



NATIONAL SCIENCE FOUNDATION  
OFFICE OF INSPECTOR GENERAL  
OFFICE OF INVESTIGATIONS

## CLOSEOUT MEMORANDUM

Case Number: A12050039

Page 1 of 1

Our investigation determined that the Subject<sup>1</sup> knowingly plagiarized in proposals submitted to NSF. NSF made a finding of research misconduct by the Subject; sent a letter of reprimand to the Subject; required the Subject to submit certifications to the Assistant Inspector General for Investigations (AIGI), NSF OIG for two years; required the Subject's employer to submit assurances to the AIGI of NSF OIG for two years; prohibited the Subject from serving as a reviewer of NSF proposals for two years; and required the Subject to provide certification to the AIGI that she has completed a course on the responsible conduct of research.

This memo, the attached Report of Investigation, and the letter from NSF with a finding of research misconduct constitute the case closeout. Accordingly, this case is closed.

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<sup>1</sup> [REDACTED]

# National Science Foundation Office of Inspector General



## Report of Investigation Case Number A12050039

January 23, 2013

**This Report of Investigation is provided to you  
FOR OFFICIAL USE ONLY.**

It contains protected personal information, the unauthorized disclosure of which may result in personal criminal liability under the Privacy Act, 5 U.S.C. § 552a. This report may be further disclosed within NSF *only* to individuals who *must* have knowledge of its contents to facilitate NSF's assessment and resolution of this matter. This report may be disclosed outside NSF *only* under the Freedom of Information and Privacy Acts, 5 U.S.C. §§ 552 & 552a. Please take appropriate precautions handling this report of investigation.

## Executive Summary

### OIG's investigation established that:

- copied text appeared in four of the Subject's NSF proposals;
- the Subject was responsible for the plagiarism;

### OIG concludes that:

- **Act:** The Subject plagiarized approximately 143 lines of text into four proposals submitted to NSF.
- **Intent:** The Subject acted knowingly.
- **Standard of Proof:** A preponderance of the evidence supports the conclusion that the Subject's acts were a significant departure from the standards of the research community, and therefore constitute research misconduct.
- **Pattern:** The Subject's actions evince a pattern of plagiarism in NSF proposals.

### OIG recommends that NSF:

- Send the Subject a letter of reprimand notifying her that NSF has made a finding of research misconduct.
- Require the Subject to certify to the Assistant Inspector General for Investigations (AIGI) her completion of a responsible conduct of research training program and provide documentation of the program's content within 1 year of NSF's finding. The instruction should be in an interactive format (*e.g.*, an instructor-led course) and specifically include plagiarism and proper citation practices.

For a period of 2 years from the date of NSF's finding:

- Require for each document (proposal, report, etc.) to which the Subject contributes for submission to NSF (directly or through his institution),
  - the Subject to submit a certification to the AIGI that the document does not contain plagiarism, falsification, or fabrication.
  - the Subject to submit assurances from a responsible official of her employer to the AIGI that the document does not contain plagiarism, falsification, or fabrication.
- Bar the Subject from participating as a peer reviewer, advisor, or consultant for NSF.

### OIG's Investigation

We assessed an allegation that four of the Subject's<sup>1</sup> NSF proposals<sup>2</sup> contained copied text. Our review of these proposals revealed approximately 143 unique lines of text apparently copied from 11 sources. The table below identifies the approximate extent of the copied text in the proposals:

Proposal	Number of Copied Lines	Sources	Embedded references <sup>3</sup>
A	20	5	12
B	18	1	0
C	5	3	14
D	100	2	23
Total	143		

We wrote the Subject to invite an explanation.<sup>4</sup> The Subject responded twice<sup>5</sup> and she requested additional time to provide further information, but we received no further response.

The Subject's first response begins with a general statement: "I would like you to know that I had no intention of using and copying anyone's published article or part thereof for any purpose especially for a federal funded proposal. By looking at majority of the sections of the proposals, it is apparent that I acknowledged and referenced the sources of information that I used. I always acknowledge the sources of information in the proposals that I had submitted to NSF. However, it seemed that one or two were not properly referenced in the proposals that you have mentioned in your letter."<sup>6</sup> Additionally, the Subject wrote: "Sometimes, the final draft gets edited by the technical writer or the person submitting the proposal because the number pages had been exceeded. Hence, I believe that in the course of the editing process, some references may have been inadvertently deleted. Also, some sentences may have been edited by some of the readers in the company and ended up looking very much like published articles but be rest assured that those were not deliberately copied from those articles."<sup>7</sup>

<sup>1</sup> [REDACTED]. The proposals were submitted from two different small companies that previously employed [REDACTED]. [REDACTED] is currently employed at [REDACTED].

