In 1996, we learned from the subject's university that the subject had misrepresented his publication record in his NSF proposal by listing published papers that had not been published and, in most cases, did not exist. In the course of the university's investigation, an allegation of data fabrication was made. The subject left the university before it could finish its investigation, so we completed the investigation. We concluded the subject committed misconduct in falsifying publications and fabricating data, and we recommended a finding to NSF's Deputy Director. Our investigation report and NSF's Deputy Director's letter reflecting his decision constitute the closeout for this case.

cc: Investigations, IG
Re: Debarment

On August 7, 2000, the National Science Foundation (NSF) sent you a Notice of Proposed Debarment in which NSF proposed to debar you from directly or indirectly obtaining the benefits of Federal research grants for a period of one year. NSF’s debarment action is based on your severe misconduct in science discussed in detail in the Notice of Proposed Debarment. In that Notice, which was delivered to you on August 14, 2000, NSF informed you that you had a period of 30 days to respond to the proposed debarment.

NSF did not receive any response to the Notice of Proposed Debarment on or before September 13, 2000. Accordingly, you are debarred until August 7, 2001. Debarment is effective throughout the Executive branch of the Federal Government. Debarment precludes you from receiving Federal financial and non-financial assistance and benefits under nonprocurement Federal programs and activities unless an agency head or an authorized designee makes a determination to grant an exception in accordance with 45 CFR 620.215. Nonprocurement 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 any Federal contracts or approved subcontracts under the Federal Acquisition Regulations (FAR) at 48 CFR Subpart 9.4 for the period of this debarment. 45 CFR Section 620.110(c).

Under NSF’s regulations, you have 30 days to submit an appeal of this decision, in writing, to the Director of the Foundation. 45 CFR 689.8(c)(1)(iii). Any appeal should be addressed to the Director, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia, 22230. (A copy of the applicable
Re: Notice of Misconduct in Science Determination and Proposed Debarment

This letter and the attached investigative report serve as formal notice that the National Science Foundation (NSF) proposes to debar you from directly or indirectly obtaining the benefits of Federal research grants for a period of one year. A person who is debarred will be excluded during the period of debarment from Federal financial and non-financial assistance and benefits under non-procurement Federal programs and activities. See 45 CFR §620.110, §620.200. In addition, you will also be prohibited from receiving any Federal contracts or approved subcontracts under the Federal Acquisition Regulations (FAR) at 48 CFR Subpart 9.4 for the period of this debarment. 45 CFR §620.110(c). Debarment of an individual is effective throughout the executive branch of the Federal Government.

Reasons for Debarment

NSF's decision to propose debarment is based upon a referral from our Office of Inspector General (OIG). The Foundation's administrative record indicates that you submitted two grant proposals and a progress report to the National Science Foundation which misrepresented the status of your publication record. You stated that seven publications were "in press" when they actually had not yet been submitted or accepted for publication. Specifically, these false statements were made in a
documents. You also submitted the Table containing the fabricated data to NSF on more than one occasion. This indicates a pattern of fabrication and falsification.

Debarment must be for a period commensurate with the seriousness of the cause. 45 CFR §620.320(a). For all of the above reasons, I am proposing that you be debarred for one year.

I am also taking the following action:

- If you submit any proposal or reports to NSF within three years from the date of this letter, you must submit to the Assistant Inspector General for Scientific Integrity, Office of Inspector General, National Science Foundation, 4201 Wilson Boulevard, Arlington, Virginia, 22230, a copy of the document, together with your certification indicating that to the best of your knowledge, the document does not contain anything that violates NSF's Misconduct in Science and Engineering regulations.

- In addition, during this three year period, if you submit any proposal or report to NSF, you must submit a written assurance from your Department Chairperson or Dean indicating that, to the best of his or her knowledge, the proposal or report is accurate and does not contain any false representations about the publication status of any manuscripts or any falsified data.

Procedures Governing Proposed Debarment/Scientific Misconduct Allegations

Under our regulations, you have 30 days after receipt of this notice to submit -- in person, in writing, or through a representative -- information and argument in opposition to the proposed debarment. 45 CFR §620.313(a). During this 30-day period you may also review the attached Investigative Report and submit comments or rebuttal. 45 CFR §689.8(c)(1), §689.1(e). Comments submitted within the 30-day period will receive full consideration and may lead to revision or withdrawal of the Investigative Report or of the recommended disposition.

