



NATIONAL SCIENCE FOUNDATION
OFFICE OF INSPECTOR GENERAL
OFFICE OF INVESTIGATIONS

CLOSEOUT MEMORANDUM

Case Number: A11060047

Page 1 of 1

A university¹ notified us that it sufficient substance to warrant an investigation of an allegation of plagiarism in a dissertation by an NSF-funded² graduate student.³ We concurred that an investigation was warranted. The university investigation found that the student copied a substantial amount of his dissertation from the dissertation of his lab partner who graduated three years prior. The university initiated procedures to revoke the graduate student's Ph.D.

We concurred with the university's findings and sent the Deputy Director our report of investigation (attached) recommending a finding of research misconduct, a requirement for training, and a 5-year debarment to be followed for 5 years by certifications, assurances, and a ban from serving NSF as a reviewer, advisor, or consultant. The Deputy Director accepted our recommendations (attached).

Accordingly this case is closed.

[REDACTED]

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], 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 five years. As reflected in the Notice, NSF proposed your debarment for submitting a dissertation to [REDACTED] that contained plagiarized material. 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. A closer review of the investigative report, however, demonstrates that NSF's Office of Inspector General ("OIG") recommended that NSF debar you for three years, as opposed to five years. We accept the OIG's recommendation. Accordingly, you are debarred until [REDACTED].

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.

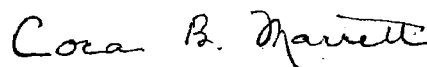
Lastly, please note that, in the Notice, NSF also took the following actions against you, which continue to remain in effect:

- From the end of your debarment period through [REDACTED], 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], 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. These assurances must be submitted to NSF's Office of Inspector General.
- You are prohibited from serving as an NSF reviewer, advisor, or consultant through [REDACTED]; and
- You are required to complete a comprehensive responsible conduct of research training course by [REDACTED], 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 plagiarism and proper citation practices.

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,



Cora B. Marrett
Deputy Director

NATIONAL SCIENCE FOUNDATION

4201 WILSON BOULEVARD
ARLINGTON, VIRGINIA 22230



OFFICE OF THE
DEPUTY DIRECTOR

CERTIFIED MAIL --RETURN RECEIPT REQUESTED

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

Dear [REDACTED]

As a graduate student at [REDACTED] ("University"), you received funding from the National Science Foundation ("NSF" or the "Foundation") under two separate awards in support of your work at the University. In 2006, you submitted a dissertation entitled, [REDACTED] in partial fulfillment of the requirements for a doctorate degree in philosophy. As documented in the attached investigative report prepared by NSF's Office of Inspector General ("OIG"), your dissertation contained plagiarized material.

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 five 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]. Furthermore, for five 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. Lastly, you must complete a comprehensive responsible conduct of research training course by [REDACTED], 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 plagiarism and proper citation practices.

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 "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 dissertation contained a substantial amount of verbatim and paraphrased material copied from another student's doctoral dissertation. By submitting a dissertation that copies 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. In addition, you failed to properly acknowledge or credit the author of the source dissertation in your dissertation. Your conduct unquestionably constitutes plagiarism. I therefore conclude that your actions meet the applicable definition of "research misconduct" set forth in NSF's regulations.

Pursuant to NSF's 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 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 was an isolated incident; and the fact that your misconduct had no impact on the research record. I have also considered other relevant circumstances, such as the fact that you had to transition to another advisor when your initial advisor was denied tenure, and abruptly left the University. *See* 45 CFR § 689.3(b).

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

- For five 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 five 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.
- From the date of this letter through [REDACTED], 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], 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 plagiarism and proper citation practices.

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 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;
 - ...

- (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 plagiarized material in a dissertation that was funded, in part, by NSF. Thus, your action supports a cause for debarment under 2 CFR 180.800(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. 2 CFR 180.865. Generally, a period of debarment should not exceed three years but, where circumstances warrant, a longer period may be imposed. 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 five 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.

