# **Report to the Provost**

# Ad Hoc Committee To Review Factors Delaying Resolution of a Research Misconduct Proceeding

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#### I. COMMITTEE CHARGE AND ACTIVITES

This *Ad Hoc Committee* was established to examine the circumstances surrounding MIT's attempts to resolve an allegation of research misconduct<sup>1</sup> involving the MIT Lincoln Laboratory. Quoting directly from the charging memo of October 17, 2005 from Provost L. Rafael Reif:

"...scientific integrity is the essential standard for all research done at MIT, and one we diligently adhere to. Nevertheless, from time to time an allegation of research misconduct may be raised. Consistent with federal regulations, MIT has well-established procedures for evaluating such allegations and for dealing with them in a thorough and timely manner, while protecting the rights of all parties. Over many years, these procedures have proven their effectiveness in achieving full and satisfactory resolution of a variety of cases.

"Recently, however, we have encountered difficulties in resolving the allegation of research misconduct involving members of the scientific staff of Lincoln Laboratory. The complexities and resulting delays in resolving this matter have been very troubling to the Institute and, of course, to the affected individuals. We actively continue to work toward a satisfactory resolution. At the same time it behooves us to understand and derive appropriate lessons from this experience.

"Your review should (i) identify the factors that have complicated and delayed the satisfactory resolution of this particular allegation of research misconduct, (ii) determine their implications, if any, for how the Institute should conduct itself in the future, and (iii) recommend any changes in policy and/or practice that would help avoid a recurrence. The review will not address the specific allegation of research misconduct itself."

This *Ad Hoc Committee* had its first meeting on October 24, 2005. Altogether, the *Committee* held more than two dozen in-person meetings, met with a dozen individuals and reviewed numerous documents<sup>2</sup>.

# NOTE ON CONFIDENTIALITY: This Ad Hoc Committee has attempted to be scrupulous to respect the confidentiality of all the individuals we met with and

<sup>&</sup>lt;sup>1</sup> Policies and guidelines at MIT, other universities and the federal government appear to use several terms to describe misconduct in the execution and/or reporting of research: "academic misconduct," "scientific misconduct," and "research misconduct." For the purposes of this report, we have interpreted all these terms to have essentially the same meaning.

<sup>&</sup>lt;sup>2</sup> Two of the four committee members hold appropriate security clearances and have examined many of the relevant classified documents.

to respect the spirit of confidentiality regarding proceedings that deal with research misconduct, as required by federal regulations and MIT policy. Most of the information presented in this report is already in the public domain. In a few cases, to achieve completeness and clarity, we have revealed additional details. We have attempted to do so in ways that should not compromise the rights of individuals and/or obtained their consent.

#### **II. THE ALLEGATION OF RESEARCH MISCONDUCT**

The allegation of research misconduct involving MIT Lincoln Laboratory emerged from analyses by MIT Professor Theodore Postol (Program in Science, Technology and Society) of various aspects of an early test in the ground-based, midcourse missile defense program, known as IFT-1A, where IFT refers to Integrated Flight Test.<sup>3</sup> The prime contractor for the test, conducted in June 1997, was Boeing North America, formerly Rockwell International.

Prior to IFT-1A, in 1996, a former employee of TRW, Inc., a government defense contractor (now part of Northrop-Grumman), filed a lawsuit in federal court under the False Claims Act alleging that TRW had misrepresented to the government the effectiveness of TRW's software for discriminating between warheads and other objects in space. The discrimination software was not part of the IFT-1A flight test, but TRW, which was a subcontractor to Boeing, used data collected during the test in a post-flight evaluation of the software. The lawsuit was amended several times, to include among others, allegations regarding TRW's reports of tests based on IFT-1A data. The False Claims Act allows a private person (commonly referred to as a "whistle-blower") to bring a lawsuit in the name and on behalf of the United States if the whistle-blower alleges that a government contractor has submitted false or fraudulent information to the government. If the suit is successful, the whistle-blower gets a share of the damages.

The Department of Justice reviews all lawsuits filed under the False Claims Act, and decides whether to assume primary responsibility for prosecution of the case, or leave it to the whistle-blower. To determine whether it should join the whistle-blower's lawsuit against TRW, the Department of Justice asked the Defense Criminal Investigative Service (DCIS), a unit within the Department of Defense Inspector General's office, to examine the Whistle Blower's allegations. In 1998, as part of this review, the National Missile Defense Joint Program Office in the Department of Defense asked the Phase One Engineering Team (POET) to assemble a review team of experts from Federally Funded

<sup>3</sup> Many of the background details presented here are taken from two similar reports of the United States Government Accountability Office: *Review of Results and Limitations of an Early National missile Defense Flight Test*, GAO-02-124 (February 2002); and *Review of Allegations about an Early National Missile Defense Flight Test*, GAO-02-125 (February 2002); the reports are unclassified, and are available at <a href="http://www.gao.gov/new.items/d02124.pdf">http://www.gao.gov/new.items/d02124.pdf</a> and <a href="http://www.gao.gov/new.items/d02125.pdf">http://www.gao.gov/new.items/d02125.pdf</a>

Research and Development Centers (FFRDCs) to assess the TRW software.<sup>4</sup> The POET, formed in 1988 by a predecessor to the Missile Defense Agency (MDA), was an "umbrella mechanism used to obtain technical and engineering support from Federally Funded Research and Development Centers. To ensure that the scientists who work on each review undertaken by the Phase One Engineering Team have the requisite expertise in the subjects they are asked to review, the membership on each review team varies with each assignment."<sup>5</sup>

In this case, the POET review team consisted of five members, including two members of the technical staff of MIT Lincoln Laboratory, who were assigned by Lincoln Laboratory in response to a request from the POET director for individuals with the necessary technical knowledge to perform the assigned task. The POET review team began its work in June 1998 and released its final report in January 1999 (we refer to this as the POET report). This *Ad Hoc Committee* was told that the POET report had an intended audience of approximately a dozen individuals in MDA, DCIS, the Department of Justice, and possibly other government agencies, who were involved in the decision whether or not the government should join the whistle-blower's lawsuit against TRW. The POET report dealt with classified information, and therefore was itself classified SECRET. In March 1999, the Department of Justice notified the court that it would not join in the lawsuit.

A year later, in the spring of 2000, Professor Postol began raising a series of charges against MDA and other parties concerning alleged misrepresentation of the viability of mid-course missile defense in general and of the results of IFT-1A in particular. These charges were expressed in various letters to government officials and in other writings. Over time, as the specifics of his charges changed and were elaborated, Professor Postol began to allege that the POET report, which was based in part on an assessment of the TRW software using data from IFT-1A, was itself fraudulent.

Professor Postol's allegation was based on a redacted version of the POET report (actually, a late draft of the final report) that had been redacted by an agent of the Defense Criminal Investigation Service (DCIS) so that it could be sent to the plaintiff in the TRW whistle-blower suit. In this context, "redacting" a document involves blacking out or otherwise eliminating parts of the text with the objective of removing all SECRET information so that it may be released to a person without a security clearance. The "redacted report" is missing selected words, phrases, sentences, paragraphs, numerical entries, equations, and labels on graphs. Subsequently, MDA determined that the attempted redaction by the DCIS agent was not authorized, and that not all of the

<sup>&</sup>lt;sup>4</sup> Note that the charge to the POET review team addressed the TRW discrimination software, not IFT-1A; however part of the charge was to use data from IFT-1A to evaluate the software. The POET review team evaluation was to augment an earlier evaluation performed by a private contractor to the national program office of the MDA's predecessor.

<sup>&</sup>lt;sup>5</sup> GAO-02-125, p4, note 10.

classified information had been removed from the report.<sup>6</sup> MDA therefore classified SECRET the redacted version of the POET report.

In the spring of 2001 Professor Postol brought his concerns regarding the POET report to the attention of then MIT President Charles Vest. The allegation of "fraud" in the POET report was made in a letter to President Vest in May 2001. Because the POET report is a government report, not an MIT Lincoln Laboratory report, the applicability of MIT's policies to the allegation was not self-evident. President Vest and then Provost Robert Brown considered whether Professor Postol's allegation should be reviewed by MIT and, if so, through what procedure.

While the President and Provost were considering the allegation, agents of the Defense Security Service (DSS) notified MIT that some of Professor Postol's correspondence concerning IFT-1A contained classified information, apparently obtained from the former TRW engineer. DSS requested that MIT retrieve that material, and any other classified information and place all such materials in a secure facility. They also requested that MIT advise all recipients of that material that it contained classified information. While complying with this request to the extent possible, President Vest and Provost Brown believed that the scope of the DSS request was inappropriate and unreasonable, especially given the widespread availability on the web of many of the documents including the redacted version of the POET report. The President and Provost actively engaged with DSS and with others, including senior leaders in the Department of Defense. As a result of these multiple efforts, they reached a compromise that satisfied DSS.

In response to Professor Postol's allegation of actual fraud in the preparation of the POET report, the Provost<sup>7</sup> decided in the early fall of 2001 to invoke MIT Section 10.1 of *Policies and Procedures*, "Procedures for Dealing With Academic Misconduct in Research and Scholarship" (see Appendix A.1), to review that allegation.<sup>8</sup> The policy

<sup>&</sup>lt;sup>6</sup> See GAO-010737R, "DOD Officials Acted in Accordance with Executive Order for Addressing Security Classification Concerns,"

http://www.gao.gov/new.items/d01737r.pdf

<sup>&</sup>lt;sup>7</sup> Normally, the Vice President for Research initiates reviews of alleged research misconduct. When the allegations were first raised, the then Vice President for Research was a Canadian citizen who did not hold a security clearance. The new Vice President for Research, who arrived in September 2001, only received her security clearance some time later. Therefore, the Provost himself assumed the oversight role.