Any response should be addressed to Lawrence Rudolph, General Counsel, National Science Foundation, 4201 Wilson Boulevard, Room 1265, Arlington, VA 22230. If you have any questions, please contact Mr. Rudolph at (703) 292-8060. We are attaching a copy
CONFIDENTIAL

NSF OIG Investigation Report

September 28, 1999

OIG Case Number M97030008
REPORT OF INVESTIGATION INTO ALLEGATIONS OF MISCONDUCT IN SCIENCE

Summary

The Office of Inspector General (OIG) has concluded that the subject (1) misrepresented his publication record by listing, in proposals and an associated Progress Report submitted to the National Science Foundation (NSF), manuscripts as "in press" when they were not and (2) fabricated data in a proposal that he submitted to NSF. The University conducted an investigation into the misrepresentation allegation and concluded the subject committed misconduct in science. We agree with the University's conclusion. Because the subject refused to cooperate with the University's investigation, we investigated the data fabrication allegation and concluded the subject committed misconduct in science. We recommend that NSF:

(a) send the subject a letter of reprimand informing him that NSF has made a finding of misconduct in science against him;
(b) debar the subject for a period of 1 year from final disposition of this case;
(c) require, for a period of 3 years from the final disposition of this case, the subject to certify that any documents submitted to NSF are, to the best of his knowledge, factually correct and contain no fabricated data; and
(d) require, for a period of 3 years from the final disposition of this case, the subject to obtain from his supervisor a certification that, to the best of the supervisor's knowledge (after appropriate inquiry), any documents the subject submits to NSF are accurate and contain no fabricated publications or data.

University Inquiry into the Misrepresentation Allegation

The subject\(^1\) submitted a tenure and promotion (T&P) package to the University\(^2\) in the Fall of 1996. The Department Head (DH) found discrepancies in the subject's publication record in that he had not listed three publications in his 1996 T&P package\(^3\) that he had listed as "in press" on his earlier grant application\(^4\) to an organization.\(^5\) The DH observed that the manuscripts listed in the grant

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\(^3\) See Tab 1; these three citations are highlighted on pg. 3 of Tab 1.

\(^5\) The

Pg. 2
application to the organization were on an NSF form. He then checked the subject's 1995 NSF proposal for publication discrepancies as well. The DH found citations denoting these manuscripts, as well as three others, as "in press" in it, none of which were listed in his T&P package.7

The DH brought his concerns to the Vice Chancellor (VC) who initiated an inquiry to examine the alleged discrepancies. The subject told the Inquiry Panel that the allegation against him was not made in good-faith and that it was an example of persecution within the Department. The subject explained that his listing of the three manuscripts as "in press" were typographical errors, and told the Inquiry Panel the citations should have read "in prep." According to the Investigation Committee report, the subject admitted [to the Inquiry Panel] that this was a mistake, [but] he claimed that it was not due to his own carelessness, but rather, the fault of the departmental procedure used by the administrative staff responsible for assembling the proposal.8

The report noted the subject told the Inquiry Panel that he had previously informed his NSF program manager (PM) about the "informational errors" in his proposal:

in addition to stating that these were typographical errors, [the subject] indicated that he had informed [his PM] of this error . . . . [He] also stated in his interview with the Inquiry Panel on March 25, 1997 that he had informed [the PM] by telephone of the errors in early January, 1996, that he had corrected the errors in a CV [curriculum vita] sent to [the PM] in February, 1996 in response to her request for him to serve on a review panel in April, 1996.9

The Inquiry Panel asked NSF whether the subject had previously informed NSF of the "informational errors" in his proposal. We examined the proposal jacket and interviewed the PM.10 We found the 1995 proposal jacket contained two copies of page C-811—the originally submitted one, and a second one with fax header indicating it had been sent from the subject's department to NSF on February 25, 1997, after the University notified the subject of its inquiry. On the version faxed

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7 The six questioned citations in the 1995 proposal are highlighted on pages 4-5 of Tab 1.
8 Tab 3, pg. 2.
9 Tab 3, pp. 6-7.
10 The PM told us she could not recall any specific conversations with the subject or any details of any conversations she may have had with him.
11 Tab 4—Pg. C-8, subsection C.1 titled "Publications in peer reviewed journals."
by the subject, he had marked out “in press” and had written either “in prep” or “preparation” by the three questioned citations.

