

# Understanding the Climategate Inquiries

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## Table of Contents

Glossary .....	3
1. Introduction.....	4
2. UK House of Commons Science and Technology Committee.....	6
2.1 Terms of Reference .....	6
2.2 Composition of Committee .....	6
2.3 Call for Evidence.....	7
2.4 Public Hearings .....	7
2.5 Cross-Examination of CRU staff.....	7
2.6 Findings.....	8
Transparency.....	8
Honesty .....	9
Blocking publication of opposing findings.....	9
Handling of FOIA requests.....	10
2.7 Subsequent stages.....	11
3. Oxburgh Inquiry.....	12
3.1 Terms of Reference .....	12
3.2 Composition of Committee .....	14
3.3 Call for Evidence.....	15
3.4 Public Hearings .....	16
3.5 Cross-Examination of CRU staff.....	16
3.6 Findings.....	16
Paleoclimate findings.....	16
3.7 Reactions to Report .....	17
4. ICCER (Muir Russell Inquiry).....	20
4.1 Terms of Reference .....	20
4.2 Composition of Committee .....	20
4.3 Call for Evidence.....	22
4.4 Public Hearings .....	22
4.5 Cross-Examination of CRU staff.....	23
4.6 Findings.....	23
CRUTEM.....	25
Paleoclimate reconstructions .....	27
Influencing peer review .....	29
Biasing the IPCC report: MM2004.....	29
Biasing the IPCC report: MM2003, 2005.....	30
FOIA responses.....	31
4.7 Reactions to Report .....	32
5. Penn State Inquiry.....	34
5.1 Terms of Reference .....	35
5.2 Composition of Committee .....	36
5.3 Call for Evidence.....	36
5.4 Public Hearings .....	37
5.5 Cross-Examination .....	37
5.6 Findings.....	37
5.7 Reactions to Report .....	41
6. Inter-Academy Council.....	42
6.1 Terms of Reference .....	43

6.2	Composition of Committee .....	44
6.3	Call for Evidence.....	45
6.4	Public Hearings .....	45
6.5	Findings .....	45
	IPCC review process.....	46
	Consideration of full range of evidence.....	46
	Treatment of uncertainty.....	47
	Basis of conclusions .....	47
7.	Conclusions.....	49

## Glossary

AR4	Fourth Assessment Report of the IPCC (2007)
CRU	Climatic Research Unit
CRUTEM	Land-surface temperature series produced by the Climatic Research Unit
FOIA	Freedom of Information Act (UK)
IAC	Inter-Academy Council
IAP	Inter-Academy Panel
ICCER	Independent Climate Change Email Review
IPCC	Intergovernmental Panel on Climate Change
TAR	Third Assessment Report of the IPCC (2001)
UEA	University of East Anglia
WGI	IPCC Working Group I (also II and III)
WMO	World Meteorological Organization

## 1. Introduction

News broke on or around 19 November 2009 that a large archive of emails and files from the Climatic Research Unit (CRU) in the UK had been released on the internet. The contents of the files were sufficiently disconcerting to the public, governments and university administrations that a number of inquiries were established. Several of my research projects were discussed not only in the so-called “Climategate” emails themselves, but also in the investigations, and I made detailed submissions of evidence to three of the panels. Consequently I take considerable interest in the outcome of these inquiries, especially with regards to whether they approached the issues impartially, investigated thoroughly and drew valid conclusions that fully reflected the evidence.

As of 30 August 2010 all five had issued their reports. The overall impression that has been created is that the scientists and their work were vindicated. Intergovernmental Panel on Climate Change (IPCC) Chair Rajendra Pachauri declared in a recent interview<sup>1</sup> “the doubts raised have proved to be unfounded.” Considerable reliance is being placed upon the outcome of these investigations. As I will show, for the most part the inquiries were flawed, but where they actually functioned as proper inquiries, they upheld many criticisms. But a surprising number of issues were sidestepped or handled inadequately. The world still awaits a proper inquiry into climategate: one that is not stacked with global warming advocates, and one that is prepared to cross-examine evidence, interview critics as well as supporters of the CRU and other IPCC players, and follow the evidence where it clearly leads.

Altogether there were five inquiries or investigations, conducted by, respectively, The UK House of Commons Science and Technology Committee, The Oxburgh panel, the Independent Climate Change Emails Review under Sir Muir Russell, Penn State University and the InterAcademy Council. The first three were established in the UK and focused on scientists at the CRU. The fourth was focused on Michael Mann of Penn State University, a major correspondent in the Climategate archive. The fifth was commissioned by the IPCC itself as a review of its policies and procedures.

Many accusations and insinuations began flying around during the uproar after the climategate emails were released. I would distill the main concerns down to the following questions.

1. Did the scientists involved in the email exchanges manipulate, hide, invent or otherwise misrepresent evidence in IPCC or World Meteorological Organization (WMO) reports so as to mislead readers, including policymakers?
2. Did the scientists involved delete emails or other documents related to the IPCC process in order to prevent disclosure of information subject to Freedom of Information laws?
3. Did the scientists involved in the email exchanges express greater doubts or uncertainties about the science in their own professional writings and in their interactions with one another than they allowed to be stated in reports of the IPCC or WMO that were intended for policymakers?

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<sup>1</sup> <http://week.manoramaonline.com/cgi-bin/MMOnline.dll/portal/ep/theWeekContent.do?sectionName=Current+Events&contentId=7842195&programId=1073754900&pageTypeId=1073754893&contentType=EDITORIAL>

4. Did the scientists involved in the email exchanges take steps individually or in collusion to block access to data or methodologies in order to prevent external examination of their work?
5. Did the scientists involved in the email exchanges take steps individually or in collusion to block publication of papers, or to intimidate or discredit journals, in order to prevent rival scientific evidence from being published?

My examination of the Climategate inquiries centers on the extent to which they succeeded in providing credible answers to the above questions. As will be shown, the various inquiries reviewed evidence that leads to an affirmative answer in each case, and in many cases the inquiries themselves report affirmative answers, yet they couched such conclusions in terms that gave the opposite impression. In other cases they simply left the questions unanswered. In some cases they avoided the issues by looking instead at irrelevant questions.

Two further questions follow from these, pointing to issues larger than Climategate itself, which many people have asked in the wake of the inquiries.

6. Is the IPCC a reliable source of information on climate change?
7. Is the science concerning the current concerns about climate change sound?

I will return to these questions in the concluding section to show that the inquiries support a negative answer to the former and are uninformative on the latter.

## 2. UK House of Commons Science and Technology Committee

The UK House of Commons Science and Technology Committee signaled its intention to investigate climategate via a letter to the University of East Anglia (UEA) on 1 December 2009 requesting an explanation regarding:

- what had taken place;
- the steps that had been taken to investigate the allegations and to test the integrity of the data held and used by CRU;
- how CRU justified its commitment to academic transparency; and
- how the Vice-Chancellor proposed to restore confidence in CRU and its handling of data.

The University responded on 10 December 2009, explaining that it had set up an “independent inquiry” headed by Sir Muir Russell to investigate the allegations against CRU. Later, (22 March 2010) the UEA announced a panel to “examine important elements of the published science” of the CRU.

The Committee then decided to proceed with its own inquiry, which was announced on 22 January 2010.

### 2.1 Terms of Reference

The Inquiry set out three main questions.

- What were the implications of the disclosures for the integrity of scientific research?
- Were the terms of reference and scope of the Independent Review announced on 3 December 2009 by UEA adequate?
- How independent were the other two international data sets?

These questions were odd in the context of the controversies then raging. The Inquiry effectively avoided the five main questions, and appeared to take the view that the UEA-initiated inquiries would henceforth have the primary responsibility to do the investigations. The first question is overly general and exceeded the ability of the committee to answer. The third question focused undue attention on the CRUTEM data set. Most of the climategate emails were focused, not on the modern CRU temperature record (called CRUTEM) but on the CRU paleoclimate work. This focus on CRUTEM to the neglect of the paleoclimate issues presaged similar steps by Muir Russell.

### 2.2 Composition of Committee

The Committee consisted of 14 Members of Parliament (8 Labour, 3 Conservative, 2 Liberal Democrat and 1 Independent). All 3 main UK parties are committed by policy to affirmation of anthropogenic global warming as a major threat, and to investment in renewable energy and imposition of anti-CO<sub>2</sub> emission regulations as remedies.

## 2.3 Call for Evidence

The Inquiry put forth its three questions on 22 January 2010 via a press release and creation of a web site,<sup>2</sup> inviting submissions of evidence from the public. The Inquiry clarified its terms of reference on 1 February 2010 by stating that they were not conducting an inquiry into global warming itself. The deadline for submission of evidence was set at 10 February 2010: 2½ weeks after the announcement of the inquiry itself.

The Inquiry received 58 submissions, all of which were published on the Internet and in a subsequent report (Report p. 9).

## 2.4 Public Hearings

The Inquiry held only one session for receiving oral evidence, on 1 March 2010. They invited 5 panels of witnesses.

1. Rt Hon Lord Lawson of Blaby, Chairman, and Dr Benny Peiser, Director, Global Warming Policy Foundation;
2. Richard Thomas CBE, former Information Commissioner;
3. Professor Edward Acton, Vice-Chancellor, UEA and Professor Phil Jones, Director of CRU;
4. Sir Muir Russell, Head of the Independent Climate Change E-Mails Review; and
5. Professor John Beddington, Government Chief Scientific Adviser, Professor Julia Slingo OBE, Chief Scientist, Met Office, and Professor Bob Watson, Chief Scientist, Department for Environment, Food and Rural Affairs.

(Report p. 9)

The first panel was the only one containing critics of the CRU, but neither of the panelists were themselves experts on the issues under examination. The second panel presenter was focused on the handling of Freedom of Information Act (FOIA) requests by the UEA. The third panel consisted of UEA and CRU staff, and the fifth panel consisted of government scientists who were all on record as being strongly supportive of the CRU and dismissive of the allegations. Julia Slingo, for instance had organized a petition in December to rally support for the CRU (<http://www.metoffice.gov.uk/climatechange/news/latest/uk-science-statement.html>) based on the assertion that they acted with the “utmost integrity.” The remaining panelist, Sir Muir Russell, was there to explain how his Inquiry would proceed.

## 2.5 Cross-Examination of CRU staff

Phil Jones was interviewed by the Committee in their one public hearing session. Most other witnesses were on his side. The only CRU critics present were not experts in the subject matter and were not in a position to offer opposing evidence.

One committee member, Graham Stringer, focused on the refusal to share data and grilled Jones about it.

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<sup>2</sup> Now archived as <http://www.parliament.uk/business/committees/committees-a-z/commons-select/science-and-technology-committee/inquiries/former-inquiries/uea/>

## 2.6 Findings

The report was published on March 24. It distilled the allegations against the CRU into two main concerns:

- transparency: that CRU failed to abide by best scientific practice by refusing to share its raw data and detailed methods
- honesty: that CRU has deliberately misrepresented the data, in order to produce results that fit its preconceived views about the anthropogenic warming of the climate.

(Report pp. 11-12).

Unfortunately the Inquiry had not received a detailed summary of the evidence against CRU during its investigation process, and it accepted the excuses supplied by CRU staff at face value.

### Transparency

The Committee looked at the refusal of Phil Jones to release his raw station data, famously expressed in the email to Warwick Hughes stating “Why should I make the data available to you, when your aim is to find something wrong with it?” They agreed that this appeared, on the face of it, to be “an unreasonable response to a reasonable request.”

They then went over, in some detail, Jones’ responses to this point. Jones asserted the following:

- a) Almost all the raw data are available on the GHCN web site and the CRU has released its list of stations, so anyone is free to examine the data.
- b) The rest of the raw data are covered by legal agreements with suppliers (national met agencies) who do not want them published.
- c) All the adjustment methodologies have been disclosed in reports and peer-reviewed publications.
- d) The raw data are not useful to most researchers anyway, instead they want the processed data after corrections have been applied for station inhomogeneities.
- e) The program used by the Met Office to produce the global average temperature had been available since December 2009, and it produced the same result as the CRUTEM algorithm.
- f) The other groups that produce global temperature products all work independently and yet get similar answers, indicating that their results are valid.

They also heard an assertion by John Beddington (Government Chief Scientist) that the satellite data from the University of Alabama and Remote Sensing Systems show a global result so similar to CRU’s surface data that it makes the theory of human-induced change “unchallengable.” (Report pp. 12—18).

These statements were not subsequently cross-examined.

The Committee’s conclusion was that Jones’ refusal to share data was “bound to be viewed with suspicion” and that climate scientists should take steps to make all their data and code available. But they concluded that CRU’s work is likely valid since it has been replicated independently by other groups.

Had the above information been cross-examined against the evidence received, the following points might have emerged. (“Ev” refers to the volume of evidence published after the report came out.)



- a) While the GHCN archive is public, it contains over 8,000 series, whereas CRU only uses about 2,000 series. They have not identified the specific subset they use and consequently the independence of the series cannot be established (Ev 142, 151-152).
- b) FOIA requests were submitted to inspect these confidentiality agreements (Ev 151). FOIA regulations require that agencies only acquire confidential information if it is critical to their mission. FOIA requests have been submitted to CRU to disclose evidence they used to support their decision to rely on confidential temperature data. Thus far CRU has not produced any such evidence (Ev 151-152).
- c) The adjustment methodologies were disclosed only for data obtained up to the early 1980s. The controversies cover data in the subsequent decades. The publications from the CRU cited by Jones do not explain the adjustments and they are not documented anywhere else (Ev. 141-142).
- d) The issue is transparency. Without the raw data it is impossible to tell what CRU has done to the underlying records, and the emails reveal CRU scientists actively withholding such information (Ev 149).
- e) The program used by the Met Office to produce the global average temperature was only made available in December 2009—*after* the climategate controversy broke.
- f) Since the surface data sets are not independent they cannot validate each other (Ev 103, 141). The CRU itself warns that the underlying data are contaminated with biases due to urbanization and other effects, so the starting premise has to be that the various data bases share common flaws (Ev 141). Satellite systems do not show the same amount of warming as the CRU ground-based system and the divergence has been growing over time (Ev. 103-104). Even the Met Office's evidence submission showed the magnitude of the divergence (Ev 56).

