

**RA-10 Inquiry Report: Concerning the Allegations of Research Misconduct
Against Dr. Michael E. Mann, Department of Meteorology,
College of Earth and Mineral Sciences,
The Pennsylvania State University**

February 3, 2010

RA-10 Inquiry Committee for the Case of Dr. Michael E. Mann:

Henry C. Foley, Ph.D.
Vice President for Research and Dean of the Graduate School

Alan W. Scaroni, Ph.D.
Associate Dean for Graduate Education and Research,
College of Earth and Mineral Sciences

Ms. Candice A. Yekel, M.S., CIM,
Director, Office for Research Protections
Research Integrity Officer

Beginning on and about November 22, 2009, The Pennsylvania State University began to receive numerous communications (emails, phone calls and letters) accusing Dr. Michael E. Mann of having engaged in acts that included manipulating data, destroying records and colluding to hamper the progress of scientific discourse around the issue of anthropogenic global warming from approximately 1998. These accusations were based on perceptions of the content of the widely reported theft of emails from a server at the Climatic Research Unit of the University of East Anglia in Great Britain.

Given the sheer volume of the communications to Penn State, the similarity of their content and their sources, which included University alumni, federal and state politicians, and others, many of whom had had no relationship with Penn State, it was concluded that the matter required examination by the cognizant University official, namely Dr. Eva J. Pell, then Senior Vice President for Research and Dean of the Graduate School. The reason for having Dr. Pell examine the matter was that the accusations, when placed in an academic context, could be construed as allegations of *research misconduct*, which would constitute a violation of Penn State policy.

Under The Pennsylvania State University's policy, Research Administration Policy No. 10, (hereafter referred to as RA-10), *Research Misconduct* is defined as:

(1) fabrication, falsification, plagiarism or other practices that seriously deviate from accepted practices within the academic community for proposing, conducting, or reporting research or other scholarly activities;

(2) callous disregard for requirements that ensure the protection of researchers, human participants, or the public; or for ensuring the welfare of laboratory animals;

(3) failure to disclose significant financial and business interest as defined by Penn State Policy RA20, *Individual Conflict of Interest*;

(4) failure to comply with other applicable legal requirements governing research or other scholarly activities.

RA-10 further provides that “research misconduct does not include disputes regarding honest error or honest differences in interpretations or judgments of data, and is not intended to resolve bona fide scientific disagreement or debate.”

On November 24, 2009, Dr. Pell decided that the matter should be examined by the process articulated in RA-10. Dr. Pell then took the first steps in implementing the RA-10 review by initiating a meeting with the Dean of the College of Earth and Mineral Sciences (Dr. William Easterling), the Associate Dean for Graduate Education and Research from the College of Earth and Mineral Sciences (Dr. Alan Scaroni), the Director of the Office for Research Protections, (Ms. Candice Yekel) and the Head of the Department of Meteorology (Dr. William Brune). At this meeting, all were informed of the situation and of the decision to respond to the matter with an inquiry under RA-10. Dr. Pell then discussed the responsibilities that each individual would be expected to have according to policy. At this time, Dean Easterling recused himself from the inquiry for personal reasons. As the next administrator in the line of management for the college, Dr. Alan Scaroni was asked to take on Dean Easterling’s function in the ensuing inquiry.

Therefore, 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. 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.

At the time of initiation of the inquiry, and in the ensuing days during the inquiry, no formal allegations accusing Dr. Mann of research misconduct were submitted to any University official. As a result, the emails and other communications were reviewed by Dr. Pell and from these she synthesized the following four formal allegations. To be clear, these were not allegations that Dr. Pell put forth, or leveled against Dr. Mann, but rather were her best effort to reduce to allegation form the many different accusations that were received from parties outside of the University. The four synthesized allegations were as follows:

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?

On November 29, 2009, Dr. Pell and Dr. Foley met with Dr. Mann to let him know personally that he was accused of research misconduct and that an inquiry under RA-10 would take place. On November 30, 2010, a letter was delivered by Dr. Pell to Dr. Mann to notify him formally of these allegations and Dr. Pell's decision to conduct an inquiry under RA-10.

From November 30 to December 14, 2009, staff in the Office for Research Protections culled through approximately 1075 of the emails that were purloined from a server at the University of East Anglia. Emails were reviewed if they were sent by Dr. Mann, were sent to Dr. Mann, were copied to Dr. Mann, or discussed Dr. Mann (but were neither addressed nor copied to him). In summary, the following were found:

- 206 emails that contained a message/text from Dr. Mann somewhere in the chain;
- 92 emails that were received by Dr. Mann, but in which he did not write/participate in the discussion; and
- 79 that dealt with Dr. Mann, his work or publications; he neither authored nor was he copied on any of these.

