NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL
OFFICE OF INVESTIGATIONS

CLOSEOUT MEMORANDUM

Case Number: A12050032

A former graduate student (Subject)[1] who conducted NSF-funded research[2] at an University[3] admitted that he fabricated and falsified data in a publication[4] and his Ph.D. dissertation.[5] Based upon the admission, the University revoked the student's Ph.D. and requested the publication be retracted.

Based on our investigation, we concluded that the Subject intentionally fabricated and falsified data and that his actions constituted a significant departure from accepted practices of the relevant research community. NSF concurred with the recommendations in our Report of Investigation (ROI), and made a finding of research misconduct and debarred the Subject for a period of three years. In addition, NSF prohibited the Subject from participating as a peer reviewer, advisor, or consultant for the three year debarment period. For an additional three years post-debarment, the Subject is required to submit certifications and assurances as well as certifications of adherence to a data management plan. NSF also required that he complete a course in the responsible conduct of research and retract the publication.[6]

This memo, the attached ROI and the letters from the Office of the Deputy Director on the notice of research misconduct determination with a proposed debarment and the final debarment notice constitute the case closeout. Accordingly, this case is ***closed***.

[1] [redacted]
[2] [redacted]
[3] [redacted]
[4] Article 1 [redacted]
[5] Ph.D. dissertation [redacted]
[6] Retraction notice in [redacted]

National Science Foundation
Office of Inspector General

Report of Investigation
Case Number A12050032
March 29, 2013

This Report of Investigation is provided to you
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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

Allegation: A former graduate student that conducted NSF-funded research at a university admitted that he intentionally fabricated and falsified data included in a publication and his Ph.D. thesis dissertation.

University Actions: Per its policy, the University did not conduct an inquiry or an investigation as the Subject admitted to the research misconduct. The University revoked the student's Ph.D. degree and dissertation and requested the publication be retracted.

OIG Investigation:

Based on these circumstances, we interviewed the Subject and asked him to discuss his research misconduct admission and to provide additional information. The Subject took responsibility for the fabricated and falsified data.

OIG Assessment:

- **The Act:** Subject fabricated and falsified data in one publication and his Ph.D. thesis dissertation.
- **Intent**: The Subject acted intentionally.
- **Standard of Proof:** A preponderance of evidence supports a finding of research misconduct.
- **Significant Departure:** The Subject's actions represent a significant departure from accepted practices.
- **Pattern:** No pattern found.

OIG Recommends:

- Make a finding of research misconduct.
- Send a letter of reprimand.
- Require certification of responsible conduct of research training within 1 year of NSF's finding.
- Require certification of retraction within 1 year.
- Debar the Subject from receiving Federal funds or participating in any federally-funded project for a period of 3 years.

Additionally for a period of 3 years immediately following the debarment period:

- Bar the Subject from participating as a peer reviewer, advisor, or consultant for NSF.
- Require certifications and assurances.
- Require submission of detailed data management plan with annual certifications of adherence.

OIG's Inquiry

The University[1] provided us with a signed document[2] from a former Graduate Student (Subject)[3] who conducted NSF funded research[4] at the University. In the document, the Subject admitted that "[t]wo experiments are invalid" in a 2008 journal publication (Article 1)[5] and the Subject's Ph.D. thesis dissertation.[6]

Article 1 acknowledged that a NSF award (Award 1)[7] and another source[8] provided support for the research. Article 1 was listed under "Publications" in several NSF progress and final reports for Award 1 and another NSF award (Award 2).[9] Specifically, we noted its mention in the third Annual,[10] fourth Annual[11] and Final reports[12] of Award 1 and in the Final report[13] of Award 2. Article 1 was also listed as one of five significant publications on the biographical sketch of the Subject's Ph.D. thesis advisor (PI)[14] in a declined proposal[15] and on the Subject's biographical sketch in two declined proposals.[16]

In the signed admission,

1. The Subject stated that for Article 1, "On page 9629, Table 1, entries #6 and #8 have been inappropriately manipulated. The data in the table does not reflect results of the experiment listed. These are the same experiments as entries 10 and 12 of Table SI-1in the supporting information page S6. This affects the [second] paragraph, first and second sentences, on page [9629], which is no longer supported by data". The data in

[1] [redacted]
[2] Tab 1.
[3] [redacted]
[4] Tab 2: [redacted] (Note: throughout this report, page numbers noted in the Tabs are according to the page numbers listed in the bottom right corner of each page in the pdf document)
[5] Tab 4: [redacted]
[6] Tab 5.
[7] Tab 2, [redacted]
[8] [redacted]
[9] Tab 10: [redacted]
[10] Tab 6:
[11] Tab 7:
[12] Tab 8:
[13] Tab 9:
[14] [redacted]
[15] Tab 13:
[16] Tab 14:

the table refers to the melting range of DNA hybrid structures[17] upon varying the concentration and NaCl levels. The data manipulation alters the conclusions regarding optimal aggregate formation upon condition variation.