When we reviewed the proposal, we found several instances where the subject had listed the three questioned manuscripts, and others, as “in press” in his proposal. The proposal has publications listed as “in press” in three sections: the Bibliography, pp. D-1 and D-6 (two citations), the Progress Report, pg. C-8 (four citations), and the subject’s Biographical Sketch, pg. E-2 (six citations). See Tab 2. His fax to NSF did not correct any of the citations to these manuscripts in other parts of the proposal.

We found evidence that the subject may have misrepresented his publication record in multiple places in his proposal, and we found no evidence that substantiated the subject’s claim that he had notified NSF of the “informational errors” in his proposal prior to the initiation of the University’s inquiry. This evidence, together with the multiple discrepancies the DH had noted, led the Inquiry Panel to conclude that the University should proceed with an investigation.

The University’s Investigation (Tab 3)

The VC charged the investigation Committee with determining if the subject’s three citation errors constituted misconduct in science. The Committee examined the subject’s T&P package and his proposals submitted to NSF and reviewed the citations in each of them. The Committee interviewed the DH and attempted to interview the subject. Although the subject had provided some information to the Inquiry Panel, he did not cooperate with the Committee and refused to provide further information, either orally or in writing.

After the Committee’s examination of the different representations of the supposedly same citations, together with the subject’s after-the-fact notification of NSF, supposedly to correct clerical errors, it noted that

[t]he errors in [the subject’s] list of citations do not appear to be simply typographical, and information the Inquiry Panel received from NSF did not substantiate [the subject’s] claims of having informed NSF of these errors prior to the initiation of the [University’s] inquiry in January of 1997. . . . The citations in question appear as “in press, 1994” in more than one document and the formats of the citations are different, pre-empting the possibility that this is a typographical error which was carried through by photocopying or “cutting and pasting”, by word processing, of the incorrect information.

12 Examples of its comparison are given in Tab 5.
13 Tab 3, pg.7.
The Committee also identified two "analogous situations" in the subject's Progress Report from his earlier, Presidential Young Investigator (PYI) award.\(^{14}\) The Committee noted the subject's claim of the manuscripts being "in press" preceded their dates of acceptance shown by the journals, and the subject cited a manuscript as "in press" in a journal that was different from the journal in which it was eventually published.\(^{15}\)

The Committee noted that the subject's misrepresentations were not an isolated occurrence:

Although the progress report was not part of the allegations brought against [the subject], it does suggest a pattern of misrepresenting the status of his work. In this case, the manuscripts cited in the original [1995] proposal as being "in press" in 1994 were updated to being "in press" in [the PYI Progress Report in] 1995, well before the date they were actually submitted to the journals.

As noted above, examination of the PYI proposal and progress reports provided by NSF suggested that [the subject] had a history of providing inaccurate information about the status of his manuscripts.\(^{16}\)

The University's investigative Committee

conclude[d] that the listing of publications as being "in press" was not the result of honest error and thus constitute[d] research misconduct. [It] consider[ed] any occurrence of research misconduct to be a serious breach of accepted scientific behavior that undermines the absolute necessity for trust among members of the scientific community.

[The subject] has misrepresented his work as being complete and as having been peer-reviewed and accepted for publication in reputable journals. Although such a misrepresentation does not have the far-reaching ramifications that might arise from falsification of clinical studies, nevertheless, it:

a) is fabricated information;

b) casts [the subject's] publication list in a more favorable light than it would be if the "in press" manuscripts had been properly listed as "in preparation";

c) may have influenced the reviews of his proposal and put it in a percentile which i) permitted it to be funded and ii) potentially disenfranchised other scientists competing with him for funding.\(^{17}\)

\(^{14}\) Tab 6.
\(^{15}\) Tab 3, pp. 7-8.
\(^{16}\) Ibid.
\(^{17}\) Tab 3, pg. 9.
The Committee stated that “[m]aintaining scientific integrity must be of highest priority for [the University],” and it recommend[ed] that [the subject] be made aware of the seriousness of his actions and that appropriate steps be taken to insure that the actions of [the subject] do not cause further damage to the reputation of the university, its faculty or students. . . . We request that University officials take appropriate action to uphold the principles underlying self-governance.18