From among these 377 emails, the inquiry committee focused on 47 emails that were deemed relevant. On December 17, 2009, the inquiry committee (Pell, Scaroni, Yekel), Dr. Brune and Dr. Foley met to review the emails, discuss the RA-10 inquiry process and go over what their respective activities would be. It was agreed that these individuals would meet again in early January and that they would use the time until that meeting to review the relevant information, including the above mentioned e-mails, journal articles, OP-ED columns, newspaper and magazine articles, the National Academy of Sciences report entitled "Surface Temperature Reconstructions for the Last 2,000 Years," ISBN: 0-309-66144-7 and various blogs on the internet.

On January 4, 2010, Dr. Foley, in his capacity as the new Vice President for Research and Dean of the Graduate School, became the convener of the inquiry committee as Dr. Pell had left the University to become the Under-Secretary of Science for the Smithsonian Institution. On January 8, 2010, Dr. Foley convened the inquiry committee to discuss their present thinking on the evidence presented in the emails and other publically available materials. At this meeting, it was decided that each committee member would send Dr. Foley specific questions that would be added to the four formal allegations and that would be used by the committee during the interview of Dr. Mann. These were compiled into one document. It was also decided that during

the upcoming interview of Dr. Mann, Dr. Foley would ask each of the initial questions with follow up questions coming from the other committee members, and he would moderate the interview.

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:

- He explained the content and meaning of the emails about which we inquired;
- He explained that he had never falsified any data, nor had he had ever manipulated data to serve a given predetermined outcome;
- He explained that he never used inappropriate influence in reviewing papers by other scientists who disagreed with the conclusions of his science;
- He explained that he never deleted emails at the behest of any other scientist, specifically including Dr. Phil Jones, and that he never withheld data with the intention of obstructing science; and
- He explained that he never engaged in activities or behaviors that were inconsistent with accepted academic practices.

On January 15, 2010, and on behalf of the inquiry committee, Dr. Foley conveyed via email an additional request of Dr. Mann, who was asked to produce all emails related to the fourth IPCC report (“AR4”), the same emails that Dr. Phil Jones had suggested that he delete.

On January 18, 2010, Dr. Mann provided a zip-archive of these emails and an explanation of their content. In addition, Dr. Mann provided a ten page supplemental written response to the matters discussed during his interview.

On January 22, 2010, the inquiry committee and Dr. Brune met again to review the evidence, including but not limited to Dr. Mann’s answers to the committee’s questions, both in the interview and in his subsequent submissions. All were impressed by Dr. Mann’s composure and his forthright responses to all of the queries that were asked of him. At this point, Dr. Foley reviewed the relevant points of his conversation with Dr. Gerald North, a professor at Texas A&M University and the first author of the NAS’ 2006 report on Dr. Mann’s research on paleoclimatology. Dr. Foley also relayed the sentiment and view of Dr. Donald Kennedy of Stanford University and the former editor of Science Magazine about the controversy currently swirling around Dr. Mann and some of his colleagues. Both were very supportive of Dr. Mann and of the credibility of his science. Once Dr. Brune had given his opinions and suggestions for next steps of the process, he was dismissed from further discussion as his role per policy RA-10 was that of providing consultation to the rest of the members; his role was not that of making a decision at the inquiry phase.

On January 26, 2010, Dr. Foley convened the inquiry committee along with University counsel, Mr. Wendell Courtney, Esq. in case issues of procedure arose.

After a careful review of all written material, and information obtained from the purloined emails, the interview of Dr. Mann, the supplemental materials provided by Dr. Mann and all the information from other sources, the committee found as follows with respect to each allegation:

Allegation 1: Did you engage in, or participate in, directly or indirectly, any actions with the intent to suppress or falsify data?

Finding 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. While a perception has been created in the weeks after the CRU emails were made public that Dr. Mann has engaged in the suppression or falsification of data, there is no credible evidence that he ever did so, and certainly not while at Penn State. 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”¹ 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.

Decision 1. As there is no substance to this allegation, there is no basis for further examination of this allegation in the context of an investigation in the second phase of RA-10.

Allegation 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?

Finding 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.

