

NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL
OFFICE OF INVESTIGATIONS

CLOSEOUT MEMORANDUM

Case Number: A03020008

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The subject's¹ University notified us it had concluded an Inquiry and was proceeding to an Investigation related to an allegation of fabrication. Specifically, the subject, a graduate student, had given her advisor fabricated data, which the advisor incorporated into an NSF proposal.² Our Report of Investigation was provided to NSF's Deputy Director, who made a finding of research misconduct and debarred the subject for 3 years. This Memorandum, our Report of Investigation, and the NSF Deputy Director's finding constitute the closeout for this case. Accordingly, this case is *closed*.

¹ [REDACTED] was a graduate student at the [REDACTED].

² [REDACTED]

NATIONAL SCIENCE FOUNDATION

4201 WILSON BOULEVARD

ARLINGTON, VIRGINIA 22230



OFFICE OF THE
DEPUTY DIRECTOR



CERTIFIED MAIL --RETURN RECEIPT REQUESTED

Re: Notice of Proposed Debarment

This letter serves as formal notice that the National Science Foundation ("NSF") is proposing to debar you from directly or indirectly obtaining the benefits of Federal grants for a period of 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. See 45 CFR Part 620, Subparts A, B and I. In addition, you will be prohibited from receiving any Federal contracts or approved subcontracts under the Federal Acquisition Regulations ("FAR"). See 45 CFR 620.125. 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. See 45 CFR 620.115.

Reason for Proposed Debarment

Your proposed debarment is based upon a referral from NSF's Office of Inspector General ("OIG"). In 2003, _____ submitted a proposal to NSF entitled, _____ As documented in the attached Investigative Report prepared by NSF's Office of Inspector General ("OIG"), you fabricated and falsified data that was incorporated into this proposal.

Regulatory Basis for Debarment

Pursuant to 45 CFR 620.800, debarment may be imposed for:

- (b) Violation of the terms of a public agreement or transaction so serious 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; or
 - ...
 - (3) A willful violation of a statutory or regulatory provision or requirement applicable to a public agreement or transaction

In any debarment action, the government must establish the cause for debarment by a preponderance of the evidence. 45 CFR 620.850. In this case, you knowingly falsified and fabricated data in connection with research funded, in part, by the Foundation. Thus, your actions support a cause for debarment under 45 CFR 620.800(b).

Length of Debarment

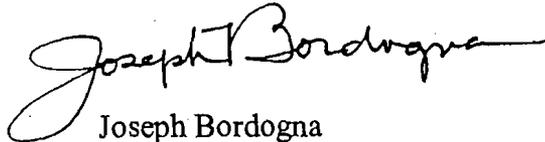
Debarment must be for a period commensurate with the seriousness of the causes upon which an individual's debarment is based. 45 CFR 620.865. Generally, a period of debarment should not exceed three years but, where circumstances warrant, a longer period may be imposed. 45 CFR 620.865. Having considered the seriousness of your actions, as well as the relevant aggravating and mitigating factors set forth in 5 CFR 620.860, we are proposing debarment for a period of three years.

Procedures Governing Proposed Debarment

The provisions of 45 CFR Sections 620.800 through 620.855 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. 45 CFR 620.860. 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.

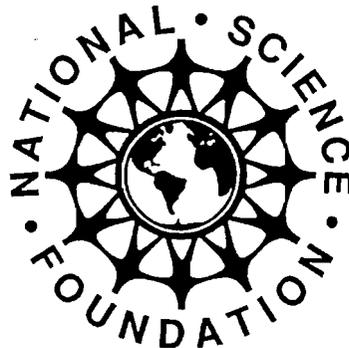
Sincerely,

A handwritten signature in cursive script that reads "Joseph Bordogna". The signature is written in black ink and is positioned above the printed name and title.