The VC (the adjudicator) informed us that the University’s options for possible actions to take regarding the subject were quite limited because the subject left the University before the conclusion of the investigation. The University issued the subject a letter of reprimand (signed by the Provost) and placed the letter in his permanent personnel file.19

OIG’s Analysis of Misrepresentation Allegation

We reviewed the University’s report and found it fair and accurate. Although the University investigation focused on three manuscripts in the 1995 proposal, it found that one of those three manuscripts, in addition to another manuscript, were also falsely cited in the Progress Report for the PYI proposal. In reviewing the materials, we found others. We present in Tabs 8, 6, and 9 a comparison of all of the false “in press” citations that appear in the subject’s NSF submissions:

- one manuscript in two sections of his PYI proposal (see Tab 8 for details);
- two manuscripts in his PYI Progress Report (see Tab 6 for details); and
- a subset of six manuscripts listed differently in three sections of the 1995 proposal (see Tab 9 for details), two of which were falsely cited in the PYI Progress Report (see above).

The subject’s three NSF submissions contain 16 false citations to 7 different manuscripts. The subject’s listing of those manuscripts as “in press” did not conform to accepted definitions of “in press,”20 nor did it even meet his own definition of “in press,” which he stated as “accepted by the journal and sent to the printer.”21 None of the manuscripts were submitted, let alone reviewed, accepted, and sent to the journal’s printer when the subject listed them as “in press.”

18 Ibid., pg. 10.
19 Tab 7.
20 For example of a “community” definition, see M.C. LaFollette, Stealing Into Print Fraud, Plagiarism, and Misconduct in Scientific Publishing (Univ. of CA Press 1992) pg. 54; and references therein.
21 After the University began its inquiry, the subject provided NSF with an updated publication list and explained his definitions of “in press” and “submitted.” See Tab 10.
Furthermore, for three of those manuscripts, there is still no evidence of publication, 4 years after they were listed as “in press.”

The subject told us that “informational errors did occur, and that it was primarily my responsibility to catch them before any grant proposal or ‘official’ documents were released by the University to any funding agency.” He explained that he did not seek to correct the errors in the NSF proposal because he had spoken to the PM about the informational errors previously. However, it appears most of the subject’s conversations with the PM took place after the University began its inquiry, and the subject’s earliest conversation on this topic took place between him and the PM in September 1995. Even if this conversation took place, it was significantly after the subject had submitted his 1991 PYI and 1995 proposals to NSF. At best, it is an ineffectual, retroactive explanation of the subject’s actions and is in no way applicable to the false citations listed in the PYI proposal that was managed by a different Program Director.

OIG Investigation into Data Fabrication Allegations

During the University’s investigation, we received allegations that the subject fabricated data in a table in the 1995 proposal. When we asked the University to examine these allegations, it told us the subject had refused to cooperate with its investigation, had left the University, and had taken all the laboratory notebooks associated with his research projects with him. Thus, it was unable to conduct an investigation into these allegations, and we conducted our own investigation.

The subject submitted three versions of the 1995 proposal page containing Table 2; we have designated these as A, B, and C (Tab 12). Version A was part of the 1995 proposal as originally submitted in November 1994. The subject submitted versions B and C later, and NSF program staff replaced version A with versions B and C in the program jacket. Version A has less data than versions B and C; there are six rows of data in Table 2 of version A, and eight rows of data in versions B and C. Version B has a different explanation of what was measured than versions A and C.

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22 Tab 11, pg. 3.
23 Ibid., pg. 4.
24 The subject claimed version B was his original and doubts the authenticity of version A because his former University submitted it. Irrespective of the subject’s doubts on the authenticity of version A, the subject agrees that he created versions B and C, and these versions contain all the fabricated data discussed in this report.
25 There is no indication in the program jacket of when the replacement versions of B and C were received and placed in the jacket.
26 See Tab 13 for a discussion of the scientific aspects of these allegations.
27 The different interpretations of one experimental parameter is described in the asterisk “Control” comments in each version.
The allegations were that Table 2 contained fabricated data. Specifically, it was alleged that the subject fabricated data in two ways in Table 2. First, three rows that represented material presumably used in experiments. The allegedly fabricated data sets were the fragment, the fragment, the fragment, and data associated with those fragments in each respective row. The was present in all versions of Table 2 (as row 1), and (row 3) and (row 6) appear in versions B and C. Second, an entire column which represented data from an experiment that was not performed.