<sup>&</sup>lt;sup>8</sup> MIT's *Policies and Procedures* Section 10.1 applies to allegations of misconduct in any research at MIT. Under federal regulations issued by the National Science Foundation and the Public Health Service (as the overseer of the National Institutes for Health) in the late 1980s, recipients of federal funds for research were required to adopt procedures for the investigation of allegations of misconduct in federally supported research. The provisions of Section 10.1 follow in large part the structure and procedures set out in the federal regulations, even though they apply to all research at MIT, not just that supported by federal funds. Both the federal regulations and MIT policy have been revised several

addresses the disposition of allegations of research misconduct against MIT personnel, including those who work at Lincoln Laboratory. In this case, the personnel were the two MIT Lincoln Laboratory technical staff members listed as co-authors of the POET report (the other three co-authors were employed by other FFRDC's, not by MIT). The policy calls for a two-step process: first a preliminary <u>inquiry</u> by a fact-finder to determine if there are sufficient grounds for believing that research misconduct might have occurred; and second, a full <u>investigation</u> if the inquiry concludes that an investigation is warranted. If the inquiry finds that an investigation is not warranted, the matter is closed.

The Provost sought to identify a faculty member who had the appropriate technical knowledge and the necessary security clearance and who was willing to undertake the inquiry as fact-finder. After more than one attempt, the Provost found a suitable faculty member, MIT Professor Edward Crawley<sup>9</sup> (Department of Aeronautics and Astronautics), who agreed to take on this assignment.

Meanwhile, in January 2002, Professor Postol filed a formal grievance with the Chair of the MIT Corporation against the President and the Provost alleging that the delay in initiating an inquiry (along with other charges) violated MIT policies.<sup>10</sup> This action was made public on February 9, 2002 in a *Boston Globe* story quoting Professor Postol. Among other information, the story named the two MIT Lincoln Laboratory co-authors of the POET report. The Ad Hoc Committee believes that this story was the first public disclosure about the MIT misconduct proceeding, although there had been numerous earlier media stories about the whistle-blower lawsuit, IFT-1A, and the events of spring/summer 2001 involving DSS and MIT. Since February 2002 the misconduct proceeding has continued to receive periodic media attention.

In February 2002, the Provost, following the typical procedure for initiating a research misconduct inquiry, corresponded with Professor Postol regarding the inquiry and solicited his comments on the selection of the person to conduct the inquiry. The Provost also requested a technical description of the reasons that support Professor Postol's allegation.

In March 2002, the United States Government Accountability Office issued two very similar reports based on its 18-month investigation of IFT-1A (GAO-02-124 and GAO 02-125).<sup>3</sup> The GAO reports had been requested by various members of Congress

times since the 1980's. MIT's current policies are strongly influenced by the report of a faculty committee, *Fostering Academic Integrity*: *Report of the Committee on Academic Responsibility* (also known as the Widnall report), MIT, 1992; the report is available at http://web.mit.edu/vpr/www/Widnall Report.pdf

<sup>9</sup> The identity of a fact-finder should be kept confidential, but earlier breaches of confidentiality have already revealed Professor Crawley's name.

<sup>10</sup> In response, the Executive Committee of the MIT Corporation conducted a grievance proceeding to examine the charges, using a fact-finder from outside MIT. In May 2002, based on the findings of the outside fact-finder, the Executive Committee concluded that there was no violation of MIT policies by either the President or the Provost.

in response to Professor Postol's communications with them. The GAO reported that it "examined the methodologies, findings, and limitations of the review conducted by the Phase One Engineering Team of TRW's discrimination software." also noted that they "did not replicate the evaluations conducted by the Phase One Engineering Team and cannot attest to the accuracy of their reports."<sup>11</sup>

In a letter of March 2002, the Provost charged Professor Crawley to conduct an inquiry. Because the Provost had not received a single, technical description of the allegation, he enclosed four letters Professor Postol had written to various people describing his concerns about the POET report. The two Lincoln Laboratory staff members listed as co-authors of the report had been informed by the Provost in February 2002 that an inquiry had been initiated under MIT's research misconduct policy, but they were not provided with a specific allegation.

The fact-finder, Professor Crawley, held the required security clearance, and was given access to unclassified and classified material (classified documents relevant to the inquiry included the POET report, the reclassified "improperly redacted" POET draft report, and certain items from Professor Postol's correspondence with government offices that had themselves been classified). As the inquiry proceeded, Professor Crawley had several communications with Professor Postol and with the MIT Lincoln Laboratory members of the POET review team. The details of Professor Postol's allegation regarding the POET report appear to have changed during the course of the inquiry.

Professor Crawley sent a preliminary draft of a portion of the inquiry report to the two Lincoln Laboratory POET review team members to review the factual and technical accuracy of his analyses. This preliminary draft concluded that no evidence of misconduct had been found by the inquiry and that further investigation was not warranted. Professor Crawley then sent the preliminary draft to Professor Postol, for the same review of factual and technical accuracy.

Professor Crawley received two detailed responses from Professor Postol, which included a statement of additional concerns. Professor Crawley revised his report and removed the conclusion that an investigation was not warranted. The report was submitted to the Provost in late November 2002.

The revised report did not find that research misconduct had occurred. But it did conclude that, in light of the additional information provided by Professor Postol, the allegation of research misconduct could not be resolved within the limited scope of an inquiry. The inquiry report proceeded to frame six questions that remained unresolved, and recommended that an investigation be initiated to answer them.

<sup>&</sup>lt;sup>11</sup> GAO-02-124, pp. 36-37; see also GAO-02-125, pp. 42-43. The GAO's most complete descriptions of their reviews of the POET report are given in GAO-02-124 Appendix IV, and GAO-02-125 Appendix II (the two are similar but not identical).

In early 2003, the Provost accepted the recommendation of the inquiry report. In February 2003, following federally-mandated procedures and the requirements of Section 10.1 of MIT's *Policies and Procedures*<sup>8</sup> (see Appendix A.1.), he notified MDA, as the federal sponsor, of MIT's intention to proceed with an investigation. The Provost decided that the investigation should be conducted by a small group of expert investigators not affiliated with MIT, and who held the requisite security clearances.

After several months, in May 2003, MDA informed the Provost that it would deny MIT's proposed investigators access to any classified documents, effectively halting MIT's investigation. Under federal rules, access to classified information requires not only that an individual hold the appropriate level of security clearance, but also that he or she have a "need to know" the classified information to perform services "essential" to fulfilling a classified contract or program. MDA informed the Provost that it would deny the proposed investigators access to classified material because their need-to-know did not meet the second prong of this test of being "essential."<sup>12</sup> MDA explained that this decision rested, in part, on the Department of Defense's assertion in January 2003 of the "state secrets privilege,"<sup>13</sup> to deny access to some of the same documents in the whistle-blower suit against TRW, and in a parallel lawsuit making many of the same claims that the former TRW engineer had filed against Raytheon in 2001. MDA stated that the basis for the assertion of the state secrets privilege was the serious damage to national security that would result from unauthorized disclosure of the technologies used to discriminate warheads from decoys and countermeasures.

<sup>&</sup>lt;sup>12</sup> MIT's oversight of classified information at MIT Lincoln Laboratory is controlled by a contract between MIT and the Department of Defense, which incorporates the terms of the National Industrial Security Program Operating Manual (NISPOM). Under the NISPOM, the determination of "need-to-know" is typically left to the discretion of MIT management, following guidelines specified in the NISPOM. Appropriate senior officers of MIT hold the necessary security clearances and acquire need-to-know access appropriate to their roles in oversight of the Laboratory. However, the NISPOM also provides that the Defense Department retains the authority to deny need-to-know access to a person even if he or she holds the appropriate security clearance. Section1-104c states "Nothing in this Manual affects the authority of the Head of an Agency to limit, deny, or revoke access to classified information under its statutory, regulatory, or contract jurisdiction if that Agency Head determines that the security of the nation so requires." It was this overriding authority that MDA exercised in May 2003 to deny access to classified investigators proposed by MIT.

<sup>&</sup>lt;sup>13</sup> The state secrets privilege permits the United States to deny access to classified information in litigation when the head of a department (in this case, the Deputy Secretary of Defense acting for the Secretary) asserts that there is a reasonable danger that providing the information will expose military matters that, in the interest of national security, should not be divulged. If the litigation cannot proceed without access to that information, then the court must dismiss the action. In February 2003 the Federal court dismissed the whistle-blower suits brought by the former TRW engineer.

MDA also advised MIT that the agency believed no further investigation was necessary because two federal agencies, the GAO and the Federal Bureau of Investigation (FBI),<sup>14</sup> had already determined the absence of fraud or misconduct in the POET report. MDA stated that, on the basis of those findings, it was satisfied with the results and conduct of the POET study, and that the POET review team members had not engaged in research misconduct.

Subsequently, MDA informed MIT that Professor Crawley's inquiry report itself contained classified information and was therefore also classified SECRET. As a result, MDA ordered MIT to collect all copies of the report, including drafts and comments on it, and to move them to a secure location.

Starting in May 2003, MIT made numerous and repeated attempts to obtain a reversal of MDA's decision to deny the proposed investigators access to the classified materials and to find a way to conduct the investigation recommended in the MIT inquiry report. MIT argued that the earlier GAO and FBI reports did not in fact address the specific questions enumerated in the MIT inquiry report, and reasserted MIT's imperative to complete the investigation to comply with its own policies and with federal regulations. MIT pledged to provide safeguards to protect classified material, and proposed other procedures for the investigation to address the MDA's security concerns. The President and Provost consulted repeatedly with faculty leaders, outside counsel and other individuals with related government and national security experience. There were exchanges of letters, phone calls and personal visits to key government officials in and out of the Department of Defense. However, the impasse was not resolved.