2. The Subject stated that "a gel image" in Article 1 and his Ph.D. thesis dissertation was also "altered". Specifically, he provided the unmodified gel images of varying intensities to exemplify the range of information for an "idealized image" in the experiment to be displayed in Article 1 and his Ph.D. thesis dissertation. The alteration of the gel image changes the conclusion regarding the formation of DNA hybrid structures in dilute versus concentrated solutions.

The "inappropriately manipulated" data appeared in both Article 1 and his Ph.D. thesis dissertation. We also found that some of the data was included in the third and fourth Annual Reports[18] for Award 1 and in the Final Annual Report for Award 2. The Table below indicates where the experiments and data in Article 1 appear elsewhere in documents to which the Subject has contributed.

		Article 1	Ph.D. thesis dissertation	Award 1, 3rd Annual Report	Award 1, 4th Annual Report	Award 2, Final Report
Experiment #1	**Data**	Entries #6 and #8 on pg 9629, Table 1	Entries #6 and #8 on pg 75, Table 3.1			
	Data	Entries #10 and #12 on pg S6, Table SI-1	Entries #10 and #12 on pg 106, Table 3.3			
	Text	1st and 2nd sentences in 2nd paragraph on pg 9629	1st and 2nd sentences in paragraph 3.2.2.3 on pg 76	6th and 7th sentences in first paragraph on pg 68	6th and 7th sentences in first paragraph on pg 72	
Experiment #2	**Figure**	Figure 1 on pg 9628 and Figure SI-2 on pg S6	Figure 3.5 on pg. 76			Figure 2 on pg 9
	Text	3rd sentence of 2nd paragraph on pg 9629	3rd sentence in paragraph 3.2.2.3 on pg 76			

[17] [redacted]

[18] Tabs 6 and 7.

University's Review

The University's Office for Research Integrity (UORI)[19] provided us with a letter[20] summarizing the chronology of the Subject's admission and subsequent University's actions. The Subject left the University in 2008 after completing his Ph.D. studies. It was not until 2010 that the PI became aware of the potential misconduct when a postdoctoral research fellow could not replicate the Subject's results listed in Article 1. The PI and postdoctoral fellow[21] reviewed the Subject's original data files from the computer that controlled the UV-Vis spectrophotometer and found several inconsistencies:

- "measurements taken at regular temperature intervals . . . rather than the random temperatures that were consistent with [the] instrument heating and holding the temperature at regular time points",
- "several experiments within short time frames . . . which is not possible because normal experiments would [have] taken several hours to run", and
- "data files appeared to have multiple dates or multiple sets of data embedded in one file" . . . in which the PI "realized that the UV-vis instrument appended time/notation tags from the original data files whenever changes were made or if files were exported and then reimported; in essence, saving the record of the modifications."[22]

The PI conducted analyses[23] in which he annotated several raw data files[24] and identified discrepancies (such as too few decimal places) in data recordings by the Subject. The analyses also included the PI's attempt to simulate the method of data fabrication by using the UV-Vis instrument in order to illustrate what the manipulated data would look like.

Subsequently, the PI notified the UORI to discuss his concerns and to discuss the University's research misconduct process. However, the PI contacted the Subject to allow him to provide an explanation. When the PI expressed concerns about the integrity of the research data, the Subject admitted to manipulating data and later provided the written admission to the UORI. Due to the Subject's admission and per University Policy[25] and Procedures[26], the University concluded[27] that, it did not need to convene an inquiry or investigation committee:

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[19] , Director of the Office of Research Integrity and Research Integrity Officer at

[20] Tab 16: Letter from University

[21]

[22] Tab 16, pg 2. The University provided the analyses to us.

[23]

[24] Tab 17: List of documents and files from - Office for Research Integrity.