Joseph Bordogna
Deputy Director

Enclosures:
Investigative Report
Nonprocurement Debarment Regulations
FAR Regulations

National Science Foundation Office of Inspector General



Confidential Report of Investigation Case Number A03020008



Summary

The Office of Inspector General (OIG) has concluded the subject (a graduate student) fabricated data and lied about doing so during the University's investigation. As a result of its investigation, the subject's university found the subject engaged in misconduct by fabricating data and misled her advisor and the Investigation Committee in evading responsibility for the fabrication. It terminated the subject's student status and barred her from future enrollment at the University. We recommend the National Science Foundation (NSF) send a letter of reprimand to the subject informing her she has committed research misconduct and debar her for 3 years.

The University's Actions

Inquiry

On 18 February 2003, the Vice Chancellor for Research and designated Research Integrity Officer¹ for the University² wrote to us³ regarding the initiation of an Investigation based on the results of an Inquiry into an allegation of fabrication/falsification of data by a graduate student (the subject).⁴ Specifically, the subject was alleged to have falsified or fabricated data she provided to her advisor⁵ for a manuscript⁶ and proposals to NSF⁷ and NIH.⁸ Because the subject was a student, the Dean of Students,⁹ in accordance with the University's Student Code of Conduct, conducted the Inquiry. A memorandum, written by the advisor described her realization that the data provided by the subject was suspicious and the subject's dubious claim of a heretofore-unknown person who purportedly altered the data.¹⁰ Based primarily on this memorandum, the University proceeded with an Investigation and asked NSF to defer independent inquiry.

Investigation

The University appointed a Student Conduct Committee (the Committee) to conduct the investigation. The Committee had three members who held a hearing to examine evidence and hear testimony from the University and the subject. The subject's advisor testified for the University, and the subject testified on her own

¹ (redacted).

² (redacted).

³

⁴ [REDACTED] was a pre-doctoral graduate student in Social Psychology.

⁵ (redacted).

⁶ (redacted) was submitted to *Psychological Science*.

⁷ (redacted). The proposal is Appendix (B).

⁸ (redacted).

⁹ (redacted).

¹⁰ The advisor's memorandum, which was enclosed with the Vice Chancellor's letter, is included in Appendix (A).

behalf. After the hearing, the Committee prepared its Confidential Memorandum (CM) describing its findings and conclusions.¹¹

The CM described the allegation as fabrication in “eight or nine studies¹² conducted by [the subject] under the supervision of [her advisor] over the span of two years.”¹³ Three studies were the basis for a manuscript submitted for publication; eight studies were included in the NSF proposal.¹⁴ According to the advisor, one of the manuscript’s reviewer’s suggestions was to put all the statistical results in a single table:

Especially after placing the statistical results in a single table, and observing the data patterns, [the advisor] realized that it is highly likely that the data had been manufactured, and that the fraud committed will be easily detected by outside researchers who attempt to verify or reproduce the results obtained from these studies.¹⁵

The advisor apparently convinced the subject such remarkable agreement between different data sets would draw scrutiny, and such scrutiny would uncover any problems with the data, if any existed. The subject’s initial response was to suggest they not put all the data in a single table. The advisor viewed the subject’s response as evasive, and it further convinced her of the likelihood the data were fabricated. The subject suggested the advisor withdraw the manuscript because the data might not replicate when pressed by the advisor for a resolution.¹⁶

Instead of defending her data or producing data that could be independently verified, the subject responded to her advisor’s questions about the validity of the data by implicating two undergraduate students in the falsification. The advisor was not convinced and concluded “no one, other than [the subject], had the level of knowledge and involvement across eight studies that would have facilitated the commission of fraud of this extent and magnitude.”¹⁷ Thus, after failing to convince the advisor an undergraduate fabricated her data, the subject then claimed a heretofore-unknown individual (the colleague¹⁸) was responsible for the data fabrication. The subject said shortly after she began working with the advisor, the colleague contacted her, asking to participate in her research. The colleague had no training or experience in entering, cleaning,¹⁹ or analyzing data, but the subject

¹¹ The 21 Feb 03 CM along with a 13 Mar 03 cover letter are Appendix (C).