## Honesty

The Committee looked at Jones' "hide the decline" email as the main exemplar of dishonesty:

I've just completed Mike's Nature trick of adding in the real temps to each series for the last 20 years (ie from 1981 onwards) and [*sic*] from 1961 for Keith's to hide the decline.

They heard from Jones that he was not trying to hide anything because he had discussed the divergence between proxies and observations in journal articles. On this basis the Committee strongly rejected any allegation of dishonesty:

That he has published papers—including a paper in *Nature*—dealing with this aspect of the science clearly refutes this allegation. In our view, it was shorthand for the practice of discarding data known to be erroneous. (Report, 21)

However the evidence in the email itself and as submitted to the Committee (Ev 147-148) makes clear that the purpose of the "trick" was not to manipulate data in a *journal article*, but in WMO and IPCC reports for policy makers. It is astonishing that a House of Commons Inquiry would excuse a misleading presentation of data in a report to policymakers on the grounds that the scientist had acknowledged the flaws in the data in a separate article for his academic peers. The fact that Jones had acknowledged the divergence in journal articles makes it *worse* that he hid the decline in official reports, as it proves that the deception was not inadvertent.

## Blocking publication of opposing findings

The Committee looked into the question of whether CRU scientists had acted to keep opposing views out of print and out of the IPCC report. They specifically focused on the Jones email

The other paper by MM is just garbage - as you knew. De Freitas again. Pielke is also losing all credibility as well by replying to the mad Finn as well - frequently as I see it. I can't see either of these papers being in the next IPCC report. Kevin and I will keep Them out somehow - even if we have to redefine what the peer-review literature is !

Jones's defence was that the papers in question were already in print, but he did not think they were very good. The Inquiry concluded that "the evidence we have seen does not suggest Professor Jones was trying to subvert the peer review process" but that the Muir Russell inquiry needed to look at the matter more closely.

Had they critically examined the evidence they would have seen that Jones' response was a misdirection. The issue was not whether the papers were published in journals but whether they were discussed in the IPCC report. They were omitted from the drafts shown to reviewers, and then false information was published in the IPCC report concerning the findings (Ev 142-144).

### Handling of FOIA requests

The Inquiry examined whether the CRU made adequate efforts to deal properly with the requests for its data and the confidentiality agreements made under FOIA regulations. The UEA had claimed that these requests amounted to a flood and the CRU staff were unable to deal with the volume, hence the apparent attitude of obstruction. The Inquiry received oral testimony and written evidence contradicting this claim, and in this case the inquiry rejected the UEA position outright.

On the evidence we took we have concerns about the handling of FOIA requests by CRU. First, the disclosed e-mails betray an attitude to freedom of information that was antipathetic to the spirit of disclosure in the legislation ... Whether or not CRU liked it, those making FOIA requests were entitled to have their requests dealt with in accordance with the legislation and, if the information sought did not fall within one of the exclusions provided by the FOIA, it should have been disclosed. **We have already recommended in paragraph 54 above that in future information, including data and methodology, should be published proactively on the internet wherever possible. However, a culture of withholding information—from those perceived by CRU to be hostile to global warming—appears to have pervaded CRU's approach to FOIA requests from the outset. We consider this to be unacceptable. ...** In the face of such an unhelpful approach we are not surprised that FOIA requests multiplied.

(Report 34).

Many important issues were left unresolved by the Select Committee, who expressed their hope that the Oxburgh and Russell inquiries would settle them. For instance, the "hide the decline" issue was referred to the Oxburgh Inquiry (page 48, para. 8). The Report also asked Muir Russell to settle the question of whether Jones had deleted emails that were subject to a FOIA request (p. 48):

There is *prima facie* evidence that CRU has breached the Freedom of Information Act 2000. It would, however, be premature, without a thorough investigation affording each party the opportunity to make representations, to conclude that UEA was in breach of the Act. In our view,

it is unsatisfactory to leave the matter unresolved simply because of the operation of the six-month time limit on the initiation of prosecutions. Much of the reputation of CRU hangs on the issue. We conclude that the matter needs to be resolved conclusively—either by the Independent Climate Change Email Review or by the Information Commissioner. (Paragraph 93)

## **2.7 Subsequent stages**

The Inquiry was cut short due to an election call in the UK. On Wednesday 24 March 2010 5 of the 14 Committee members met to finalize the report. Numerous motions were made by MP Graham Stringer to soften the support for CRU and toughen the wording of conclusions about their wrongdoing, but they were defeated 3 to 1 each time. (Report 52-54).

The Committee reconvened in September 2010 to put further questions to Muir Russell and Lord Oxburgh.

### 3. Oxburgh Inquiry

The University of East Anglia asked Ronald (Lord) Oxburgh to lead an independent team to investigate the science work at the CRU. The University announced its intention to form the panel on 11 February 2010 as follows.<sup>3</sup>

**An independent external reappraisal of the science in the Climatic Research Unit's (CRU) key publications has been announced by the University of East Anglia.**

The Royal Society will assist the University in identifying assessors with the requisite expertise, standing and independence.

“Published papers from CRU have gone through the rigorous and intensive peer review process which is the keystone for maintaining the integrity of scientific research,” said Professor Trevor Davies, the University’s Pro-Vice-Chancellor for Research, Enterprise and Engagement. “That process and the findings of our researchers have been the subject of significant debate in recent months. Colleagues in CRU have strenuously defended their conduct and the published work and we believe it is in the interests of all concerned that there should be an additional assessment considering the science itself.”

The University put considerable prominence on the role of the Royal Society in the inquiry panel. On 22 March 2010 the University announced that the panel would be led by Lord Oxburgh, and once again emphasized that it would be an independent assessment of the science produced at the CRU.

Lord Oxburgh FRS, a former chair of the Lords Select Committee on Science and Technology, is to chair an independent Scientific Assessment Panel to examine important elements of the published science of the Climatic Research Unit (CRU) at the University of East Anglia.

His appointment has been made on the recommendation of the Royal Society, which has also been consulted on the choice of the six distinguished scientists who have been invited to be members of the panel.

(<http://www.uea.ac.uk/mac/comm/media/press/CRUstatements/SAPannounce>)

#### 3.1 Terms of Reference

No terms of reference were published. However the UEA announcements on February 11 and March 22 had, naturally, created the impression that Oxburgh would conduct an assessment of CRU science. When his report came out and it was clear he had not produced such an assessment, there was some confusion. Stephen McIntyre emailed Oxburgh in June 2010 requesting any documents that set out the terms of the inquiry. Oxburgh replied:

I am afraid that I am not able to be very helpful as none of the documents about which you inquire exists...the terms of reference were given to me verbally and are encapsulated in the introductory paragraphs of our report.

(<http://climateaudit.org/2010/06/04/oxburgh-refuses-to-answer/>)

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<sup>3</sup><http://www.uea.ac.uk/mac/comm/media/press/CRUstatements/New+scientific+assessment+of+climatic+research+publications+announced>

The introduction to the report states:<sup>4</sup>

The Panel was not concerned with the question of whether the conclusions of the published research were correct. Rather it was asked to come to a view on the integrity of the Unit's research and whether as far as could be determined the conclusions represented an honest and scientifically justified interpretation of the data.

In his email of 3 June 2010 to Stephen McIntyre, Oxburgh elaborated:

The important point to emphasise is that we were assessing people and their motivations. We were not assessing the wisdom of their judgement or the validity of their conclusions.

The final confirmation that Oxburgh had never intended to provide a reappraisal of CRU science came in an email to Stephen McIntyre on 1 July 2010, in response to a request by McIntyre that he address reports that Phil Jones had admitted to the Inquiry that paleoclimate reconstructions likely could not be done with any accuracy. Oxburgh declined to comment, saying:

What you report may or may not be the case. But as I have pointed out to you previously the science was not the subject of our study.

<http://climateaudit.org/2010/07/01/oxburgh-and-the-jones-admission/>

The UEA had not only issued announcements on February 11 and March 22 (quoted above) promising an independent reassessment of the scientific work done by the CRU, but its Vice-Chancellor, Edward Action, had made this claim in a submission to the House of Commons Committee (House of Commons Report p. 7) and in his 1 March 2010 oral testimony.

Muir Russell's independent review is not looking at the science, it is looking at allegations about malpractice. As for the science itself, I have not actually seen any evidence of any flaw in the science but I am hoping, later this week, to announce the chair of a panel to reassess the science and make sure there is nothing wrong.

(House of Commons report Ev 31)

Yet at some point during this interval, UEA officials had met with Oxburgh at his home and agreed to a different, and much narrower, remit. This emerged during testimony given by Oxburgh to a follow-up meeting of the House Science and Technology Committee on 8 September 2010.<sup>5</sup>

*Question* – [The] UEA press notice did so [sic] it would be an independent and external reappraisal of the science. Now you're clear that you didn't see it that way. Can we just why to get to the bottom as to why there's a slight difference between what the press release said and what you're saying?

*Oxburgh* – I can't comment on other people saying things. Let me tell you. I was visited in Cambridge by the Deputy [Vice-Chancellor] and a senior member of the university who wanted to persuade me to take this on. This had to be done rapidly. They really wanted it within a month. There would be no way that panel could validate the science. If you wanted to validate the science, you would have a different panel. You wouldn't appoint me as chairman. You'd appoint

<sup>4</sup> <http://www.uea.ac.uk/mac/comm/media/press/CRUstatements/SAP>

<sup>5</sup> <http://climateaudit.org/2010/09/09/new-light-on-actons-trick/>

experts from the field. It's a very different activity. I was quite clear that what we took on was to look at the integrity of the researchers.

Hence, despite several claims by the UEA that Oxburgh would provide an independent scientific reappraisal of the work done by the CRU, they had not agreed to such terms and Oxburgh was proceeding with the different remit of looking at the integrity of the scientists—the same assignment Acton said Muir Russell had taken on. Oxburgh also stated that the announcement by the UEA about him providing an “independent external reappraisal of the science” was “inaccurate.”<sup>6</sup>

### 3.2 Composition of Committee

The Committee was chaired by Lord Oxburgh. In addition to being a Fellow of the Royal Society, Oxburgh is CEO of the Carbon Capture and Storage Association and Chairman of Falck Renewable Resources, both companies with strong vested interests in promoting climate policy. He is also UK Vice-Chair of GLOBE International, an industry-NGO-government consortium that lobbies for global warming policy.

There were six other panelists.

Kerry Emanuel of MIT was a coauthor with Michael Mann, who was one of the scientists most implicated in the climategate emails and a friend and coauthor with Phil Jones.

Lisa Graumlich of the University of Arizona is a colleague and coauthor with Malcolm Hughes, another climategate email author. Some of her previous work was published in a book edited by Phil Jones.

The remaining panelists were not known to have connections or sympathies to CRU scientists.

The Inquiry itself failed to establish a credible degree of independence from the UEA. The letterhead used by Oxburgh bore a crest indicating his correspondence was to be handled by a UEA staff member:



Lisa Williams is a staff member in the UEA Vice-Chancellor's Office.

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<sup>6</sup> <http://www.guardian.co.uk/environment/2010/sep/08/uea-emails-inquiry-science>.

In addition, the first appearance of the list of papers sent to the committee for examination was in an email (obtained by UK blogger Andrew Montford under FOI request) from UEA Vice Chancellor Trevor Davies to UK Chief Scientist John Beddington.<sup>7</sup> In other words the list of papers to be examined was prepared by the UEA, not the panel. Moreover, prior to Oxburgh sending the list to the panel members, it was vetted by Phil Jones himself (<http://bishophill.squarespace.com/blog/2010/7/18/more-on-oxburghs-eleven.html>).

Hence there was no procedural or administrative independence between the University of East Anglia and the Oxburgh inquiry.

### 3.3 Call for Evidence

The Committee did not issue a call for evidence. They claimed that the 11 papers they selected for examination were chosen because they “cover a period of more than twenty years and were selected on the advice of the Royal Society.” (Report paragraph 3). UK blogger Andrew Montford inquired who at the Royal Society advised on the selection. In response, the Royal Society would only state that they recommended the Committee have access to “any and all papers” they needed, but would not confirm the claim that they had selected the 11 papers specifically.<sup>8</sup> It later emerged that the Royal Society did not provide any meaningful advice on the selection of papers. The actual chronology of their selection was unearthed through FOIA requests.

On 12 March 2010, UEA Vice-Chancellor Trevor Davies contacted Martin Rees of the Royal Society and Brian Hoskins (FRS) of the Hadley Centre to ask if they could say the list had been selected on the advice of the Royal Society.

Ron [Oxburgh]... is keen that we can say that it was constructed in consultation with the Royal Society. I did send you this list earlier, which I attach again here.[List obtained] They represent the core body of CRU work around which most of the assertions have been flying. They are also the publications which featured heavily in our submission to the Parliamentary Inquiry, and in our answers to the Muir Russell Review’s questions.

I would be very grateful if you would be prepared to allow us to use a form of words along the lines: “the publications were chosen in consultation with The Royal Society”.