[25] Tab 18: Policy for Reviewing Alleged Research Misconduct.

[26] Tab 19: Procedures for Reviewing Alleged Research Misconduct.

[27] Tab 20: Letter from Director of the Office of Research Integrity to the Vice President for Research

[redacted][28]

Consequently, the University accepted the Subject's admission and proceeded with a disciplinary review process through the Graduate School to determine what additional sanctions were appropriate. Based on their review, the University determined that the Subject "[c]ommitting research misconduct is a serious offense"[29] and the University formally revoked the Subject's degree and published dissertation. Furthermore, the University requested that the Subject and the PI start the process of retracting Article 1. Additional communication[30] with the Director of UORI revealed that the University rejected the Subject's appeal of the Provost's decision and the Subject's request for a master's degree.

OIG Investigation

We contacted the Subject regarding the signed admission and requested an interview. During our interview,[31] the Subject admitted that he manipulated the data specified in his signed admission and asserted that he had not manipulated or altered data in other sections of his Ph.D. thesis or in any other publications from the PI's lab.

Specifically, we asked him to elaborate on his signed admission regarding entries #6 and #8. Explicitly, the Subject stated "I believe Entry 7 is the one that is accurate"[32] and "there was [a] previous curve that was also accurate. I had taken the other accurate curve that wasn't published, [and] presented it as either [entry #] 6 or 8".[33] After describing the experimental details, the Subject admitted he manipulated the data for entries #6 and #8 so it would represent results he had obtained previously and represent the expected result. Specifically he stated:

"[W]e were looking to see . . . a sharp melting transition, and that I had seen a couple of times. But most of the times . . . I would not see it",[34]

"[A]t some point, I took one of the ones that actually worked the way we wanted it to and said that it was also two other instances",[35]

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[28] Tab 18, pg 5.
[29] Tab 21: Letter from [redacted] Provost to the Subject, [redacted].
[30] Tab 22: Email from [redacted] Director of the Office of Research Integrity [redacted]
[31] Tab 23: Transcribed [redacted] interview of Subject.
[32] Tab 23, pg 3, lines 10-11.
[33] Tab 23, pg 3, lines 13-15.
[34] Tab 23, pg 4, lines 16-18.
[35] Tab 23, pg 4, lines 20-22.

"So I took the raw data and subtracted a few degrees from it so that it looked like it melted a few degrees lower than it had",[36] and

"It was replicating something that was accurate once and altering it slightly so it looked like two different instances."[37]

Regarding the electronic file dates, the Subject specifically stated the time stamps on the files were "a little fishy"[38] due to his changing the values (of the temperature measurements) and re-importation of the files. The Subject indicated that the PI noted the date changes and shorter decimal points in the temperature measurement recordings as the PI "could tell that the decimal places didn't look like the original decimal places"[39] obtained in the experiments.

The Subject admitted that temperature data manipulations occurred "towards the very end . . . within the last year"[40] of his research and "probably . . . summer of 2007"[41] due to "[f]rustration, desperation"[42] in working with unstable material. The Subject proclaimed that he "couldn't convince [his] boss that it was actually unstable"[43] and wanted "to just move on to something else".[44] Furthermore, he stated that his data manipulations to obtain entries #6 and #8 were "intentional falsification"[45] and when asked, he affirmed that his manipulations changed the conclusion in Article 1 for that "the average number of cooperative duplexes is calculated to be 2.97".[46]

For the native PAGE gel in Figure 1 of Article 1, the Subject disclosed that the original data included in his signed admission "doesn't show . . . Band 1 as being clear"[47] since for Article 1 he "cut a picture that [he] had taken"[48] and "adjusted the band height"[49] . . . "so it looked more clear".[50] When asked,[51] the Subject affirmed that his manipulation did not "altered the conclusion"[52] but instead, the "evidence for the conclusion".[53]

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[36] Tab 23, pg 4, lines 24-26.
[37] Tab 23, pg 5, lines 6-8.
[38] Tab 23, pg 53, line 4.
[39] Tab 23, pg 55, lines 21-22.
[40] Tab 23, pg 11, lines 4-5.
[41] Tab 23, pg 11, lines 7-8.
[42] Tab 23, pg 11, line 15.
[43] Tab 23, pg 12, line 14-15.
[44] Tab 23, pg 12, lines 19-20.
[45] Tab 23, pg 18, line 5.
[46] Tab 23, pg 18, lines 21-22.
[47] Tab 23, pg 15, lines 1-2.
[48] Tab 23, pg 15, lines 4-5.
[49] Tab 23, pg 15, line 7.
[50] Tab 23, pg 15, line 9.
[51] Tab 23, pgs 16-17.
[52] Tab 23, pg 16, line 23.
[53] Tab 23, pg 17, line 3.