<sup>2</sup> [REDACTED]

[REDACTED]. Proposals A, B, and C were declined for funding. Proposal D was awarded.

<sup>3</sup> An embedded reference is a citation that appears within the copied text. The citation is copied along with the text, and the reference appears in the References Cited section of the proposal.

<sup>4</sup> Our inquiry letter to the Subject is at Tab 1.

<sup>5</sup> Response 1 was received September 14, 2012. Response 2 was received October 15, 2012. Both responses are included at Tab 2.

<sup>6</sup> Response 1, page 1.

<sup>7</sup> Response 1, page 1.

The following explanations from the Subject are organized by proposal.

**Proposal A.** In her explanation of copied text in a specific part of the proposal,<sup>8</sup> the Subject stated: "Multiplexed (sic) analysis systems are very important in clinical diagnosis, genomics, proteomics, immunology, drug screening, detection of bioterror agents, and water/food/ air quality monitoring" was assigned the reference number 1 because most fo (sic) the contents of the sentence was taken from the referenced material as indicated in the reference section denoted by the footnote 1."<sup>9</sup> "The reason I did not enclose it in parentheses is because other properties of multiplexed systems that are included in the sentence did not come from this paper and are acquired knowledge from my graduate school, post-doctoral fellowship, and industry experiences."<sup>10</sup> "The succeeding sentence is but a statement of the facts that exist in multiplex systems and was not deliberately not (sic) copied from any source. The sources of the details in the succeeding statements were properly referenced."<sup>11</sup>

The Subject asserted that the additional phrases she added to the first sentence in the paragraph, along with providing the citation for Source 1,<sup>12</sup> obviated the need for quotation marks around the copied text. However, the remainder of the paragraph is predominantly composed of text copied from the same source. The listed concept improvements and encoding methods are drawn directly from the short review provided in Source 1. Furthermore, references provided in Source 1 reappear in the proposal attached to the listed encoding methods, as shown in the table below.

Proposal reference	Source 1 reference
2	8
3	9
4	10
5	12
6	13
7	14
8	15
9	16
10	17
11	18
12	21
13	22

Twelve references from the source are re-used in the proposal in this paragraph. The Subject used Source 1, the published work of others, as a source of both text and references, and the copied text appears in the proposal as emblematic of her understanding of the field. The Subject asserted that she did not copy the second sentence in this paragraph from Source 1 or any other

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<sup>8</sup> Section 2.2 Paragraph 1, page 7.

<sup>9</sup> Response 1, page 2.

<sup>10</sup> Response 1, page 2.

<sup>11</sup> Response 1, page 2.

<sup>12</sup> Source 1 is [REDACTED].

source, but comparison of the proposal and Source 1 clearly shows the duplicated text. We conclude that it is not credible that the references could have been copied into the proposal with less than knowing intent.

For remaining examples of copied text in this proposal, the Subject stated that: "However, the succeeding sentences were not enclosed in quotations which I believe were not deliberate and may have had the references and/or the quotation marks at the time the draft was first written. However, the editing led to inadvertent removal of the quotation marks and/or the reference number."<sup>13</sup>

**Proposal B:** In her explanation of a specific instance of copying in this proposal,<sup>14</sup> the Subject asserted that: "The intention is to reference [authors] which was properly referenced at the end of the statement except that the quotations were not included. As in the other proposals, the quotations may have been eliminated during the process of editing the proposals as it went from one reviewer to another within the company. It was the intention to properly document the source of the information which was indicated at the end of the sentence, however, the quotation marks were inadvertently missed."<sup>15</sup>

The reference at the "end of the statement" is the source of one sentence copied into the proposal without quotation marks. The next two sentences are copied verbatim from a source document that is not included as a reference. References 1-14 in this source document are identical with references 61-74 in the proposal, the citation style for these references in the proposal is different from other citations in the References Cited section, and the typographical error in the author's name<sup>16</sup> in Reference 8 (source) reappears in Reference 68 in the proposal. This evidence supports a conclusion that the text was cut-and-paste from the source into the proposal. Additionally, there is no documentary support for the Subject's assertion that quotation marks were inadvertently missed or eliminated.