Seven minutes later Martin Rees replied:

Dear Trevor,

It seems to me that the scope of the panel’s work is a matter primarily for Ron [Oxburgh], but if Brian [Hoskins] is also happy with this choice of papers (as you know, I have no relevant expertise myself!) I see no problem with saying that the list was drawn up in consultation.

best wishes

Martin

Thirteen minutes later Brian Hoskins replied:

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<sup>7</sup> See <http://climateaudit.org/2010/09/09/who-made-the-list/>.

<sup>8</sup> <http://bishophill.squarespace.com/blog/2010/4/16/actons-eleven-the-response.html>

Dear Trevor

I am not aware of all the papers that could be included in the list, but I do think that these papers do cover the issues of major concern.

Best wishes

Brian

(text of emails posted at <http://climateaudit.org/2010/06/10/british-due-diligence-royal-society-style/>)

That is the extent of the consultation behind the claim of the Inquiry that the papers were selected “on the advice of the Royal Society.” It is more accurate to say that the list of papers to be studied by the “independent” inquiry was drawn up by the UEA itself, and within about 20 minutes was rubber-stamped by two members of the Royal Society, both of whom cautioned that they did not have the proper expertise to do so. At no time was the list subject to any extensive examination by members of the Royal Society itself.

As for the 11 papers themselves, they were never ones that have been controversial (see <http://climateaudit.org/2010/04/15/a-fair-sample/>). The list also omitted the paleoclimate papers that had been subject to controversy, such as the Tornetrask and Yamal papers by Keith Briffa, and all the ‘hockey stick’-related paleoclimate papers from CRU. By focusing only on journal articles, the Oxburgh panel avoided the key question of whether CRU staff had suppressed uncertainties in WMO and IPCC Reports.

### **3.4 Public Hearings**

The Inquiry held no public hearings.

### **3.5 Cross-Examination of CRU staff**

The Inquiry held closed interviews with CRU staff. No notes were taken. No meetings with critics of the CRU were held.

### **3.6 Findings**

The Report was released on 14 April 2010, just over 3 weeks after the announcement of the formation of the panel. The process of evidence-gathering and report-writing thus took about twenty three days from start to finish.

The report itself is a brief 5-page document, It looks at the paleoclimate reconstruction work and the CRUTEM analysis. Under each heading the report offers brief and largely subjective judgments to the effect that while they do not necessarily think the CRU work was scientifically strong, they found no evidence of wrongdoing.

#### **Paleoclimate findings**

- a) “In the CRU papers that we examined we did not come across any inappropriate usage [of statistical methods] although the methods they used may not have been the best for the purpose.” (p. 2).



- b) “The potential for misleading results arising from selection bias is very great in this area. It is regrettable that so few professional statisticians have been involved in this work because it is fundamentally statistical. Under such circumstances there must be an obligation on researchers to document the judgemental decisions they have made so that the work can in principle be replicated by others... CRU accepts with hindsight that they should have devoted more attention in the past to archiving data and algorithms and recording exactly what they did.” (p. 3).
- c) “Recent public discussion of climate change and summaries and popularizations of the work of CRU and others often contain oversimplifications that omit serious discussion of uncertainties emphasized by the original authors. For example, CRU publications repeatedly emphasize the discrepancy between instrumental and tree-based proxy reconstructions of temperature during the late 20th century, but presentations of this work by the IPCC and others have sometimes neglected to highlight this issue. (p. 5).
- d) “After reading publications and interviewing the senior staff of CRU in depth, we are satisfied that the CRU tree-ring work has been carried out with integrity, and that allegations of deliberate misrepresentation and unjustified selection of data are not valid. In the event CRU scientists were able to give convincing answers to our detailed questions about data choice, data handling and statistical methodology.” (p. 3)

Had there been any attempt to cross-examine the CRU answers, they might have noted the following.

- a) The CRU papers they examined were not the ones that had been controversial as regards inappropriate methods, etc., and the list of papers appears to have originated with UEA itself, in consultation with the CRU but not its critics.
- b) The failure to archive and disclose data and methods is a common finding of all the CRU inquiries.
- c) There can be no distinction between the conduct of CRU scientists and the contents of IPCC reports: Phil Jones was Coordinating Lead Author of IPCC chapter 3 (surface temperatures), and Keith Briffa was Coordinating Lead Author of IPCC chapter 6 (paleoclimate). To the extent the IPCC Report contained oversimplifications and neglected to explain important uncertainties, the fault lies directly with CRU scientists themselves. By drawing an artificial distinction between CRU and IPCC in this matter, the Oxburgh panel (like the House of Commons Inquiry) apparently excused misleading presentations in reports to policymakers in cases where the scientists could show they disclosed the discrepancies and uncertainties somewhere else.
- d) The CRU answers might have been “convincing,” but they were not subject to examination by CRU critics. In the absence of any attempt to solicit counter-arguments the Oxburgh team’s acceptance of the CRU answers carries no weight.

Despite the request from the House of Commons the report did not address the “hide the decline” issue.

### 3.7 Reactions to Report

The responses to the Oxburgh inquiry have been quite critical. Climate scientist Judith Curry of Georgia Tech commented:

When I first read the report, I thought I was reading the executive summary and proceeded to look for the details; well, there weren’t any... I was concerned that the report explicitly did not address the key issues that had been raised by the skeptics.

MP Graham Stringer of the House of Commons Inquiry was quoted in an article in the UK Register as follows.

Stringer told us... that MPs had been misled by the University of East Anglia ...MPs believed that Anglia had entrusted an examination of the science to a separate inquiry...Ron Oxburgh's inquiry eventually produced a short report clearing the participants. He did not reassess the science, and now says it was never in his remit. "The science was not the subject of our study," he confirmed in an email to Steve McIntyre of Climate Audit.... "The Oxburgh Report looks much more like a whitewash," Graham Stringer told us.

Commons Inquiry chair Phil Willis was quoted in the same article as follows:

The former chair of the Science and Technology Committee, Phil Willis, now Lord Willis, said MPs had been amazed at the "sleight of hand". "Oxburgh didn't go as far as I expected."  
[http://www.theregister.co.uk/2010/07/09/stringer\\_on\\_russell/](http://www.theregister.co.uk/2010/07/09/stringer_on_russell/)

The notes of Panelist Michael Kelly (Professor of Physics) were among documents eventually obtained through FOIA requests. They indicate that he was far more critical in private than the text of the report conveyed.

(See <http://climateaudit.org/2010/06/22/kellys-comments/>)

*Up to and throughout this exercise, I have remained puzzled how the real humility of the scientists in this area, as evident in their papers, including all these here, and the talks I have heard them give, is morphed into statements of confidence at the 95% level for public consumption through the IPCC process. This does not happen in other subjects of equal importance to humanity, e.g. energy futures or environmental degradation or resource depletion. I can only think it is the 'authority' appropriated by the IPCC itself that is the root cause.*

*Our review takes place in a very febrile atmosphere. If we give a clean bill of health to what we regard as sound science without qualifying that very narrowly, we will be on the receiving end of justifiable criticism for exonerating what many people see as indefensible behaviour. Three of the five MIT scientists who commented in the week before Copenhagen on the leaked emails, (see <http://mitworld.mit.edu/video/730>) thought that they saw prima facie evidence of unprofessional activity.*

*(i) I take real exception to having simulation runs described as experiments (without at least the qualification of 'computer' experiments). It does a disservice to centuries of real experimentation and allows simulations output to be considered as real data. This last is a very serious matter, as it can lead to the idea that real 'real data' might be wrong simply because it disagrees with the models! That is turning centuries of science on its head.*

*(ii) I think it is easy to see how peer review within tight networks can allow new orthodoxies to appear and get established that would not happen if papers were written for and peer reviewed by a wider audience. I have seen it happen elsewhere. This finding may indeed be an important outcome of the present review.*

*My overriding impression that this is a continuing and valiant attempt via a variety of statistical methods to find possible signals in very noisy and patchy data when several confounding factors may be at play in varying ways throughout the data. It would take an expert in statistics to comment on the appropriateness of the various techniques as they are used. The descriptions are*

*couched within an internal language of dendrochronology, and require some patience to try and understand.*

*I find no evidence of blatant mal-practice. That is not to say that, working within the current paradigm, choices of data and analysis approach might be made in order to strain to get more out of the data than a dispassionate analysis might permit.*

*The line between positive conclusions and the null hypothesis is very fine in my book.*

*I worry about the sheer range and the ad hoc/subjective nature of all the adjustments, homogenisations etc of the raw data from different places.*

Lord Oxburgh was called before the UK House of Commons Select Committee on 8 September 2010 at which he was grilled about the superficiality of his report and about the fact that he did not conduct the kind of review of the science as the MPs had been led to believe he would.

## 4. ICCER (Muir Russell Inquiry)

The Independent Climate Change Email Review (ICCER), chaired by Sir Muir Russell, was announced on 11 February 2010.

### 4.1 Terms of Reference

(<http://www.cce-review.org/About.php>)

1. Examine the hacked e-mail exchanges, other relevant e-mail exchanges and any other information held at the Climatic Research Unit to determine whether there is any evidence of manipulation or suppression of data which is at odds with acceptable scientific practice and may therefore call into question any of the research outcomes.
2. Review the Climatic Research Unit's policies and practices for acquiring, assembling, subjecting to peer review and disseminating data and research findings, and their compliance or otherwise with best scientific practice.
3. Review the Climatic Research Unit's compliance or otherwise with the University of East Anglia's policies and practices regarding requests under the Freedom of Information Act ('the FOIA') and the Environmental Information Regulations ('the EIR') for the release of data.
4. Review and make recommendations as to the appropriate management, governance and security structures for the Climatic Research Unit and the security, integrity and release of the data it holds.

It is noteworthy that the ICCER was not asked to examine the science produced by the CRU.

### 4.2 Composition of Committee

The precedent set by the Oxburgh Inquiry, of open disregard for the appearance of conflict of interest, was followed by Russell's Committee. Committee members included Sir Geoffrey Boulton (University of Edinburgh), Prof. Peter Clarke (University of Edinburgh), Mr. David Eyton (British Petroleum) and Prof. Jim Norton (Independent Director, visiting professor at Sheffield). Initially the panel also included Dr. Philip Campbell (editor, Nature) but he resigned when it was revealed on a UK weblog (<http://bishophill.squarespace.com/>) that he had given an interview on a Chinese radio station in which he dismissed the allegations out of hand:

It's true that it comes at a bad time but it is not true that it is a scandal. The scientists have not hidden the data. If you look at the emails there is one or two bits of language that are jargon used between professionals that suggest something to outsiders that is wrong. In fact the only problem there has been is some official restriction on their ability to disseminate their data. Otherwise they have behaved as researchers should.

(<http://bishophill.squarespace.com/blog/2010/2/11/russell-review-under-way.html>)

Another panelist, Geoffrey Boulton, then became a focus of controversy for several reasons.

- He was a signatory to a petition circulated by the UK Met Office in December (<http://www.metoffice.gov.uk/climatechange/news/latest/uk-science-statement.html>). The petitioners declare “the utmost confidence in the observational evidence for global warming and the scientific basis for concluding that it is due primarily to human activities,” they assert their belief that the scientists who have done the research “adhere to the highest levels of professional integrity” and that the material in question “has been subject to peer review and publication, providing traceability of the evidence and support for the scientific method.” Yet these were precisely the points under investigation: whether the observational evidence has been compromised, whether key scientists have acted with less than the utmost integrity, whether the peer review process has been obstructed and whether evidence actually is traceable. By signing the petition Dr. Boulton had advocated for conclusions that are supposed to be under review.
- The Inquiry claimed that none of its members had any links to the CRU (<http://www.cce-review.org/about.php>). Dr. Boulton’s CV indicates that he was employed at the University of East Anglia in the School of Environmental Sciences from 1968 until 1986, a fact not revealed on the Inquiry website. It stretches credibility to claim that he could have been at the UEA, in the Environmental Sciences area, for 18 years, without interaction with the CRU. At the very least his long employment at the UEA created the appearance of a lack of independence.
- The Inquiry emphasized that its members were not from the climate change field. At a press conference in mid-February Professor Boulton stated [sic] “I am not involved in recent and the issues of recent and current climate nor am I part of that community.” He was described on the Inquiry web site as having expertise “in fields related to climate change and is therefore aware of the scientific approach, though not in the climate change field itself.” Yet his CV, which his university distributed to Xiamen University (<http://spa.xmu.edu.cn/edit/UploadFile/2007101883249846.doc>), states “His research is in the field of climatic and environmental change and energy, and is an advisor to the UK Government and European Commission on climate change. He leads the Global Change Research Group in the University of Edinburgh, the largest major research group in the University’s School of Geosciences.” In a 2005 address to the Royal Academy of Engineering, Dr. Boulton said of himself “I am also still a practicing scientist, working on issues such as climate change and nuclear waste disposal...” ([http://www.raeng.org.uk/news/publications/list/reports/Ethics\\_transcripts.pdf](http://www.raeng.org.uk/news/publications/list/reports/Ethics_transcripts.pdf)). In a January 2008 speech to the Glasgow Centre for Population Health ([http://www.gcph.co.uk/component/option,com\\_docman/task,doc\\_download/gid,385/](http://www.gcph.co.uk/component/option,com_docman/task,doc_download/gid,385/)) he was introduced with the following comments:

He also heads up the Global Change Research Group which is hosted in Edinburgh and he has just told Carol and I that he has recently arrived back from China where he has been having discussions there with governmental and NGO representatives around global climate change and the role that China and it’s industrialisation will be playing in that.