Regarding the data manipulation in Article 1 and his Ph.D. thesis dissertation, the Subject indicated his reason was "to be done with that experiment"[54] as he "didn't think [the] materials were very stable"[55] and he was having trouble creating reproducible results. The Subject informed the incoming post-doctoral fellow[56] regarding the instability of the materials, who then "refused to work on them".[57] Furthermore, the Subject stated that "having the grant added to part of the pressure . . . can we continue to get funding on the same grant, or will it just be dropped because we're not being successful?"[58]

The Subject admitted "[I] felt so terrible about what I had done, but I wasn't really able to come forward on my own, because I was too scared of the consequences"[59] and "it was somewhat a relief . . . to at least get the dishonesty out"[60] to the PI.

Since the University revoked the Subject's degree and published dissertation, the Subject was hopeful that the University would have considered his request to resubmit his thesis, with the omission of Chapter 3 which pertained to Article 1, for a master's degree. The Subject stated he has been in contact with the PI to start the process of retracting Article 1. Towards the conclusion of the interview, the Subject admitted he "felt sick"[61] about the data fabrication and "it was a desperate move"[62] as he did not think others would try to repeat his experiments.

OIG's Assessment

We assessed the University's actions and concluded that the University followed reasonable procedures in accordance with their policies.[63]

A finding of research misconduct by NSF requires that (1) there be a significant departure from accepted practices of the relevant research community, (2) the research misconduct be committed intentionally, or knowingly, or recklessly, and (3) the allegation be proven by a preponderance of the evidence.[64]

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[54] Tab 23, pg 30, lines 20-21.
[55] Tab 23, pg 32, lines 17-18.
[56] [redacted]
[57] Tab 23, pg 32, line 21.
[58] Tab 23, pg 36, lines 6-9.
[59] Tab 23, pg 41, lines 15-17.
[60] Tab 23, pg 42, lines 1-2.
[61] Tab 23, pg 49, line 5.
[62] Tab 23, pg 49, lines 6-7.
[63] Tab 18: [redacted] Policy for Reviewing Alleged Research Misconduct.
[64] 45 C.F.R. § 689.2(c).

The Acts

Specifically, the Subject admitted that he:

1. Fabricated the melting data for DNA hybrid structures in Article 1 and his Ph.D. thesis dissertation by manufacturing data for entries #6 and #8 in Table 1 of Article 1 and entries #10 and #12 in Table SI-1 of Article 1. This identical data was also included in the Subject's Ph.D. dissertation as entries #6 and #8 in Table 3.1 and entries #10 and #12 in Table 3.3.

2. Falsified the digital image of a native PAGE gel containing DNA hybrid structures in Figure 1 and Figure SI-2 of Article 1 and Figure 3.5 of his Ph.D. thesis dissertation. For lane 1, which represented DNA hybrid structures[65] formed in dilute solution, he adjusted the band height.

Intent

The Subject acknowledged that his actions were "intentional fabrication".[66] In addition, the Subject acknowledged he fabricated and falsified results of his experiments and data that were concurrently included in Article 1 and his Ph.D. thesis dissertation. His actions and admissions indicate he decided to fabricate and falsify the data as he had difficulty obtaining repeatable results and wanted to produce the expected results to fit the hypothesis in order to move on to other experiments as he was completing his Ph.D. thesis.

In Table 1 of Article 1 (and Table 3.1 of his Ph.D. thesis), the data for entries #6 through #8 (or #10 through #12 in Table SI-1 of Article 1 and in Table 3.3 of his Ph.D. thesis) refer to the melting range of DNA hybrid structures[67] upon varying the NaCl concentration levels. The Subject's fabrication was further perpetuated because entries #6 and #8 (or #10 and #12) were used to calculate[68] the number of cooperative duplexes for the DNA hybrid structures. This resulted in an erroneous, but desired, conclusion that the average number of cooperative duplexes was calculated to be 2.97 (the average of 2.90, 2.68 and 3.33 for entries #6, 7 and 8, respectively).