The Subject provides references for "parts of the succeeding sentences."<sup>17</sup> However, the reappearance of small phrases in these references does not explain longer sections of copied text that were copied verbatim without quotation, citation, or reference.

**Proposal C:** In her explanation of text copied from Source 1 that appeared in a list, the Subject pulled small individual phrases from the list, searched the phrase on the web, and then provided references in her explanation to show that the "phrases are common in the art."<sup>18</sup> This explanation does not address the combined appearance of the phrases in the list provided in the proposal. The combined entries in this list can be searched, and the results converge solely on the indicated source document, which is not included in the References Cited section of the proposal. Therefore, we conclude the copied text is neither quoted, cited, nor referenced.

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<sup>13</sup> Response 1, page 2.

<sup>14</sup> Page 8, Last paragraph.

<sup>15</sup> Response 1, page 2.

<sup>16</sup> The author name [REDACTED] should be hyphenated.

<sup>17</sup> Response 1, page 2.

<sup>18</sup> Response 1, page 4.

In describing text copied from Source 2 and from Source 3, the Subject agreed that the entire paragraphs which were copied should have been enclosed in quotation marks, stated that "quotations and reference numbers may be inadvertently deleted during edits,"<sup>19</sup> and that "if the people editing the proposal do not know of the existence of the literature source of the statements, they may modify it in a way that it becomes too close or the same as published statements."<sup>20</sup> Finally, because the reference number in the proposal adjacent to the copied text is the source of the copied text, the Subject asserted that this appearance is indicative of "the intention to properly cite the reference material."<sup>21</sup> However, the Subject provided no support for her suggestion that quotation marks were originally present, or were removed during editing, or that the copied text was edited by anyone else so as to match the source text. The appearance of acronyms for terms that appeared only in the copied section, and nowhere else in the proposal, provides evidence that the text was cut-and-pasted from the indicated source.

**Proposal D:** The proposal contains an extensive section of copied text that describes [REDACTED]. In her response, the Subject stated: "the descriptions of the [REDACTED] were written as these were found in the literature. Due to the nature of the [REDACTED] formulations, the descriptions were written as they were found in the literature. The references for these descriptions were provided."<sup>22</sup> The Subject also stated "the descriptions of the different [REDACTED] and the way these are prepared are the same no matter what the reference because these are set standard methods. The references in addition to those given in the proposal are as follows . . ."<sup>23</sup> The Subject's response then listed several sources, but without bibliographic information. One of the listed references links to a website that provides descriptions of the [REDACTED]s, but does not include any of the verbatim copied text that appeared in the Subject's proposal. The Subject's explanation is not a response to the apparent plagiarism, but is instead a collection of references to the topical area.

The Subject further asserts that "references are provided." However, all of the references in this section of the proposal are simply those which were embedded within the copied text. The bibliographic citations were cut-and-pasted from the source into the References Cited section of the proposal. The punctuation errors, misspellings, and incorrect dates that appear in the source references reappear in the proposal references.<sup>24</sup> The source from which the text and the references were copied is not referenced or acknowledged, and the copied text is not enclosed within quotation marks in the proposal.

In further explanation, the Subject selected many two- and three-word phrases from within the longer copied sections, and then provided examples of the scientific literature that

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<sup>19</sup> Response 1, page 7.

<sup>20</sup> Response 1, page 7.

<sup>21</sup> Response 1, page 8.

<sup>22</sup> Response 2, page 1.

<sup>23</sup> Response 2, page 1.

<sup>24</sup> For example, multiple errors in the punctuation of "et al." in the source references recur in the proposal references. The word "Medicine" is misspelled in the journal title for the reference [REDACTED] in both the source and the proposal. The author name is given as "[REDACTED]" in the reference lists of both source and proposal, but as "[REDACTED]it" in the text of both source and proposal. The date of the publication of [REDACTED] is given as 1991 in the reference lists for both source and proposal, but as 1989 in the embedded reference in the text for both source and proposal.

contain the phrase. However, these examples do not contain the longer sections of copied text. In another instance, the Subject purported to search for a longer section of copied text, and listed examples of sources.<sup>25</sup> Again, these examples do not contain the copied text. The Subject's response did not address the extensive sections of copied text taken from an unlisted and unacknowledged source.

