 2010, Lupo began a year-long contract with The Heartland Institute in which he was paid \$9,000 for "consultant/advisor" work. A 2017 version of his resume shows he had contracts in 2011 and 2013 as well.
- In 2011, Lupo was part of an amicus brief that urged the U.S. Court of Appeals to nullify the EPA's finding that greenhouse gasses threaten society.
- In 2013, the state of Alaska hired Lupo as a climate modeling expert. (I have requested records through Alaska's sunshine law that I expect will illuminate the scope of this work.)
- In 2014, as well as in 2013, and probably others years, Lupo co-taught an annual seminar hosted by MU called the Teacher Education Program that is designed to persuade local public school teachers that burning fossil fuels does not change the climate.
- In 2016, Lupo co-founded Clexit.net (Climate Exit), a climate-change denial website created shortly after Brexit.
- And in October, 2018, Lupo was named a finalist for the EPA's Science Advisory Board.

In telling the story of Lupo's rise in academia and within the network, I plan to expose a branch that is operating with little scrutiny. Lupo will serve as a narrative thread, a case study. He is one of dozens of professors from universities the size of MU and smaller who seed doubt in their communities and are tied to the network. The universities where they work are diverse – they are publicly funded and privately funded, liberal arts institutions and theology institutions, spread from California to South Carolina – but what they have in common is that they are tacitly funding, amplifying and disseminating the network's message. Below are six professors like Lupo; the full roster is longer:

- Robert Balling, of Arizona State University, who appeared in a 2012 Heartland Institute proposed budget as a paid consultant, worked for Western Fuels Association on its Greening Earth Society project and co-wrote for the Cato Institute "Climate of Extremes: Global Warming Science They Don't Want You to Know," in which he said, "The data lead us to conclude that anthropogenic global warming (AGW) is indeed real, but relatively modest";
- Terry Anderson, of Montana State University, who was a committee member of the Environmental Issues Council, or EIC, when it helped draft the 1998 climate change manifesto and a president of the Property and Environment Research Center, or PERC, a "free market environmentalism" think tank funded by the energy industry and conservative donors;
- Roger Meiners, of the University of Texas at Arlington, who was also an EIC committee member at the same time as Anderson as well as a fellow at PERC and a co-author of "Silent Spring at 50: Reflections on an environmental classic," a polemic against the 1962 book that sparked the environmental movement;
- Bruce Yandle, of Clemson University, who was an EIC committee member as well at the time of Anderson and Meiners, is a Heartland Institute policy advisory and is a co-author of a number of books that advocate for free-market approaches to environmentalism;
- Kenneth Chilton, of Lindenwood University, who has a bio page on The Heartland Institute's website, was a senior fellow in 2016 at The Cornwall Alliance for the Stewardship of Creation, another free-market think tank that discourages action on climate change; and directs Lindenwood's Institute for Study of Economics and the

Environment, which in 2005 hosted a lecture for students by Indur Goklany, another network operative, titled "Is Climate Change the 21st Century's Most Urgent Environmental Problem?";

- and Tracy Miller, of Grove City College, who has been a speaker at The Cornwall Alliance, argues against carbon taxes, believes climate change is an unsettled issue and signed onto a condescending open letter to state attorneys general that was dubious of climate science and began with "You're not stupid."

This faction of the network continues to thrive as the world burns, oceans acidify and species migrate or die. It continues to spread the message that climate change is not a threat as children in lawsuits order the government to protect them from the increasingly tangible threat. And Lupo, hiding in plain sight all this time in the middle of America, has been an agent of this cabal since the beginning.

### **Professional project**

I have already done three interviews with Lupo in his office, attended two of his classes and interviewed one of his students. I spent most of my time this fall semester doing computer research on Lupo, building out the network and making phone calls to check my assumptions. In January, though, when I move to Brooklyn, I will begin in earnest on-the-ground reporting. I will do interviews and make observations in New York, Washington and back here in Columbia, Mo.