He did not gainsay that description, and the talk he gave was a detailed presentation on the subject of climate change. In a speech to the Royal Society of Edinburgh in February 2008 he was reported (<http://www.ma.hw.ac.uk/RSE/events/reports/2007-2008/ecrr.pdf>) as having focused on climate change, saying “I believe that we can currently say that the probability of severe climate change with massive impacts is uncomfortably high.” In a contribution to a report from the David Hume Institute in October 2008 (<http://tinyurl.com/yjok56a>) Professor Boulton wrote a fictional retrospective from 2050 on the subject of climate change, elaborating a pessimistic scenario in which extreme damages from greenhouse gas emissions played out around the world. In other cases his detailed public presentations on climate change frequently focused on extreme risks and high-end warming scenarios, and he publicly represented himself as an expert in the field of climate change. Thus it

strains credibility for the Inquiry to have maintained that Professor Boulton is not “in the field of climate change itself” and for Professor Boulton to say that he is not involved in these issues.

Despite pressure on the panel as these things came to light, Boulton refused to resign and Russell did not ask him to. Thus two of the five panelists brought onto the ICCER had openly pre-judged the issue, and the one who stayed on was found to hold strong public views on global warming.

A third panelist, Mr. David Eyton, is Vice President of British Petroleum. The Review occurred at the same time as the Gulf of Mexico Deepwater Horizon oil spill disaster. Eyton was formerly Vice President of Deepwater Gulf of Mexico drilling (according to his bio on <http://www.cce-review.org/Biogs.php>). It is reasonable to surmise that he was only able to give limited attention to the matters under review.

### 4.3 Call for Evidence

The inquiry established a website (<http://www.cce-review.org/index.php>) and on 11 February 2010 invited submissions from interested members of the public, with a deadline for submission of 1 March 2010.

### 4.4 Public Hearings

No public hearings were held. The Review team described their method of investigation as follows (p. 23):

The team proceeded to investigate the allegations by interviewing members of CRU and others from the University. We considered that the nature of our inquiry was such that holding public hearings to gather evidence, as some had urged, would be unlikely to add significant value over and above the written record. Nor have we produced transcripts of the interviews. This is because our conclusions are founded on information given in submissions and at interviews relating to facts that can be checked and referenced, rather than on interview testimony as such. The team found that this process helped it follow up key points, leading to supplementary submissions and references.

The team did not carry out interviews other than with CRU and other UEA staff (apart from preliminary discussions with [the Information Commissioner’s Office] and the police and interviews with two relevant IPCC Review Editors). We recognise that natural justice requires that those in respect of whom findings will be made should have an opportunity to be heard: this does not apply to the authors of submissions and other parties, in respect of whom the Review has made no findings.

(p. 23)

The claim that public hearings “would be unlikely to add significant value” is prejudicial, since it implies that critics of the CRU, were they to be invited, would not be able to provide useful information beyond what was in their submissions. Yet the Inquiry assumed that CRU staff would be able to provide useful information over and above their submissions. For example, the Review assumed that critics would not be able to provide any information that would help assess the validity of the CRU submissions, or their answers to inquiries.

The claim that there was no need to produce interview transcripts because the Review's conclusions were to be based on information that can be checked and referenced contradicts the purpose of the interviews. The statement could only be true if they received no information during interviews that contributed to the Review's conclusions.

Finally the claim that they made no findings in respect of those making submissions ignores the fact that to the extent they dismissed allegations, they did make findings against those who had made the allegations.

#### **4.5 Cross-Examination of CRU staff**

A note in the Review panel minutes of 25 February 2010 stated: JN [Jim Norton] and PC [Peter Clarke] to meet with Jones and Osborne to consolidate understanding of how CRUTEM [is] produced. <http://www.cce-review.org/pdf/25Feb-meeting.pdf>

A subsequent meeting was held on 4 March 2010 at CRU in which Norton and Clarke again met to discuss the CRUTEM production methodology. The issue of deleting emails was raised briefly. Jones indicated that he had not been given any training on FOIA issues. [http://www.cce-review.org/evidence/UEA-CRU\\_IV5\\_040310v6.pdf](http://www.cce-review.org/evidence/UEA-CRU_IV5_040310v6.pdf)

Based on submissions of evidence, some specific questions were put to CRU members, and their responses formed the basis of the ICCER Report. The responses by CRU members were not shown to critics or subject to further rebuttal.

Inquiry Chairman Sir Muir Russell did not attend any of the interviews with Jones or Briffa.

It is noteworthy that the first item in the terms of reference called for examination of all relevant email exchanges, and that the Inquiry noted that the emails released on the internet made up only a small fraction of the total volume of CRU correspondence. The Report noted (p. 33)

The presumption is that e-mails were selected to support a particular viewpoint. Recognising that they were a tiny fraction of those archived, the Review Team sought to learn more about the full contents of the back-up server. This attempt, summarised in Appendix 6, was largely unsuccessful due to the sheer scale of the task and ongoing police investigation.

The Inquiry made only a hesitant and disorganized effort to examine the CRU backup server, allowing itself to be dissuaded by the UEA itself. As outlined in Appendix 6 to the report, the Inquiry accepted a proposal to have the UEA hire a computing consultant to access the backup server, who would then work with the police computer analyst to identify other emails and materials pertinent to the Inquiry, which would then be redacted by the university before submitting to the Review panel. But by the time this protocol was worked out, too much time had elapsed to actually do it, so the whole matter was dropped.

#### **4.6 Findings**

The 160 page report was issued on 7 July 2010. Important aspects of the report are as follows.

On 11 February 2010 the Inquiry released a document called “Issues for Examination”<sup>9</sup> which laid out the allegations against the CRU, and which supposedly provided the framework the panel would follow in its investigations. The eight allegations were stated as follows.

- a. The allegation of ignoring potential problems in deducing paleotemperatures from tree ring data that might undermine the validity of the so-called “hockey-stick” curve.
- b. The allegation that CRU has colluded in attempting to diminish the significance of data that might appear to conflict with the 20th century global warming hypothesis
- c. It is alleged that proxy temperature deductions and instrumental temperature data have been improperly combined to conceal mismatch between the two data series
- d. It is alleged that there has been an improper bias in selecting and adjusting data so as to favour the anthropogenic global warming hypothesis and details of sites and the data adjustments have not been made adequately available
- e. It is alleged that there have been improper attempts to influence the peer review system and a violation of IPCC procedures in attempting to prevent the publication of opposing ideas.
- f. The scrutiny and re-analysis of data by other scientists is a vital process if hypotheses are to rigorously tested and improved. It is alleged that there has been a failure to make important data available or the procedures used to adjust and analyse that data, thereby subverting a crucial scientific process.
- g. The keeping of accurate records of datasets, algorithms and software used in the analysis of climate data.
- h. Response to Freedom of Information requests.

However, the Review proceeded to answer various different versions of these questions. The Review reframed some of the general issues as follows.

Although the recent Oxburgh Scientific Assessment Panel has been critical of some of the statistical work of CRU in relation to the tree ring series, that issue lies beyond our remit. Our concern is whether tree ring series have been improperly selected and whether the uncertainties have been properly presented. (p. 38) *[Contrast to b and c above. Initially the question is whether data was improperly combined to conceal something, in which case guilt would be a serious matter. Now the issue is whether uncertainties have been properly presented. Even if this was not found to be the case, softening the allegation means a finding of guilt is less serious.]*

One of the allegations against CRU is that they have not been sufficiently frank in communicating uncertainties about their reconstructions into the public domain. *[Contrast to a and b above: the original allegations are of actively suppressing information; the Review now refers to passively failing to be sufficiently forthcoming, which even if they found to be the case would be less serious.]* (pp. 40-41)

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<sup>9</sup> <http://www.cce-review.org/pdf/CCER%20ISSUES%20FOR%20EXAMINATION%20FINAL.pdf>



It has been alleged that CRU scientists subverted IPCC processes by minimising uncertainties and blocking ideas that disagreed with their established views. (p. 41)

The first 5 chapters of the review provided background and summary, as well as some philosophical reflections on peer review and the scientific enterprise.

## CRUTEM

The Review's first substantive chapter was Chapter 6, on the CRUTEM archive. They stated the allegations (for which no sources were provided) as follows (p. 44):

- i. That CRU prevented access to raw data.
- ii. That CRU adjusted the data without scientific justification or adequate explanation. Some allegations imply that this was done to fabricate evidence for recent warming.
- iii. That CRU inappropriately withheld data and computer code, thus inhibiting others from checking the conclusions of the CRUTEM analysis.

Once again a new set of allegations was put forward which did not correspond with a—f as set out in the Issues for Examination. The differences are important.

(i) is not the same as d or f above. The allegation as stated in d was that they did not indicate which particular sites they selected from the GHCN. In my evidence (Ross McKittrick, denoted RM:*page#*) they received a lengthy and detailed review of the FOIA requests received by Jones after 2003, which were focused on obtaining his list of station locations, not on obtaining his raw data (RM:26-35). That evidence also shows that an exact site list was never published. The Review admitted (p. 45) that only two submissions alleged that CRU withheld access to raw data, and that the Review received evidence that the CRU primarily relied on the GHCN archive, which is publicly available.

(ii) This only partly corresponds to f: the issue was whether they explained their methods. But in its call for evidence the Review never indicated it was addressing an allegation of fabrication of evidence for warming, and in the report itself no source for this allegation was provided, and no evidence was cited in support of the allegation. By raising an extreme but irrelevant allegation it would give them an opportunity for a prominent dismissal of an irrelevant charge.

(iii) This allegation corresponds to f and g except for the word “inappropriately” (suggesting that they would look for reasons for whether it was “appropriate”) and by ignoring the point in g, namely that part of the responsibilities of CRU was their own record-keeping.

Chapter 4 of the Review investigated these allegation by the completely irrelevant exercise of downloading the GHCN data base and constructing their own global average.

In order to test the principal allegations of withholding data and making inappropriate adjustments, the Review undertook its own trial analysis of land station temperature data. The goal was to determine whether it is possible for an independent researcher to (a) obtain primary data and (b) to analyse it in order to produce independent temperature trend results. This study was intended only to test the feasibility of conducting such a process, and not to generate scientific conclusions.

The Team then went on to address a further question, namely the extent to which an independent researcher could check the CRUTEM analysis. In particular, this considered:

- whether the data sources were properly explained
- the availability of software required in the analysis

(pp. 45-46)

Here again we see a further re-write of the allegations into two (“withholding data and making inappropriate adjustments”) that either were not at issue (withholding data) or were different than the original allegations (which pertained to the inability to ascertain whether the adjustments were adequate for the stated purpose, as opposed to whether inappropriate adjustments were made). The last two points were trivial: the role of the GHCN data was not in dispute, and the availability of software to do the analysis was never an issue. Allegations a—f were by now largely set aside in favour of irrelevant or non-existent questions.

The coherence of their global average temperature graph with the CRUTEM product showed that published data and routine averaging methods could replicate CRU results. On this basis the Review set aside the irrelevant allegations, and left the relevant ones unaddressed. They went on to say:

It should be noted that in making these findings, the Review Team is making no statement regarding the correctness of any of these analyses in representing global temperature trends. We do not address any alleged deficiencies such as allowance for non climatic effects or the significant drop in station number post 1991. We do not address any possible deficiencies of the method. These are entirely matters for proper scientific study and debate and lie outside the scope of this Review.

(p. 49)

However, notwithstanding this claim, they did in fact take up these issues and proceeded to make statements defending the CRU’s position on these very points, when the issue came up as to whether Jones had suppressed information about non climatic biases in CRU data in the IPCC Report (see below regarding Section 9.3 of the Review).

The Review then returned to the original allegations, on page 49, as follows:

In order to reproduce exactly a CRUTEM study, the independent researcher requires the exact list of stations used in order to source the primary data themselves.

After investigating this, the Review team concurred that CRU had not made its station list available, and it should have done so:

The Review finds that as a matter of good scientific practice, (and having established the precedent with CRUTEM1986) CRU should have made available an unambiguous list of the stations used in each of the versions of CRUTEM at the time of publication. In the absence of this, CRU was unhelpful and defensive and should have responded throughout to requests for this information in a more timely way.

(p. 51)

Their overall findings on this chapter were:

- Regarding data availability, there is no basis for the allegations that CRU prevented access to raw data. It was impossible for them to have done so.
- Regarding data adjustments, there is no basis for the allegation that CRU made adjustments to the data which had any significant effect upon global averages and through this fabricated evidence for recent warming.
- We find that CRU was unhelpful in dealing with requests for information to enable detailed replication of the CRUTEM analysis.
- Crucially, we find nothing in the behaviour on the part of CRU scientists that is the subject of the allegations dealt with in this Chapter to undermine the validity of their work. (p. 53).

They did not address the following issues:

- That Jones readily gave out his station data to colleagues he liked, so they could exactly replicate his work, but he withheld it from people he considered adversaries (RM:Ev 27-28, 33)
- Jones could and did withhold access to some data: what he withheld was the identification of the subsample from GHCN that he used. Without the station list or the raw data themselves, it was impossible (as the Review found) to exactly replicate Jones' data set.

Overall they did not refute the main allegations in the evidence and that were set out in the Issues for Examination. They upheld the allegation that Jones inappropriately withheld his station list (though they merely considered it “defensive and unhelpful”) and otherwise they refuted a different set of allegations that were largely irrelevant.

## **Paleoclimate reconstructions**

The allegations were set out on page 55 of the Review. The allegations set out in the Issues for Examination were (b & c)

The allegation that CRU has colluded in attempting to diminish the significance of data that might appear to conflict with the 20th century global warming hypothesis

It is alleged that proxy temperature deductions and instrumental temperature data have been improperly combined to conceal mismatch between the two data series

In addition to presenting some new allegations arising out of the evidence submitted, the Review watered the initial two allegations down as follows:

That the phenomenon of “divergence” (see discussion below) may not have been properly taken into account when expressing the uncertainty associated with reconstructions; and that this was not addressed with sufficient openness in IPCC reports.