¹ The word *trick* as used in this email has stirred some suspicion. However, *trick* is often used in context to describe a mathematical insight that solves the problem. For example, see in a classic text on quantum mechanics by David Parks: "The foregoing explanation of the velocity paradox involves no new assumptions; the basic *trick*, the representation of a modulated wave as the superposition of two (or more) unmodulated ones, has already been used to explain interference phenomena..." pg. 21, **Introduction to Quantum Theory**, David Parks, Third Edition, Dover 1992.

Decision 2. As there is no substance to this allegation, there is no basis for further examination of this allegation in the context of an investigation in the second phase of RA-10.

Allegation 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?

Finding 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. Those who have formed this view-feel that, in their capacity as reviewers, Dr. Mann and his colleagues had early access to manuscripts from other authors with whom they disagreed, and that they could somehow act on those to reject them for publication. Actually, when one does due diligence on this matter, and asks about what papers were involved, one finds that enormous confusion has been caused by interpretations of the emails and their content. In some cases, the discussion and related debate centered on papers that were about to emerge which members of the purported conspiracy had written, but which were simply under embargo. In other cases, the discussion and related debate centered on papers that have emerged in otherwise notable scientific journals, which they deemed to have been published with a lower standard of scholarly and scientific scrutiny. The committee found no research misconduct in this. Science often involves different groups who have very different points of view, arguing for the intellectual dominance of their viewpoint, so that that viewpoint becomes the canonical one. We point to Kuhn² as an authority on how science is done, before it is accepted as “settled.”

Decision 3. As there is no substance to this allegation, there is no basis for further examination of this allegation in the context of an investigation in the second phase of RA-10.

Allegation 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?

Finding 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

² Thomas Kuhn, **The Structure of Scientific Revolutions**, The University of Chicago Press, Chicago, 1962.

proposing, conducting, or reporting research or other scholarly activities. It is the case that there has been a public outcry from some quarters that Dr. Mann and his colleagues did deviate from what some observers claim to be standard academic practice. All disciplines and scientific fields work within broad bounds of “accepted scientific” practice that apply to all researchers. However, within different disciplines of science there are additional elements of accepted practice that may be specific to those disciplines and therefore are different from those of other disciplines and fields. For example, accepted practices in a field of pure mathematics, such as number theory, may differ markedly from those in a field such as socio-biology. This is axiomatic. That said, the committee could not make a definitive finding on this allegation for reasons that follow.

Policy RA-10 speaks not just of research *misconduct* but also of research *conduct* and is explicit regarding the responsibility that we have as scientists to maintain the public trust. The preamble is as follows:

“Public trust in the integrity and ethical behavior of scholars is essential if research and other scholarly activities are to play their proper role in the University and in society. The maintenance of high ethical standards is a central and critical responsibility of faculty and administrators of academic institutions. Policy [AD-47](#) sets forth statements of general standards of professional ethics within the academic community.”

Furthermore, the preamble speaks to the high ethical expectations that Penn State has for its faculty and administrators. These expectations are embodied in another document, Policy AD-47 General Standards of Professional Ethics. The purpose of AD-47 is stated as follows:

“To set forth statements of general standards of professional ethics to serve as a reminder of the variety of obligations assumed by all members of the academic community.”

The full document is publically available (see <http://guru.psu.edu/policies/ad47.html>). Here we will simply excerpt those parts of AD-47 that are most relevant to our finding and from which our decision on the allegation flowed.

- I. Professors, guided by a deep conviction of the worth and dignity of the advancement of knowledge, recognize the special responsibilities placed upon them. Their primary responsibility to their respective subjects is to seek and to state the truth as they see it. To this end, they devote their energies to developing and improving their scholarly competence. They accept the obligation to exercise critical self-discipline and judgment in using, extending, and transmitting knowledge. They practice intellectual honesty. Although they may follow subsidiary interests, these interests must never seriously hamper or compromise their freedom of inquiry.

- III. As researchers/scholars, professors recognize that their goal is to discover, develop, and communicate new understanding. This goal is rarely achieved without making use of knowledge gained from others. Researchers must always

exercise gracious and appropriate recognition of published work in the literature, conversations with colleagues, and the efforts of students who work under the researchers' guidance. They must be scrupulous in presentation of their own data; it must be verifiable as a result of the highest standards in data gathering techniques. They must be extremely careful in the use of data reported by others, especially if used in the formation of broad comparative or contradictory hypotheses, since they may not know of any compromising circumstances in such data gathering. They must be comprehensive in consideration of work with human subjects; they must have thoroughly researched all procedures, must have informed individuals involved of all aspects of their cooperation, and must report all responses accurately, both positive and negative results. As open-minded researchers, when evaluating the work of others, they must recognize the responsibility to allow publication of theories or experiments that may contradict their own findings, as only by free inquiry and dissemination of all facts will the fruits of the labor of the whole community be allowed to mature.