New York and Washington will provide me access to sources I wouldn't likely interview from Columbia, Mo., sources whom I expect will help me, one, understand the network more from a national level and, two, understand Lupo at different stages in his career. Potential sources include:

- high-profile network operators like Willie Soon, an energy-industry-funded climate-doubting engineer at the Harvard-Smithsonian Center for Astrophysics and a Heartland Institute speaker, and Steve Milloy, formerly of Murray Energy Corp., formerly a columnist for Fox News, the publisher of JunkScience.com and a scholar at the Competitive Enterprise Institute, a free-market think tank (who sees Lupo as his "very high flying climate and atmospheric science colleague.");
- former professors and classmates of Lupo's from the two New York state colleges – Cayuga County Community College and State University of New York at Oswego – which he attended in the late 1980s;
- federal and private climate scientists;
- conservative and environmental lobbyists;
- Lupo's colleagues from conference panels he was part of and the moderators of those panels;
- officials at think tanks that have funded Lupo's research;
- journal editors where Lupo's research has been published;
- and academics who have reviewed Lupo's research.

But I need to do more reporting here in Columbia, Mo., too. Lupo, for instance, offered that he is teaching an undergraduate climate change class in the spring and said I could attend.

My sources in Columbia may include:

- his current students;
- his former students still living in the area;
- his colleagues;

- Lupo himself;
- MU officials;
- Columbia Public Schools officials;
- teachers who have taken the Teacher Education Program;
- and officials who have organized it.

While in Columbia I will stay on a couch owned by my friends in the journalism program. In Washington I will stay with my classmates in the D.C. Program. Before traveling to Washington I will coordinate with Reuben Stern to schedule the use of MU's offices down there so I that have a reliable place to do work.

Wherever I am, each week I will file a memo to the non-MU email accounts of my committee members that will update them on my progress that week and steps I anticipate for the following week. I will only communicate with my committee through non-public channels to reduce the chance of people who may be critical of my work obtaining through public records laws our communications, which could be used to smear me. Twice a month I will video-conference with my committee.

In New York I will also participate in the New York Program. Through this program I anticipate making contact with editors who may be interested in this story, but I hope to successfully pitch it before then to Mother Jones. On Jan. 7, 2019, Mark Horvit reached out to an editor there to inquire about me pitching.

### **Professional analysis**

I want to understand why US reporters who are not experts in climate change are susceptible to the misinformation spread on the subject by the network. Note: I am proposing to

exclude from my study veteran environmental reporters because they are more likely to avoid the pitfalls associated with climate change (Hiles & Hinnant, 2014). To this end, for the analysis component of my project, I am proposing an examination of the practices of journalists who are not experts in covering climate change but have to cover it anyway. I propose reading their stories on climate change that uses as sources operatives like Lupo or think tanks like The Heartland Institute and soliciting interviews from at least eight of these journalists. This work, I expect, will compliment my professional project.

### **Theoretical framework**

One of the surest ways to deceive the public is to trick trusted media outlets into broadcasting a deception (Shoemaker, Vox, & Reese, 2009), and journalists writing about climate change are especially susceptible (Boykoff & Boykoff, 2004; McKewon, 2012; Brulle, Carmichael, & Jenkins, 2012; Mintz, 2005). When the public consumes these messages they are more likely to buy them because, even if they distrust the reporter's source, they do trust, to some degree, the media they consume (McKewon, 2012; Brulle, Carmichael, & Jenkins, 2012). News media are gatekeepers (Shoemaker, Vox, & Reese, 2009); they distill a universe of facts and opinions into coherent messages out of necessity and convenience for their audience (Şerban, 2015). And through this process, over and over, they set agendas: the more coverage an issues receives, the more important it becomes to its audience (Coleman et al., 2008). Media coverage of climate change, therefore, influences whether the public considers it a problem or nothing worth worrying about (McKewon, 2012).

### **Influencing the gatekeepers**

Efforts to influence the message that media broadcast on climate change have been successful, primarily, by exploiting the journalistic norm of balance – that is, the practice of giving equal weight to competing parties. Maxwell T. and Jules M. Boykoff (Boykoff & Boykoff, 2004) examined coverage of climate change in four large U.S. newspapers between 1988 and 2002 and found that despite the scientific consensus that climate change is serious and human-caused, beginning in 1990 many reporters were giving as much voice to sources who downplayed the crisis. Specifically, they found 53 percent of the stories they sampled contained false balance and only 6 percent exclusively covered the human role in climate change. "(W)hen it comes to the coverage of global warming," they wrote, "balanced reporting can actually be a form of informational bias." When Maxwell T. Boykoff measured this problem again on his own, he found that it began subsiding in 2005 (Boykoff, 2007).

What, then, prompted the swell in false-balance reporting between 1990 and 2005? Researchers point primarily to two variables in explaining what shifts media coverage on climate change.