In the signed admission, the Subject included three different intensity images of the same native PAGE gel in order to better visualize the DNA hybrid structures that were loaded into the lanes of the gel at various concentrations. The experiment was done to determine the concentrations for the samples to be used in the native PAGE gel presented in Figure 1 and Figure SI-2 of Article 1 and Figure 3.5 of his Ph.D. thesis dissertation. For lane 1, which

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[65] [redacted]

[66] Tab 23, pg 18, line 5.

[67] [redacted]

[68] Equation and calculated values located at Tab 4: [redacted]

represented DNA hybrid structures[69] formed in dilute solution, he intentionally adjusted the band height to falsely represent the DNA hybrid structures[70] at a higher desired molecular weight. The alteration in the gel image altered the conclusion pertaining to the formation of DNA hybrid structures in dilute versus concentrated solutions.

Standard of Proof

Based on his own admission and documented evidence, the Subject fabricated and falsified data. OIG concludes that the Subject is found, by a preponderance of evidence, to have intentionally fabricated and falsified data and materials, thereby committing an act of research misconduct.[71]

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; (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.[72]

Seriousness

The Subject's actions are severe violation of the standards of research ethics. The Subject's intentional fabricated and falsified data were included in a published manuscript and his Ph.D. thesis dissertation. The Subject's actions adversely affected his immediate research community as other researchers spent time, effort and resources trying to repeat the Subject's experiments.

Degree of Intent

We found no evidence to mitigate our conclusion that the Subject intentionally fabricated and falsified data. His actions and admission indicate he fabricated and falsified his data to deceive the PI and finish the studies for his Ph.D. thesis.

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[69] [redacted]
[70]
[71] 45 C.F.R. part 689.
[72] 45 C.F.R. § 689.3(b).

The professional society[73] which produces the journal[74] that published Article 1 maintains a set of guidelines for the publication of research, these guidelines include the ethical obligations of authors such as:

[75]

[76]

The Subject intentionally deceived the journal and the reviewers who reviewed Article 1 by not providing an accurate account of the research performed and by manipulating images, both of which adversely affected the research conclusions. The Subject co-authored three other publications[77] in the same journal (in addition to Article 1) and submitted 14 poster presentations at the professional society's annual national meetings.

The Subject's actions were an intentional violation of the research community principles and values. As a graduate student, he violated basic expectations of academic behavior when conducting research. Universities assume their research community (faculty, students and staff) will adhere to the scholarly expectations of accuracy, validity and integrity in research. The Subject's actions are an affront to the academic community and indicate a failure in carrying out the expected responsibilities in sustaining professional honesty and integrity. Only after the post-doctoral researcher and the PI analyzed the questionable data did the Subject admit to the data fabrication and falsification in early 2012.

Pattern of Behavior

The Subject asserted that he did not manipulate data in other sections of his Ph.D. thesis or in any other publications in the PI's lab. The PI's analyses of the Subject's data records did not reveal other manipulations which affected additional experiments. We therefore do not find a pattern of fabrication and falsification.

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[73] Society.
[74] Journal of the Society.
[75] Tab 24: Ethical Guidelines, pg 2.
[76] Tab 24, pg 4.
[77] Tab 25: - Publication history of Subject.

Impact on the Research Record

The falsified and fabricated data that was included in Article 1 had an impact in the literature as Article 1 has been cited[78] 13 times, 8 of which are from research groups that do not have a discernible affiliation with the PI's laboratory.

Other Concerns

During the interview, the Subject indicated[79] that he had no formal training in the responsible conduct of research (RCR). The Subject was a graduate student at the University from 2002 until 2008 whereas the NSF's RCR requirements[80] for institutions applied only to NSF proposals that were submitted or due on or after 1/4/10. A discussion with the UORI Director[81] confirmed that the Subject had not participated in any RCR training. The Subject served as the Graduate Student Mentor for a total of three undergraduates in 2006 and 2007 who participated in the Research Experiences for Undergraduate (REU) summer program funded by Award 1 and one of the summer undergraduates continued participation in the research program during the academic year. In the Subject's curriculum vitae[82] attached to his Ph.D. thesis, he listed four additional summer undergraduates that he mentored in addition to serving as a tutor and/or teaching assistant in organic chemistry lab courses. Although the Subject had not participated in RCR training, honest representation of data is a basic tenet of all those who conduct scientific research.