These efforts were redoubled after Dr. Susan Hockfield assumed the presidency of MIT (in December 2004). Shortly after her arrival, President Hockfield met with Professor Postol. She consulted with MIT senior officers, the Chair of the Faculty, the Research Policy Committee and other senior faculty. Contact was also made at high levels in the government. By early summer of 2005, there had been changes in leadership at MDA and in other senior positions, providing a fresh look at the issues.

<sup>&</sup>lt;sup>14</sup> Representative Dennis Kucinich and 52 other members of the House of Representatives had asked the FBI to investigate Professor Postol's allegations of false or fraudulent findings of the Ballistic Missile Defense Organization and the POET review team. On May 10, 2001, the Deputy Assistant Director of the Criminal Investigative Division of the FBI wrote a letter to Representative Kucinich to advise him that, after investigation, the FBI found that all of the POET review team members provided "plausible explanations" for the issues Professor Postol alleged, and that the FBI attributed "[s]ome of the discrepancies" to the fact that Professor Postol based his conclusions on the redacted version of the POET report, which the FBI letter said was "missing crucial scientific information." The letter concluded that interviews, reviews of documents, and "extensive discussions with General Accounting Office (GAO) investigators and DCIS Agents did not identify any criminal fraud or cover-up by Pentagon officials or contractors involved in the National Missile Defense System" and advised Representative Kucinich that the FBI had closed its investigation.

By mid-fall of 2005, negotiations between MIT and the Department of Defense led to a plan for an investigation into the questions framed by Professor Crawley's inquiry report. The plan called for an investigation by a high-level civilian employee of the Air Force, not MDA, who would have full access to all materials. At MIT's insistence, the Department of Defense agreed to the participation of an external advisor/consultant who could have access to all classified materials except those for which the state secrets privilege had been invoked in 2003. It required several months for the plan to be implemented, including identifying and appointing an investigator and consultant/advisor, and issuing appropriate task orders. The plan for the investigation was formally launched by the Department of Defense at the end of February 2006 and announced to the MIT faculty and to MIT Lincoln Laboratory staff by Provost Reif on March 3, 2006.

#### **III. CHRONOLOGY AND ESTIMATE OF THE DELAY**

The *Ad Hoc Committee* concludes that the time period it should consider as MIT's review of Professor Postol's allegation began in May 2001, when Professor Postol first brought his allegation of fraud to the attention of the President. The *Committee* found it helpful to categorize the events from spring 2001 to the present into separate phases, as follows:

<u>Phase 1</u>: May 2001 [Letter to Vest alleging fraud] – March 2002 [MIT inquiry initiated] Elapsed time: 10 months

<u>Phase 2</u>: March 2002 [MIT inquiry initiated] – May 2003 [MDA denies access] Elapsed time: 14 months

Phase 3: May 2003 [MDA denies access] – February 2006 [the Department of Defense initiates investigation] Elapsed time: 33 months

The total elapsed time from May 2001 to February 2006 is ~57 months, or 4 years and 9 months. The first 10 months (Phase 1), spanned from the time of initial notification to the initiation of the inquiry. The next 14 months (Phase 2) were occupied by the inquiry and the first attempt to initiate the investigation. The remaining 37-months (Phase 3), is primarily the period of impasse between MIT and the government over whether or not an investigation could and should be carried out, the time expended in negotiations to find and, eventually, to define a mutually acceptable plan to conduct the investigation, and the time needed to implement the plan.

The *Ad Hoc Committee* has made a rough estimate of how much time was spent in review of the allegation and how much might be characterized as atypical and therefore subject to assessment under the *Committee's* charge to identify "factors that have complicated and delayed the satisfactory resolution of this matter." The office of the Vice President for Research, which normally oversees reviews of academic misconduct, reported to us that the handful of cases considered over the past several years have varied greatly in duration, taking from 3 to more than 24 months to resolve, with most requiring nine to twelve months. The duration depended, in part, on the degree of complexity. Even this small sample includes one other inquiry lasting more than 24 months, presumably because of its own complicating factors.

In this context, the 24 months of Phases 1 and 2 appears to be roughly 8-14 months longer than one might expect for a more straightforward inquiry, i.e., there was a "delay" of 8-14 months (most of this occurred prior to the start of the inquiry and was the subject of the MIT Corporation Executive Committee review (see footnote 10). The *Ad Hoc Committee* has characterized much of the 33 months of Phase 3 as delay; in the absence of complications, it should probably take no more than a few months, say 2, to establish and launch an investigation. Therefore, we estimate the total delay to be roughly 39-45 months, or more than three but less than four years.

## IV. COMPLICATING FACTORS

The *Ad Hoc Committee* has identified sixteen factors that complicated the review of the allegation of research misconduct and, therefore, may have contributed to the delay in resolving it. We group these complicating factors into three categories: those that affected all phases, those that primarily affected the Phases 1 and 2 associated with initiating and conducting the inquiry, and those that primarily affected Phase 3 associated with the attempts to launch an investigation. Some of these complications contributed directly to the delay, some indirectly. The degree to which they contributed is addressed both here and in our findings in Section V.

#### IV A. COMPLICATING FACTORS AFFECTING ALL PHASES

<u>Factor 1. The alleged misconduct has intersected with an issue of national policy.</u> The internal MIT issue, the allegation of research misconduct in the POET report, has intersected with a highly visible and contentious issue of national policy, the viability of mid-course ballistic missile defense. Furthermore, because of other factors below (e.g., classification restrictions, extensive media coverage, and the MIT administration's adherence to MIT confidentiality policies), it has been very difficult for outside observers (including most faculty) to develop an independent understanding of the relationship of the POET report to the overall national policy issue.

Factor 2. The complainant's concerns have encompassed the broader national policy issues and extend beyond MIT. In writings and public statements, Professor Postol closely identifies his allegation of research misconduct by the Lincoln Laboratory scientists with national policy issues. He has objected that MIT's categorization of the allegation, namely as an allegation of research misconduct involving the two MIT co-authors of the POET report, is improperly narrow.

<u>Factor 3. The alleged misconduct intersected with external litigation</u>. The issues of concern to MIT partially intersected with external legal proceedings (the former TRW engineer's whistle-blower lawsuits) that do not involve MIT. This intersection has heightened government concerns and has added extra dimensions to the issues in Factor 1. More importantly, this was the litigation in which the government later chose to exercise the state secrets privilege over some of the classified documents that were necessary for MIT's review. As described in Factor 15, the fact that the state secrets privilege had been invoked in this litigation was a major factor in preventing MIT from conducting its own investigation.

<u>Factor 4. Key documents were classified</u>. Key documents were (and remain) classified, including the final POET report, the incompletely redacted version of that report, certain correspondence, and, subsequently, the MIT inquiry report itself that frames the specific questions for an investigation (as well as drafts and comments on that report).<sup>15</sup> These documents have been available to appropriately cleared administrators at Lincoln Laboratory and MIT-campus and were made available to the MIT fact-finder, who held the appropriate clearance. However, this Factor has had several consequences:

- i. The government subsequently denied MIT's proposed outside investigators access to certain key classified documents.
- ii. Even if normal confidentiality associated with misconduct cases were not a factor, classified information cannot be used to refute charges in public forums.
- iii. The Provost had to personally initiate the misconduct process (see footnote 7 and Factor 14).
- iv. Those who have had access, including the fact-finder during the inquiry, have to review the documents under the controlled conditions required for handling classified materials, adding time and complexity to their reviews.

<u>Factor 5. Throughout the process, confidentiality was not respected</u>. Repeated breaches of confidentiality by the complainant throughout the process led to coverage in local and national media, to inquiries from members of Congress, and to a high degree of visibility.<sup>16</sup> Despite media interest, MIT's efforts to conform to MIT and federal policies of confidentiality generated an asymmetry in the public accounts about the matter (one view was reported, the other was not). The breaches of confidentiality have had several consequences:

- i. Very elevated levels of concern by all parties involved
- ii. Inappropriate disclosure of the identities of individuals charged with alleged research misconduct
- iii. Heightened levels of concern by the government over future disclosures and possible loss of control of classified information

<sup>&</sup>lt;sup>15</sup> We realize that Professor Postol has stated that access to classified documents is not necessary to conduct an investigation. The committee's view of this issue is given in Finding 9.

<sup>&</sup>lt;sup>16</sup> Some might argue that the media attention (and Congressional interest) provided pressure on MIT and the Department of Defense to confront and resolve the allegations.

- iv. Widespread public misperceptions about the allegation based on one-sided information
- v. Reluctance of qualified individuals to serve as fact-finders or investigators (see Factor 6)

Factor 6. Complications arose in identifying individuals who were appropriately independent, held the proper clearance, had the necessary expertise, and who were willing to conduct the inquiry and investigation. Efforts to recruit suitable individuals delayed the start of the inquiry and the first stages of establishing an investigation (see Factor 5v). This complication also may have contributed to the fact that only one individual was tasked with conducting the inquiry (see Factor 13).