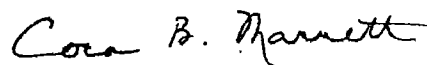
Procedures Governing Proposed Debarment

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) 292-5054.

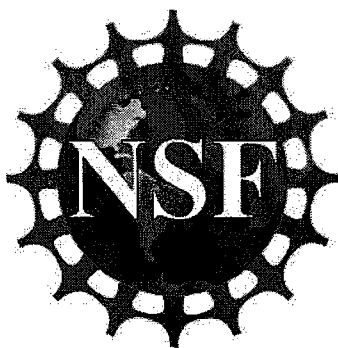
Sincerely,

A handwritten signature in cursive script that reads "Cora B. Marrett".

Cora B. Marrett
Deputy Director

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

National Science Foundation Office of Inspector General



Confidential Report of Investigation Case Number A-11060047 6 July 2012

**This Confidential 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 confidential report of investigation.

Executive Summary

- Allegation:** Plagiarism in the Subject's NSF-supported dissertation.
- Inquiry:** The University conducted an inquiry and determined the need for a detailed investigation. The University informed us of its intention to proceed. We reviewed the University inquiry report and referred an investigation to the University.
- University Investigation and Action:** The University completed an investigation finding that the Subject committed intentional plagiarism that was a significant departure from the accepted practices of the graduate student community. The University is taking steps to rescind the Subject's doctoral degree.
- OIG's Assessment:**
- **The Act:** The Subject copied ~1,255 lines of text, 98 embedded citations to 97 embedded references, 58 spectra and 84 other embedded objects into his dissertation from another student's dissertation.
 - **Significant Departure:** The copying was a significant departure from the accepted practices of the relevant research community.
 - **Intent:** The Subject acted intentionally (purposefully).
 - **Standard of Proof:** The preponderance of the evidence supports a finding of research misconduct.
 - **Pattern:** There is no evidence to support a pattern of misconduct beyond the dissertation.
- OIG Recommendation:**
- A finding of research misconduct.
 - A letter of reprimand.
 - Require the subject to certify completion of RCR training within 1 year of the finding.
 - Debar the Subject for 3 years.
 - For 5 years after the debarment:
 - Require the Subject to provide certifications and assurances; and
 - Bar the Subject from serving as an NSF reviewer, advisor, or consultant.

The University's and OIG's Inquiries

The University¹ notified us that it had completed an inquiry into an allegation that a former graduate student (the Subject)² had copied another student's dissertation (Student 1)³ into his dissertation. Both the Subject and Student 1 were doctoral students of Advisor 1.⁴ The Subject completed his dissertation under Advisor 2⁵ approximately 3 years after Student 1 and sometime after Advisor 1 left the University. The Subject asserted in the University inquiry:

As in many research groups target projects are worked on simultaneously by several people in collaboration thus it may be difficult for someone that is not familiar with the project or the research group to determine the exact contributions apart from one another if they did not witness the intimate workings of the project as it was being conducted. I believe this to be the case regarding these allegations of research misconduct that have been brought against me. In no uncertain terms I labored exhaustively during the time I attended [the University] and due to extenuating circumstances and the corresponding complications for graduate students that come with their primary investigator/advisor not being granted tenure.^[6]

The Subject had left his lab notebooks at the University when he graduated, but he was unable to produce electronic drafts or other files at the request of the University. He asserted that his laptop computer had been stolen from his postdoctoral laboratory.⁷ The University inquiry committee recommended an investigation.⁸ We reviewed the inquiry report and confirmed that the Subject had received NSF funding in support of his work at the University.⁹ We concurred that an investigation was warranted and referred the investigation to the University.¹⁰

Because the University identified both NSF funding and NIH funding¹¹ associated with the Subject's work, we coordinated with the Department of Health and Human Services (DHHS) Office of Research Integrity (ORI) and assumed the lead in this investigation.

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⁶ Tab 1 at 7. Throughout this report we refer to the OIG generated page numbers, which appear in the lower right corner preceded by the case number. The page numbering is sequential from Tab 1 through Tab 6.