For text copied in another section of this proposal,<sup>26</sup> the Subject responded: "This section has the necessary details that were included in the proposal. The languages are constrained by the identified references but again, in the process of editing the quotations may have inadvertently removed"<sup>27</sup> and "I believe that the contents of the above paragraph are not the same as the original source and the source [...] is documented in this section. Hence, I don't see the reason why this is in question."<sup>28</sup> The copied text in the source and the proposal is highlighted in the materials provided to the Subject. Evidence that the text was copied from the source through cut-and-paste is provided by the recurrence of a misspelling.<sup>29</sup> In her response, the Subject again pulls small phrases from the larger sections of copied text, and provides examples of their appearance in the literature. However, the response does not address the plagiarism for which there is strong and direct evidence.

The Subject summarized: "... I did not deliberately copy any text from any source. If there has been any close similarities, I believe it was inadvertent in all cases and this can be proven by the presence of references that appear in places close to the sentences that were similar to some articles. Additionally most of the phrases used are common phrases being used by scientists and researchers like myself who have published the sue [sic] of such phrases."<sup>30</sup> As this assessment shows, the reference to the source document is missing, the references listed are simply those that were embedded within the copied text, and the "common phrases" argument is irrelevant to the verbatim copying of longer sections of text. There is clear and convincing evidence that the Subject knowingly copied text from the indicated sources.

### OIG's Assessment

A finding of research misconduct by NSF requires that 1) there be a significant departure from accepted practices of the relevant research community, that 2) the research misconduct be committed intentionally, or knowingly, or recklessly, and that 3) the allegation be proved by a preponderance of the evidence.<sup>31</sup>

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<sup>25</sup> Response 2, page 5.

<sup>26</sup> Section 4.2, Market opportunity.

<sup>27</sup> Response 2, pages 8-9.

<sup>28</sup> Response 2, page 9.

<sup>29</sup> In the indicated source, [REDACTED] is instead spelled "[REDACTED]," and this misspelling recurs in the Subject's proposal. A Google search of the misspelled company name provides the indicated source as the sole result. The phrase "sales growth forecast" appears in the source as "sale growth forecast," and this phrase recurs in the Subject's proposal.

<sup>30</sup> Response 2, page 13.

<sup>31</sup> 45 C.F.R. §689.2(c).



### Acts

We conclude that the Subject copied approximately 143 lines of text, including embedded references, into four NSF proposals. The Subject asserted repeatedly that someone else may have been responsible,<sup>32</sup> that she did not deliberately copy from the sources, and that any similarities are inadvertent. However, comparison of the proposals and the sources provides direct evidence that the copied text and references were cut-and-pasted from the sources. Quotation marks are absent from the copied text, and some source documents are not listed as references in the proposal. The Subject's copying constitutes plagiarism, defined as the appropriation of another person's ideas, processes, results or words without giving appropriate credit. The Subject's Ph.D. degree is in Chemistry, and she is a member of professional chemistry organizations<sup>33</sup> that describe plagiarism as a violation of the standard of the scientific community.<sup>34</sup>

We conclude the Subject failed to ensure adequate attribution to words written by others, and the Subject committed acts of plagiarism that significantly departed from accepted standards of the research community.

### Intent

The Subject claimed that similarities in text in her proposals with the text in the sources are inadvertent, or the result of editing by someone else, or that quotation marks were removed by someone else. We do not find these explanations credible. There is direct evidence for cut-and-paste copying of text and references from the indicated sources, and this is a knowing act. We therefore conclude that the Subject's intent was knowing.

### Standard of Proof

We conclude that direct comparison of the proposals with the sources provides a preponderance of the evidence that the Subject failed to provide adequate attribution for text copied into her NSF proposals, and that these actions constitute knowing plagiarism. Because these actions represent a significant departure from accepted practices, we conclude that the Subject's plagiarism constitutes research misconduct.