Factor 7. The distinction between MIT's policies regarding "research misconduct" as opposed to "grievance" was not always clear to all parties. MIT's *Policies and Procedures* make a clear distinction between a grievance (section 9.6)<sup>17</sup> and an allegation of research misconduct (section 10.1; see Appendix). The former has qualities of a civil dispute between two parties, whereas the latter is an institutional matter and in cases involving federal sponsorship is subject to government regulations in cases involving federal sponsorship. While an allegation of research misconduct is often initially brought forward by a "complainant," the role that individual can or should play in the subsequent inquiry and/or investigation is not the same as it would be in the case of a grievance, and what constitutes "resolution" of the matter is also different.<sup>18</sup> The *Ad Hoc Committee* believes that the distinction was, and is, not clearly understood by all the parties involved nor by others in the MIT community.

# IV B. COMPLICATING FACTORS AFFECTING PRIMARILY PHASES 1 & 2

<u>Factor 8. The POET study was not an MIT report.</u> This fact led to an initial uncertainty about the applicability of MIT's research misconduct policy to a government report written by a team of five, only two of whom were MIT employees assigned to participate on the government team to address a government charge. This uncertainty contributed to the delay in starting the inquiry. In the end, the Provost determined that an inquiry should proceed under MIT's research misconduct policy because the allegation concerned the activities of two MIT authors who were acting in their roles as employees of MIT Lincoln Laboratory in preparing the POET report.

<sup>&</sup>lt;sup>17</sup> MIT *Policies and Procedures* 9.6, "Complaint and Grievance Procedures" outlines procedures to be followed by "any person working or studying at MIT who believes that he or she has been unjustly treated or that the Institute's stated policy of nondiscrimination has been violated...." See http://web.mit.edu/policies/9.6.html.

 <sup>&</sup>lt;sup>18</sup> See Fostering Academic Integrity: Report of the Committee on Academic Responsibility (Widnall Report), MIT, 1992, section VIII.1
http://web.mit.edu/vpr/www/Widnall Report.pdf

<u>Factor 9. A key document was "reclassified</u>." MDA determined that a publicly available version of the POET report redacted by the Defense Criminal Investigation Service (DCIS) had been declassified without authority, and still contained classified information. Thus, MDA asserted that the redacted version of the report remain classified (or in effect was "reclassified"). Professor Postol's allegation was based on this redacted report. The "reclassification" led to one of the peripheral events of the summer of 2001 (DSS efforts to have MIT secure all copies) addressed in Factor 10.

Factor 10. Key parties were diverted by the need to deal with other events. Primary peripheral events associated with this matter include: 1) the MIT administration's need to address DSS demands that MIT retrieve copies of the redacted report and related materials during the summer of 2001; and, 2) the grievance raised by Professor Postol against the President and Provost regarding their handling of Professor Postol's misconduct allegation. The former led to a delay in initiating the inquiry, whereas the latter may have contributed to the decision to use non-MIT investigators, which in turn may have exacerbated the intersection with MDA's decision not to approve access by the investigators to the classified information.

Factor 11. The inquiry lacked a specific and consistent definition of the allegation of research misconduct. Professor Postol's allegation evolved over time regarding the missile defense test, IFT1-A, and the POET report. The absence of a clear, concise, and consistent definition of the allegation complicated the conduct of the inquiry, the ability of the fact-finder to determine whether or not the allegation had merit, and the ability of the respondents to explain their actions.

<u>Factor 12. The complainant lacked confidence in the process</u>. This lack of confidence has been expressed in numerous internal communications and public statements, and presumably helped motivate the breaches in confidentiality (Factor 5). While it may not be unusual for protagonists to have concerns about whether or not their points of view will be accepted in misconduct proceedings, the lack of confidence appears to have been particularly severe in this case. The *Ad Hoc Committee* was told by those who have conducted inquiries in the past that the ability of a fact-finder to conclude a satisfactory inquiry is greatly facilitated when there is a reasonable degree of confidence in the process among the key parties.

<u>Factor 13. A single faculty member conducted the inquiry</u>. Other complications made it difficult for a single individual to complete an inquiry that answered all the questions raised in a timely manner. (We note that the GAO investigations into IFT-1A, admittedly with broader scope, involved more than a dozen investigators plus outside consultants and took 18 months.) The fact that questions could not be resolved after nine months of inquiry led the fact-finder to recommend an investigation, rather than prolong the inquiry. (See also Factor 6 regarding reasons that may have led to a single person conducting the inquiry.)

Factor 14. The Provost directly initiated the inquiry. When the process began, the Vice President for Research was ineligible for a security clearance due to his Canadian

citizenship, so the Provost himself took direct responsibility for initiating what proved to be a complex process (see footnote 7). The Provost is arguably one of the two busiest administrators at MIT, and was further diverted by the need to deal with the events noted in Factor 10. This undoubtedly contributed to delays during Phases 1, 2, and 3.

#### **IV C. COMPLICATING FACTORS PRIMARILY AFFECTING PHASE 3**

Factor 15. The Government invoked the state secrets privilege in related litigation (see <u>footnote 13</u>). The state secrets privilege was asserted by the government in January 2003 in the former TRW engineer's whistle-blower lawsuits, denying the court access to certain classified information, which resulted in dismissal of the suits. This assertion occurred around the time of MIT's decision to conduct an investigation using outside investigators. The Department of Defense asserted, and continues to assert, that they cannot grant MIT's investigators access to the classified information after they denied the court similar access. MIT, with assistance from outside counsel with experience in Department of Defense matters, made counter arguments but was unsuccessful.

Factor 16. The Government blocked any new investigation. The bulk of the delay, from May 2003 to fall of 2005, was caused by an impasse between MIT and the Department of Defense. The latter denied MIT's plan for conducting an investigation but also failed to conduct their own investigation, as allowed in federal guidelines and the Department of Defense's own procedures for addressing research misconduct allegations (*Department of Defense Instruction* 3210.7). The Department's decision was based in part on the state secrets privilege (Factor 15), and in part on its view that no investigation was necessary because earlier investigations by the GAO and the FBI had already found that no misconduct had occurred.

#### V. FINDINGS AND RECOMMENDATIONS

Section IV responds to item (i) of the *Ad Hoc Committee's* charge (see Section I), namely the identification of factors that have complicated and delayed the resolution of the allegation of research misconduct. This section addresses items (ii) and (iii) of the charge, which seeks recommendations regarding how the Institute should conduct itself in the future and regarding "any changes in policy and/or practice that would help avoid a recurrence." Based on our consideration of the factors enumerated in the previous section, we present the *Committee's* findings and recommendations. The *Committee* is unanimous in all aspects of this report, including these findings and recommendations.

We believe that there are lessons to be learned from this case that might benefit individuals involved in or dealing with future allegations of research misconduct of unusual complexity. However, the *Ad Hoc Committee* is also mindful of the caution (expressed below in Finding 3), that any recommendations should "do no harm" to a system that, in nearly all cases, has worked very well.

#### V A. OVERALL FINDINGS AND RECOMMENDATIONS

Finding 1. The present case was affected by a multiplicity of interacting factors. The difficulties in resolving this allegation of research misconduct arise from a large number of complicating factors. Some factors compounded with one or more others in ways that exacerbated their effect. Many, if not most, of the sixteen factors would not normally be present in any single allegation, whether at Lincoln Laboratory or on campus. For that reason, a recurrence of a very similar set of circumstances appears to be remote. However, it is possible that attempts to resolve some future allegation might be affected by several of these factors together with others not present here, thus achieving a comparable degree of complexity. (The case involving a disputed paper in the journal *Cell* that unfolded during the late 1980's may be an example from the past;<sup>19</sup> both MIT and federal policies have evolved significantly since then, partially in response to that case). It is hoped that the findings and recommendations below might facilitate the resolution of any future cases of great complexity.

Finding 2. Factors 1, 2, and 3 are the most troublesome factors affecting all Phases In the *Ad Hoc Committee's* opinion the most troublesome factors affecting all phases of the present case are Factors 1, 2, 3, namely the intersection of the allegation of research misconduct with broader national policy issues, dealing with national security, and with a lawsuit. These intersections have affected, and continue to affect, every step of the misconduct proceeding. While these factors in themselves might not have caused any specific delay, they can be seen as giving rise to others, such as Factor 15, which caused significant delay (see Finding 7, below).

> Despite its importance, we make no specific recommendations regarding Finding 2. It is often said that MIT's fundamental mission has four parts: education, research, service to the nation and service to humanity. It is inevitable that some of the things we do now and in the future will intersect with national policy issues, some of which may be contentious and divisive.

Therefore, we believe that some future application of *Policies and Procedures* 10.1 may well intersect with contentious national issues. The additional intersection with external litigation seems less likely but is also possible. In any case, the complications that may be present in future cases will surely be different in detail from those found here (Finding 1). Our policies can and must still apply. In applying MIT policies in those cases, as here, the Institute must look for guidance to its deeply held values of integrity, community, collegiality, and mutual respect. A key challenge will be to isolate the matters that fall under MIT's academic misconduct policy from the broader national issue, as has been attempted in this case. MIT is responsible for reviewing allegations of research misconduct made

<sup>&</sup>lt;sup>19</sup> See Kevles, D. *The Baltimore Case*, W.W. Norton Co., 1998.

# against members of the MIT community, not those dealing with the government or other external parties.

#### V B. FINDINGS AND RECOMMENDATIONS REGARDING MIT Policies and Procedures 10.1

<u>Finding 3. MIT's misconduct policies are fundamentally sound.</u> Those who have been responsible for implementing MIT's policies on research misconduct (*Policies and Procedures* 10.1) informed the *Ad Hoc Committee* that the policies have worked well in a variety of other cases since they first appeared (an early policy was formulated in 1985 and revised several times since then). This includes a small number of cases involving MIT Lincoln Laboratory personnel, which were also conducted satisfactorily. We were also told that major complications, of the kind encountered here, have not occurred in the application of *Policies and Procedures* 10.1 prior to or since the beginning of the present case, although some other complex cases required several years to achieve resolution. In view of this, together with Finding 1, this *Committee* believes that MIT's policies regarding academic misconduct are fundamentally sound.