One is the influence of partisan organizations and their agents. Elaine McKewon found that Australian news media articles on climate change between 1989 and 2009 mirrored the communications of a think tank that dismissed climate change and climate science (McKewon, 2012). "This analysis shows that the Institute of Public Affairs, an Australian neoliberal think tank, has used its access to the media as a news source to influence the public discussion on climate change in Australia," she wrote (McKewon, 2012). Robert J. Brulle in 2013 examined the funding sources of 91 US organizations that, similar to the Institute of Public Affairs in Australia, discourage action on climate change using tactics that include broadcasting messages

through the media; he found they had an annual income of more than \$900 million, and much of the funding that he was able to trace came from conservative foundations (Brulle, 2013). This network of conservative-funded think tanks lean primarily on sympathetic news media to broadcast their message to the public (Brulle, 2013), but their pipeline to distribution is the media at large (McKewon, 2012; Brulle, Carmichael, & Jenkins, 2012; Mintz, 2005).

Politics, shaped in part by think tanks and their agents, is the other major factor that has influenced media coverage of climate change. The same year the raft of false-balance reporting emerged in the US – 1990 – a major international climate change report was released that found "emissions resulting from human activities are substantially increasing the atmospheric concentrations of the greenhouse gases carbon dioxide, methane, chlorofluorocarbons (CFCs) and nitrous oxide" and that if steps were not taken to curb the emissions, the global average temperature could rise by 3 degrees Celsius above pre-industrial levels by 2100 (IPCC, 1990) -- news, in short, contrary to the messages of organizations that dismissed climate change. From 1990 forward, the shift to false-balance in the US "can be explained by the increasingly complex politicization of the global warming issue (sic), and the coalescence of a small group of influential spokespeople and scientists emerged in the news to refute these findings" (Boykoff & Boykoff, 2004). Most government officials had referenced climate scientists as authoritative sources when talking with reporters about climate change (Wilkins, 1993), but during the time period when false-balance reporting dominated, government officials were citing the findings of climate change doubters instead (Boykoff & Boykoff, 2004). In his 2004 book "Projections of Power: Framing News, Public Opinion, and U.S. Foreign Policy," Robert M. Entman showed that media tend to take their cues on how to frame issues from elite politicians (Entman, 2004) –

although, recently, Entman has found that with the prevalence of digital forms of communication, the media are becoming increasingly less necessary to elites wishing to speak to the public (Entman & Usher, 2018).

But experience in covering climate change likely protects a journalist from many of the subject's pitfalls. Sara Shipley Hiles and Amanda Hinnant interviewed 11 journalists each with at least a decade of experience covering the environment and found they were unlikely to become victims of the false-balance trap when covering climate change, more likely to let the preponderance of scientific evidence guide their coverage and often relied on their scientific expertise in evaluating sources (Hiles & Hinnant, 2014). One journalist in the study said, "If you covered a story on an avalanche, and people were buried under it, you wouldn't feel the need to balance it by quoting someone saying it didn't happen" (Hiles & Hinnant, 2014). A 2005 issue of *Nieman Reports*, a widely read journalism trade magazine published by Harvard University, devoted 22 pages to the issue of covering science and, in particular, climate change. The articles, written by journalists and communication scholars, stressed a need for more nuanced coverage of science and, with climate change, a weight-of-evidence approach (Nieman Reports, 2005).

But even veteran environmental journalists revert to the "he said, she said" framing of climate change when they code a story as political, opening them to the false-balance trap (Hiles & Hinnant, 2014) so common in the US between 1990 and 2005. And most reporters do not specialize in covering science or environmental topics but have to cover them anyway (Wilson, 2000). These reporters are more susceptible to the influence of agents spreading climate-change doubt: an analysis of British newspaper coverage between 2007 and 2011 found that messages

dubious of climate change were more likely to be found in articles written by reporters who aren't specialists (Painter & Gavin, 2016).

### **Relevance**

The 2004 and 2007 Boykoff studies explained theoretically why journalists may succumb to the trap of false balance, but they didn't explain it empirically like Hiles and Hinnant did in their 2014 study examining how veteran environmental journalists cover climate change. But that study does not illuminate the practices of journalists who are novices in climate change. In my review of literature for this proposal, I was unable to find any research that answered this question, which is why the study I am proposing is needed.

### **Methods**

My research question is the following:

- Why do reporters without expertise in covering climate change incorporate in their stories messages dismissive of climate change?