That the reference in a specific e-mail to a “trick” and to “hide the decline” in respect of a 1999 WMO report figure show evidence of intent to paint a misleading picture.

The review also addressed concerns that Briffa did not disclose a collapse in the Yamal series sample size that coincided with the blade of its hockey stick, and that Briffa improperly manipulated Tornetrask data.

The Review began by conveniently limiting its focus to the IPCC Fourth Assessment Report (AR4) of 2007 (p. 56). This swept aside the whole issue of the deletion of Briffa's post-1960 data in the IPCC 3<sup>rd</sup> Assessment Report, which was the subject of extensive climategate emails (RM:Ev 8-12) and which was one of the major controversies about Briffa's presentation of the divergence problem in an official report. Their defence of the hide-the-decline deletion in the AR4 was that it was discussed in the text, but that defence is invalid in the case of the IPCC Third Assessment Report (TAR) since it was not disclosed. By averting their gaze from the TAR they gave Briffa a free pass.

Nor did they take note of the fact that the only reason the divergence issue *was* discussed in the AR4 was as a result of the protests of McIntyre, acting as IPCC reviewer. It was not voluntarily done by the CRU authors, as was explained in the evidence, since early IPCC drafts did not provide the discussion that the CRU later appeals to in their defence of the handling of the topic.

They then pointed out that the evidence showing that small variations in the proxy rosters would lead to different results, implying that the proxy data was selectively used or cherry-picked, consisted of unpublished demonstrations in the submitted evidence. They dismissed all this evidence on the grounds that it was not in peer-reviewed journals (pp. 56-57). However they also criticised the CRU scientists for not sharing their data, without realizing the connection: precisely because it has taken so long to get the data, it has not been feasible to complete the sensitivity analyses before now. In Steve's evidence (<http://www.cce-review.org/evidence/StephenMcIntyre.pdf>) on page 12, the published version of Briffa's Polar Urals series was shown, in which the medieval era appears somewhat cold. Also shown was an updated resampling of the Polar Urals region in which the medieval era was now very warm by comparison to the present. Yet the updated data was never published by Briffa (Steve obtained it after a lengthy dispute with *Science* magazine), disguising a problem of proxy inconsistency and making it impossible for others to test the effect of the Urals update on previous results. Likewise, Steve's evidence (p. 12) showed that Briffa only archived the Yamal core counts in September 2009 after long resisting such disclosure. The Review could hardly fault people for not having used the information in published sensitivity analyses before now since, in this case, the information only became available last fall.

With regard to the Briffa Yamal series, they also dismissed concerns about it based on the claim that it was only used in 4 (or, possibly 5) out of 12 reconstructions discussed in the AR4 (p. 57). It is noteworthy that of those 12, only 8 were actually tree ring reconstructions—the others were borehole or glacier studies, so it was inappropriate to include them in the category. It would have mattered even if Yamal had only been used once, but having found that it was used in as many as 5 of 8 tree ring-based reconstruction series, they were certainly not in a position to dismiss it as moot. Later in the Review they conceded that the CRU had relied on Yamal core counts without ensuring the data were published in a timely way, and that this led to readers not knowing a critical weakness of the reconstruction (pp. 60-61).

The Review then looked at the communication of uncertainty. The specific allegation was of “ignoring potential problems” in paleoclimate reconstructions. In terms of evidence submitted, a specific allegation was that CRU scientists held more private doubts about this work than they admitted in the IPCC report (RM:Ev 10-11, 22-24). Instead of addressing these issues, the Review took the position that the presence of *any* indications of uncertainty in the IPCC report disproved the allegations:

We do not find that the data described in IPCC AR4 and shown in Figure 6.10 is misleading, and we do not find that the question marks placed over the CRU scientists' input casts doubt on the conclusions. In particular:

- The variation within and between lines, as well as the depiction of uncertainty is quite apparent to any reader.

- It presents all relevant published reconstructions we are aware of, i.e. there has been no exclusion of other published temperature reconstructions which would show a very different picture.
- The general discussion of sources of uncertainty in the text is extensive, including reference to divergence and it therefore cannot be said that anything has been suppressed. Presenting uncertainty in this way is a significant advance on the TAR.

(p. 59)

It is obviously untrue that the variations among the lines is apparent to any reader, since one of the most conspicuous variations (Briffa's post-1960 data) was deleted. In fact, in the next section of the report the Review *did* conclude that this deletion by Jones in another case was misleading. The claim that the graph "presents all relevant reconstructions" is also false since it depended on deletion of some data for its visual impact. The third conclusion neatly avoids addressing the suppression of Briffa's doubts in the TAR by saying the additional discussion of uncertainty in the AR4 was a "significant advance." They also do not address the fact that these essential uncertainties were left out of the Summary for Policymakers by Lead Authors like Briffa.

With respect to the "hide the decline" graph itself, the Review effectively ran out of wiggle room and found Jones guilty as charged. But they tried to mitigate their finding nonetheless.

In relation to "hide the decline" we find that, given its subsequent iconic significance (not least the use of a similar figure in the TAR), the figure supplied for the WMO Report was misleading in not describing that one of the series was truncated post 1960 for the figure, and in not being clear on the fact that proxy and instrumental data were spliced together. We do not find that it is misleading to curtail reconstructions at some point *per se*, or to splice data, but we believe that both of these procedures should have been made plain – ideally in the figure but certainly clearly described in either the caption or the text.

(p. 60)

Yet having made the finding that Jones' actions were misleading, in all the headline conclusions of the report they dismiss any claims against Jones' integrity.

## **Influencing peer review**

Chapter 8 of the Review pertains to allegations that CRU scientists conspired to subvert peer review at a couple of journals. These episodes typically come down to personality conflicts and actions that, while they sometimes appear unseemly, are difficult to identify as corrupt, since they involve interactions with many parties who are often in conflict and who can appeal to the excuse that they are entitled to exercise their expert judgment. As such this Chapter deals with inherently inconclusive issues.

## **Biasing the IPCC report: MM2004**

In Section 9.3 the Review presented a detailed discussion of the issues surrounding the use of McKittrick and Michaels (2004, denoted "MM2004") in the preparation of the IPCC Report, namely Jones' exclusion of it from the drafts shown to reviewers, and then the fabrication of evidence to conceal its implications. Unfortunately, notwithstanding their claim on page 49, and again on page 76 para 22, that it is not their place to adjudicate scientific controversies, they proceeded to make a superficial attempt to

pronounce on the scientific controversy in question rather than dealing with the actual allegation that Jones and his chapter coauthors inserted fabricated evidence into the IPCC Report.

The Review's summary of the allegation on pages 71—73 is accurate. They then list Jones' responses. Jones asserts without evidence that the MM2004 findings are incompatible with satellite and ocean data. The MM2004 paper itself shows the findings are compatible with satellite data in the sense of having a highly significant correlation, and there is no basis for the claim about ocean data (nor did the IPCC make any such claim). Jones also said that MM2004 can be "readily shown to be scientifically flawed" without giving any supporting evidence. As to the paragraph in the IPCC Report containing the fabrication, Jones denied responsibility and said it was another member of the writing team, though Jones approved its inclusion. Jones did not provide any evidence to rebut the allegation of fabrication of evidence.

In paragraph 21 on page 75 the Review asked whether the decision to exclude the information from the IPCC drafts was "reasonable." But they seemed to take the view that *any* decision would be reasonable since the IPCC had the job of making a decision. In this respect they misrepresented the mission of the IPCC as laid down by its member governments, which is to assess the full range of published evidence on such issues, and to ensure that unresolved controversies are described in the report. The Review also ignored the glaring issue of conflict of interest, whereby Jones was Coordinating Lead Author of the section of the IPCC Report surveying evidence critical of his work, and they took at face value the scientific claims by Professor Jones without noting that submitted evidence (RM: Ev Appendix B) specifically disproved it.

On the question of evidence fabrication, having noted that the allegation could be disproved by means of a specific statistical test (a *p* value), they then changed the subject by stating that the truth of the allegation

...depends upon the implication that the response to MM2004 in the published Chapter 3 was not scientifically credible.

(p. 76)

But this is false. The truth of the allegation of evidence fabrication depends on whether there was any statistical evidence for it. None was presented in the IPCC Report, including in the responses to reviewer Gray. Furthermore, none of the evidence cited by the Review, including the scientific literature they examined, presented any supporting evidence for the point. The only paper that specifically addresses the question (McKittrick 2010) disproved it. The Review was supplied a copy of this paper, but ignored it in making its findings.

Consequently their finding on this point, that Jones was not biased and the IPCC statement was not "invented" is baseless. On the evidence in the Review itself they established the opposite.

### **Biasing the IPCC report: MM2003, 2005**

In Section 9.4 the Review presented a discussion of the issues surrounding the use of McIntyre and McKittrick's challenge to the IPCC hockey stick. In brief, the Review focuses on the 2003 M&M paper rather than the 2005 papers, which were actually at issue, and thereby sidesteps the real controversies. It also reviews Briffa's outreach to Eugene Wahl to assist in writing the IPCC report even though Wahl was not a reviewer or a lead author.

It is clear from Briffa's responses (p. 80) that he still misunderstands the points at issue, for he frames them in terms of whether MM2003 were unable to replicate Mann's results. This was not the point of that paper or subsequent papers: what was at issue was that Mann had not disclosed his actual data and methodology, and his results, properly understood, were not as significant or robust as he claimed. By misrepresenting the actual issues the Review fell into irrelevance in the discussion. They also took at face value the claim by Briffa that the Wahl and Ammann paper he referred to was usable under IPCC rules. The problem with this argument was that the results he relied on were not in the paper he cited: they were in another paper that would not be published until at least a year later. Briffa's defense on this point (p. 81) was false. Also, his claim that Wahl was a "knowledgeable and objective" source of information was risible, since the emails in question reveal Wahl to be a partisan supporter of the hockey stick, to the extent of providing "coaching" for Congressional witnesses for Democratic Congressman Henry Waxman's office.

## FOIA responses

As with other reports, the Review finds fault with CRU for being unhelpful in their responses to FOIA requests. But with regard to the most serious matter, namely the deletion of emails that were the subject of a FOIA request, even though the email archive clearly shows Jones asking his colleagues to purge their records, the Review made an astonishing omission by not asking Jones whether he had deleted any emails. The UK Guardian took up this issue as follows:<sup>10</sup>

Most seriously, it finds "evidence that emails might have been deleted in order to make them unavailable should a subsequent request be made for them [under Freedom of information law]". Yet, extraordinarily, it emerged during questioning that Russell and his team never asked Jones or his colleagues whether they had actually done this.

In light of the House of Commons Inquiry's specific request for Muir Russell to conclusively resolve the question of email deletion, their treatment of this issue was irresponsible.

In his submission of evidence to the Inquiry, David Holland detailed his FOIA requests to the University of Reading and the Hadley Centre beginning in March 2008 and going forward from there. In email 1206628118.txt, Jones wrote to a colleague:

"The person who sent you this is likely far worse. This is David Holland. He is a UK citizen who send countless letters to his MP in the UK, writes in Energy & Environment about the biased IPCC and has also been hassling John Mitchell about his role as Review Editor for Ch 6. You might want to talk to John about how he's responding. **He has been making requests under our FOI about the letters Review Editors sent when signing off. I'm sure Susan is aware of this. He's also made requests for similar letters re WG2 and maybe 3. Keith has been in contact with John about this.**"

That was dated 27 March 2008. On 5 May 2008, just over a month later, Holland made information requests FOI\_08-23 and EIR\_08-1 to the UEA requesting information related to the IPCC review process, including email correspondence. The email in which Jones asked his colleagues to delete all AR4-related emails was sent 29 May 2008 (1212063122.txt), after the initiation of the FOIA process. Yet the Review concluded

<sup>10</sup> <http://www.guardian.co.uk/environment/cif-green/2010/jul/07/climategate-scientists>

There seems clear incitement to delete emails, although we have seen no evidence of any attempt to delete information in respect of a request already made.  
(p. 92)

Given Jones' email of 29 May 2008 this finding is clearly untrue.

## 4.7 Reactions to Report

The University of East Anglia pronounced itself very pleased with the report and reinstated Jones to a leadership position at CRU, although the CRU itself was administratively demoted to become a branch of an existing science department. While the university claimed the report was a complete vindication, other observers did not agree.

Fred Pearce of the UK Guardian,<sup>11</sup> for instance, wrote a reasonably balanced summary of the Report's conclusions.

Generally honest but frequently secretive; rigorous in their dealings with fellow scientists but often "unhelpful and defensive", and sometimes downright "misleading", when explaining themselves to the wider world. That was the verdict of Sir Muir Russell and his fellow committee members in their inquiry into the role of scientists at the University of East Anglia in the "climategate" affair.

Many will find the report indulgent of reprehensible behaviour, particularly in peer review, where CRU researchers have been accused of misusing their seniority in climate science to block criticism. Brutal exchanges in which researchers boasted of "going to town" to prevent publication of papers critical of their work, and in which they conspired to blacklist journals that published hostile papers, were dismissed by Russell as "robust" and "typical of the debate that can go on in peer review".

In the event, the inquiry conducted detailed analysis of only three cases of potential abuse of peer review. And it investigated only two instances where allegations were made that CRU scientists such as director Phil Jones and deputy director Keith Briffa misused their positions as IPCC authors to sideline criticism. On the issue of peer review and the IPCC, it found that "the allegations cannot be upheld", but made clear this was partly because the roles of CRU scientists and others could not be distinguished from those of colleagues. There was "team responsibility". The report is far from being a whitewash. And nor does it justify the claim of university vice-chancellor Sir Edward Action that it is a "complete exoneration". In particular it backs critics who see in the emails a widespread effort to suppress public knowledge about their activities and to sideline bloggers who want to access their data and do their own analysis.