¹² As will be explained later in this ROI, the University was unable to determine the extent of the fabrication.

¹³ CM, p. 2; Appendix (C).

¹⁴ Appendix (B).

¹⁵ CM, p. 4; Appendix (C); see also advisor’s memorandum, Appendix (A), p. 3.

¹⁶ Curiously, when the advisor learned of the possibility that the subject’s data were fabricated, she withdrew the manuscript and the NIH proposal, but refused to withdraw the NSF proposal, even after the University concluded the data upon which the proposal was based were fabricated and made a finding against the subject. The proposal was subsequently declined.

¹⁷ CM, p. 4; Appendix (C); see also memo, Appendix (A), p. 3.

¹⁸ [REDACTED]

¹⁹ The term ‘cleaning’ is used to mean checking the data for obvious errors.

apparently agreed to hire and train her, even though she provided the colleague neither pay nor credit for her efforts.²⁰

As described in the CM,²¹ the subject gave conflicting testimony about her working relationship with the colleague. Despite purportedly working together for several years, the subject claimed only to be able to correspond with the colleague via email. However, the colleague apparently responded rapidly to the subject's email requests. The subject provided her advisor a copy of an email she said she sent the colleague asking if the colleague had fabricated any of the data.²² Three minutes afterward, the colleague evidently emailed the subject back admitting she had, stating she thought it would be helpful to the subject for her to do so.²³ In further emails, the colleague admitted to the subject how she fabricated the data, including having friends fill out surveys.²⁴

After the admission of data fabrication, the advisor emailed the subject asking for the colleague's email address, saying she wanted to speak with her.²⁵ The subject supposedly communicated this to the colleague. Sixteen minutes after the colleague's alleged response to the subject, the subject informed her advisor she had heard from the colleague, and the colleague professed embarrassment for her actions and indicated she was changing her email address and would not write again.²⁶ In that same email, the subject concluded it did not really matter she could not contact the colleague anymore, and she asked the advisor about beginning her thesis work.^{27, 28} As the Committee observed, "[i]n about fifteen minutes, [the subject] was able to conclude that the only individual who could possibly vindicate the integrity of her work or absolve her from culpability is no longer available."²⁹ These correspondences and the abrupt termination of communication from the colleague raised considerable doubts about the subject's story. The advisor reported to the subject:

²⁰ The colleague was not acknowledged on any papers or in the manuscript with the fabricated data. The lack of acknowledgment for contributions to the research is inconsistent with other papers published by the subject and advisor. For example, (redacted), acknowledged research assistants. The lack of acknowledgment in the submitted manuscript indicates the work was purportedly conducted by the subject.

²¹ See CM, pp. 5-8; Appendix (C).

²² Appendix (D) contains email correspondence between the subject and the colleague, and between the subject and the advisor. The subject's sent email to the colleague at 13:46, 16 Oct 2002. See Appendix (D), p. 1.

²³ The colleague's response to the subject was emailed 13:49, 16 Oct 2002—3 minutes after the subject's email was sent. See Appendix (D), p. 1.

²⁴ *Ibid*, p. 2.

²⁵ The advisor's 9:12, 17 Oct 02 email to the subject; *ibid*. p. 3.

²⁶ The colleague's email to the subject was at 10:23, 17 Oct 2002; *ibid*. p. 4.

²⁷ The subject's email to her advisor was at 10:39, 17 Oct 2002; *ibid*. p. 5.

²⁸ It is also telling that rather than provide the colleague's to the advisor as requested, the subject offered to fax her the email rather than forward it to her, which not only would have been easier, but places the subject's story at risk if the advisor discovered there was no such email address.

²⁹ CM, p. 6; Appendix (C).