The subject provided three different, inconsistent explanations addressing the allegations of data fabrication. The subject's first response was a November 10, 1997, letter, and his second, a December 3, 1998, letter in response to questions raised by a scientist in the field whom we asked to examine the allegations. His third response occurs in an affidavit taken during our March 8, 1999, interview. In his letters and his affidavit, the subject said he had obtained the data reported in Table 2 from a visiting scientist (the VS) who had worked in his laboratory. He said he could not document the questioned data because the VS had taken his laboratory records with him when he left. We interviewed the VS who told us the subject had all of his laboratory notebooks.

DATA FABRICATION ALLEGATIONS (PART (i))

The subject initially told us "that I did not perform the experiments that lead to the data used to generate Figure 7 and Table 2 in the grant application. These data resulted from experiments that were performed by" the VS. The subject said the "data used to generate Table 2 is contained in [the VS's] primary laboratory notebook (see attached laboratory notebook, pages 09-011) as well as in the progress report that [the VS] was forced to provide after leaving my laboratory." The subject said "Table 2 [was] prepared by me after lengthy discussions with [the VS] about the experimental data obtained." He said any inaccuracies Table 2 were the result of his trust in the accuracy of data provided by the VS.

The scientist did not find documentation in [the VS's] notebook for any of the allegedly fabricated data described in Table 2. He noted that those data could not

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28 Tab 11. With his letter, the subject provided us with the visiting scientist's (the VS's) laboratory notebook that was related to the research in the proposal.
29 His letter was in response to our November 20, 1998, questions (both in Tab 14). With his second letter, the subject provided notebooks used by a graduate student in the subject's laboratory. The date of the notebooks indicated all of the graduate student's results were obtained after the proposal was submitted and funded. Thus, they are not exculpatory for the data in the proposal.
30 The scientist analyzed the subject's notebook and responses. His comments are under Tab 15.
31 The subject's affidavit is under Tab 16.
32 We interviewed the VS to get his interpretation of the data on February 11, 1999. His affidavit summary is under Tab 17.
33 Tab 11, pg. 4 (underlining in original).
34 Ibid., pg. 5.
35 Ibid.
be prepared by the techniques described in the VS's laboratory notebook and one of them could not be created by the experimental method described in the 1995 proposal.\textsuperscript{36}

When asked about the scientist's analysis, the subject, in his second response, argued that: (1) mistakes could have been made entering or interpreting the data and (2) the experimental data that supports the data in the proposal is unavailable. The subject stated numerous times in his second response that Table 2 was created from information provided by the VS,\textsuperscript{37} and that it was possible that mistakes were made by either the VS or by him in either interpreting or entering the data into the table.\textsuperscript{38} The subject suggested the additional\textsuperscript{39} and data were possibly created by mathematical manipulation of existing data.\textsuperscript{39} He simultaneously suggested those two data sets “could have resulted from a mistake or unintentional error in the transcription of data and/or information presented by [the VS].”\textsuperscript{40}

The subject proffered two different reasons why the documentation supporting the questioned data in the proposal was unavailable. He claimed that “information . . . was provided to me in schematic form by” the VS and there were problems verifying the data “because much of [the VS’s] data was not written-up in [the VS’s] laboratory notebook.\textsuperscript{41} He also said “the original protocols, data, and one of [the VS’s] laboratory notebooks used to generate data in Table 2 were removed from my office by” the VS.\textsuperscript{42,43}

In his affidavit, the subject addressed the allegedly fabricated data in light of evidence that contradicted his various statements about its authenticity. He said he agreed . . . that the data about the \textsuperscript{40} and cannot be created using the experimental protocols used in my laboratory. After receiving [OIG’s] letter I reviewed the data and independently concluded that these fragments and the data could not exist . . . When I assigned the pluses and minuses in Table 2 [last two columns], it was based on [results] that I personally examined. However, I cannot recall why I included the fragments (\textsuperscript{40} and \textsuperscript{41}) and data about

