

## Science not faked, but not pretty

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This Dec. 10, 2009 photo shows a sign at the University of East Anglia in Norwich, England. E-mails stolen from the computer network server of the climate research unit at the university show climate scientists stonewalled skeptics and discussed hiding data, but the messages don't support claims that the science of global warming was faked, according to an exhaustive review by The Associated Press. The 1,073 e-mails examined by the AP show that scientists harbored private doubts, however slight and fleeting, even as they told the world they were certain about climate change. However, the exchanges don't undercut the vast body of evidence showing the world is warming because of man-made greenhouse gas emissions. (AP Photo/Kirsty Wigglesworth)

(AP) -- E-mails stolen from climate scientists show they stonewalled skeptics and discussed hiding data - but the messages don't support claims that the science of global warming was faked, according to an exhaustive review by The Associated Press.



The 1,073 e-mails examined by the AP show that scientists harbored private doubts, however slight and fleeting, even as they told the world they were certain about <u>climate change</u>. However, the exchanges don't undercut the vast body of evidence showing the world is warming because of man-made <u>greenhouse gas emissions</u>.

The scientists were keenly aware of how their work would be viewed and used, and, just like politicians, went to great pains to shape their message. Sometimes, they sounded more like schoolyard taunts than scientific tenets.

The scientists were so convinced by their own science and so driven by a cause "that unless you're with them, you're against them," said Mark Frankel, director of scientific freedom, responsibility and law at the American Association for the Advancement of Science. He also reviewed the communications.

Frankel saw "no evidence of <u>falsification</u> or fabrication of data, although concerns could be raised about some instances of very 'generous interpretations."

Some e-mails expressed doubts about the quality of individual temperature records or why models and data didn't quite match. Part of this is the normal give-and-take of research, but skeptics challenged how reliable certain data was.

The e-mails were stolen from the computer network server of the climate research unit at the University of East Anglia in southeast England, an influential source of climate science, and were posted online last month. The university shut down the server and contacted the police.

The AP studied all the e-mails for context, with five reporters reading and rereading them - about 1 million words in total.



One of the most disturbing elements suggests an effort to avoid sharing scientific data with critics skeptical of global warming. It is not clear if any data was destroyed; two U.S. researchers denied it.

The e-mails show that several mainstream scientists repeatedly suggested keeping their research materials away from opponents who sought it under American and British public records law. It raises a science ethics question because free access to data is important so others can repeat experiments as part of the scientific method. The <u>University of East Anglia</u> is investigating the blocking of information requests.

"I believe none of us should submit to these 'requests," declared the university's Keith Briffa. The center's chief, Phil Jones, wrote: "Data is covered by all the agreements we sign with people, so I will be hiding behind them."

When one skeptic kept filing FOI requests, Jones, who didn't return AP requests for comment, told another scientist, Michael Mann: "You can delete this attachment if you want. Keep this quiet also, but this is the person who is putting FOI requests for all e-mails Keith (Briffa) and Tim (Osborn) have written."

Mann, a researcher at Penn State University, told The Associated Press: "I didn't delete any e-mails as Phil asked me to. I don't believe anybody else did."

The e-mails also show how professional attacks turned very personal. When former London financial trader Douglas J. Keenan combed through the data used in a 1990 research paper Jones had co-authored, Keenan claimed to have found evidence of fakery by Jones' co-author. Keenan threatened to have the FBI arrest University at Albany scientist Wei-Chyung Wang for fraud. (A university investigation later cleared him of any wrongdoing.)



"I do now wish I'd never sent them the data after their FOIA request!" Jones wrote in June 2007.

In another case after initially balking on releasing data to a skeptic because it was already public, Lawrence Livermore National Lab scientist Ben Santer wrote that he then opted to release everything the skeptic wanted - and more. Santer said in a telephone interview that he and others are inundated by frivolous requests from skeptics that are designed to "tie-up government-funded scientists."

The e-mails also showed a stunning disdain for global warming skeptics.

One scientist practically celebrates the news of the death of one critic, saying, "In an odd way this is cheering news!" Another bemoans that the only way to deal with skeptics is "continuing to publish quality work in quality journals (or calling in a Mafia hit.)" And a third scientist said the next time he sees a certain skeptic at a scientific meeting, "I'll be tempted to beat the crap out of him. Very tempted."

And they compared contrarians to communist-baiting Sen. Joseph McCarthy and Somali pirates. They also called them out-and-out frauds.

Santer, who received death threats after his work on climate change in 1996, said Thursday: "I'm not surprised that things are said in the heat of the moment between professional colleagues. These things are taken out of context."

When the journal, Climate Research, published a skeptical study, Penn State scientist Mann discussed retribution this way: "Perhaps we should encourage our colleagues in the climate research community to no longer submit to, or cite papers in, this journal."