Most seriously, it finds "evidence that emails might have been deleted in order to make them unavailable should a subsequent request be made for them [under Freedom of information law]". Yet, extraordinarily, it emerged during questioning that Russell and his team never asked Jones or his colleagues whether they had actually done this.

Secrecy was the order of the day at CRU. "We find that there has been a consistent pattern of failing to display the proper degree of openness," says the report. That criticism applied not just to Jones and his team at CRU. It applied equally to the university itself, which may have been embarrassed to find itself in the dock as much as the scientists on whom it asked Russell to sit in judgment.

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<sup>11</sup> <http://www.guardian.co.uk/environment/cif-green/2010/jul/07/climategate-scientists>



The university "failed to recognise not only the significance of statutory requirements" – FOI law in particular – and "also the risk to the reputation of the university and indeed the credibility of UK climate science" from the affair.

The university has responded by abolishing the role of director of CRU, held by Jones until last November. Indeed CRU itself has lost its former independence. Acton said Jones would now be "director of research" for CRU, working within the university environment department.

## 5. Penn State Inquiry

Penn State University received a large number of complaints and accusations against Professor Michael Mann following the release of the climategate emails. In response, on 24 November 2009 the university initiate an inquiry under RA-10, its policy concerning research misconduct. That policy is online at <http://guru.psu.edu/policies/RA10.html>. The policy provides for an initial inquiry, to be followed if necessary by a formal investigation. RE-10 states, in part:

3: A written report shall be prepared that states what evidence was reviewed, a copy of all interview transcripts and/or summaries, and includes the conclusions of the inquiry. The accused individual(s) shall be given a copy of the report of inquiry. If they comment on that report, their comments may be made part of the record. If the inquiry takes longer than 60 days to complete, the record of inquiry shall include documentation of the reasons for exceeding the 60 day period.

5. If it is determined from the inquiry that the research misconduct allegation(s) warrant further investigation, the Vice President for Research, shall;

a. in consultation with the Budget Executive and Budget Administrator of the area in which the accused individual is primarily employed, appoint an ad hoc Investigatory Committee composed as provided herein,

b. refer the research misconduct charge to the Committee,

c. take such interim action as may be necessary to ensure the integrity of research or other scholarly work, the rights and interests of research participants and the public, and the observance of legal requirements or responsibilities, and

d. provide written notification to the accuser and the accused individual of the initiation of the investigation and of the misconduct allegation(s) to be investigated.

Thereafter, the Director of The Office For Research Protections shall provide on-going administrative support and assistance to the investigatory committee.

The two stages are similar to those outlined by the federal Office of Research Integrity (ORI), however the Inquiry stage is not intended to issue findings, only to ascertain if an Investigation is warranted. The ORI has noted that many institutions are blurring the distinction between these stages.

Institutions treat the inquiry phase in a widely varying manner, and the distinction between an inquiry and an investigation has caused much confusion. Some inquiries conducted by institutions are largely indistinguishable from investigations. As the OSTP policy adopts a two-stage process, we have retained the current two-stage process but propose to sharpen the distinction between inquiries and investigations by clarifying that the inquiry is only an initial review of the allegations to see if they warrant an investigation.

<http://edocket.access.gpo.gov/2004/04-8647.htm>

The federal HHS website contains the following cautions about issuing findings from inquiries (emphasis added, PHS=Public Health Service):

(21) Inquiry Versus Investigation Stages in Research Misconduct Cases - When examining allegations of research misconduct, institutions have an obligation to conduct an initial inquiry, and, if warranted, a thorough investigation in accordance with PHS Policies on Research Misconduct. 42 C.F.R. Part 93. This article discusses some procedural and substantive considerations in examining allegations of research misconduct in inquiries and investigations.

After receiving a good faith allegation of research misconduct, an institution will usually open an inquiry to gather general information and make initial findings of fact to determine whether the allegation has substance and there is sufficient evidence to warrant an investigation. Sometimes, however, when there is sufficient evidence already at hand, for example as the result of an audit of a clinical trial, the institution may move directly to the investigation stage. If the inquiry uncovers evidence of "fabrication, falsification or plagiarism," an investigation is warranted. Section 93.307 (d). **In general, absent full admissions, inquiries should not be used to make findings on whether research misconduct in fact occurred.**

**On occasion, ORI receives an inquiry report in which either the committee has conducted the equivalent of an investigation and made specific findings, or which is obviously the result of a negotiated agreement. These reports may violate the PHS regulation and cause substantial difficulties for ORI's oversight. Findings made at the inquiry stage are all too frequently incomplete because the record has not been fully developed, and negotiated agreements violate the PHS regulation, if made without advance notice to ORI. Both instances may deprive ORI of the facts necessary to determine whether there has been an adverse effect on the PHS sponsored research, and the institution may be required to reopen its case and initiate an investigation.**

Instead of short circuiting the process, once an institution has determined that there is some evidence of possible misconduct, a thorough investigation should be conducted in accordance with the requirements explained in Section 93.310. Only after this process is complete should the investigation committee turn to an analysis of whether the charges have been proven by a preponderance of the evidence.

These points are noteworthy since the Penn State committee was established as an Inquiry, not at Investigation.

## 5.1 Terms of Reference

The university did not receive any formal allegations of research misconduct, instead it received a large number of complaints and accusations by email. From these, Dr Eva Pell (Sr VP for Research and Dean of Graduate Studies at Penn State) distilled the accusations down to four allegations:

1. Did you engage in, or participate in, directly or indirectly, any actions with the intent to suppress or falsify data?
2. Did you engage in, or participate in, directly or indirectly, any actions with the intent to delete, conceal or otherwise destroy emails, information and/or data, related to AR4, as suggested by Phil Jones?

3. Did you engage in, or participate in, directly or indirectly, any misuse of privileged or confidential information available to you in your capacity as an academic scholar?
4. Did you engage in, or participate in, directly or indirectly, any actions that seriously deviated from accepted practices within the academic community for proposing, conducting, or reporting research or other scholarly activities?

## 5.2 Composition of Committee

University regulations stipulate that the committee must be comprised of “at least five tenured University faculty members, each of whom should have no conflict of interest” and be competent to conduct the inquiry. The report describes an Inquiry committee consisting of only two tenured professors and an administrator (p. 2):

[The] committee assigned to conduct the inquiry into the matter consisted of **Dr. Pell** in her role as Senior Vice President for Research, **Ms. Candice Yekel** in her role as the Director of the Office for Research Protections and **Dr. Scaroni** in his role as the Associate Dean for Graduate Education and Research from the College of Earth and Mineral Sciences.

On page 3 they specifically identify Pell, Yekel and Scaroni as “the Inquiry Committee”. In addition there were two ex officio members:

**Dr. William Brune**, in his role as the Head of the Department of Meteorology, was to serve in a consulting capacity for the committee. **Dr. Henry C. Foley**, then Dean of the College of Information Sciences and Technology, was added to the inquiry committee in an ex-officio role for the duration of 2009, since he had been named to succeed Dr. Pell as the next Vice President for Research, beginning January 1, 2010.

Ms. Candice Yekel holds an MS in Developmental Psychology and is Director in the Penn State Office for Research Protections (ORP). She is not a tenured professor. (<http://www.research.psu.edu/about/contact-information/office-for-research-protections/cay3>). Dr. Pell left PSU at the start of January 2010 so Dr. Foley took over for her on the committee.

Consequently the Inquiry did not satisfy the Penn State requirements of at least 5 tenured faculty members.

## 5.3 Call for Evidence

The Committee issued no call for evidence.

## 5.4 Public Hearings

No public hearings were held. They are not normally part of such procedures. The investigation procedures are prescribed as follows (emphasis added):

The investigation normally will include examination of all documentation, including but not necessarily limited to relevant research data and proposals, publications, correspondence, and memoranda of telephone calls. Whenever possible, interviews should be conducted of all individuals involved, including the accused and the accuser(s), **as well as other individuals who might have information regarding key aspects of the allegations**; complete summaries of these interviews should be prepared, provided to the interviewed party for comment or revision, and included as part of the investigatory record.

<http://guru.psu.edu/policies/RA10.html>

The inquiry's selection of individuals to interview is notable. Most of the emails involving Mann also refer to either or both of Steve McIntyre and me, yet the committee did not contact us.

## 5.5 Cross-Examination

The inquiry committee met to review the emails and the allegations. They describe their investigation as follows (p. 4):

On January 12, 2010, the inquiry committee (Foley, Yekel, Scaroni) and Dr. Brune met with Dr. Mann to interview him. Dr. Mann was asked to address the four allegations leveled against him and to provide answers to the fifteen additional questions that the committee had compiled. In an interview lasting nearly two hours, Dr. Mann addressed each of the questions and follow up questions. A recording was made of the meeting, and this recording was transcribed. The committee members asked occasional follow-up questions. Throughout the interview, Dr. Mann answered each question carefully.

They then list the responses Mann gave. After putting some follow-up questions to him and receiving responses, they continue:

All were impressed by Dr. Mann's composure and his forthright responses to all of the queries that were asked of him.

The committee then talked to Gerald North of Texas A&M and Donald Kennedy of Stanford, neither of whom are involved in the climategate emails. Both were supportive of Mann's work. At this point Dr. Brune was dismissed from the committee as his consultative role was complete.

## 5.6 Findings

On 26 January 2010 the committee came to the following conclusions (emphasis added).

Allegation 1:

After careful consideration of all the evidence and relevant materials, the inquiry committee finding is that there exists no credible evidence that Dr. Mann had or has ever engaged in, or participated in, directly or indirectly, any actions with an intent to suppress or to falsify data....In fact to the contrary, in instances that have been focused upon by some as indicating falsification

of data, for example in the use of a “trick” to manipulate the data, this is explained as a discussion among Dr. Jones and others including Dr. Mann about how best to put together a graph for a World Meteorological Organization (WMO) report. **They were not falsifying data; they were trying to construct an understandable graph for those who were not experts in the field. The so-called “trick” was nothing more than a statistical method used to bring two or more different kinds of data sets together in a legitimate fashion by a technique that has been reviewed by a broad array of peers in the field.**

It is obviously ludicrous to claim that deleting data and making an undisclosed splice of different data in order to conceal an inconvenient pattern in the original data set is legitimate and widely accepted. Such a claim was not supported by any evidence disclosed by the committee. Even the Muir Russell report concluded that Jones’ actions in this case were “misleading.”

#### Allegation 2:

After careful consideration of all the evidence and relevant materials, the inquiry committee finding is that **there exists no credible evidence that Dr. Mann had ever engaged in, or participated in, directly or indirectly, any actions with intent to delete, conceal or otherwise destroy emails, information and/or data related to AR4**, as suggested by Dr. Phil Jones. Dr. Mann has stated that he did not delete emails in response to Dr. Jones’ request. Further, Dr. Mann produced upon request a full archive of his emails in and around the time of the preparation of AR4. The archive contained e-mails related to AR4.

The only evidence in support of this finding was the fact that Professor Mann was able to supply an archive of emails. But there is no evidence of a follow-up email in which Mann explains to Jones that he is declining the request. Notably, they did not make mention of Mann’s *actual response* to Jones’ request (1212063122.txt):

```
From: Michael Mann <mann@xxxxxxxxxxx.xxx>
To: Phil Jones <p.jones@xxxxxxxxxxx.xxx>
Subject: Re: IPCC & FOI
Date: Thu, 29 May 2008 08:12:02 -0400
Reply-to: mann@xxxxxxxxxxx.xxx
```

```
<x-flowed>
Hi Phil,
```

```
laughable that CA would claim to have discovered the problem. They would
have run off to the Wall Street Journal for an exclusive were that to
have been true.
```

```
I'll contact Gene about this ASAP. His new email is: generwahl@xxxxxxxxxxx.xxx
```

```
talk to you later,
```

```
mike
```

```
Phil Jones wrote:
```

```
>
>> Mike,
> Can you delete any emails you may have had with Keith re AR4?
> Keith will do likewise. He's not in at the moment - minor family crisis.
>
> Can you also email Gene and get him to do the same? I don't
> have his new email address.
>
> We will be getting Caspar to do likewise.
>
> I see that CA claim they discovered the 1945 problem in the Nature
> paper!!
>
```

> Cheers  
> Phil

This does not indicate that Mann had any objections to fulfilling the request.

Mann's personal emails are not subject to UK FOIA laws so he could not have been found guilty even had he complied with Jones' request. However, with regard to the PSU allegation, their finding in this case was not soundly based on the evidence they produced.

#### Allegation 3:

After careful consideration of all the evidence and relevant materials, the inquiry committee finding is that there exists no credible evidence that Dr. Mann had ever engaged in, or participated in, directly or indirectly, any misuse of privileged or confidential information available to him in his capacity as an academic scholar. In media reports and blogs about Dr. Mann and other paleoclimatologists, those who are named in the CRU email files are purported to have been engaged in conspiratorial discussions indicative of a misuse of privileged or confidential information. Although it is not clear where the exact accusation lies in this with respect to Dr. Mann, it is inferred that the emails prove the case.

This allegation was never clear to begin with, as the discussion explains. It was largely unimportant in comparison with the other matters.

#### Allegation 4:

After careful consideration of all the evidence and relevant materials, the inquiry committee could not make a definitive finding whether there exists any evidence to substantiate that Dr. Mann did engage in, or participate in, directly or indirectly, any actions that deviated from accepted practices within the academic community for proposing, conducting, or reporting research or other scholarly activities.