Subject's Response to Draft Report

In the Subject's response[83] to our draft investigation report,[84] he provided comments that clarified the degree of fabrication in the native PAGE gel in Article 1 and his Ph.D. thesis dissertation. He indicated that for the native PAGE gel, "[E]ach lane" was of "its original intensity" and the "falsification [was] limited to a shifted band-height of lane 1" as "the height of the band in lane 1 did not support [their] conclusion" for that experiment. We altered our report to more accurately reflect the subject's actions.

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[78] Tab 26: [redacted] database- Publications that cite Article 1.
[79] Tab 23, pgs 37-38.
[80] Part II, Award and Administration Guide, Chapter IV Grantee Standards. B. Responsible Conduct of Research and NSF 11-1, Part I Grant Proposal Guide, Chapter II Proposal Preparation Instructions, Part C. Proposal Contents, 1.e. Proposal Certifications.
[81] [redacted].
[82] Tab 5, pgs 153-155.
[83] Tab 27: Response from Subject [redacted].
[84] Tab 28: Letter to Subject with Draft ROI [redacted].

Recommendations

Based on the evidence, OIG recommends NSF to take the following actions:

- Send the Subject a letter of reprimand notifying him that NSF has made a finding of research misconduct.[85]

- Require the Subject to certify to the Assistant Inspector General for Investigations (AIGI) his completion of a responsible conduct of research training program and provide documentation of the program's content within 1 year of NSF's finding.[86] The instruction should be in an interactive format (*e.g.*, an instructor-led course) and specifically include data fabrication and falsification.

- Require the Subject to certify to the AIGI within 1 year of NSF's finding that he has notified the affected journal of the research misconduct finding and the state of the retraction of the published work conducted at the University.[87]

- Debar the Subject for 3 years.[88]

For a period of three years immediately following the debarment period:

- Bar the Subject from participating as a peer reviewer, advisor, or consultant for NSF.[89]

- Require for each document (proposal, report, etc.) to which the Subject contributes for submission to NSF (directly or through an institution),
    - the Subject to submit a contemporaneous certification to the AIGI that the document does not contain plagiarism, falsification, or fabrication.[90]
    - the Subject to submit a contemporaneous assurance from a responsible official of his employer to the AIGI that the document does not contain plagiarism, falsification, or fabrication.[91]

[85] A Group I action 45 C.F.R. 689.3(a)(1)(i).
[86] This action is similar to Group I actions 45 C.F.R. 689.3(a)(1).
[87] This action is similar to a Group II action 45 C.F.R. 689.3(a)(2)(iii).
[88] A Group III action 45 C.F.R. 689.3(a)(3)(iii).
[89] A Group III action 45 C.F.R. 689.3(a)(3)(ii).
[90] This action is similar to 45 C.F.R. 689.3(a)(1)(iii).
[91] A Group I action 45 C.F.R. 689.3(a)(1)(iii).

- Require the Subject to submit to the AIGI for each NSF proposal a detailed data management plan including requirements for notebooks and data archiving to be adhered to during the course of any resulting award, and to provide annual certifications that this plan is being implemented.[92]

[92] This action is similar to a Group II action 45 C.F.R. 689.3(a)(2)(ii).

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

OFFICE OF THE
DEPUTY DIRECTOR

[redacted] 2013

CERTIFIED MAIL --RETURN RECEIPT REQUESTED

[redacted]

Re: Notice of Proposed Debarment and Notice of Research Misconduct Determination

Dear [redacted]:

As a graduate student at [redacted] University ("University"), you fabricated and falsified data that was included in your Ph.D. thesis dissertation and a publication which acknowledged support by the National Science Foundation ("NSF"). This research misconduct is documented in the attached investigative report prepared by NSF's Office of Inspector General ("OIG").

In light of your misconduct, this letter serves as formal notice that NSF is proposing to debar you from directly or indirectly obtaining the benefits of Federal grants for three years. During your period of debarment, you will be precluded from receiving Federal financial and non-financial assistance and benefits under non-procurement Federal programs and activities. In addition, you will be prohibited from receiving any Federal contracts or approved subcontracts under the Federal Acquisition Regulations ("FAR"). Lastly, during your debarment period, you will be barred from having supervisory responsibility, primary management, substantive control over, or critical influence on, a grant, contract, or cooperative agreement with any agency of the Executive Branch of the Federal Government.