I have to say that the idea that an undergrad from an unknown university came to your house, entered data which she faked for two years, and then vanished without a trace is meeting with some skepticism.³⁰

The Committee felt likewise:

It struck the Committee as highly implausible that an undergraduate would volunteer to manufacture the very data that is crucial to [the subject's] thesis and career, gain the confidence to do so with impunity, promptly confess to the fraud once confronted by electronic mail, and then vanish, not to be found by anyone.³¹

The Committee concluded, "it is more likely than not that [the colleague] was a convenient scapegoat invented by [the subject] in order to escape responsibility for her malfeasance."³²

At the hearing, the Committee focused on the subject's testimony, which it found lacking in credibility. There was no significant analysis or discussion of the data itself. It seemed to be accepted they were fabricated, as evidenced by the colleague's admission. Therefore, the Committee's assessment of the credibility of the subject's story was a primary basis for reaching its conclusions. The Committee noted:

Much of this case turns on the believability of [the subject's] proffered explanations and claims, and on the Committee's assessment of [the subject's] credibility and honesty. . . . [T]he Committee found the [subject] to lack in credibility, and agreed that [the subject] is being dishonest about her role in fabricating data and then attempting to evade responsibility by concealing and misrepresenting the evidence.³³

The Committee had to

decide whether [the subject] has been beset by extremely unfortunate circumstances that have entirely compromised her scholarly research or if [the subject] herself is the maker of her misfortune by fabricating data and then acting to hide the evidence of her fraud. Upon carefully examining the course of [the subject's] conduct in response to the charges made, and her demeanor and statements at the Hearing, the Committee unanimously agreed that [the subject] is being dishonest, and that it is more likely than not that she herself fabricated the data, and then acted to prevent the discovery of the fraud.

...

³⁰ CM, p. 8; Appendix (C) quoting from the advisor's email, Appendix (D), p. 5.

³¹ CM, p. 8; Appendix (C).

³² *Ibid.*, p. 9.

³³ *Ibid.*, p. 3.

[The Committee] concluded the University has proved by a preponderance of the evidence that [the subject] has violated [the Student] Code by engaging in academic misconduct by fabricating data and knowingly furnishing false information. . . . [C]onsidering the extent, duration, and magnitude of fraud involved in this case, and [the subject's] lack of honesty throughout the process and systematic attempt to conceal the fraud and evade responsibility, the Committee unanimously recommends that [the subject] be dismissed from the University, and that her status as a graduate student, and doctoral candidate at [the University] be terminated.³⁴

Subject's statement

The subject provided a statement and timeline.³⁵ Her statement describes her supposed collaboration with the colleague. As noted in the University report, the subject's description of her working relationship with the colleague in her written statement conflicted her oral testimony before the Committee.

Adjudication

The Interim Vice Chancellor, Student Affairs³⁶ concluded the subject fabricated the data sets and upheld the Committee's recommendation to dismiss the subject from the University. The University informed the subject of its findings and action. The subject declined to comment.

OIG's Assessment

Jurisdiction

After receiving the allegation, we determined that even though the subject did not directly submit any fabricated data to NSF, the appearance of the allegedly fabricated data in the NSF proposal gave us sufficient jurisdiction to warrant our investigation. After we received the University's Investigation report, we learned the Office of Research Integrity³⁷ (ORI) was also involved; thus, we worked with ORI in the review of the University's investigation of this allegation. To avoid duplicating the University's efforts, ORI handled the post-Investigation correspondence with the University.

³⁴ CM, p. 10; Appendix (C).

³⁵ Appendix (E).

³⁶

³⁷ The Office of Research Integrity, Department of Health and Human Services, oversees institutional investigations of scientific misconduct involving research grant applications submitted to the National Institutes of Health.

Analysis

As already noted above, given the Committee's acceptance of the admission of fabrication, its focus was on who fabricated the data. There was no substantive analysis of the data itself to show they were fabricated. Unfortunately, the advisor's laboratory practices³⁸ and the University's failure to sequester evidence³⁹ have resulted in nearly all allegedly falsified and/or fabricated data either being destroyed or unavailable.⁴⁰ As the advisor noted, it was the accumulation of two years worth of data in eight studies that each seemed to agree with the others with an unusually high correlation that led to her conclusion the data were fabricated.⁴¹