Because the committee could not reach a decision, this was referred to a further investigation. The new investigation committee consisted of 5 faculty members, in keeping with the RA-10 requirements. Its report is online at [http://live.psu.edu/fullimg/userpics/10026/Final\\_Investigation\\_Report.pdf](http://live.psu.edu/fullimg/userpics/10026/Final_Investigation_Report.pdf). Although the committee referred to McIntyre's emails regarding Mann's refusal to disclose his data, the Committee did not take information from McIntyre, and took at face value the following reply by Mann:

Specifically, Dr. Mann repeated that all data, as well as the source codes requested by Dr. McIntyre, were in fact made available to him. All data were listed on Dr. Mann's FTP site in 2000, and the source codes were made available to Dr. McIntyre about a year after his request was made, in spite of the fact that the National Science Foundation had ruled that scientists were not required to do so. The issue of an "incorrect version" of the data came about because Dr. McIntyre had requested the data (which were already available on the FTP site) in spreadsheet format, and Dr. Rutherford, early on, had unintentionally sent an incorrectly formatted spreadsheet.

Because the committee did not do any actual investigation they did not notice the easily-proven falsehoods in this statement. In 2003 Mann first made the claims that his data had long been available on his ftp site, that McIntyre requested a data spreadsheet because he did not want to access the ftp archive, that a special one was prepared in response to his request and that some errors occurred during the preparation of this file.

In fact, the data were not available on Mann's ftp site, as the email correspondence at the time<sup>12</sup> made clear, which is why Mann referred McIntyre to his colleague Scott Rutherford, who gave Steve access to an ftp site, from which Steve obtained a text file that had been prepared in 2002, long before his April 2003 request. We prepared the spreadsheet ourselves to make it easier to visually examine the data, and it was an identical copy of the text file obtained from Rutherford. We didn't use the spreadsheet for the calculations in the 2003 paper, instead Steve re-collated all the data from original sources, as the paper explains at some length. These points were on the public record in 2003 (<http://www.uoguelph.ca/~rmckitri/research/MM-nov12-part1.pdf>) and have been well known by all parties. Email thread 1067596623.txt, dated 31 October 2003, contains a lengthy response by Tim Osborn of the CRU to Mann's claims about the excel file. Osborn states, in part:

[Mann's] mention of ftp sites and excel files is contradicted by their email record on their website, which shows no mention of excel files (they say an ASCII file was sent) and also no record that they knew the ftp address. This doesn't matter really, since the reason for them using a corrupted data file is not relevant - the relevant thing is that it was corrupted and had you been involved in reviewing the paper then it could have been found prior to publication. But they will use the email record if the ftp sites and excel files are mentioned.

(As an aside, Osborn here ignores the fact that we had sent Mann the file prior to publication, pointing out that we were running into some difficulties and we asked him to confirm that it was the correct one, but Mann refused to respond and closed off further inquiries.)

On November 12, 2003, Osborn made a further point about Mann's claims in another email to his CRU colleagues (1068652882.txt):

I do wish Mike had not rushed around sending out preliminary and incorrect early responses - the waters are really muddied now. He would have done better to have taken things slowly and worked out a final response before publicising this stuff. Excel files, other files being created early or now deleted is really confusing things!

Anyway, because McIntyre has now asked Mann directly for his data and programs, his request that \*we\* send McIntyre's request to Mann has been dropped (I would have said "no" anyway).

Had the Penn State committee done even the most elementary checking of Mann's comments they would have discovered that he gave them false information on this point.

Other questions of the Investigation were leading and prejudicial, such as

“Do you believe that the perceived hostility and perceived ulterior motives of some critics of global climate science influenced your actions with regard to the peer review process, particularly in relation to the papers discussed in the stolen emails?”

(p. 8)

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<sup>12</sup> Online at <http://www.uoguelph.ca/~rmckitri/research/Response.Oct29.pdf>.



The inquiry confined its interviews to Mann and to people who were either known to be his supporters or who were largely uninvolved bystanders, except for a meeting with Richard Lindzen of MIT, who is not a principal figure in climategate (mentioned in only 14 emails, and none in regards to controversies pertaining to the PSU investigation) nor is he in a position to provide detailed commentary on Mann's research since he has not worked in that area.

The investigation dismissed the remaining allegation against Mann, largely on the basis of his publication record and success at obtaining grants.

## 5.7 Reactions to Report

Clive Crook, in the Atlantic, wrote the following:

<http://www.theatlantic.com/politics/archive/2010/07/climategate-and-the-big-green-lie/59709>

I think climate science points to a risk that the world needs to take seriously. I think energy policy should be intelligently directed towards mitigating this risk. I am for a carbon tax. I also believe that the Climategate emails revealed, to an extent that surprised even me (and I am difficult to surprise), an ethos of suffocating groupthink and intellectual corruption....

I had hoped, not very confidently, that the various Climategate inquiries would be severe. This would have been a first step towards restoring confidence in the scientific consensus. But no, the reports make things worse. At best they are mealy-mouthed apologies; at worst they are patently incompetent and even wilfully wrong. The climate-science establishment, of which these inquiries have chosen to make themselves a part, seems entirely incapable of understanding, let alone repairing, the harm it has done to its own cause.

The Penn State inquiry exonerating Michael Mann -- the paleoclimatologist who came up with "the hockey stick" -- would be difficult to parody. Three of four allegations are dismissed out of hand at the outset: the inquiry announces that, for "lack of credible evidence", it will not even investigate them. (At this, MIT's Richard Lindzen tells the committee, "It's thoroughly amazing. I mean these issues are explicitly stated in the emails. I'm wondering what's going on?" The report continues: "The Investigatory Committee did not respond to Dr Lindzen's statement. Instead, [his] attention was directed to the fourth allegation.") Moving on, the report then says, in effect, that Mann is a distinguished scholar, a successful raiser of research funding, a man admired by his peers -- so any allegation of academic impropriety must be false.

You think I exaggerate?

This level of success in proposing research, and obtaining funding to conduct it, clearly places Dr. Mann among the most respected scientists in his field. Such success would not have been possible had he not met or exceeded the highest standards of his profession for proposing research...

Had Dr. Mann's conduct of his research been outside the range of accepted practices, it would have been impossible for him to receive so many awards and recognitions, which typically involve intense scrutiny from scientists who may or may not agree with his scientific conclusions...

Clearly, Dr. Mann's reporting of his research has been successful and judged to be outstanding by his peers. This would have been impossible had his activities in reporting his work been outside of accepted practices in his field.

In short, the case for the prosecution is never heard. Mann is asked if the allegations (well, one of them) are true, and says no. His record is swooned over. Verdict: case dismissed, with apologies that Mann has been put to such trouble.

## 6. Inter-Academy Council

The Inter-Academy Council (IAC) was created by the Inter-Academy Panel on International Issues (IAP), an organization formed in 1993 to act as a liaison for national scientific academies and societies around the world. It is important to distinguish between the administrative hierarchy that presumes to speak on behalf of thousands of experts, and the experts themselves, most of whom have likely never heard of the IAC or the IAP and who have little or no input into its statements.

The IAP was created as an advocacy mechanism directed at the public and governments, on behalf of the societies (who, themselves, often engage in advocacy as well). The IAP describes its mission as follows:

IAP is a global network of the world's science academies, launched in 1993. Its primary goal is to help member academies work together to advise citizens and public officials on the scientific aspects of critical global issues.

(<http://www.interacademies.net/CMS/About.aspx>)

In 2000, the IAP created the IAC as a “client-driven” sub-agency with the task of producing advisory reports for hire, on “critical issues” like sustainability and climate change. Its purpose is stated as follows:

In May 2000 all of the world's science academies created the IAC to mobilize the best scientists and engineers worldwide to provide high quality advice to international bodies - such as the United Nations and the World Bank - as well as to other institutions.

In a world where science and technology are fundamental to many critical issues - ranging from climate change and genetically modified organisms to the crucial challenge of achieving sustainability - making wise policy decisions has become increasingly dependent on good scientific advice.

(<http://interacademycouncil.net/CMS/3239.aspx>)

The IAC has only produced a few reports. Prior to the IPCC Review its most recent was in 2007, called “Lighting the Way: Toward a Sustainable Energy Future.” It was coauthored by a 15-member committee<sup>13</sup> that included IPCC Chair Rajendra Pachauri, and IPCC Lead Authors Nebosja Nakicenovic and Ged Davis.

The report’s foreword stated, in part:

“...although achieving a sustainable energy future requires long-range approaches, given the dire prospect of global climate change, the Study Panel urges that the following be done expeditiously and simultaneously:

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<sup>13</sup> <http://interacademycouncil.net/?id=11846>

- Concerted efforts should be mounted for improving energy efficiency and reducing the carbon intensity of the world economy, including the worldwide introduction of price signals for carbon emissions with consideration of different economic and energy systems in individual countries.
- Technologies should be developed and deployed for capturing and sequestering carbon from fossil fuels, particularly coal.
- Development and deployment of renewable energy technologies should be accelerated in an environmentally responsible way.

<http://interacademycouncil.net/CMS/Reports/11840/11842.aspx>

The report's conclusions began as follows.

Scientific evidence is overwhelming that current energy trends are unsustainable. Immediate action is required to effect change in the timeframe needed to address significant ecological, human health and development, and energy security needs. Aggressive changes in policy are thus needed to accelerate the deployment of superior technologies. With a combination of such policies at the local, national, and international level, it should be possible—both technically and economically—to elevate the living conditions of most of humanity, while simultaneously addressing the risks posed by climate change and other forms of energy-related environmental degradation and reducing the geopolitical tensions and economic vulnerabilities generated by existing patterns of dependence on predominantly fossil-fuel resources.

<http://interacademycouncil.net/?id=12198>

Considering the fact that the IAC had previously published an alarmist report on global warming coauthored by IPCC chair Rajendra Pachauri and two other IPCC Lead Authors, they hardly qualify as an independent organization for the purpose of reviewing the IPCC.

## 6.1 Terms of Reference

The IAC was commissioned by the UN and the IPCC on March 10 2010 to investigate IPCC procedures. The charge to the IAC is recorded on the IAC website as follows:

The IAC Review Committee will take into account the following IPCC official documents: “Principles Governing IPCC Work”, including their Appendices: Appendix A “Procedures for the preparation, review, acceptance, adoption, approval and publication of the IPCC reports” and its Annexes (hereinafter referred to as “IPCC Procedures”), Appendix B “Financial Procedures for the IPCC”, and Appendix C “Rules of Procedures for the Election of the IPCC Bureau and Any Task Force Bureau”. The Review Committee is requested to perform the following tasks:

2.1. Review the IPCC procedures for preparing assessment reports including, but not restricted to:

- i. Data quality assurance and data quality control;
- ii. Guidelines for the types of literature appropriate for inclusion in IPCC assessments, with special attention to the use of non peer-reviewed literature;
- iii. Procedures for expert and governmental review of IPCC materials;

- iv. Handling of the full range of scientific views; and
- v. Procedures for correcting errors identified after approval, adoption and acceptance of a report.

2.2. Analyze the overall IPCC process, including the management and administrative functions within IPCC, and the role of UNEP and WMO, the United Nations system and other relevant stakeholders, with a view to strengthen and improve the efficiency of the assessment work and effectively ensure the consistent application of the IPCC Procedures.

2.3. Analyze appropriate communication strategies and the interaction of IPCC with the media to ensure that the public is kept apprised of its work.

2.4. Prepare a report on the outcome of the activities referred to above, including:

- i. Methodology of the report preparation and measures taken to ensure high quality of the report findings;
- ii. Recommendations for amendments to the IPCC procedures;
- iii. Recommendations concerning strengthening the IPCC process, institutions and management functions;
- iv. Any other related recommendations; and
- v. Outline of a plan for the implementation of recommendations.

(<http://reviewipcc.interacademycouncil.net/committee.html>).

## 6.2 Composition of Committee

The Committee had 12 members. None had obvious conflicts of interest, though Mario Molina was an AR4 Lead Author.

The Co-chairman of the IAC, Robert Dijkgraaf, was interviewed about, among other things, climategate, on 20 April 2010.<sup>14</sup> In response to the question “What about 'Climategate', the hacked emails from the British climate institute?” he replied:

Those emails are not directly related to the work of the IPCC. This affair shows how sensitive the issue is and what is at stake. Transparency is paramount. Scientists live in a glass house. The more the impact of knowledge grows, the more important it becomes to make clear how you reached a conclusion.

It is ludicrous, indeed ignorant, to claim the Climategate emails were “not directly related” to the IPCC. Most of the emails were exchanges of views among IPCC authors, referring to discussions about what to put into the IPCC report and what to exclude. The archive begins with emails around 1999 discussing the production of the TAR, and continue through the 2004-2006 interval during which the AR4 was being

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<sup>14</sup>

[http://www.nrc.nl/international/Features/article2527930.ece%20/IPCC\\_reviewer\\_Every\\_good\\_scientist\\_is\\_a\\_sceptic\\_by\\_nature](http://www.nrc.nl/international/Features/article2527930.ece%20/IPCC_reviewer_Every_good_scientist_is_a_sceptic_by_nature)

put together, then continue afterwards with discussions related to the FOIA requests for emails related to writing the AR4. However Dikgraaf was not a member of the Committee and likely did not have much if any influence over its investigation.

### 6.3 Call for Evidence

The Committee established a web site, <http://reviewipcc.interacademycouncil.net/comments.html>, at which interested persons could submit evidence. In May 2010 hundreds of people involved with or interested in the IPCC were sent an email questionnaire asking for their input on the review questions. The response deadline was June 8, 2010.