### OIG's Recommended Disposition

When deciding what appropriate action to take upon a finding of misconduct, NSF must consider: (1) how serious the misconduct was; (2) the degree to which the misconduct was knowing, intentional, or reckless; (3) whether it was an isolated event or part of a pattern;

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<sup>32</sup> The Subject does not implicate any of the coPIs listed on the proposals in her explanations. No grant writers are named in the proposals. The majority of the Subject's plagiarism occurs in Proposal D on which she is the sole PI.

<sup>33</sup> The Subject lists membership in the [REDACTED] in her curriculum vita available on the web (Tab 3).

<sup>34</sup> For example, [REDACTED].

(4) whether it had a significant impact on the research record, research subjects, other researchers, institutions or the public welfare; and (5) other relevant circumstances.<sup>35</sup>

#### Seriousness

The Subject copied approximately 143 lines of text into four NSF proposals. In so doing, the Subject presented this text to NSF proposal reviewers as her own. The extent of plagiarism by the Subject exceeds the level for which NSF has made previous findings of research misconduct, and has put in place requirements for certifications and assurances. One proposal containing plagiarized text was awarded by NSF. The copied text is separate from proposed research plans, and the reviews of the proposal do not address issues related to the copied text. We conclude that the plagiarism is not connected to the funding decision.

#### Degree of Intent

The Subject's knowing intent is revealed in the recurrence of errors (spelling, typographical and others) in the copied text and references in her proposals. The reuse of references compiled by the source authors, substituting for references selected by herself, reinforces the degree of knowing intent.

#### Pattern

The Subject's recurrent plagiarism in four NSF proposals submitted over a period of several years is evidence for a pattern of behavior by the Subject.

#### Impact on the Research Record

Three of the Subject's NSF proposals in which plagiarism occurred were declined; the impact of the Subject's plagiarism on the research record is therefore limited to activities related to NSF merit review of those proposals. The fourth proposal was awarded by NSF, but the plagiarism was not a factor in the review or recommendation for the award.

#### Recommendations

We recommend that NSF:

- Send the Subject a letter of reprimand notifying her that NSF has made a finding of research misconduct.<sup>36</sup>
- Require the Subject to certify to the Assistant Inspector General for Investigations (AIGI) her completion of a responsible conduct of research training program and provide documentation of the program's content within 1 year of NSF's finding.<sup>37</sup> The instruction should be in an interactive format (e.g., an instructor-led course) and specifically include plagiarism and proper citation practices.

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<sup>35</sup> 45 C.F.R. § 689.3(b).

<sup>36</sup> A Group I action 45 C.F.R. 689.3(a)(1)(i).

<sup>37</sup> This action is similar to Group I actions 45 C.F.R. 689.3(a)(1).

For a period of 2 years as of the date of NSF's finding:

- Require for each document (proposal, report, etc.) to which the Subject contributes for submission to NSF (directly or through her institution),
  - the Subject to submit a certification to the AIGI that the document does not contain plagiarism, falsification, or fabrication.<sup>38</sup>
  - the Subject to submit assurances from a responsible official of her employer to the AIGI that the document does not contain plagiarism, falsification, or fabrication.<sup>39</sup>
- Bar the Subject from participating as a peer reviewer, advisor, or consultant for NSF.<sup>40</sup>

Subject's certifications, assurances, and certificate of attendance should be sent to the Assistant Inspector General for Investigations for retention in OIG's confidential file.

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<sup>38</sup> This action is similar to 45 C.F.R. 689.3(a)(1)(iii).

<sup>39</sup> A Group I action 45 C.F.R. 689.3(a)(1)(iii).

<sup>40</sup> A Group III action 45 C.F.R. 689.3(a)(3)(ii).

NATIONAL SCIENCE FOUNDATION  
4201 WILSON BOULEVARD  
ARLINGTON, VIRGINIA 22230



OFFICE OF THE  
DEPUTY DIRECTOR

JUN 06 2013

**VIA CERTIFIED MAIL/RETURN RECEIPT REQUESTED**

[REDACTED]

*Re: Notice of Research Misconduct Determination*

Dear [REDACTED]:

From 2007-2010, you served as a Principal Investigator on four Small Business Innovation Research/Small Business Technology Transfer Phase I proposals submitted for funding to the National Science Foundation ("NSF") entitled, [REDACTED]

[REDACTED] As documented in the attached Investigative Report prepared by NSF's Office of Inspector General ("OIG"), these proposals contained plagiarized material.