We agree with the Committee the subject's story lacks any credibility. The idea the subject outsourced crucial parts of her thesis research to an undergraduate, whom she had never disclosed to her advisor or anyone in the group, is not deserving of acceptance. Furthermore, it is difficult to believe the subject would

³⁸ The advisor's general approach in testing her theories was to assign undergraduate students a survey to conduct. The students would administer the questionnaires, collect the data, and provide it to the subject for cleaning and statistical analysis. After the subject completed her statistical analysis, the original data (questionnaires) were returned to the students. Adding to the loss of evidence, when the advisor checked the subject's statistical analysis and found 'discrepancies', she would 'correct' them and discard the 'incorrect' ones.

³⁹ The University handled this as a student conduct matter and a formal hearing. Perhaps because of this, the University did not actively sequester the subject's data. At some point, someone noticed the absence of data upon which the allegation is based and asked the subject about it during the hearing, where she "testified that she did not supply the database for her studies because the University has never asked for it, and that if the University had asked for it, [she] would have supplied it." "The Committee found [the subject's] claims all too convenient, and pronouncedly evasive," and it appeared to reason that even if true, the University should not have had to ask for the subject's data because "[the subject] has been accused of very serious charges, and the Committee would have expected [the subject] to be eager to supply the data that could possibly vindicate her work." However, the CM noted that at different times, the subject apparently made contradictory statements about her giving the data to her advisor, and ultimately concluded the subject "has been unable or unwilling to product the database in question." [All quotations in this footnote are from CM, pp. 9-10; Appendix (C).]

⁴⁰ A small amount of evidence remains in the form of facsimiles and data from one study.

⁴¹ As noted in the CM and in this ROI, it was the subject's tabular summary of 3 data sets, along with the advisor's familiarity with 2-years worth of data, that led her to question the validity of the subject's data. The subject never actually presented her raw data to her advisor. There is little evidence of fabrication to be observed from any of the data in the NSF and NIH proposals because only statistical results of the analyses were presented in the proposals. There was only one set of 'raw' data the subject produced, and that was after a 10+ day delay following the advisor's request for it; however, it does not provide any insight regarding the allegations because it consists of only individual surveys. There is no evidence in those data which directly indicate fabrication. However, one indicator the statistical data in the manuscript, NSF and NIH proposals were not legitimate is that the questionnaires lack questions for which data is provided. For example, in both the NSF and NIH proposals (p. 6 and p. 21, respectively), there is a statement: "All patients in the sample were on an insulin regimen, and 38% of the sample had been hospitalized previously due to their condition." As can be seen from a typical survey (Appendix (F)), there is no question about hospitalization. Another indicator is that the necessary documentation (*e.g.*, human subjects' approval, IRB approval) does not exist.

calmly accept the colleague's admission that she had been fabricating the data she provided to the subject and, with two years of her thesis research on the line, wait nearly one and one half hours before asking the colleague which data was fabricated and the extent and nature of the fabrication, especially given the rapid email exchanges that took place between subject and colleague. It is also telling that in the alleged email exchanges between subject and colleague, there is no email from the subject to the colleague asking her to communicate with the advisor; the colleague apparently, and conveniently, decided to disappear. It seems clear the subject reacted to the advisor's request to communicate with the colleague by having the colleague become unavailable. We agree with the Committee's incredulousness that, having learned the colleague was no longer available for questions, the subject, without trying to dissuade the colleague, took only fifteen minutes to inform her advisor that the colleague's disappearance "doesn't really matter"⁴² and then asked the advisor about finishing her thesis.