In addition to proposing your debarment, I am prohibiting you from serving as an NSF reviewer, advisor, or consultant to NSF until [redacted], 2016. Furthermore, for three years from the expiration of your debarment period, I am requiring that you submit certifications, and that a responsible official of your employer submit assurances, that any proposals or reports you submit to NSF do not contain plagiarized, falsified, or fabricated material. In addition, for three years from the expiration of your debarment period, you are required to submit a detailed data management plan for any proposal submitted to NSF. Moreover, by [redacted], 2014, you must certify the completion a comprehensive responsible conduct of research training course, and provide documentation of the program's content. Finally, by [redacted], 2014, you are required to certify that you have notified the journal that published your article of the research misconduct finding and the state of the retraction of the published research work conducted at the University.

Research Misconduct and Sanctions other than Debarment

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 "fabrication" as "making up data or results and recording or reporting them." 45 CFR § 689.1(a)(1). NSF defines "falsification" as "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." 45 CFR § 689.1(a)(2). 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 admission of data manipulation permits me to conclude that your actions meet the applicable definitions of falsification and fabrication, as set forth in NSF's regulations.

Pursuant to NSF's regulations, the Foundation must also determine whether to make a *finding* of research misconduct based on a preponderance of the evidence. 45 CFR § 689.2(c). After reviewing the Investigative Report and your admission of data falsification and fabrication, NSF has determined that, based on a preponderance of the evidence, your falsification and fabrication of data and materials was committed intentionally 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; our determination that it was committed intentionally; the fact

that the misconduct had impact on the research record with it being published in a scientific journal and being cited by other researchers; and the fact that your misconduct was an isolated incident. I have also considered other relevant circumstances, such as the fact that you had taken responsibility for the fabricated and falsified data and submitted a written admission to the University. *See* 45 CFR § 689.3(b).

Based on the foregoing, I am imposing the following actions on you:

- For three years from the end of your debarment period, you are required to submit certifications that any proposals or reports you submit to NSF do not contain plagiarized, falsified, or fabricated material.

- For three years from the end of your debarment period, you are required to submit assurances by a responsible official of your employer that any proposals or reports you submit to NSF do not contain plagiarized, falsified, or fabricated material.

- For three years from the end of your debarment period, you are required to include a detailed management plan with each NSF proposal you submit. The plan must include requirements for notebooks and data archiving to be adhered to during the course of any resulting award.

- From the date of this letter through [redacted], 2016, you are prohibited from serving as an NSF reviewer, advisor, or consultant.

- You are required to complete a comprehensive responsible conduct of research training course by [redacted], 2014, and provide documentation of the program's content. The instruction should be in an interactive format (e.g., an instructor-led course, workshop, etc.) and should include a discussion of data falsification and fabrication.

- By [redacted], 2014, you are required to provide certification that you have notified the affected journal of the research misconduct finding and the state of the retraction of the published work conducted at the University.

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

Debarment

Regulatory Basis for Debarment

Pursuant to 2 CFR § 180.800, debarment may be imposed for:

(b) Violation of the terms of a public agreement or transaction so serous as to affect the integrity of an agency program, such as –

(1) A willful failure to perform in accordance with the terms of one or more public agreements or transactions;

...

(3) A willful violation of a statutory or regulatory provision or requirement applicable to a public agreement or transaction; or

(d) Any other cause of so serious or compelling a nature that it affects your present responsibility.

In any debarment action, the government must establish the cause for debarment by a preponderance of the evidence. 2 CFR § 180.850. In this case, you intentionally fabricated and falsified data that was included in your Ph.D. dissertation and a publication which acknowledged NSF support. Thus, your action supports a cause for debarment under 2 CFR §§ 180.800(b) and (d).

Length of Debarment

Debarment must be for a period commensurate with the seriousness of the causes upon which an individual's debarment is based. 2 CFR § 180.865. Having considered the seriousness of your actions, as well as the relevant aggravating and mitigating factors set forth in 2 CFR § 180.860, we are proposing your debarment for three years.

Appeal Procedures for Finding of Research Misconduct and Procedures Governing Proposed Debarment

Appeal Procedures for Finding of Research Misconduct

Under NSF's regulations, you have 30 days after receipt of this letter to submit an appeal of this finding, 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, the decision on the finding of research misconduct will become final. For your information, we are attaching a copy of the applicable regulations.