- IV. As colleagues, professors have obligations that derive from common membership in the community of scholars. They respect and defend the free inquiry of their associates. In the exchange of criticism and ideas they show due respect for the opinions of others. They acknowledge their academic debts and strive to be objective in their professional judgment of colleagues. They accept their share of faculty responsibilities for the governance of their institution.
- VI. As members of the community, professors have the rights and obligations of all citizens. They measure the urgency of these obligations in the light of their responsibilities to their respective subjects, to their students, to their profession, and to their institution. When they speak or act as private persons they avoid creating the impression that they speak or act for their respective colleges or the University. As citizens engaged in a profession that depends upon freedom for its health and integrity, professors have a particular obligation to promote conditions of free inquiry and to further public understanding of academic freedom.

It is clear to those who have followed the media and blogs over the last two months that there are two distinct and deeply polarized points of view that have emerged on this matter. One side views the emails as evidence of a clear cut violation of the public trust and seeks severe penalties for Dr. Mann and his colleagues. The other side sees these as nothing more than the private discussions of scientists engaged in a hotly debated topic of enormous social impact.

We are aware that some may seek to use the debate over Dr. Mann's research conduct and that of his colleagues as a proxy for the larger and more substantive debate over the science of anthropogenic global warming and its societal (political and economic) ramifications. We have kept the two debates separate by only considering Dr. Mann's conduct.

The allegation inquires about whether Dr. Mann seriously deviated from accepted practices within the academic community for proposing, conducting, or reporting research or other scholarly activities. In 2006, similar questions were asked about Dr. Mann and these questions motivated the National Academy of Sciences to undertake an in depth investigation of his research. The committee that wrote the report on surface temperature reconstructions found that Dr. Mann's science did fall well within the bounds of accepted practice. What has changed since that time is that private emails have come to our attention and that of the public at large, and these give us a glimpse into the behind the scenes workings of Dr. Mann and many of his colleagues in the conduct of their science.

Decision 4. Given that information emerged in the form of the emails purloined from CRU in November 2009, which have raised questions in the public's mind about Dr. Mann's conduct of his research activity, given that this may be undermining confidence in his findings as a scientist, and given that it may be undermining public trust in science in general and climate science specifically, the inquiry committee believes an investigatory committee of faculty peers from diverse fields should be constituted under RA-10 to further consider this allegation.

In sum, the overriding sentiment of this committee, which is composed of University administrators, is that allegation #4 revolves around the question of accepted faculty conduct surrounding scientific discourse and thus merits a review by a committee of faculty scientists. Only with such a review will the academic community and other interested parties likely feel that Penn State has discharged its responsibility on this matter.

An investigatory committee of faculty members with impeccable credentials will consider this matter and present its findings and recommendations to Dr. Henry C. Foley within 120 days of being charged. The committee will consist of the following five faculty members:

1. Dr. Mary Jane Irwin, Evan Pugh Professor, Department of Computer Science and Electrical Engineering;
2. Dr. Alan Walker, Evan Pugh Professor, Department of Anthropology and Department of Biology;
3. Dr. A. Welford Castleman, Evan Pugh Professor, Department of Chemistry and Department of Physics;
4. Dr. Nina G. Jablonski, Head, Department of Anthropology; and
5. Dr. Sarah M. Assmann, Waller Professor, Department of Biology.

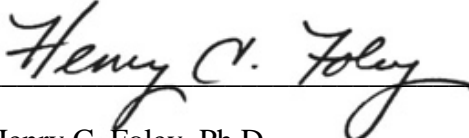
Ms. Candice Yekel, as Director of the Office for Research Protections and as the University's Research Integrity Officer, will provide administrative support and assistance to the committee.

The investigatory committee's charge will be to consider what are the bounds of accepted practice in this instance and whether or not Dr. Mann did indeed 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.

In accordance with policy RA-10, Dr. Mann will receive a printed copy of this inquiry report, and he will be welcome to provide written comment on this report for the record if he wishes.

NOTE: Dr. Michael E. Mann has consented to the public release of this report.

 02/03/2010

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