⁷ Tab 1 at 6-7.

⁸ Tab 1, University Inquiry Report.

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Tab 2, OIG Investigation Referral Letter.

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The University's Investigation¹²

The University assembled an investigation committee (IC) consistent with its policy¹³ and procedure.¹⁴ The IC reviewed the materials assembled by the University during the inquiry and reviewed additional materials, including other contemporaneous dissertations from Advisor 1's group,¹⁵ two published papers (Paper 1¹⁶ and Paper 2¹⁷) and instrument logs.¹⁸ The IC also conducted interviews with the Subject, his research advisors (Advisor 1 and Advisor 2¹⁹), and Student 1.²⁰

The IC found the following:

- "large sections of [the Subject's] dissertation included verbatim or near-verbatim text from [Student 1's] dissertation."²¹
- "there was no attribution to [Student 1's] dissertation in any of the sections where the wording is verbatim or near verbatim."²²
- "Approximately 41% of the . . . spectra in the [Subject's] dissertation were reported previously in [Student 1's] dissertation and had identical numerical values. These spectra were not related to joint publications [*i.e.*, Paper 1] and no attribution was given"²³
- Furthermore, some of the acquisition timestamps on the original spectra in the Subject's dissertation predate his arrival at the University and contain the same scanning artifacts (*e.g.*, dust spots) as those in Student 1's dissertation.²⁴
- Another 20 spectra in the Subject's dissertation corresponded with spectra published in Paper 1; however, these spectra did not require attribution because the Subject is a coauthor on Paper 1.²⁵
- "the amount of nearly identical phrasing between [Student 1] and [the Subject]'s dissertations is substantially outside the accepted standards and scientific cultural bounds of acceptability at [the University]. . . . the degree of overlap in this case

¹² Tab 3, The University's Investigation Report and Appendixes.

¹³ Tab 3.a, The University Research Misconduct Policy.

¹⁴ Tab 3.b, The University Research Misconduct Investigation Procedure.

¹⁵ Tab 3.e.

¹⁶ Tab 3.f.

¹⁷ Tab 3.g.

¹⁸ Tab 3 at 448. Copies of the logbooks were not provided to us.

¹⁹ Tab 3.h.

²⁰ Tab 3.i.

²¹ Tab 3 at 451.

²² Tab 3 at 451.

²³ Tab 3 at 451.

²⁴ Tab 3 at 451.

²⁵ Tab 3 at 451.

could not be explained in terms of collaboration or joint publications. Moreover, the probability of such overlap occurring spontaneously is vanishingly small.”²⁶

- “Given the circumstances under which [the Subject] completed the work on his dissertation and his continued insistence that the high level of identical verbiage was coincidental, the Panel found that [the plagiarism] was intentional.”²⁷
- The Subject had no dissertation committee members in common with Student 1, thereby making recognition of the copying at the time of the Subject’s defense unlikely.²⁸

The IC, primarily through its interview with Student 1, established that Student 1’s dissertation was Student 1’s unique expression of his contributions to the joint project under Advisor 1.²⁹ The IC included as evidence Paper 1 and Paper 2, each identifying Student 1 as an author. Student 1’s dissertation, however, contained no appreciable copied text from either Paper 1 or Paper 2. His responses to the IC questions indicated his understanding of the University’s expectation that his dissertation be his unique expression of his contribution to the larger research effort.³⁰

The IC noted extenuating circumstances pertinent to the allegation and its assessment. The Subject “faced difficult circumstances when completing his dissertation. [Advisor 1] had been denied tenure and left him to finish his project on his own.”³¹ The department did not assign Advisor 2 as the Subject’s formal advisor until approximately one year later; however, the Subject had full access to funding and a lab to complete his work. The Subject’s time constraint for completing his dissertation was self-imposed by his obtaining a postdoctoral position at another institution.³² The IC found that these “circumstances [were] conducive to plagiarism” but did not excuse the Subject’s actions.³³