<u>Finding 4. The inquiry was hampered by the lack of a definitive formulation of the</u> <u>allegation and by the fact that the complainant lacked confidence in the process</u>. With respect to the inquiry phase, the *Ad Hoc Committee* finds the most troublesome factors to be Factor 11, dealing with the lack of a clear and consistent formulation of the allegation of misconduct, and Factor 12, dealing with the complainant's lack of confidence in the process. To some extent, the troublesome effects of these two factors were compounded.

The lack of a detailed, specific and consistent definition of the allegation complicated the conduct of the inquiry, the ability of the fact-finder to determine whether or not the allegation had merit, and the ability of the respondents to explain their actions. The *Ad Hoc Committee* believes that any inquiry or investigation should be based on a clear, written charge that is sent to fact-finders and explained to complainants and respondents. While it has been the general practice to provide such a written charge, the *Committee* recommends consideration of adding clarification on this point in *Policies and Procedures* 10.1 (see also the Widnall Report, Section VIII.1).

<u>Recommendation 1 (Policy)</u>: *Policies and Procedures* 10.1 should be modified to specify that a written charge be provided to persons conducting an inquiry or investigation and explained to complainants and respondents. If facts revealed during the course of an inquiry or investigation indicate that a change in the charge is warranted, then a revised written charge should similarly be prepared and provided to the persons conducting the inquiry or investigation, and explained to the complainants and respondents.

The fact that the complainant lacked confidence in the process compounded the difficulty in specifying the charge. His lack of confidence may have been a factor in his

breaches of confidentiality. This issue is addressed further in Finding 6 and section V. C. below.

Finding 5. *Policies and Procedures* 10.1 is appropriately general. In recognition of the need for latitude in its application, *Policies and Procedures* 10.1 (Appendix A.1) is written with a degree of generality. It states that "the procedures that should be used in investigating any allegations of academic misconduct depend on the circumstances of each case," although it also provides guidelines for conducting an inquiry and, if warranted, an investigation in a manner consistent with federal requirements for dealing with allegations of research misconduct in federally-funded research (see Appendix A.2). The generality of *Policies and Procedures* 10.1 may have caused some delay in implementing the procedure in this case; the issue of whether the policy applied to a government document like the POET report (see Factor 8) is an example.

The Ad Hoc Committee believes that the generality of Policies and Procedures 10.1 is appropriate, given the wide variety of cases that have and could in the future come forward. The Committee examined the corresponding policies at some peer institutions, some of which are considerably more detailed and legalistic (listing, for example, detailed specifications of the circumstances under which they apply). We do not recommend that MIT adopt this approach for two reasons. First, Policies and Procedures is a document of and for the faculty and administration, not a legal statute or regulation; the detailed and complicated language required to cover all eventualities would not be appropriate or particularly useful for those applying it. Second, even a highly detailed prescription is likely to overlook some eventuality, and therefore prove incomplete. In the end, we believe it makes more sense to trust the judgment of those implementing the policy. informed by seasoned legal advice about the particular matter being handled. However, the MIT community must recognize that the generality of our policy may, in some cases, lead to additional delay whenever the policy must be applied to an unusual and complex set of circumstances (see also Finding 11 regarding communication).

<u>Finding 6. A complex inquiry/investigation may require special practices.</u> The conduct of an inquiry or investigation in the face of numerous complexities is a major challenge. The challenge is exacerbated when those complexities include lack of confidence on the part of key participants, breaches of confidentiality, and intense media interest. Maintaining the focus of the process and achieving a timely resolution could be extremely difficult under such circumstances, especially if the load is carried by a single individual.

The *Ad Hoc Committee* believes that in complex cases there is significant benefit to having more than one individual conducting an inquiry (or investigation). An ad hoc fact-finding committee (of, say, three individuals) will bring to bear a broader base of judgment and experience to a complex matter. They should also have an advantage in

maintaining the focus of the process and in completing their work in a timely fashion (although the more complicated logistics of coordinating multiple schedules might add some time to the process).

A separate issue is the need to maintain the neutrality of the inquiry and investigation process when one or both of the parties is a strong advocate on issues the fact-finder is reviewing. Factor 7, the distinction between a misconduct proceeding and a grievance, is also very relevant here. It is widely recognized that the fact-finder (whether an individual or a committee) who conducts an inquiry must be impartial, must have no real or apparent conflicts of interest bearing on the case and must, to the extent reasonably feasible, have the expertise to carry out a thorough and authoritative evaluation of the relevant information.

Neither the complainant nor the respondent is expected to be impartial. Cases that depend specifically on the observations or contentions of the person bringing the allegation of research misconduct obviously require the fact-finder to discuss the allegation with that individual at the outset of the inquiry or investigation. However, neither the complainant nor the respondent should be permitted to participate in the work of the fact-finder in a way that amounts to undue influence on the inquiry or investigation itself.

<u>Recommendation 2 (Practice)</u>: In complex cases, the administration should give strong consideration toward appointing a small ad hoc committee to conduct an inquiry or investigation, rather than appointing a single individual. The committee should strive to assure that neither the complainant nor the respondent influences either the inquiry or the investigation process inappropriately. The distinction between a misconduct proceeding and a grievance should be made clear to all parties.

As noted in Factor 5, the resolution of the present case has been complicated by repeated breaches of confidentiality. *Policies and Procedures* 10.1 states, "All members of the community are expected to cooperate with the proceedings of inquiries and investigations. Those involved should, to the maximum extent possible, protect the privacy of those who in good faith report apparent academic misconduct and of those who are the alleged offenders, and should take steps to preserve the confidentiality of the investigation and information pertaining to it to the maximum extent possible" (see Appendix A.1). In addition to the protection of complainants and alleged offenders, confidentiality is generally seen as important to maintaining the integrity of the inquiry and investigation processes themselves.

The *Ad Hoc Committee* believes that the breaches in confidentiality contributed to the delays in resolving the matter, as well as causing personal distress to the Lincoln Laboratory researchers, their families and colleagues (see Factor 5). The breaches also violated MIT and federal policies.

Recommendation 3 (Practice): The Ad Hoc Committee believes that, in applying *Policies and Procedures* 10.1 to an allegation of research misconduct, all members of the MIT community should strive to achieve the stated purpose of "preserv[ing] the confidentiality of the investigation and information pertaining to it to the maximum extent possible." If and when confidentiality is breached, attempts should be made to limit or contain the disclosures and to minimize the possibility of additional disclosures, as was done at various points during the present case. In some cases, it may be appropriate for MIT to make selected public communications (see Finding 11) to clarify or correct misperceptions that might undermine the process or that might harm the reputations of individuals. In an extreme case, it may be appropriate to invoke Policies and Procedures Section 9, which deals with "Relations and Responsibilities Within the MIT Community." However, the Committee believes that the primary goal of the Institute must be to achieve a clear and satisfactory resolution of an allegation of research misconduct.

Finding 7. State secrets privilege (Factor 15) was the most troublesome factor delaying the investigation. With respect to the impasse over starting the investigation, the *Ad Hoc Committee* finds the most troublesome factor to be Factor 15, the intersection of this matter with the government's assertion of the state secrets privilege in separate litigation that involved some of the same documents. This factor appears to have been an underlying reason for the government's denial of MIT's investigation plan, which caused most of the delay (at first, as noted in Factor 16, the MDA also asserted that an investigation was not "essential" and that no additional investigation was warranted beyond those conducted by the GAO and FBI; once the Department of Defense accepted the need for an investigation, Factor 15 complicated the process of defining a mutually satisfactory implementation plan). For this factor to arise in an MIT misconduct case requires a confluence of rare circumstances, namely the existence of a closely-related law suit (the privilege is invoked in litigation) in which the government asserts the state secrets privilege to protect highly sensitive, classified material (although seldom used in the past, the state secrets privilege has been invoked more frequently in recent years).

However, to put this in context, this *Ad Hoc Committee* takes note that federal funding agencies have "ultimate oversight authority over federally funded research" and retain the right to take over an inquiry or investigation into allegations of research misconduct associated with a federal grant or contract originating in that agency, independent of issues of classification or state secrets privilege.<sup>20</sup> While the federal

<sup>&</sup>lt;sup>20</sup> See Appendix A.2 Federal Policy on Research Misconduct [Fed. Reg. Dec. 6, 2000, Vol. 65, Number 235, pages 76260-76264]: "Agencies and research institutions are partners who share responsibility for the research process. Federal agencies have ultimate oversight authority for federally funded research, but research institutions bear primary responsibility for prevention and detection of research misconduct and for the

agencies normally "defer to the research institution," it is certainly possible that some other set of circumstances could again cause a federal agency to take similar action. Examples might include allegations involving senior officers of MIT, where the agency may want to insure a fully independent review, allegations involving certain criminal charges, or allegations that involve a number of different institutions, where a single investigation would be more effective. Therefore, MIT could, in the future, again find that it cannot conduct its own inquiry or investigation into an allegation involving MIT researchers, and that a federal agency has instead exercised its right to assume that responsibility. In at least one previous case, the one concerning the disputed *Cell* paper, external investigations were conducted by the National Institutes of Health and a Congressional Committee.

