

Closeout for M00050024

Our office received an allegation that the subject¹ presented falsified data into his doctoral thesis and a manuscript submitted and accepted for publication. The institution conducted an investigation and provided us with a copy of their investigation report. The institution determined that the subject had committed an act of scientific misconduct. The institution recommended the following actions:

1. Place a letter of reprimand in the subject's graduate student file.
2. Subject revise and resubmit his thesis.
3. Delay of awarding his doctoral degree by one year.
4. Once the above actions are met, he would be granted his doctorate and research papers based on his thesis work could be submitted for publication.

Our review of the institution's report determined that the investigation was thorough, fair and accurate and we concur with its conclusions. Based on the institution's report and our own investigation, we recommended that NSF find that the subject committed misconduct in science. Our investigation report, the NSF Deputy Director's 29 Oct 2001 letter reflecting his decision and this memo constitute the closeout for this investigation.

Confidential



Office of Inspector General

Investigation Report

OIG Case M00050024

MARCH 21, 2001

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Summary

The Office of Inspector General (OIG) has concluded that the subject¹ presented falsified data in his doctoral thesis and in a manuscript submitted and accepted for publication. As a result of its investigation, the subject's educational institution found that the subject was guilty of scientific misconduct under its policy. We recommend that the National Science Foundation (NSF) find accordingly and send a letter of reprimand to the subject informing him that he has been found to have committed misconduct in science.

The Institution's Actions

The vice provost of an institution² informed us that an "allegation of misconduct involving the manipulation of portions of experimental data occurring under an NSF award has been the subject of an inquiry that found the reasonable possibility of research fraud existed in the circumstances presented by a range of evidence that warranted the conduct of an investigation"³ The institution decided to conduct an investigation after the subject's division chair found "that a reasonable possibility of research fraud exists with regard to [the subject's] admitted manipulation of portions of experimental data obtained in the course of [his] Ph.D. research, which data appear in [his] Ph.D. thesis and were additionally included in a manuscript submitted, and accepted, for publication"⁴ The subject, who was still at the institution conducting post-doctoral research for another professor, had written three letters to his doctoral supervisor describing his actions.⁵

The committee appointed to conduct the investigation summarized the subject's actions as follows:

In some cases, the sets of data points acquired by [the subject] contained "spikes" consisting of data points that lay away from the remainder of the points. . . . When faced with such "spikes" in sets of data points, [the subject] sometimes sought to produce smoother-appearing data. To do so, he created files of the original data and used this original data, including the spikes, to calculate fits to an exponential function from which lifetimes were obtained. He then removed outlying data points from the display of the fitted data but did not re-fit the data, and created a new file. Since no re-fitting of the original data were performed, the changes were purely cosmetic.⁶

¹ [REDACTED] doctoral candidate [REDACTED]

² [REDACTED], Vice Provost, [REDACTED]

³ See Appendix 1: Vice Provost's notification letter, dated May 8, 2000. The subject's doctoral supervisor withdrew the manuscript after learning of the subject's actions.

⁴ See Appendix 2: Chairman's notification letter, dated April 14, 2000.

⁵ See Appendix 3: subject's letters to supervisor, dated February 23, February 25, and February 29, 2000.

⁶ See Appendix 4: committee report, dated May 22, 2000, at 2.

The committee concluded that the subject "was guilty of scientific misconduct but not of scientific fraud."⁷ Regarding the institution's response, the committee stated: "In deciding about sanctions for [the subject], the committee believes that his voluntary admission of misconduct in time to avoid the publication of the manuscript based on his data should be regarded as an indication that he has learned an important lesson."⁸ The Vice Provost informed the subject of the institution's resolution in a letter:

You are hereby formally reprimanded for misconduct under the [institution's] Policy. A copy of this letter will be placed in your [institutional] graduate student file, and a copy sent to your present supervisor, [], who will be advised to exercise particularly careful supervision of your work. As regards your work, you will be required to revise and resubmit your thesis, describing in full what you actually did. According to the committee report, the original data can be recovered in some cases. Examples of those data should be included. The revised thesis must be candid, honest and complete. This action will result in a delay of at least one year in the awarding of your doctorate.