Interview transcripts from the investigation illustrate further the particular details of the Subject’s transition from Advisor 1 to Advisor 2. Advisor 1 was denied tenure in the fall of 2004 and stayed at the University to teach through the spring of 2006 while also “moonlighting” in the private sector.³⁴ When his tenure was denied, he asked those students who would not complete their degrees with him to seek new advisors. Advisor 1 asserted his belief that the Subject had made the necessary arrangements to be advised by Advisor 2.³⁵ Advisor 2 recalls being the Subject’s formal advisor for approximately 10 weeks starting in April 2006 and having only informal contact with him otherwise.³⁶ Those interviewed, including the Subject, did not

²⁶ Tab 3 at 451.

²⁷ Tab 3 at 452.

²⁸ Tab 3 at 452.

²⁹ Tab 3.i at 1274-1275.

³⁰ Tab 3.i at 1274-1275.

³¹ Tab 3 at 452.

³² Tab 3 at 452.

³³ Tab 3 at 452.

³⁴ Tab 3.j at 1304.

³⁵ Tab 3.j at 1305.

³⁶ Tab 3.h at 1240.

identify any impediments to the Subject having more interaction with Advisor 2. Advisor 2 stated he had invited the Subject to come to his lab to work so that the Subject would not be so isolated during the writing process. Advisor 2 received drafts from the Subject for editing and provided comments.³⁷

The Subject's explanation of his transition to Advisor 2 differs. The Subject asserts that Advisor 1 gave him an "ultimatum" to "finish the molecule" rather than instructing him to find another group.³⁸ Also the Subject's account of Advisor 1's absence from the dissertation committee differs from Advisor 2's account. The Subject asserts the absence resulted from his inability to make contact with Advisor 1, a matter he said he took to the grievance committee.³⁹ In contrast, Advisor 2 indicated his impression was that the Subject did not want Advisor 1 on his committee.⁴⁰ The University did not resolve the apparently conflicting accounts.

The IC made three recommendations to the University, only one of which related directly to the Subject. The IC recommended that the University rescind the Subject's doctoral degree. The other two consisted of recommending: 1) the department review its procedures for formally transitioning students to a new advisor when left behind by a departing untenured advisor; and 2) "the University maintain an ongoing emphasis on the education of undergraduates, graduate students and postdoctoral fellows concerning plagiarism and research misconduct."⁴¹

The Subject's Comments on the University Investigation Report⁴²

The Subject expressed concern that the IC failed to accord proper weight to the period of time during which he had no formal advisor and his close working relationship with Student 1 in conducting the research described in the copied material. He provided documentation of a stolen laptop, and thus his email records relevant to the period under investigation, to support his assertion that he was cooperating fully with the investigation. At the time of his response, he had not formerly retained counsel but had been advised by counsel he had informally consulted to assert reservation of his right to make comments to the NSF Deputy Director and request a hearing.⁴³

The University's Actions

The University made a finding of intentional research misconduct warranting rescission of the Subject's doctoral degree.⁴⁴ The University is currently developing a procedure to complete that process.

³⁷ Tab 3.h at 1238.

³⁸ Tab 3.k at 1358.

³⁹ Tab 3.k at 1361. However, there is no documentation to support that the Subject filed a grievance.

⁴⁰ Tab 3.h at 1250.

⁴¹ Tab 3 at 452-453.

⁴² Tab 3.o.

⁴³ Tab at 1455

⁴⁴ Tab 3 at 445.

OIG's Investigation and Assessment

We notified the Subject of our receipt of the University report and invited his comments as we resumed our investigation.⁴⁵ In response, the Subject asserted his position that the University failed to provide a fair, accurate, and complete investigation. He cited concerns about witness credibility and bias, specifically with regard to Advisor 2.⁴⁶ He stated his intention to provide a sealed statement to the Deputy Director in response to our Draft report.⁴⁷ The Subject declined to provide specific details to our office with regard to what may be contained in any sealed statement, despite two requests.⁴⁸ We have been unable to confirm any bias on the part of Advisor 2, and have based our assessment of the University's investigation on the evidence available to us. We have informed the Subject that he will have an opportunity to communicate with the Deputy Director following the submission of our report.