The *Ad Hoc Committee* believes that the recently announced plan for the Department of Defense to complete the investigation of the present misconduct allegation constitutes a feasible solution given these extraordinary circumstances. The plan goes beyond the federal guidelines by allowing the participation of an external advisor/consultant, the oversight of a senior Defense Department official, and an investigator from outside the funding agency (the federal policy assumes that the funding agency, in this case MDA, would itself conduct the investigation). However, a full evaluation of the efficacy of this approach must await the completion of the process.

### The *Ad Hoc Committee* makes no recommendation based on Finding 7. Once the Department of Defense investigation of the present case has been completed, it may be appropriate for the Provost to evaluate its efficacy and revisit the need for additional changes in MIT policy or practice.

<u>Finding 8. Classification in itself is not the overriding factor.</u> The fact that the POET report is classified (Factor 4) in itself does not appear to be the overriding factor in complicating or delaying the resolution of this particular case, although it has had impacts (Factors 3, 6, 9, 10, 14, 15, and 16) at least one of which contributed significantly to the delay (Factor 15, the application of the state secrets privilege to withhold relevant

"In most cases, agencies will rely on the researcher's home institution to make the initial response to allegations of research misconduct. Agencies will usually refer allegations of research misconduct made directly to them to the appropriate research institution. *However, at any time, the Federal agency may proceed with its own inquiry or investigation. Circumstances in which agencies may elect not to defer to the research institution include, but are not limited to, the following* [emphasis added]: the agency determines the institution is not prepared to handle the allegation in a manner consistent with this policy; *agency involvement is needed to protect the public interest, including public health and safety* [emphasis added]; the allegation involves an entity of sufficiently small size (or an individual) that it cannot reasonably conduct the investigation itself."

inquiry, investigation, and adjudication of research misconduct alleged to have occurred in association with their own institution...."

classified material from the whistle blower lawsuit; see Finding 7). For reference, the *Committee* was not made aware of any other research misconduct proceedings at MIT, including Lincoln Laboratory that required access to classified information.

The broad issue of classified research at MIT was reviewed thoroughly in the report of an Ad Hoc Faculty Committee in June 2002.<sup>21</sup> That report articulates that "the rationale for conducting classified research at MIT flows directly from our institutional commitment to public service. MIT stands ready to assist the nation in applying its expertise to the most pressing national issues – it has done so in the past, it is doing it now, and it will do so in the future." The report further states, "We believe that public service is the only rationale for conducting classified or otherwise restricted research at MIT."<sup>22</sup> For some time, classified research has not generally been permitted on campus, except in exceptional cases with prior approval by the Provost (see MIT *Policies and Procedures* 14.2).<sup>23</sup> Therefore, at present, therefore, all classified research at MIT is conducted at MIT Lincoln Laboratory. The 2002 report does not address the question of how to resolve allegations of research misconduct involving classified research.

The *Ad Hoc Committee* believes that *Policies and Procedures* 10.1 can be applied to cases of alleged research misconduct dealing with classified material, whether at MIT Lincoln Laboratory or at some future date, on campus. Dealing with classified material in such cases is manageable, although it adds complexity and probable delay to the process of resolving an allegation. Senior MIT administrators hold the necessary security clearances and have appropriate need-to-know access to oversee the activities at Lincoln Laboratory (including access to the documents related to this case). There are sufficient numbers of MIT faculty who also hold clearances and who can be given access in order to conduct an official inquiry or investigation (as was done in the case of the present inquiry) and several faculty with security clearances sit on the Lincoln Laboratory Advisory Board.

The *Ad Hoc Committee* notes that the recent action of the Department of Defense to initiate an investigation reaffirms the position that MIT has pressed for several years, namely that the investigation of an allegation of research misconduct is "essential" to MIT's contractual obligations. It thereby establishes an important precedent (see Factor 16 and footnote 12), which MIT should express vigorously should the need ever arise in the future.

<sup>&</sup>lt;sup>21</sup> See In the Public Interest: Report of the Ad Hoc Faculty Committee on Access to and Disclosure of Scientific Information

<sup>(</sup>http://web.mit.edu/faculty/reports/publicinterest.pdf).

<sup>&</sup>lt;sup>22</sup> *Ibid.*, Chapter 5, "Rationale for Performing Classified Research at MIT," p. 17.

<sup>&</sup>lt;sup>23</sup> *Ibid.*, Chapter 1, "Service to the Nation: A History of Research and Research Policies," p. 1.

The *Ad Hoc Committee* believes it was the intersection of the present case with external litigation (Factor 3) in which the government invoked the state secrets privilege (Factor 15 and Finding 7), not simply the fact that classified material was involved, that led the Defense Department to make an extraordinary denial of access to the MIT investigators. This denial kept MIT from conducting the investigation as originally planned, and eventually led the government to instead conduct its own investigation. Furthermore, this compounding of events occurred in a time when the government appears particularly sensitive to issues of secrecy and security.

As noted in the discussion of Finding 7, the government always retains ultimate oversight authority over all federally sponsored research, whether or not it is classified. In the future, some other concatenation of unlikely factors surrounding allegations that may or may not involve classified research might lead a federal agency to exercise its authority over an inquiry or investigation. While MIT should always strive to retain control of an inquiry and investigation, the *Ad Hoc Committee* believes that the prime goal of the Institute must be to achieve a just resolution of an allegation of research misconduct. As was done here, MIT must work actively with the federal government to achieve that goal.

One smaller factor related to classification was that in this case, the Provost had no alternative but to initiate the misconduct proceeding himself (Factor 14). Historically, and presently, the Vice President for Research, the Associate Provost, and/or another senior officer (besides the President) have held security clearances and could have been able to assist him in this matter. (Because the Provost is the adjudicator of a misconduct proceeding and the President would consider any final appeal, neither one may directly conduct an inquiry or investigation.)

# The *Ad Hoc Committee* advises that at least one, and preferably two, senior officers below the level of President and Provost hold appropriate security clearances.

<u>Finding 9. This investigation requires access to classified material</u>. The primary documents are classified, most importantly the POET report itself which is the subject of the allegation of research misconduct. The inquiry report that framed the questions for the investigation is also now classified, as is the incompletely redacted POET report on which Professor Postol's allegation was based. Moreover, the respondents activities dealt with classified information from the outset; even if fewer of the primary documents had been classified, the exclusion of classified information would unfairly deny the respondents' ability to use all the materials they believe necessary to rebut the allegation.

# The *Ad Hoc Committee* finds that access to classified material is essential in order to resolve the allegation made in this case by Professor Postol.

#### V C. ADDITIONAL FINDINGS AND RECOMMENDATIONS

The *Ad Hoc Committee's* charge focuses on factors that "complicated and delayed the resolution" of the present allegation of academic misconduct and recommendations derived from those factors. However, in conducting our review, we identified several other findings and recommendations worthy of mention, whether or not they might have had any impact on the present case.

Finding 10. The definition of the threshold for investigation is potentially ambiguous. In the present case, the fact-finder recommended proceeding with an investigation because of his inability to exhaust all the questions that arose during the inquiry and to assure himself that "further investigation was unlikely to produce any significant evidence of misconduct," not because he "found a reasonable basis to believe that misconduct may have occurred, whether or not the evidence is conclusive" (quotations are from *Policies and Procedures* 10.1). In other words, the inquiry did not establish the positive reason stated in *Policies and Procedures* for recommending an investigation the (second quote). In that sense, the inquiry could not be completed and, therefore, the factfinder recommended an investigation.

The *Ad Hoc Committee* recommends that *Policies and Procedures* 10.1 be reviewed to clarify the conditions under which a fact-finder should recommend an investigation, in order to resolve an apparent ambiguity that exists about the "threshold" for that decision. The current wording describes conditions for <u>not</u> conducting further investigation, on one hand, and conditions <u>for</u> going forward with an investigation, on the other. To our eyes, the two are not exact opposites, hence the possibility of ambiguity. This possible ambiguity does not appear to have been problematic in the past, so far as we know. Nevertheless, we suggest clarification by carefully specifying the conditions <u>for</u> going forward and then using the absence of those conditions as the grounds for <u>not</u> proceeding to an investigation.

#### <u>Recommendation 4 (Policy)</u>: Section 10.1 of *Policies and Procedures* should be clarified to remove an apparent ambiguity about the criteria for proceeding from an inquiry to an investigation.

<u>Finding 11. Attention should be paid to internal and, if necessary, external</u> <u>communications.</u> The *Ad Hoc Committee* finds that communication is a key consideration, especially when a case becomes protracted. Communication can have several components depending on the circumstances surrounding the case:

a. Most university and federal agency guidelines for dealing with research misconduct appropriately call for timeliness. They sometimes further specify that

resolutions should be sought within a fixed number of days, sometimes as few as 60 or 90. In practice, however, even an inquiry can take considerably longer, much less an inquiry followed by an investigation. This may result in a mismatch between the expectations of the parties involved and the realities of conducting an inquiry and/or investigation and that needs to be addressed through communications.

b. Regular communication to affected parties, particularly the complainant and respondents, regarding the status and progress of the proceeding, is of central importance. If confidentiality is breached, as it was in this case, communications to the affected parties can become even more critical.

c. Communications to address concerns of the MIT community also become a factor when confidentiality has been compromised. MIT's primary obligation is still to maintain confidentiality to the maximum extent possible, in order both to protect the reputations of all concerned and to preserve the integrity of the review process from outside influences (a responsibility shared by the key parties as specified in *Policies and Procedures* 10.1), but some communication to the community may become necessary.