That skeptical study turned out to be partly funded by the American



## Petroleum Institute.

The most provocative e-mails are usually about one aspect of climate science: research from a decade ago that studied how warm or cold it was centuries ago through analysis of tree rings, ice cores and glacial melt. And most of those e-mails, which stretch from 1996 to last month, are from about a handful of scientists in dozens of e-mails.

Still, such research has been a key element in measuring climate change over long periods.

As part of the AP review, summaries of the e-mails that raised issues from the potential manipulation of data to intensely personal attacks were sent to seven experts in research ethics, climate science and science policy.

"This is normal science politics, but on the extreme end, though still within bounds," said Dan Sarewitz, a science policy professor at Arizona State University. "We talk about science as this pure ideal and the scientific method as if it is something out of a cookbook, but research is a social and human activity full of all the failings of society and humans, and this reality gets totally magnified by the high political stakes here."

In the past three weeks since the e-mails were posted, longtime opponents of mainstream climate science have repeatedly quoted excerpts of about a dozen e-mails. Republican congressmen and former vice presidential candidate Sarah Palin have called for either independent investigations, a delay in U.S. Environmental Protection Agency regulation of greenhouse gases or outright boycotts of the Copenhagen international climate talks. They cited a "culture of corruption" that the e-mails appeared to show.

That is not what the AP found. There were signs of trying to present the



data as convincingly as possible.

One e-mail that skeptics have been citing often since the messages were posted online is from Jones. He says: "I've just completed Mike's (Mann) trick of adding in the real temps to each series for the last 20 years (from 1981 onward) and from 1961 for Keith's to hide the decline."

Jones was referring to tree ring data that indicated temperatures after the 1950s weren't as warm as scientists had determined.

The "trick" that Jones said he was borrowing from Mann was to add the real temperatures, not what the tree rings showed. And the decline he talked of hiding was not in real temperatures, but in the tree ring data which was misleading, Mann explained.

Sometimes the data didn't line up as perfectly as scientists wanted.

David Rind told colleagues about inconsistent figures in the work for a giant international report: "As this continuing exchange has clarified, what's in Chapter 6 is inconsistent with what is in Chapter 2 (and Chapter 9 is caught in the middle!). Worse yet, we've managed to make global warming go away! (Maybe it really is that easy...:)."

But in the end, global warming didn't go away, according to the vast body of research over the years.

None of the e-mails flagged by the AP and sent to three climate scientists viewed as moderates in the field changed their view that global warming is man-made and a threat. Nor did it alter their support of the conclusions of the Intergovernmental Panel on Climate Change, which some of the scientists helped write.

"My overall interpretation of the scientific basis for (man-made) global



warming is unaltered by the contents of these e-mails," said Gabriel Vecchi, a National Oceanic and Atmospheric Administration scientist.

Gerald North, a climate scientist at Texas A&M University, headed a National Academy of Sciences study that looked at - and upheld as valid - Mann's earlier studies that found the 1990s were the hottest years in centuries.

"In my opinion the meaning is much more innocent than might be perceived by others taken out of context. Much of this is overblown," North said.

Mann contends he always has been upfront about uncertainties, pointing to the title of his 1999 study: "Northern Hemisphere Temperatures During the Past Millennium: Inferences, Uncertainties and Limitations."

Several scientists found themselves tailoring their figures or retooling their arguments to answer online arguments - even as they claimed not to care what was being posted to the Internet

"I don't read the blogs that regularly," Jonathan Overpeck of the University of Arizona wrote in 2005. "But I guess the skeptics are making hay of their (sic) being a global warm (sic) event around 1450AD."

One person singled out for criticism in the e-mails is Steve McIntyre, who maintains Climate Audit. The blog focuses on statistical issues with scientists' attempts to recreate the climate in ancient times.

"We find that the authors are overreaching in the conclusions that they're trying to draw from the data that they have," McIntyre said in a telephone interview.



McIntyre, 62, of Toronto, was trained in math and economics and says he is "substantially retired" from the mineral exploration industry, which produces greenhouse gases.

Some e-mails said McIntyre's attempts to get original data from scientists are frivolous and meant more for harassment than doing good science. There are allegations that he would distort and misuse data given to him.

McIntyre disagreed with how he is portrayed. "Everything that I've done in this, I've done in good faith," he said.

He also said he has avoided editorializing on the leaked e-mails. "Anything I say," he said, "is liable to be piling on."

The skeptics started the name-calling said Mann, who called McIntyre a "bozo," a "fraud" and a "moron" in various e-mails.

"We're human," Mann said. "We've been under attack unfairly by these people who have been attempting to dismiss us as frauds as liars."

The AP is mentioned several times in the e-mails, usually in reference to a published story. One scientist says his remarks were reported with "a bit of journalistic license" and "I would have rephrased or re-expressed some of what was written if I had seen it before it was released." The archive also includes a request from an AP reporter, one of the writers of this story, for reaction to a study, a standard step for journalists seeking quotes for their stories.

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