\textsuperscript{36} Tab 15.
\textsuperscript{37} Tab 14, pp. 3, 4, 5, and 7.
\textsuperscript{38} \textit{Ibid.}, pp. 4, 5, and 6.
\textsuperscript{39} \textit{Ibid.}, pg. 5. See Tab 18 for an explanation of the mathematical manipulation described by the subject. Although this could explain how the false fragments were derived, it in no way subtracts from the fact that the and fragments and associated data never existed.
\textsuperscript{40} Tab 14, pg. 3.
\textsuperscript{41} \textit{Ibid.}
\textsuperscript{42} Tab 14, pg. 3. Bold emphasis omitted.
\textsuperscript{43} The VS told us that when he left the subject’s laboratory, he turned in his letter of resignation and his key to the laboratory, thus refuting the subject’s account. Tab 17.
them, including the pluses and minuses in my proposal Table 2 when the fragments cannot be made and the [results] did not exist.44

DATA FABRICATION ALLEGATIONS (PART (ii))

In addition to three rows of data discussed above, the data in the "[ ]" column in Table 2 representing the results of a [ ] experiment were allegedly fabricated. The scientist "did not find documentation in [the VS's] notebook for a [ ] experiment such as that described in Table 2."45

The subject explained that the experiment for determining "[ ]" was commonly performed by students working on the . . . project. There is no documentation in [the VS's] notebook or his summary to indicate [ ] experiments were described because after performing the experiments, he did not transfer the raw data to his notebook; he kept them in the laboratory data and protocol file folders.46

The subject also described the experiment performed. He told us he believed that statements in another graduate student's laboratory notebook indicate[d] that [the VS] did in fact carry out an experiment that yields [ ]. It is my contention that [the experiment I described] will provide information equivalent to a [ ] experiment [under certain conditions].47

However, the scientist told us that experiment was not equivalent to a [ ] experiment and would not yield the data presented in Table 2. The VS independently stated that the experiment described by the subject "does not give [ ]."48 The VS said he did not know where [the subject] got those numbers [the data] from. [The VS] never did a [ ] experiment. The numbers in that column are not from any research that [the VS] did.49

Based on the scientist's analysis, the absence of any supporting data in the VS's notebook, the VS's statements, and the subject's admission that he conducted an experiment "equivalent" to a [ ] experiment, we do not find the subject's explanation of the column of data in Table 2 (part (ii)) credible.

44 Tab 16, pg. 3.
45 Tab 15, pg. 2.
46 Tab 14, pp. 6-7.
47 Tab 16, pg. 4.
48 Tab 17.
49 Ibid.
Conclusion Regarding 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" (45 C.F.R. § 689.1(a)(1)). A finding of misconduct in science against a subject requires that the subject both committed a bad act and did so with a level of culpable intent that justifies taking action against the subject. In order to make a finding of misconduct, the subject must have acted, minimally, with gross negligence. NSF's standard of proof in evaluating each element of misconduct in science is a preponderance of the evidence.

The Act

A preponderance of the evidence shows that the subject misrepresented his publication record by listing seven manuscripts as "in press" in two proposals and a Progress Report he submitted to NSF. The University's and our analysis of these publications showed that none of them were submitted when the subject claimed they were "in press." There is no evidence that three of the seven exist even now as publications, nearly 4 years after they were listed as "in press."

A preponderance of the evidence shows the subject fabricated three rows of data, representing the fragments and their associated data. The subject's admission that the data could not exist, the VS's statements and supporting documentation, a lack of supporting experimental evidence in the laboratory notebook, contrary experimental evidence in the notebook, and the scientist's analysis of all the above, support the allegation that the subject fabricated three fragments and their associated data.

A preponderance of the evidence shows the subject fabricated the entire column of data corresponding to the results of a experiment (on all the fragments listed in Table 2). The subject's explanation of "equivalent" experiments, the VS's and the scientist's statements, together with the lack of supporting experimental evidence in the laboratory notebook, support the allegation that the subject fabricated the results of a experiment.

Based on our interviews with the subject and the VS, together with the existing documentation and the scientist's comments, we do not find the subject's explanations credible. The VS's statements were supported by the laboratory notebook and the scientist's analysis.

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50 One in the PYI proposal plus six in the 1995 proposal.
Intent

We believe the subject acted knowingly when he misrepresented his publication record by listing manuscripts as “in press” in his NSF proposals that either did not exist or had not been submitted. Because the manuscripts minimally must exist and be submitted before they can be “in press,” we believe the subject’s misrepresentation of non-existent manuscripts as “in press” was knowing. It is important to note that in the PYI proposal, as well as in PYI Progress Reports, the subject differentiated between manuscripts that he had submitted and those he had not, demonstrating that he was aware of the distinction between those citations. That the subject’s actions were knowing is supported by the sheer number of the false citations, and the variety of ways in which he cited them belies his assertions that his errors were clerical or the result of cutting and pasting.