We have reviewed the University investigation report and conclude that the University investigation was accurate, complete, and in accordance with reasonable procedures.⁴⁹

A finding of misconduct 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.⁵⁰

The Act

We concur with the University that the Subject's dissertation contains a substantial amount of material copied without appropriate attribution from Student 1's dissertation, which constitutes a significant departure from the accepted practices of the relevant research community. In his defense, the Subject asserted that working in close quarters with Student 1 and Advisor 1 resulted in commonalities in expression of the research concepts among the three of them leading to the overlap in text between his dissertation and Student 1's.

Because the Subject, Student 1, and Advisor 1 are coauthors on Paper 1, it is reasonable to expect them to share the expression of the research as presented in Paper 1. Further, it would be reasonable to expect this common expression of the research as it appears in Paper 1 to also appear in the relevant sections of both the Subject's and Student 1's dissertations (e.g., Chapter 2 of the Subject's dissertation). However, neither the Subject's nor Student 1's dissertations contain text copied from Paper 1. Rather, the majority of Chapter 2 of the Subject's dissertation is a verbatim copy of Student 1's dissertation, which appears to be a unique expression of Student 1's work.⁵¹ Student 1 stated in his interview that he purposefully avoided using text from his published works (Paper 1 and Paper 2) because the dissertation should represent his

⁴⁵ Tab 4, Notification Letter to Subject.

⁴⁶ The Subject asserts that Advisor 2 participated as a witness for the opposing party in unrelated litigation. Tab 5, Subject's Communications with OIG, at 1456.

⁴⁷ Tab 5 at 1455.

⁴⁸ Tab 5.

⁴⁹ 45 C.F.R. 689.9(a).

⁵⁰ 45 C.F.R. 689.2(c).

⁵¹ Tab 3.i at 1274-1275.

independent expression of his contributions to the group's work. Thus, it appears that the only commonality of expression is the result of the Subject's verbatim copying of Student 1's dissertation.⁵²

In considering this issue, the IC noted that the length of the verbatim passages counters the Subject's assertions regarding common expressions among colleagues as an explanation for the copied text.⁵³ The consistent use of particular descriptive phrases might demonstrate a group's customary expression, but the copying of entire paragraphs makes the Subject's assertion not credible.

Further, the Subject submitted his dissertation two years and nine months after Student 1 submitted his dissertation in 2003. Some of the copied material includes reference characterized by Student 1 as "recent" results citing to sources published from 2000-2003.⁵⁴ Although "recent" is a subjective characterization, Student 1's use of "recent" in several of the verbatim passages refers to publications dated in 2003 and therefore reasonably contemporaneous with his dissertation.⁵⁵ Whereas, the characterization of these references as "recent" in the Subject's dissertation almost three years later is more indicative of direct copying than commonalities of expression among lab members.

The large number of embedded citations (98) with associated embedded references (97)⁵⁶ the Subject copied from Student 1's dissertation is further evidence of direct copying and not commonalities of expression from working closely together. While continuation of Student 1's work by the Subject would reasonably include reliance on the same published literature, the exact placement of the citations and usage of the references would likely vary from author to author with the expected variation in the text.

The material copied but unattributed in the Subject's dissertation also includes graphical information such as spectra and schemes. The Subject's unattributed reuse of spectra Student 1 acquired prior to the Subject's enrollment is particularly troubling and does not reasonably fall within the gamut of collaborative work product. The IC identified 58 spectra in common between the Subject's dissertation and Student 1's dissertation.⁵⁷ Spectra acquired on a compound should be reasonably reproducible between experiments; however, some variability is expected as a result of numerous factors.⁵⁸ That the spectra, as printed in both dissertations, are

⁵² The IC also reviewed Student 2's dissertation (Tab 3.e). Student 2 [REDACTED] was also a student in Advisor 1's group and completed his dissertation at about the same time as Student 1. Any commonalities of expression from working in close proximity could have reasonably appeared in Student 2's dissertation despite the different focus of the work. The IC identified no such overlap in text.