Once these steps have been taken, we believe you may be allowed to graduate with your doctorate from [the institution], and research papers based on your research may be submitted for publication.⁹

The subject complied with these steps, submitted a revised thesis, and according to the institution he will receive his doctoral degree in June 2001.

OIG's Assessment

The institution's investigation report describes a fair, accurate, and thorough evaluation of the facts relevant to the allegation. We have used the institution's investigation report in forming our own conclusions and recommending a finding of misconduct in science.

NSF defines misconduct in science, in relevant part, as "[f]abrication, falsification, plagiarism, or other serious deviation from accepted practices in proposing, carrying out, or reporting results from activities funded by NSF. . . ."¹⁰ Before recommending a finding of misconduct in science, we assess whether a preponderance of the evidence¹¹ supports a conclusion that the subject committed a bad act with a level of culpable intent (minimally, gross negligence) that justifies taking action against the subject.

⁷ *Id.* at 3. As the Vice Provost subsequently explained, "the [institutional] Policy makes a distinction between research fraud, and misconduct that does not amount to fraud. The committee report draws that distinction, finding that you were guilty of misconduct, but not fraud." See Appendix 5, Vice Provost's letter, dated June 27, 2000, at 2.

⁸ See Appendix 4: committee report, dated May 22, 2000, at 3.

⁹ See Appendix 5: Vice Provost's letter, dated June 27, 2000, at 2.

¹⁰ 45 C.F.R. § 689.1(a)(1).

¹¹ 45 C.F.R. § 689.2(d).

The Vice Provost stated that the subject admitted that, "out of more than 100 transients recorded, about 20%, that is between 20 and 30, had been altered" in his doctoral thesis.¹² There were several deliberate steps involved in the falsification. The subject, at the direction of his institution, revised his thesis to include a discussion of the steps he took in smoothing data points, and he included comparative figures demonstrating the effect his actions had on charting the data.¹³ The subject's letters of admission¹⁴ state he: reviewed the original data, altered the "noisy" data points, reconfigured the internal computer clock, saved the manipulated data to new data files, and deleted the original data files. We believe these deliberate acts support the conclusion that the subject acted with knowing intent to deceive.

Accordingly, we fully concur with the institution's finding that the subject falsified data presented in his thesis and therefore committed misconduct in science. Although the subject's data manipulations were intended to achieve cosmetic rather than substantive improvements in his research results, any falsification of data is fundamentally abhorrent to accepted practices in the scientific community.

OIG's Recommended Disposition

In deciding appropriate actions for misconduct in science, NSF officials must consider the seriousness of the misconduct, the intent with which the subject acted, any evidence of a pattern, and finally, its relevance to other funding requests or awards involving the institution or individual.¹⁵

Although the subject's actions constituted misconduct in science, we do not believe that the misconduct was significant. The data manipulations came to light before the data was published, and the subject's subsequent compliance with the institution's directions ensured the integrity of the research record.

We also believe that the subject's *sua sponte* act of bringing this matter to his thesis advisor's attention; the written acknowledgement of his ethical lapses; his full cooperation with the institution's investigation; and his full compliance with the institution's sanctions, are significant mitigating considerations.

We are aware of no other incidents that would establish evidence of a pattern of misconduct, or of any other funding requests involving the subject.

Recommended NSF Action

We believe that the subject's falsifying of data is sufficiently serious to warrant a finding of misconduct in science, and we recommend that NSF make such a finding and send a letter to that effect to the subject.¹⁶ In the circumstances of this case, we do not recommend that NSF take any other actions against the subject.

¹² See Appendix 6: Vice Provost's letter, dated August 9, 2000, at 2.

¹³ See Appendix 7: "Appendix III" from subject's revised doctoral thesis.

¹⁴ See Appendix 3: subject's letters to supervisor, dated February 23, February 25, and February 29, 2000.

¹⁵ 45 C.F.R. § 689.2(b).

¹⁶ This is a Group I action (45 C.F.R. § 689.2(a)(1)(i)).