We believe the subject acted knowingly when he fabricated three fragments and their associated data and when he fabricated data from an experiment that was not performed. Because the data could not have been created by the standard techniques employed in the subject’s laboratory, were not in the primary laboratory notebook for this project, and different data were included on different versions of Table 2, we believe the subject knowingly included fabricated data in his proposal.

Seriousness

A PI’s publication record might likely indicate to proposal reviewers an active program with many students, and could be a factor in their recommendations, even if it is not explicitly mentioned on the reviews. Conversely, lack of publications could indicate a weak research program or one that did not allow students an opportunity to publish, neither of which are desirable. By misrepresenting his publication record, the subject presented NSF and its reviewers misleading information about his research activities. As evidence of this, we note that one reviewer commented that

The PI has been moderately productive in recent research . . . . However, the recent productivity, as indicated by the papers “in press,” has been quite good. This suggests that he has overcome this lag and that the research is now moving forward at a good clip.51

This misrepresentation seriously deviated from the accepted practice of his scientific community, and also from what NSF expects from its PIs, and skews the information NSF’s reviewers are presented with to make a decision about whether the PI and the proposal warrant funding.

The subject’s inclusion of fabricated data in his proposal represents a serious deviation from the accepted practice in every field of science and engineering and

51 Tab 19; quote marks added.
distorts the research record. If the subject’s proposal had been declined, the proposal would have only been seen by the proposal’s reviewers and NSF’s PM, and the research record only minimally effected. Because the subject’s proposal was funded, the distortion of the research record could be amplified because of public access through the Freedom of Information Act.

Evidence of a Pattern

The subject first misrepresented his publication record in two places in his PYI proposal. He included false citations in two places in a PYI Progress Report and in three places in his 1995 proposal. These 16 misrepresentations occurred over a period of several years. We agree with the University that the subject’s actions suggest a pattern of misrepresenting his publication record.

The subject first fabricated data in version A of Table 2. He continued to misrepresent the fabricated data as authentic, and compounded his actions by adding more fabricated data sets, in versions B and C.

Based on a preponderance of the evidence, we conclude that the subject misrepresented his publication record by listing manuscripts as “in press” that were not, and that he fabricated data. We believe the evidence demonstrates that the subject acted knowingly, and we believe his actions represent a pattern of deception. We conclude that each of the subject’s acts—misrepresentation of his publication record and fabrication of data—are misconduct in science.

The Subject’s Response

The subject’s response (Tab 20) to the draft investigation report did not present new arguments that addressed the substance of the allegations; instead it addressed the role of the University administrators and the relevance of the recommendations. In discussing the misrepresentation allegation, the subject agreed that “informational errors” occurred in his proposal, but wrote that his PM had told him that manuscripts listed in any form, other than officially being published (i.e., having a journal volume and page numbers), were not to be used by reviewers; “therefore, do not worry about it.” As noted in fn. 10, the PM told us she did not recall any details of any conversations with the subject on this matter.

Regarding the data fabrication allegation, the subject said he accepted “administrative responsibility” for the fabricated data, but immediately blamed the

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52 See, for example, M.C. LaFollette, Op. Cit. (fn. 20), pp. 42-47.
53 We note that any use reviewers or POs may make of information in a proposal is distinct from NSF’s overall reliance on and expectation that the information in it is accurate, and the author’s obligation to ensure that accuracy.
VS, claiming the VS fabricated it and removed the supporting data files after being dismissed. We found this explanation unsatisfactory as it ignored the VS's and the scientist's statements, as well as his own admissions during our interview that the data could not exist (Tabs 17, 15, and 16, respectively). His explanation is also inconsistent with the data recorded in the VS's laboratory notebook. Finally, the subject also contradicted both the VS's and his own statements, made during our interviews, in which each stated that the VS resigned; he was not dismissed (Tab 17).