⁵³ Tab 3 at 452.

⁵⁴ For example, Tab 3.c at 494, 497 (footnote 15), and 498.

⁵⁵ For example, Tab 3.d at 753, 757 (footnote 16 and citation to reference 10c).

⁵⁶ An embedded citation is the copied textual element (superscript or parenthetical) that directs the reader to the bibliographic reference which the source author attributed as his source. The bibliographic reference that is copied along with the embedded citation is an embedded reference. In previous cases it has been unnecessary to distinguish between embedded citation and embedded references, generally using the latter term to encompass both. In the present case, the distinction became important given the attribution style the Subject used wherein a copied citation referred back to a previously used reference or subpart of a multiple reference bibliographic footnote.

⁵⁷ Tab 3 at 451.

⁵⁸ Tab 3 at 451.

identical with respect to chemical shift and integral supports finding that the Subject has plagiarized the data. Moreover as the IC noted, the Subject copied two spectra that were acquired by Student 1 before the Subject entered the University.⁵⁹

Several synthesis schemes appear in both dissertations in identical or substantively identical form with modest additions in the Subject's dissertation. The Subject asserted that the schemes are composed in large part of chemical structures drawn with a commercial software package with standard bond lengths and angles. This is a possible, reasonable explanation for the relative sizes and similarities of the chemical structures. However, it does not explain the copied schemes. Even if the schemes standing apart from the copied text might not constitute actionable misconduct, the schemes in the context of the copied text constitute an additional element of unattributed copying as embedded objects.⁶⁰

Other embedded objects in this case include descriptive footnotes which are explanatory rather than bibliographic in nature that have been copied from Student 1's dissertation.⁶¹ In total, we identified 84 embedded objects.

Thus, the preponderance of evidence supports a finding that the Subject's actions constitute plagiarism of ~1,255 lines, 98 embedded citations to 97 embedded references, 58 spectra, and 84 embedded objects.

Intent

We concur with the University that the Subject's actions were intentional (purposeful). The University admits its role in contributing to the "difficult circumstances" the Subject faced with respect to his formal transition from Advisor 1 to Advisor 2. But difficult circumstances do not mitigate the purposefulness of his actions. The Subject faced no pending change in funding or access to laboratory space. The Subject's deadline for completing his dissertation was self-imposed. There is no evidence to suggest that the Subject was following anyone's advice when he copied the materials, and he apparently chose to work in isolation rather than seek such advice.⁶²

The text of the dissertation demonstrates the Subject's deliberate efforts to represent Student 1's work as his own. The IC noted several specific instances where copied verb tenses or pronouns suggested that the Subject was accepting credit for the work already published in Student 1's dissertation.⁶³ Further, the evidence suggests that the Subject's actions were not a matter of simple copy-and-paste. In several instances, the Subject updated references that were "in press" at the time of Student 1's dissertation to reflect subsequent publication in the journal.

⁵⁹ Tab 3 at 451.

⁶⁰ Several of the copied schemes illustrated the work of other researchers who were cited and referenced in Student 1's dissertation. We reviewed the cited sources to assess whether technical constraints limited the expression of the intellectual content (Tab 6). We conclude in this case that Student 1's schemes paraphrase the published schemes. Thus, it is reasonable to conclude that the Subject was not constrained to a particular expression of the scheme.

⁶¹ In at least two of these descriptive footnotes, prices are quoted for commercially available compounds.

⁶² Tab 3.h at 1237.

⁶³ For example, Tab 1.a at 61, 72, 91, and 93.