### 6.4 Public Hearings

The IAC scheduled public meetings in Amsterdam and Montreal to hear from invited witnesses regarding IPCC procedures and the need for reform. On June 10, Dutch journalist Marcel Crok noticed that for the upcoming meeting in Montreal, the IAC was flying in speakers from Germany, the UK and Alabama, yet had not invited McIntyre and I, despite the fact that we live nearby. He wrote the IAC and asked why they were not interviewing us. He received a reply from William Kearney, a spokesman for the US National Academy of Sciences who also acted as spokesman for the IAC Committee. Kearney told Crok (emphasis added):

Given that the InterAcademy Council committee reviewing IPCC processes and procedures expects to deliver a peer-reviewed report by Aug. 30, it has limited time for presentations at its public meetings and therefore has chosen speakers who are current leaders of IPCC or who can offer representative and varying perspectives of IPCC processes based on prior IPCC experience. Meanwhile, **members of the committee are interviewing dozens of scientists and other stakeholders with insight and views on the IPCC process, such as Stephen McIntyre and Ross McKittrick.**

Yet neither of us had been contacted for interviews, nor were we even sent the email questionnaire that had already been sent to hundreds of people, the replies to which had been requested by June 8, a deadline that had, at that point, already passed.

The next day we received survey forms by email, with a requested response date by 25 June 2010. On June 13 we each wrote to Kearney asking him to retract his claim that the IAC was interviewing us. Shortly after that McIntyre was invited to participate in a telephone interview with Committee chair Harold Shapiro.

### 6.5 Findings

The IAC report was released on 30 August 2010 and is available at <http://reviewipcc.interacademycouncil.net/report.html>. Notwithstanding the concerns expressed above, of all the reports to date it presents the most independent, and most critical, appraisal of aspects of the IPCC process. The IAC report offers both muted praise and muted criticism of the IPCC. They remark on the success of the IPCC in producing a series of Assessment Reports, in raising public awareness, in gaining international respect and in securing the involvement of thousands of scientists worldwide. It is noteworthy that they do not congratulate the IPCC for establishing a scientific “consensus,” which is a leading boast of the IPCC and its supporters. Indeed the only discussion of the concept of consensus in

the IAC report is critical. They explicitly link consensus-building to “the dangers of group-think” (p. v) and, in their discussion of the handling of uncertainty by the IPCC, they comment, with a hint of sarcasm, about the curious way in which the IPCC reported “consensus” views on purely subjective probability assessments.

[It] is unclear exactly whose judgments are reflected in the [uncertainty] ratings that appear in the Fourth Assessment Report or how the judgments were determined. How, exactly, a consensus was reached regarding subjective probability distributions needs to be documented. (p. 37).

The muted language of the report requires some parsing. The findings are expressed with great diplomacy and tact. But they make clear that *fundamental changes to the process and the management structure are essential* (p. 51). This is not a clean bill of health for the IPCC. Moreover, many of the recommended changes concern aspects of IPCC operations that are essential to its claims of reliability, including the review process, the willingness to give proper consideration to the full range of evidence, the proper treatment of uncertainty and the basis for many prominent conclusions.

### **IPCC review process**

The IAC reported that a “near-universal” observation among witnesses and those presenting evidence was that the IPCC Review Editors need to have more authority (p. 22), especially (among other things) for ensuring that alternative or dissenting views receive proper consideration (p. 23). This reform, if truly implemented, would constitute a major change to the IPCC process, and had it been implemented prior to the AR4, that report would likely have been materially different. The IAC noted that under current procedures Lead Authors have the final say on chapter content (p. 3). The IAC not only called for Review Editors to have (and to exercise) more authority, but they also suggested that Review Editors be selected by agencies outside the IPCC, and even that they report to an outside agency rather than to the IPCC.

### **Consideration of full range of evidence**

There were several findings in the IAC report indicating a failure on the part of the IPCC to ensure that the full range of scientific views are given consideration.

- The IAC warned against “confirmation bias” and recommended that “Lead Authors should explicitly document that a range of scientific viewpoints has been considered” and that Review Editors and Coordinating Lead Authors should check that “due consideration was given to properly documented alternative views” (p. 20). The implication is that, at present, these things do not happen: Lead Authors in some cases fail to give consideration to a range of scientific views, and nobody verifies whether they have done so.
- The IAC pointed out that there is no formal process or criteria for selecting Lead Authors, and cautioned that “The absence of a transparent author selection process or well-defined criteria for author selection can raise questions of bias and undermine the confidence of scientists and others in the credibility of the assessment.” (p. 18). They alluded to the problem again later when they observed “Having author teams with diverse viewpoints is the first step toward ensuring that a full range of thoughtful views are considered.” (p. 20)
- They also called upon the IPCC to develop policies governing conflict of interest, including intellectual conflicts of interest in which Lead Authors are in a position of reviewing their own work, or have revealed through speeches, public statements or writings that they hold “fixed positions” (pp. 46-47).

- The IAC commented that some of their respondent were concerned that “the Summary for Policy Makers places more emphasis on what is known, sensational, or popular among Lead Authors than one would find in the body of the report.” (p. 25). They went on to observe that the Working Group II Summary for Policymakers “is more focused on the negative impacts of climate change than the underlying report” (p. 26).

### **Treatment of uncertainty**

The IAC was deeply critical of the way the IPCC, particularly Working Group II, handled and reported on uncertainty, especially in regards to statements about the impacts of climate change.

The Working Group II Summary for Policy Makers in the Fourth Assessment Report contains many vague statements of “high confidence” that are not supported sufficiently in the literature, not put into perspective, or are difficult to refute.  
(p. 37)

They found that the guidance for explaining uncertainty is not itself adequate, and is often not followed anyway (p. 4). They recommended use of a Level-of-Understanding scale for communicating uncertainty, rather than a probability scale, since it is inappropriate to assign probabilities and confidence levels to poorly-understood issues.

Many of the 71 conclusions in the “Current Knowledge about Future Impacts” section of the Working Group II Summary for Policy Makers are imprecise statements made without reference to the time period under consideration or to a climate scenario under which the conclusions would be true....In the Committee’s view, assigning probabilities to imprecise statements is not an appropriate way to characterize uncertainty. If the confidence scale is used in this way, conclusions will likely be stated so vaguely as to make them impossible to refute, and therefore statements of “very high confidence” will have little substantive value.  
(pp. 33-34).

More generally, the IAC noted that in some cases

“[IPCC] authors reported high confidence in statements for which there is little evidence, such as the widely-quoted statement that agricultural yields in Africa might decline by up to 50 percent by 2020. Moreover, the guidance was often applied to statements that are so vague they cannot be falsified. In these cases the impression was often left, quite incorrectly, that a substantive finding was being presented.”  
(p. 36)

### **Basis of conclusions**

The IAC concluded that “many of the conclusions in the “Current Knowledge about Future Impacts” section of the Working Group II Summary for Policy Makers are based on unpublished or non-peer-reviewed literature” (p. 33). They also found that many conclusions stated with “High Confidence” by Working Group II had little or no scientific basis:

[By] making vague statements that were difficult to refute, authors were able to attach “high confidence” to the statements. The Working Group II Summary for Policy Makers contains many such statements that are not supported sufficiently in the literature. (p. 4).

The IAC concludes that had Working Group II used a level-of-understanding scale, rather than their “confidence” scale, it would have made clear the “weak evidentiary basis” for many of their conclusions (p. 33).

In sum, once the tall weeds of diplomatic niceties are pulled back, the IAC report contains a profound critique of the IPCC. It would not be possible to paraphrase the IAC conclusions so as to turn them into an endorsement of the IPCC without falsifying their content. Instead the wording inescapably implies—while never quite saying in so many words—that the IPCC lacks the balance, rigor and transparency it so often boasts of. The IPCC does not consistently follow its rules. Lead Authors are chosen in a backroom process that does not satisfy the need to encompass a diversity of views. Review Editors are toothless and Lead Authors have too much authority to impose their own preferred conclusions. Alternative lines of evidence seem to be overlooked without cause. Statements are made with “high confidence” that have no supporting evidence. Many conclusions about the impact of global warming have a weak evidentiary basis. These are points that critics have made for years.

It remains to be seen how seriously the IPCC will take these findings. In a February 2010 interview in the Hindustan Times,<sup>15</sup> a combative IPCC Chairman Rajendra Pachauri gave little indication that he is open to criticism of his organization.

There is only one error (Himalayan glaciers melting by 2035), to which we have admitted. After that the errors reported are spurious. They (some western media) said the IPCC claim on the losses from disasters was not from an authentic source. We checked the source; it was authentic. The IPCC was also correct on its claim on Amazon forests...the IPCC isn't here to answer deniers of climate change. Their sole objective is to damage the credibility of IPCC, not answering people whose only motive is to deny the science of climate change. We will put up a statement on IPCC website (clarifying errors), this is it. We are not going to answer these spurious individual complaints

And in a 12 September 2010 interview in The Week, an Indian news magazine, Pachauri responded to the question “Do you feel vindicated?” as follows.<sup>16</sup>

I knew that truth would prevail. To a large extent, justice has been done. I was symbolic of the larger cause of climate change science. The falsehoods that were being propagated were aimed at damaging climate change talks and attacking the IPCC. I was merely an emblem of the larger issue that these people wanted to harm and damage over the so-called errors in the IPCC's fourth assessment report. Except for one error, which we ourselves acknowledged about the Himalayan glaciers, the doubts raised have proved to be unfounded. I do feel vindicated.

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<sup>15</sup> <http://www.hindustantimes.com/They-can-bend-me-but-they-can-t-break-me/H1-Article1-504204.aspx>

<sup>16</sup> <http://week.manoramaonline.com/cgi-bin/MMOnline.dll/portal/ep/theWeekContent.do?sectionName=Current+Events&contentId=7842195&programId=1073754900&pageTypeId=1073754893&contentType=EDITORIAL>



## 7. Conclusions

Where do matters now stand? Returning to the five issues raised at the start, we can say that the evidence points to some clear conclusions.

1. The scientists involved in the email exchanges manipulated evidence in IPCC and WMO reports with the effect of misleading readers, including policymakers. The divergence problem was concealed by deleting data to “hide the decline.” The panels that examined the issue in detail, namely Muir Russell’s panel, concurred that the graph was “misleading.” The ridiculous attempt by the Penn State Inquiry to defend an instance of deleting data and splicing in other data to conceal a divergence problem only discredits their claims to have investigated the issue.
2. Phil Jones admitted deleting emails, and it appears to have been directed towards preventing disclosure of information subject to Freedom of Information laws, and he asked his colleagues to do the same. The inquiries largely fumbled this question, or averted their eyes. Despite being asked by Parliament to conclusively resolve this issue, Sir Muir Russell did not attend the interviews with Jones and, as reported in UK media, his inquiry did not ask Jones if he had deleted emails.
3. The scientists privately expressed greater doubts or uncertainties about the science in their own professional writings and in their interactions with one another than they allowed to be stated in reports of the IPCC or WMO that were intended for policymakers. Rather than criticise the scientists for this, the inquiries (particularly the House of Commons and Oxburgh inquiries) took the astonishing view that as long as scientists expressed doubts and uncertainties in their academic papers and among themselves, it was acceptable for them to conceal those uncertainties in documents prepared for policy makers.
4. The scientists took steps individually or in collusion to block access to data or methodologies in order to prevent external examination of their work. This point was accepted by the Commons Inquiry and Muir Russell, and the authors were admonished and encouraged to improve their conduct in the future.
5. The inquiries were largely unable to deal with the issue of the issue of blocking publication of papers, or intimidating journals. These ended up being subjective, he-said-she-said disputes, and in some cases the documentation was too sparse. But academics reading the emails could see quite clearly the tribalism at work, and in comparison to other fields, climatology comes off looking juvenile, corrupt and in the grip of a handful of self-appointed gatekeepers and bullies.

There remain two other questions needing to be addressed:

6. *Is the IPCC a reliable source of information on climate change?* In light of the answer to question 3, and the findings of the IAC that fundamental reforms are needed, the answer is that, even if one assumes that the existing problems did not compromise the validity of previous IPCC reports, as of the present, the IPCC should be viewed as unsound until and unless fundamental reforms are implemented. It has become tendentious and conniving, and its review process is compromised.

7. *Is the science concerning the current concerns about climate change sound?* Many people, starting with the members of the UK House of Commons Science and Technology Committee, had hoped this question would be answered during the inquiry process, and there is a frequent refrain in the media that the investigations affirmed the science. But the reality is that none of the inquiries actually investigated the science. The one inquiry supposedly set up to address this, namely Lord Oxburgh's, actually operated under a different remit altogether, despite multiple claims by the UEA that it was a science reappraisal panel. Sir Muir Russell's team had no mandate to assess CRU scientific work, though they nonetheless ventured into making superfluous claims in support of the conventional view. The IAC made clear that they were not investigating or commenting on the scientific issues. The House of Commons inquiry and the Penn State inquiries were also too limited in focus to examine the scientific issues. Consequently none of the inquiries addressed the question.

Climategate raised legitimate doubts on enough specific issues to put into question the process by which climate research is done and presented to the public. Over the course of the five reviews, a few complaints were investigated and upheld, such as the problem of data secrecy at the CRU and the misleading nature of the "hide the decline" graph. And the IAC leveled enough serious criticisms about the IPCC process to substantiate concerns that the organization is unsound for the purpose of providing balanced, rigorous science assessments. But many other concerns were left unaddressed, or slipped through the cracks between the inquiries, or were set aside after taking CRU responses at face value. The Muir Russell inquiry was particularly frustrating in the way it kept restating and shuffling the allegations until they were rendered into either innocuous or irrelevant terms, at which point any findings they did offer were largely beside the point. The world still awaits a proper inquiry into climategate: one that is not stacked with global warming advocates, and one that is prepared to cross-examine evidence, interview critics as well as supporters of the CRU and other IPCC players, and follow the evidence where it leads.