To answer the question, I am proposing that I conduct semi-structured interviews with at least eight professional journalists from US newspapers and TV and radio stations who have incorporated statements made by organizations or agents dismissive of climate change. When possible, I would do interviews in person, but I expect most would need to be done by phone. Because my line of questioning could yield compromising answers, I would offer the reporters anonymity. I would record each interview and transcribe the audio. From the interviews I would hope to learn about the decisions the reporters made in selecting their sources and how they portrayed the information from their sources.

To find these journalists, I would query the Dow Jones Factiva database for articles and transcripts using the names of low- and high-profile network agents paired with "climate change" or "global warming." I would do the same with at least three network organizations. A challenge I anticipate is selecting the appropriate time frame to query: too broad a range and the reporters won't remember the nuance of their decisions in selecting sources; too narrow a range and I won't have the sample size I need. To start, I propose limiting my query by a date range of four years, from Jan. 1, 2015, to Jan. 1, 2019. On Dec. 5, 2018, I ran a number of preliminary queries through Factiva without limiting by date (see below) and believe that if my proposed time frame nets too few clips I can supplement my queries with more network actors and organizations.

<b>Terms searched</b>	<b>Results</b>	<b>Date range</b>
"ken chilton" and "climate change"	0	na
"ken chilton" and "global warming"	1	2007
"tracy miller" and "climate change"	2	2007
"kenneth chilton" and "climate change"	3	1997-2006
"tony lupu" and "global warming"	5	2007-2012
"roger meiners" and "global warming"	6	1996-2012
"tracy miller" and "global warming"	7	2006-2017
"anthony lupu" and "climate change"	9	2009-2018
"anthony lupu" and "global warming"	10	2004-2011
"tony lupu" and "climate change"	10	2006-2011

		4
"kenneth chilton" and "global warming"	10	1991-2008
"roger meiners" and "climate change"	12	1999-2015
"terry anderson" and "climate change"	27	1992-2018
"bruce yandle" and "climate change"	28	1998-2018
"bruce yandle" and "global warming"	32	1996-2018
"terry anderson" and "global warming"	46	1989-2018
"robert balling" and "climate change"	70	1991-2015
"tony lupo"	86	1987-2018
"steve milloy" and "climate change"	116	1999-2018
"robert balling" and "global warming"	122	1990-2015
"steve milloy" and "global warming"	144	1999-2018
"anthony lupo"	218	1986-2018
"patrick michaels" and "climate change"	440	1989-2018
"patrick michaels" and "global warming"	503	1986-2018
"heartland institute" and "global warming"	948	1991-2018
"heartland institute" and "climate change"	1,165	1997-2018

"lupo"	12,955	1970-2018
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After doing the interviews, I would pitch an article based on my findings to the Columbia Journalism Review.

### **Potential questions for the reporters**

The following are questions I would probably ask the reporters I'd interview:

1. How often do you do stories involving climate change?
2. How would you categorize the majority of those stories – science stories, political stories, etc.?
3. Where do you find human sources for your stories on climate change?
4. Where do you find other types of sources, such as documents, for your stories on climate change?
5. Do you take steps to learn more about your sources before you use them?
6. (If the answer to 5 is "yes," then ask this.) What are they?
7. Could you explain your decision to use X actor or Y organization<sup>1</sup> in your story on climate change?
8. Did you have any problems with using those sources?
9. Did anyone influence your decision to use those sources, such as an editor?
10. What role would you say objectivity plays in your reporting on climate change?
11. Do you see more than one side to the story when you are reporting on climate change?

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<sup>1</sup> For example, "Anthony Lupo" or "The Heartland Institute." Whichever names apply.

12. (A follow-up to 14 if the answer is "yes.") What sides do you see?
13. How do you decide on which sides to give voice to in your stories on climate change? Walk me through your thought process.
14. On a scale of 1 to 5, with 1 being "novice" and 5 being "expert," how would you rate your understanding of climate change?
15. What are your personal views on climate change?
16. What are your views on how the scientists who study climate change perceive it?  
(In case this isn't clear, a follow-up: For instance, do you believe there is a consensus among climate scientists that the earth is warming because of humans, or perhaps you believe the scientific community is split.)
17. (Conditional question: ask only if the answer to 16 is an affirmative on the scientific consensus.) How much do you consider the scientific consensus on climate change when you are doing a story on it?

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