The transposition of chemical shift values or missing or transposed signal assignments pointed out by the IC indicate that the Subject manually retyped at least some portions of the material taken from Student 1's dissertation.⁶⁴

Thus, the evidence supports finding that the Subject decided to engage in the plagiarism with intent and purpose of completing his dissertation in order to meet his self-imposed deadline for moving on to a postdoctoral position at another institution.

Standard of Proof

We conclude that the preponderance of the evidence supports finding the Subject's actions, which significantly depart from accepted practices, constitute intentional plagiarism in a dissertation supported by NSF funding.

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.⁶⁵

Seriousness

The Subject acted as described above for the specific purpose of receiving his doctorate and the benefits that ultimately derive from an advanced degree. The NSF funding that supported the Subject for his doctoral studies has the expressed purpose of enabling under-represented groups' competitive access to benefits such as faculty positions at American universities, colleges, and community colleges. As such, the Subject's degree supported through the University with NSF award funds enabled him to compete for those benefits.⁶⁶ The net result of his plagiarism of approximately 1,255 lines with embedded elements will be the revocation of the NSF-supported degree. Therefore, the purpose of the investment of funds in the Subject's education has been undermined by the Subject's actions.

Degree to which the Act was Intentional (Purposeful)

The Subject's actions appear calculated to achieve the primary purpose of completing his doctorate and moving to a postdoctoral position. As noted by the University, the Subject had

⁶⁴ For example, Tab 1.a at 172, 174, and 175.

⁶⁵ 45 C.F.R. 689.3(b).

⁶⁶ At the present time, the Subject appears to be employed in [REDACTED] as a senior research chemist and is a recent inductee into the Sigma Xi Research Society. The Subject's current employer does not appear to have federal contracts or grants.

imposed on himself a deadline for completing his degree. However, the threat of losing funding or laboratory access does not appear to have been a factor in this case. We concur with the University that the Subject “faced difficult circumstances” created in part by the University’s failure to ensure a transition between advisors. However, we agree with the IC that these circumstances do not excuse the conduct.

Pattern of Behavior

There is no evidence of pattern beyond the conduct described above.

Impact on the Research Record

There appears to be no impact on the research record beyond the Subject’s dissertation as described above.

Other Factors

The Subject declined to provide any evidence in support of his assertions with respect to the fairness, accuracy, and completeness of the University investigation. He instead states his intention to submit a sealed statement for the Deputy Director to accompany our report.

Recommendations⁶⁷

Based on the evidence, OIG recommends that NSF:

- Send the Subject a letter of reprimand notifying him that NSF has made a finding of research misconduct.⁶⁸
- 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.⁶⁹ The instruction should be in an interactive format (*e.g.*, an instructor-led course) and specifically include plagiarism and appropriate attribution of sources.
- Debar the Subject for 3 year.⁷⁰

Furthermore, for a period of 5 years immediately following the debarment period:

- 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 contemporaneous certification to the AIGI that the document does not contain plagiarism, falsification, or fabrication.⁷¹
 - the Subject to submit contemporaneous assurances from a responsible official of his employer to the AIGI that the document does not contain plagiarism, falsification, or fabrication.⁷²

⁶⁷ 45 C.F.R. 689.9(c)(2)(ii).

⁶⁸ A Group I action 45 C.F.R. 689.3(a)(1)(i).

⁶⁹ This action is similar to Group I actions 45 C.F.R. 689.3(a)(1).

⁷⁰ A Group III action 45 C.F.R. 689.3(a)(3)(iii).

⁷¹ This action is similar to 45 C.F.R. 689.3(a)(1)(iii).

- Bar the Subject from participating as a peer reviewer, advisor, or consultant for NSF.⁷³

The Subject's Response to OIG's Draft Investigation Report

We provided the Subject with a draft of this investigation report and requested his comments within 30 days.⁷⁴ The Subject did not respond. Therefore, the report remains unchanged.

⁷² A Group I action 45 C.F.R. 689.3(a)(1)(iii).

⁷³ A Group III action 45 C.F.R. 689.3(a)(3)(ii).

⁷⁴ 45 C.F.R. 689.9(c)(2)(i),