We conclude, given the absence of the allegedly fabricated data, the Committee's Investigation was sufficient in addressing the allegation, its report was complete and accurate, and, although the University did not attempt to sequester the data, it otherwise followed reasonable procedures; therefore, we accept its report in lieu of doing our own investigation. A finding of 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 the evidence.⁴³

THE ACT

The subject allegedly fabricated data over the course of two years and provided those fabricated data sets to her advisor for inclusion in a manuscript, an NIH proposal, and an NSF proposal.⁴⁴ The advisor was suspicious of the incredible correlation the subject's data showed,⁴⁵ and when initially questioned about the data's integrity, the subject agreed the data would not withstand scrutiny and recommended the withdrawal of the manuscript. When questioned further, the subject attempted to shift blame to an undergraduate in her group and, ultimately, to a fictitious colleague. The colleague admitted the data were fabricated in an email to the subject. The subject could (or would) not produce any data to support the validity of her data, showing a lack of responsibility in accepting the obligation

⁴² Appendix (D), p. 5.

⁴³ 45 CFR § 689(2)(c).

⁴⁴ The exact extent of the fabrication is unknown; the subject acknowledged only the data in the seven studies supposedly handled by the colleague were fabricated, but in the advisor's judgment, data in all nine studies is likely unreliable.

⁴⁵ In a discussion with ORI after the University investigation, the advisor supported her allegation the data were fabricated based on her assessment that (a) the degrees of freedom were wrong, a computation that would have been impossible given the software the advisor's group used for statistical analysis; and (b) the pattern of "F values" and degree of statistical significance correlated over all studies to an extent the advisor described as unheard of.

inherent in practicing science to provide her data for independent verification. She also could not provide the identity of the colleague to whom she had entrusted the original data. Therefore, we conclude that the preponderance of the evidence supports the conclusion the subject created fake data and then invented the colleague as a scapegoat to avoid taking responsibility for her actions.

INTENT

The Vice Chancellor's cover letter noted the Committee found the subject had intentionally fabricated data and knowingly furnished false information to avoid responsibility. We agree with this assessment. The emails from the alleged colleague indicate she created the fake data to help the subject; thus, we conclude the subject intentionally created fake data to give the appearance of good research results. The emails show a pattern of fabrication that occurred with forethought because friends were asked to make up results on multiple occasions.⁴⁶

Thus, we conclude a preponderance of evidence supports the conclusion that the subject, through the colleague, admitted to the fabrication, which took place over the course of 2 years, and which she committed intentionally. Fabrication of this magnitude is considered a significant departure from accepted practices, and therefore we conclude the subject committed research misconduct.

OIG's Recommended Disposition

In deciding what actions are appropriate when making a finding of research misconduct, NSF must consider several factors. These factors include how serious the misconduct was; the degree to which the misconduct was knowing, intentional, or reckless; whether it was an isolated event or part of a pattern; whether it had significant impact on the research record; and other relevant circumstances.⁴⁷

In our view, which the University shared, fabrication of data is a serious breach of the standards of research. In this case, the fabrication took place over a 2-year period, consisted of nearly the entirety of the subject's research, and represented a pattern of egregious behavior. The subject knowingly provided data to the advisor for inclusion in a manuscript to be published, and proposals to NIH and NSF. In addition to the fabrication itself, the subject evaded responsibility by inventing a fictitious colleague and told numerous lies to the advisor and Committee to try to support this fictitious colleague. These fabrications and evasions of responsibility led to the Committee's unanimous recommendation for the University to dismiss the subject—the strongest possible action it could recommend.

⁴⁶ See p. 6 of the University's Confidential Memo found in Appendix (C); also see subject's email found in Appendix (D), p. 2.

⁴⁷ 45 CFR § 689.3(b).

We note the subject has not been cooperative with the Federal investigation. She did not respond to our written request for information and did not return our telephone call.

We conclude the subject's fabrication warrants a finding of research misconduct. The University's action is appropriate, but does not protect the Federal government's interests. The subject's fabrication of data, blaming others, and creating a colleague to take the blame indicates she lacks present responsibility to conduct research for the government. Accordingly, we recommend NSF debar the subject for 3 years from final resolution of this case.⁴⁸ These recommendations are consistent with the subject's acts as well as the University's disposition. The recommended debarment is longer than in some other fabrication cases because of the duration, scope, and pattern of fabrication and the subject's lack of present responsibility.

⁴⁸ This is a Group III action, 45 CFR § 689.3(a)(3)(iii).