The subject believed the University, as grantee, should share the blame for the "informational errors" in his proposal. He said his proposal was reviewed by several administrators, and if these administrators had taken responsibility for the proposal, the "informational errors" would have been caught, and this investigation would have never taken place. However, as indicated by the certifications on the NSF Cover Page, it is the PI, not the university, who is responsible for the accuracy and completeness of the content in the proposal. Only hypotheses and opinions are excluded from the PI's certification of the accuracy of the proposal contents. Representations a PI chooses to make about publications and data are expected to be accurate, not fabricated. Such information is reliable known only to the PI and could be certified to by universities only after detailed data audits and review efforts, which to our knowledge, no university subjects its faculty to. Separately, university officials certify to the administrative responsibility of a limited set of, principally financial, issues.

The subject also objected to the assurances we recommended NSF require from his current university. He believed they should be required from his former university, as the grantee where the misconduct occurred. However, the recommendation is designed to ensure the implementation of review procedures which will protect future federal government interests. With regard to the subject's current funding and future submissions, it can only be secured from, and is only relevant to, his current place of employment.

In our draft report, we recommended that NSF prohibit the subject from serving as a panelist for a period of 3 years. The subject argued that he has the experience, knowledge, and scientific insight to carry out the duties of being a panelist, and that he had served as an honorable panelist. Given that his misconduct was not directly related to any panel actions, and that his PM apparently finds his input beneficial, we have dropped this recommendation.

The subject spent a considerable portion of his response discussing what he characterized as racial bias on the part of the University. He believes the University persecuted him because of his race, and that by investigating the allegations raised against him, we are supporting the University's actions. We note that our investigation is independent of the University's investigation, and considered more and different issues.
RECOMMENDED DISPOSITION

Under 45 CFR § 689.2(b) of NSF's misconduct in science and engineering regulation, when deciding what actions are appropriate when misconduct is found, NSF officials should 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 university or the individual.

We conclude the subject knowingly included false citations and fabricated data in his submissions to NSF. This behavior is a serious deviation from the practices of both the subject's research community as well as the broader scientific community, and it violated NSF's expectation that proposals be prepared with all the care afforded a scientific paper. The subject's repeated misrepresentations and fabrications are representative of a pattern of disregard for the integrity of the scientific record.

The subject's responses demonstrate he does not accept responsibility for his actions. He misled the Inquiry Panel about his attempts to correct his publication record in his proposals with NSF. He blamed the department's administrative staff for the inclusion of "errors" in his citations, and ultimately, blamed the DH and the University for persecuting him by trying to resolve the discrepancies in his various documents. He fabricated three rows and one column of data in his proposal. Rather than cooperate with his university in resolving the allegations, he took all the evidence and left the University. He ostensibly agreed to cooperate with our investigation, but he gave conflicting statements about the proposal and data, and again, blamed others. He said the VS provided him with the data that was fabricated, while simultaneous acknowledging the data could not have been created by the VS. He said the University itself had possibly created version A to persecute him. While the subject has made some statements acknowledging the wrongdoing, we believe his misrepresentations and fabrications manifest a lack of present responsibility.

As a continuing recipient of NSF funds, it is incumbent upon the subject to ensure that the high scientific standards expected by his research community and NSF are upheld and that the research record not be corrupted. We believe the subject's actions and statements demonstrate a lack of responsibility an NSF PI is expected to exercise in his research. Therefore, we recommend NSF:

(a) send a letter of reprimand to the subject informing him that NSF has made a finding of misconduct in science against him; and
(b) debar the subject for 1 year from the final disposition of this case.

The subject has a current [redacted] award and two amendments.

This is a Group I Action (§ 689.2(a)(1)(i)).

This is a Group III Action (§ 689.2(a)(3)(ii)).
So that the subject can demonstrate his understanding of community and NSF standards of research, and we propose the following actions to be taken to protect NSF's interests. We recommend NSF:

(c) require the subject, for 3 years from the final disposition of this case, to certify that any documents he submits to NSF are, to the best of his knowledge (after appropriate inquiry), factually correct and contain no fabricated publications or data;\textsuperscript{57} and

(d) require the subject, for 3 years from the final disposition of this case, to obtain an assurance from his supervisor that any documents the subject submits to NSF are, to the best of his knowledge (after appropriate inquiry), factually correct and contain no fabricated publications or data.\textsuperscript{58}

The subject's certifications and his supervisor's assurances should be sent to OIG for retention in its confidential file on this matter.

\textsuperscript{57} This is a Group II Action (§ 689.2(a)(2)(ii)).

\textsuperscript{58} This is a Group I Action (§ 689.2(a)(1)(iii)).