Procedures Governing Proposed Debarment

The provisions of 2 CFR Sections 180.800 through 180.885 govern debarment procedures and decision-making. Under our regulations, you have 30 days after receipt of this notice to submit, in person or in writing, or through a representative, information and argument in opposition to this debarment. 2 CFR § 180.820. Comments submitted within the 30-day period will receive full consideration and may lead to a revision of the recommended disposition. If NSF does not receive a response to this notice within the 30-day period, this debarment will become final. Any response should be addressed to Lawrence Rudolph, General Counsel, National Science Foundation, Office of the General Counsel, 4201 Wilson Boulevard, Room 1265, Arlington, Virginia 22230. For your information, we are attaching a copy of the Foundation's regulations on non-procurement debarment and FAR Subpart 9.4.

Should you have any questions about the foregoing, please contact [redacted], Assistant General Counsel, at (703) 292-[redacted].

Sincerely,

Fae Korsmo
Senior Advisor

Enclosures:
Investigative Report
Nonprocurement Debarment Regulations
FAR Regulations
45 CFR Part 689

NATIONAL SCIENCE FOUNDATION
4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230

OFFICE OF THE
DEPUTY DIRECTOR

[redacted]

VIA CERTIFIED MAIL/RETURN RECEIPT REQUESTED

[redacted]

Re: Notice of Debarment

Dear [redacted]:

On [redacted], 2013, the National Science Foundation ("NSF") issued to you a Notice of Proposed Debarment and Notice of Research Misconduct Determination ("Notice"), in which NSF proposed to debar you from directly or indirectly obtaining the benefits of Federal grants for a period of three years. As reflected in the Notice, NSF proposed your debarment because, as a graduate student at [redacted] University ("University"), you falsified and fabricated data that was included in your Ph.D. thesis dissertation and a publication which acknowledged support by NSF. In that Notice, NSF provided you with thirty days to respond to the proposed debarment.

Over thirty days have elapsed and NSF has not received a response. Accordingly, you are debarred until [redacted], 2016.

Debarment precludes you from receiving Federal financial and non-financial assistance and benefits under non-procurement Federal programs and activities unless an agency head or authorized designee makes a determination to grant an exception in accordance with 2 CFR 180.135. Non-procurement transactions include grants, cooperative agreements, scholarships, fellowships, contracts of assistance, loans, loan guarantees, subsidies, insurance, payments for specified use, and donation agreements.

In addition, you are prohibited from receiving Federal contracts or approved subcontracts under the Federal Acquisition Regulations at 48 CFR Subpart 9.4 for the period of this debarment. 2 CFR 180.925. During the debarment period, you may not have supervisory responsibility, primary management, substantive control over, or critical influence on, a grant, contract, or cooperative agreement with any agency of the Executive Branch of the Federal Government.

Lastly, please note that, in the Notice, NSF also took the following actions against you, which continue to remain in effect:

- From the end of your debarment period through [redacted], 2019, you are required to submit certifications to NSF's Office of Inspector General that any proposals or reports you submit to NSF do not contain plagiarized, falsified, or fabricated material.

- From the end of your debarment period through [redacted], 2019, you are required to submit assurances by a responsible official of your employer that any proposals or reports you submit to NSF do not contain plagiarized, falsified, or fabricated material.

- From the end of your debarment period through [redacted], 2019, you are required to include a detailed management plan with each NSF proposal you submit. The plan must include requirements for notebooks and data archiving to be adhered to during the course of any resulting award.

- You are prohibited from serving as an NSF reviewer, advisor, or consultant through [redacted], 2016; and

- You are required to complete a comprehensive responsible conduct of research training course by [redacted], 2014, and provide documentation of the program's content to the OIG. The instruction should be in an interactive format (e.g., an instructor-led course, workshop, etc.) and should include a discussion of data falsification and fabrication.

- By [redacted], 2014, you are required to provide certification that you have notified the affected journal of the research misconduct finding and the state of the retraction of the published work conducted at the University.

All certifications, assurances, and training documentation should be submitted in writing to NSF's OIG, Associate Inspector General for Investigations, 4201 Wilson Boulevard, Arlington, VA 22230.

Should you have any questions regarding the foregoing, please contact [redacted], Assistant General Counsel, at (703) 292-8060.

Sincerely,

Fae Korsmo
Senior Advisor