<u>Recommendation 5 (Practice)</u>: The implementation of *Policies and Procedures* 10.1 should include guidelines for internal and external communications tailored to the specifics of each case. In most cases this would call for reasonably regular communications to the parties directly involved about the status and estimated schedule for completion of the inquiry and/or investigation. When confidentiality has been compromised, it can be difficult, if not impossible, to maintain the integrity of the process. In those situations, careful consideration must be given as to how best to remedy the violation of confidentiality. In some cases, careful use of external communications may be necessary to protect or restore the reputations of persons entitled to confidentiality while the review of an allegation of research misconduct is under way.

<u>Finding 12. Special attention is needed to address asymmetries in rank</u>. When a research misconduct charge involves a tenured faculty member on one side and untenured faculty, students or staff (on campus or at MIT Lincoln Laboratory) on the other side, there is an asymmetry in terms of the individual's standing and sense of employment security. An inquiry and/or investigation, including the communication of information about the progress of the review, should be conducted in ways that treat all parties in an equitable manner regardless of rank.

<u>Recommendation 6 (Practice)</u>: In all aspects of an inquiry or investigation equal consideration should be given to all parties regardless of rank.

#### VI. ACKNOWLEDGEMENTS

The *Ad Hoc Committee* is extremely grateful to Helen Samuels for her expert staff assistance in conducting our review and preparing this report. We also thank Gail Monahan for expert assistance in logistical support. We thank all those who took time to meet with us and gave us their candid input and perceptive observations. We also thank a small number of reviewers for their comments on a draft version of the report. However, the *Committee* itself takes full responsibility for the content of this report.

#### **APPENDIX**

#### POLICIES ON RESEARCH (OR ACADEMIC) MISCONDUCT

#### A.1 MIT POLICY

See: http://web.mit.edu/policies/10.1.html

#### **10.0 ACADEMIC MISCONDUCT AND DISHONESTY**

# **10.1 Procedures for Dealing with Academic Misconduct in Research and Scholarship**

Unethical behavior in research and scholarship strikes at the heart of the scholarly and educational enterprise. A shared understanding of expectations and responsibilities is, therefore, critical--not only to the quality of the research enterprise but also to the collegial life of this community. Academic misconduct can take many forms, including fabrication or falsification of data, theft of ideas or direct plagiarism, and deliberate interference with the integrity of the work of others. Whatever the form, academic misconduct is behavior that may lead to a variety of disciplinary actions, including, in severe cases, expulsion of a student, dismissal of an employee, or termination of tenure.

Misconduct arises most readily in an environment in which supervision at each relevant level is not reasonably exercised. Laboratory and center directors and department heads must make clear the standards and protocols for research, scholarship, and creative work in their organizations and must set a tone (by example, through discussion and review of research, and, when possible, with written guidelines) that will make adherence to those standards a matter of course.

**Reporting Academic Misconduct:** Someone believing in good faith that an act of academic misconduct is taking or has taken place should in most circumstances present his or her concerns to the supervisor of the person whose work is in question. There may be circumstances in which, prior to doing this, it would be appropriate for the person who suspects misconduct to go directly to the suspected person. It is also possible to seek prior confidential advice from one of the Special Assistants to the President or from senior academic officers.

Supervisors who become aware of situations of possible academic misconduct, either by their own observations or because of reports from others, have a responsibility to report them to the Vice President for Research in order to assure that the proper procedure is followed. If a person feels that the Vice President for Research is not the appropriate person to whom to report in a particular case, the allegation may be referred to the Provost.

**Inquiries and Investigations:** An inquiry or investigation of allegations concerning academic misconduct raises difficult and sensitive issues for those making the allegations, for those suspected, and for those responsible for the inquiry or investigation. Therefore, inquiries and investigations and any subsequent proceedings should be conducted promptly and with care and sensitivity.

All members of the community are expected to cooperate with the proceedings of inquiries and investigations. Those involved should, to the maximum extent possible, protect the privacy of those who in good faith report apparent academic misconduct and of those who are the alleged offenders, and should take steps to preserve the confidentiality of the investigation and information pertaining to it to the maximum extent possible. However, legal requirements, including legal process, may require disclosure in certain cases.

Those involved also have a responsibility to take steps to prevent reprisal against the person bringing the allegation. Reprisal at any time against the person bringing the allegation is an act of misconduct subject to disciplinary action.

Those conducting the inquiry or investigation should, to the extent reasonably feasible, have the expertise to carry out a thorough and authoritative evaluation of the relevant information and have no real or apparent conflicts of interest bearing on the case.

The procedures that should be used in investigating any allegations of academic misconduct depend on the circumstances of each case. The Vice President for Research should be consulted regarding specific Institute procedures for conducting inquiries and investigations and should be contacted before either procedure is undertaken. The following guidelines provide an overview of the process, which involves an initial inquiry into allegations and apparent instances of academic misconduct, followed by a more formal investigation when that is warranted. An inquiry is initial information gathering and fact finding designed to determine whether or not an allegation deserves further investigation. An investigation is a formal examination and evaluation of all relevant facts to determine if misconduct has occurred.

These guidelines are consistent with more specific requirements applicable to the review, investigation, and reporting of allegations of scientific misconduct arising in the context of certain federally sponsored research. These requirements are set forth in the *Supplement to MIT Procedures for Dealing with Academic Misconduct*, available from the Vice President for Research or the Director of the Office of Sponsored Programs.

Unless they are subject to the requirements of that supplement, cases involving students will be addressed in accordance with Section <u>10.</u> 2 Procedures for Dealing with Student Academic Dishonesty.

**Conducting an Inquiry:** The supervisor of the alleged offender is responsible, in most cases, for initiating the inquiry to determine if an investigation is warranted by notifying

the Vice President for Research of the allegations. The Vice President for Research will appoint an impartial fact finder or fact finding committee to conduct the inquiry. The inquiry should be initiated promptly after written allegations or other evidence of possible academic misconduct become known and are brought to the attention of the Vice President for Research. Barring unusual circumstances, the alleged offender will be notified in writing by the Vice President for Research or, in some cases, the relevant senior officer.

While the fact finder's inquiry may vary in accordance with the circumstances of each case, the initial inquiry should, to the extent possible, be based on objective data and avoid unnecessary disclosures of the inquiry to others. Cases that depend specifically upon the observations or statements of the person bringing the allegation may require the involvement of that individual. Other cases that can rely on written information may permit the person bringing the allegation to remain anonymous. The inquiry might also include informal discussion with others of more senior responsibility, such as the relevant laboratory or center director, department head, or vice president. At Lincoln Laboratory, informal discussions might be held with the relevant division head or assistant director.

The inquiry will be concluded with a written report summarizing the process, the information reviewed, and the conclusions as to whether or not an investigation is warranted.

If the fact finder or fact finding committee concludes on the basis of this inquiry that no reasonable basis exists for a belief that academic misconduct may have occurred and that further investigation is unlikely to produce any significant evidence of misconduct, the report should contain sufficient documentation to permit a later assessment of the reasons for this conclusion. The fact finder will provide a draft copy of the report to the alleged offender who may comment on the report. Those comments will become part of the written report. After considering those comments and revising the report, if he or she so chooses, the fact finder should submit the report to the Vice President for Research, together with a copy of the comments of the alleged offender. The Vice President for Research will submit the report to the Provost along with a recommendation on next steps to be taken, including communicating the findings to others who should be informed.

If the fact finder determines that there is a reasonable basis to believe that misconduct may have occurred, whether or not the evidence is conclusive, the alleged offender will be given a copy of the draft report. The report should include all information supporting the allegations. The alleged offender shall be offered the opportunity to respond to the allegations and present such information as he or she wishes. This information will be made a part of the record. The fact finder and the alleged offender may meet in person for the fact finder to review this information. The alleged offender may be accompanied by an MIT associate (as defined in Section <u>9.6</u> Complaint and Grievance Procedures) at any meeting during the inquiry process, and should be informed of this before any such meetings take place.

After considering the responses of the alleged offender, the fact finder should prepare a

final report, including an accurate summary of the information offered by the alleged offender, and forward it to the Vice President for Research. The Vice President for Research will forward the report to the Provost with a recommendation as to whether or not an investigation should be initiated, and a recommendation as to others who should be informed.

**Conducting an Investigation:** If the Provost concludes that an investigation is warranted, he or she will direct the Vice President for Research to appoint a fact finding person or investigating committee that may include members from outside the Institute. At the same time, the alleged offender will be informed of this action by the Provost. The Provost is also responsible for notifying the sponsor of a research project in which misconduct is suspected as soon as the decision has been made to undertake an investigation and for keeping the sponsor informed of the status and the outcome of the investigation.

In each case the investigating person or committee will conduct a full investigation in accordance with Institute policy and practice in order to determine all the relevant facts. This will normally include the examination of all relevant documentation and interviews with all individuals who are involved or may have pertinent information. The investigation should be initiated promptly and should be completed as expeditiously as possible. The alleged offender should be provided with all necessary information in a timely manner to facilitate the preparation of a response and ensure an opportunity to address the charges and the supporting information in detail. The alleged offender may be accompanied to any interview, meeting, or hearing by an MIT associate. The person or persons conducting the investigation should consider all relevant information, reach findings of fact based on such information, and not be bound by the findings of the prior inquiry process. Oversight for this process and specific guidance will be provided by the Office of the Vice President for Research.

The investigating person or committee will detail its findings in a final report that should include substantiating documentation. A draft of this report will be made available to the subject(s) of the investigation for written comment. The final report, including comments of the subject, will then be given to the Vice President for Research. Upon receiving the report and comments, the Vice President for Research will notify the alleged offender that the investigation has been concluded and that a decision with respect to any disciplinary or other action will be reached as expeditiously as possible. The Vice President for Research will deliver the report to the Provost along with a recommendation for disciplinary actions to be taken and persons to be notified.