**Research Misconduct and Proposed Sanctions**

Under NSF's regulations, "research misconduct" is defined as "fabrication, falsification, or plagiarism in proposing or performing research funded by NSF ..." 45 CFR § 689.1(a). NSF defines "plagiarism" as "the appropriation of another person's ideas, processes, results or words without giving appropriate credit." 45 CFR § 689.1(a)(3). A finding of research misconduct requires that:

- (1) There be a significant departure from accepted practices of the relevant research community; and
- (2) The research misconduct be committed intentionally, or knowingly, or recklessly; and
- (3) The allegation be proven by a preponderance of evidence.

45 CFR § 689.2(c).

Your proposals contained 143 unique lines of text copied from numerous source documents. By submitting proposals to NSF that copied the ideas or words of another without adequate attribution, as described in the OIG Investigative Report, you misrepresented someone else's work as your own. Your conduct unquestionably constitutes plagiarism. I therefore conclude that your actions meet the definition of "research misconduct" set forth in NSF's regulations.

Pursuant to NSF regulations, the Foundation must also determine whether to make a *finding* of misconduct based on a preponderance of the evidence. 45 CFR § 689.2(c). After reviewing the Investigative Report, NSF has determined that, based on a preponderance of the evidence, your plagiarism was committed knowingly and constituted a significant departure from accepted practices of the relevant research community. I am, therefore, issuing a finding of research misconduct against you.

NSF's regulations establish three categories of actions (Group I, II, and III) that can be taken in response to a finding of misconduct. 45 CFR § 689.3(a). Group I actions include issuing a letter of reprimand; conditioning awards on prior approval of particular activities from NSF; requiring that an institution or individual obtain special prior approval of particular activities from NSF; and requiring that an institutional representative certify as to the accuracy of reports or certifications of compliance with particular requirements. 45 CFR § 689.3(a)(1). Group II actions include award suspension or restrictions on designated activities or expenditures; requiring special reviews of requests for funding; and requiring correction to the research record. 45 CFR § 689.3(a)(2). Group III actions include suspension or termination of awards; prohibitions on participation as NSF reviewers, advisors or consultants; and debarment or suspension from participation in NSF programs. 45 CFR § 689.3(a)(3).

In determining the severity of the sanction to impose for research misconduct, I have considered the seriousness of the misconduct, and our determination that it was committed knowingly. I have also considered the fact that your misconduct was part of a pattern, and that the plagiarism had little, if any, impact on the research record. In addition, I have considered other relevant circumstances. 45 CFR § 689.3(b).

After assessing the relevant facts and circumstances of this case, I am taking the following actions against you:

- (1) Until June 1, 2015, you must provide certifications to the OIG that any proposal or report you submit to NSF as a PI or co-PI does not contain plagiarized, falsified, or fabricated material;
- (2) Until June 1, 2015, you must provide assurances to the OIG from a responsible official of your employer that any proposal or report you submit to NSF as a PI or co-PI does not contain plagiarized, falsified, or fabricated material;

- (3) By June 1, 2014, you must complete a responsible conduct of research training program, for which the instruction should be in an interactive format (e.g., an instructor-led course) and specifically include plagiarism. You must provide documentation of the program's content and proof of its completion to the OIG; and
- (4) Until June 1, 2015, you are prohibited from serving as a reviewer, advisor, or consultant for NSF.


The certifications, assurances and written documentation of the training program should be submitted in writing to NSF's OIG, Associate Inspector General for Investigations, 4201 Wilson Boulevard, Arlington, Virginia 22230.

Procedures Governing Appeals

Under NSF's regulations, you have 30 days after receipt of this letter to submit an appeal of this decision, in writing, to the Director of the Foundation. 45 CFR § 689.10(a). Any appeal should be addressed to the Director at the National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia 22230. If we do not receive your appeal within the 30-day period, this decision will become final.

For your information, we are attaching a copy of the applicable regulations. If you have any questions about the foregoing, please call [REDACTED] Assistant General Counsel, at (703) 292-8060.

Sincerely,



Fae Korsmo  
Senior Advisor

Enclosures

- Investigative Report
- 45 C.F.R. Part 689