Disciplinary actions that the Provost might take after considering the report include a reprimand, termination of employment, or other alteration of status of the person in question. In the case of the termination of a faculty member or the expulsion of a student, a recommendation to the President would be involved. (See also Section 3.3 Termination of Tenure.) In addition, the Provost has the authority to mitigate the effects of the misconduct by withdrawing MIT's name and sponsorship from pending abstracts and papers and by notifying persons known to have relied upon any work affected by the

misconduct.

If, at any point, investigation reveals the charges to be unsubstantiated, every reasonable effort should be made to restore and protect the reputation of the researcher or scholar under investigation. A report will be prepared documenting the reasons for the conclusion that the allegation is without merit. That report will be given to the Vice President for Research, who will submit it to the Provost along with recommendations concerning it, including recommendations of others who should be informed. Appropriate actions should be taken against anyone found to have brought intentionally dishonest charges.

# A. 2 FEDERAL POLICY

Taken from Office of Science and Technology Policy web site: http://www.ostp.gov/html/001207\_3.html Or U.S. Federal Register, Dec. 6, 2000, Vol. 65, Number 235, pages 76262-76264

# FEDERAL POLICY ON RESEARCH MISCONDUCT[1]

## I. Research [2] Misconduct Defined

Research misconduct is defined as fabrication, falsification, or plagiarism in proposing, performing, or reviewing research, or in reporting research results.

*Fabrication* is making up data or results and recording or reporting them.

• *Falsification* is manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.[3]

• *Plagiarism* is the appropriation of another person's ideas, processes, results, or words without giving appropriate credit.

Research misconduct does not include honest error or differences of opinion.

## II. Findings of Research Misconduct

A finding of research misconduct requires that:

 $\cdot$  There be a significant departure from accepted practices of the relevant research community; and

- The misconduct be committed intentionally, or knowingly, or recklessly; and
- The allegation be proven by a preponderance of evidence.

## **III.** Responsibilities of Federal Agencies and Research Institutions[4]

Agencies and research institutions are partners who share responsibility for the research process. Federal agencies have ultimate oversight authority for Federally funded research, but research institutions bear primary responsibility for prevention and detection of research misconduct and for the inquiry, investigation, and adjudication of research misconduct alleged to have occurred in association with their own institution.

• Agency Policies and Procedures. Agency policies and procedures with regard to intramural as well as extramural programs must conform to the policy described in this document.

• Agency Referral to Research Institution. In most cases, agencies will rely on the researcher's home institution to make the initial response to allegations of research misconduct. Agencies will usually refer allegations of research misconduct made directly to them to the appropriate research institution. However, at any time, the Federal agency may proceed with its own inquiry or investigation. Circumstances in which agencies may elect not to defer to the research institution include, but are not limited to, the following: the agency determines the institution is not prepared to handle the allegation in a manner consistent with this policy; agency involvement is needed to protect the public interest, including public health and safety; the allegation involves an entity of sufficiently small size (or an individual) that it cannot reasonably conduct the investigation itself.

Multiple Phases of the Response to an Allegation of Research Misconduct. A

response to an allegation of research misconduct will usually consist of several phases, including: (1) an inquiry – the assessment of whether the allegation has substance and if an investigation is warranted; (2) an investigation – the formal development of a factual record, and the examination of that record leading to dismissal of the case or to a recommendation for a finding of research misconduct or other appropriate remedies; (3) adjudication – during which recommendations are reviewed and appropriate corrective actions determined.

• Agency Follow-up to Institutional Action. After reviewing the record of the investigation, the institution's recommendations to the institution's adjudicating official, and any corrective actions taken by the research institution, the agency will take additional oversight or investigative steps if necessary. Upon completion of its review, the agency will take appropriate administrative action in accordance with applicable laws, regulations, or policies. When the agency has made a final determination, it will notify the subject of the allegation of the outcome and inform the institution regarding its disposition of the case. The agency finding of research misconduct and agency administrative actions can be appealed pursuant to the agency's applicable procedures.

• Separation of Phases. Adjudication is separated organizationally from inquiry and investigation. Likewise, appeals are separated organizationally from inquiry and investigation.

Institutional Notification of the Agency. Research institutions will notify the funding agency (or agencies in some cases) of an allegation of research misconduct if (1) the allegation involves Federally funded research (or an application for Federal funding) and meets the Federal definition of research misconduct given above, and (2) if the institution's inquiry into the allegation determines there is sufficient evidence to proceed to an investigation. When an investigation is complete, the research institution will forward to the agency a copy of the evidentiary record, the investigative report, recommendations made to the institution's adjudicating official, and the subject's written response to the recommendations (if any). When a research institution completes the adjudication phase, it will forward the adjudicating official's decision and notify the agency of any corrective actions taken or planned.

• Other Reasons to Notify the Agency. At any time during an inquiry or investigation, the institution will immediately notify the Federal agency if public health or safety is at risk; if agency resources or interests are threatened; if research activities should be suspended; if there is reasonable indication of possible violations of civil or criminal law; if Federal action is required to protect the interests of those involved in the investigation; if the research institution believes the inquiry or investigation may be made public prematurely so that appropriate steps can be taken to safeguard evidence and protect the rights of those involved; or if the research community or public should be informed.

• When More Than One Agency is Involved. A lead agency should be designated to coordinate responses to allegations of research misconduct when more than one agency is involved in funding activities relevant to the allegation. Each agency may implement administrative actions in accordance with applicable laws, regulations, policies, or contractual procedures.

#### IV. Guidelines for Fair and Timely Procedures

The following guidelines are provided to assist agencies and research institutions in developing fair and timely procedures for responding to allegations of research misconduct. They are designed to provide safeguards for subjects of allegations as well as for informants. Fair and timely procedures include the following:

• Safeguards for Informants. Safeguards for informants give individuals the confidence that they can bring allegations of research misconduct made in good faith to the attention of appropriate authorities or serve as informants to an inquiry or an investigation without suffering retribution. Safeguards include protection against retaliation for informants who make good faith allegations, fair and objective procedures for the examination and resolution of allegations of research misconduct, and diligence in protecting the positions and reputations of those persons who make allegations of research misconduct in good faith.

• Safeguards for Subjects of Allegations. Safeguards for subjects give individuals the confidence that their rights are protected and that the mere filing of an allegation of research misconduct against them will not bring their research to a halt or be the basis for other disciplinary or adverse action absent other compelling reasons. Other safeguards include timely written notification of subjects regarding substantive allegations made against them; a description of all such allegations; reasonable access to the data and other evidence supporting the allegations; and the opportunity to respond to allegations, the supporting evidence and the proposed findings of research misconduct (if any).

• Objectivity and Expertise. The selection of individuals to review allegations and conduct investigations who have appropriate expertise and have no unresolved conflicts of interests help to ensure fairness throughout all phases of the process.

• Timeliness. Reasonable time limits for the conduct of the inquiry, investigation, adjudication, and appeal phases (if any), with allowances for extensions where appropriate, provide confidence that the process will be well managed.

• Confidentiality During the Inquiry, Investigation, and Decision-Making Processes. To the extent possible consistent with a fair and thorough investigation and as allowed by law, knowledge about the identity of subjects and informants is limited to those who need to know. Records maintained by the agency during the course of responding to an allegation of research misconduct are exempt from disclosure under the Freedom of Information Act to the extent permitted by law and regulation.

#### V. Agency Administrative Actions

• Seriousness of the Misconduct. In deciding what administrative actions are appropriate, the agency should consider the seriousness of the misconduct, including, but not limited to, the degree to which the misconduct was knowing, intentional, or reckless; was an isolated event or part of a pattern; or had significant impact on the research record, research subjects, other researchers, institutions, or the public welfare.

• Possible Administrative Actions. Administrative actions available include, but are not limited to, appropriate steps to correct the research record; letters of reprimand; the imposition of special certification or assurance requirements to ensure compliance with applicable regulations or terms of an award; suspension or termination of an active award; or suspension and debarment in accordance with applicable government-wide

rules on suspension and debarment. In the event of suspension or debarment, the information is made publicly available through the List of Parties Excluded from Federal Procurement and Nonprocurement Programs maintained by the U.S. General Services Administration. With respect to administrative actions imposed upon government employees, the agencies must comply with all relevant federal personnel policies and laws.

• In Case of Criminal or Civil Fraud Violations. If the funding agency believes that criminal or civil fraud violations may have occurred, the agency shall promptly refer the matter to the Department of Justice, the Inspector General for the agency, or other appropriate investigative body.

### VI. Roles of Other Organizations

This Federal policy does not limit the authority of research institutions, or other entities, to promulgate additional research misconduct policies or guidelines or more specific ethical guidance.

[1]No rights, privileges, benefits or obligations are created or abridged by issuance of this policy alone. The creation or abridgment of rights, privileges, benefits or obligations, if any, shall occur only upon implementation of this policy by the Federal agencies.

[2] Research, as used herein, includes all basic, applied, and demonstration research in all fields of science, engineering, and mathematics. This includes, but is not limited to, research in economics, education, linguistics, medicine, psychology, social sciences, statistics, and research involving human subjects or animals.

[3] The research record is the record of data or results that embody the facts resulting from scientific inquiry, and includes, but is not limited to, research proposals, laboratory records, both physical and electronic, progress reports, abstracts, theses, oral presentations, internal reports, and journal articles.

[4] The term "research institutions" is defined to include all organizations using Federal funds for research, including, for example, colleges and universities, intramural Federal research laboratories, Federally funded research and development centers, national user facilities, industrial laboratories, or other research institutes. Independent researchers and small research institutions are covered by this policy.