

CLOSEOUT FOR M-94030010

This case was brought to our attention on 29 March 1994 by the complainant.¹ He alleged that the subject,² on two separate occasions, plagiarized materials from graduate students' Master of Science theses³ when the subject copied these materials into publications without appropriate citation.⁴ Our inquiry determined that the allegations of plagiarism had substance. We learned the University had initiated a review of allegations and had completed an investigation.

After reviewing the institution's investigation report, we began its own investigation. Our investigation report and the NSF Acting Deputy Director's 22 March 1999 letter reflecting his decision constitute the closeout for this case.

cc: Integrity, IG

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REPORT OF INVESTIGATION INTO ALLEGATIONS OF MISCONDUCT IN SCIENCE AND ENGINEERING

SUMMARY

The Office of Inspector General (OIG) has determined that [REDACTED] (the subject), a faculty member at [REDACTED] (the University), on two separate occasions plagiarized materials from graduate students' Master's of Science theses when he copied these materials into publications without providing authorship credit or appropriate citation. This conclusion is based on the University's investigation report and OIG's analysis of the evidence provided in the report. OIG recommends that NSF find that the subject committed misconduct in science and take the following four actions as a final disposition in this case. First, NSF's Deputy Director should send the subject a letter of reprimand informing him that NSF has made a finding of misconduct in science against him. Second, a University official, who understands the acceptable community standards for the supervision of graduate student development and training, should be required to provide annual assurances that the subject behaved appropriately as a mentor to his graduate students in connection with NSF-supported activities. Third, the subject should be required to provide certification that, with every NSF-supported paper, conference abstract, presentation, or report he submits on which he is an author, he has appropriately acknowledged all individuals involved with the project. This certification should be countersigned by all the participants in the project. NSF should inform the subject that the assurance and certification requirements are in effect until 3 years have elapsed from the final disposition of this case. Fourth, NSF should require for the same period that the subject send copies of the University official's assurances and the certifications to the Assistant Inspector General for Oversight in the Office of Inspector General for retention in that Office's confidential file.

BACKGROUND

[REDACTED] (the subject) has been a tenured full professor in the [REDACTED] (the Department) at [REDACTED] (the University) since [REDACTED]. In March 1994, OIG was informed that the subject was alleged to have plagiarized material from two of his former graduate students' Master's of Science (M.S.) theses. Specifically, it was alleged that the subject copied a large part of [REDACTED] (student 1's) M.S. thesis¹ in a published paper (paper 1)² without referencing the thesis as the source of the copied material or providing co-authorship for the student on the paper. Tab 1. It was

¹ Student 1's M.S. thesis was entitled [REDACTED] It was accepted by the Department at the University in 1991.

² Paper 1, entitled [REDACTED] was authored by the subject, [REDACTED] and was published in [REDACTED]

further alleged that the subject copied part of [REDACTED] (student 2's) M.S. thesis³ in another published paper (paper 2)⁴ without referencing the thesis as the source of the copied material or providing co-authorship for the student on the paper. Tab 2. We learned that the students were unaware of the subject's actions until a year after paper 2 and 2 years after paper 1 were published. Papers 1 and 2 acknowledged NSF funded proposal, [REDACTED]⁵ as providing support for part of the work.⁶ Tabs 1 and 2. This same NSF proposal supported both students for part of their graduate student research in the subject's laboratory at the University. Tab 8, pages 40-42.

OIG'S INQUIRY

OIG compared text, figures, and tables in the students' theses to text, figures, and tables in the corresponding papers. In paper 1, more than one-third of the text, all five figures, and one table, together comprising more than half of the material presented in the paper, appeared to be identical or substantially similar to material in student 1's thesis. The apparently copied material was not attributed to the thesis or distinguished⁷ from the other contents of paper 1 to show that it was derived from the thesis. Although the remaining material in paper 1 did not appear to have been copied from student 1's thesis, its contents appeared to have been derived from student 1's thesis. In paper 2, a passage of equations, three figures, and approximately half of the contents of 2 tables (and the associated references) appeared to be identical or substantially similar to material in student 2's thesis. The apparently copied material was not attributed to the thesis or distinguished from the other contents of the paper. The acknowledgment sections in papers 1 and 2 recognized students 1 and 2, respectively, for their "technical assistance."

In Tabs 1 and 2, identical or substantially similar text, figures, or tables in each student's thesis are annotated in sequentially numbered sections and cross-referenced to the corresponding paper.

³ Student 2's M.S. thesis was entitled [REDACTED] It was accepted by the Department at the University in 1991.

⁴ Paper 2, entitled [REDACTED] was authored by the subject and [REDACTED] and was published in [REDACTED]

⁵ NSF funded proposal [REDACTED], entitled [REDACTED] was under the direction of [REDACTED] Vice President for Research and Institutional Advancement, [REDACTED] and [REDACTED] all from the University. It was a continuing award that began on [REDACTED] and, according to the NSF's database, closed on [REDACTED]

⁶ The acknowledgment in paper 1 cited [REDACTED] which does not correspond to any award listed in NSF's files. The correct citation should have been NSF Grant [REDACTED] The acknowledgment in paper 2 cited NSF grant [REDACTED]

⁷ Throughout this report, the term "distinguished," is used to indicate a method, such as font, indentation, or quotation marks, that is used so that the reader can differentiate between copied material and original material in the document being read.

UNIVERSITY'S INITIAL HANDLING OF THE ALLEGATIONS

OIG was further informed that the University had initiated a review of allegations of "improper use of material in students¹⁾ M.S. theses." Tab 6, page 2. Subsequently, OIG received information that the University had completed an investigation and had determined that the subject was "guilty of misrepresenting work from [student 1's] thesis" in paper 1 and that "he was guilty of academic misconduct" for "not properly acknowledg[ing student 2's] work" in paper 2. Tab 3, pages 2-4.

Because OIG had not received any information directly from the University about either its proceedings or the sanctions imposed, we wrote to the Dean of the College of Science.⁸ We explained that under NSF's Misconduct in Science and Engineering regulation (45 C.F.R. § 689.8) OIG must assess independently the evidence related to allegations of misconduct that involve NSF-supported activities to determine whether NSF should take action. We explained that if the University's investigation provided a sufficient evidentiary basis for our independent assessment, we could accept it in lieu of conducting our own investigation. We requested a copy of the University's investigation report and supporting documentation. Tab 4.

The Dean's Response

In a letter to OIG, the Dean explained that when he was informed of the allegations by the Department chairperson, he was also told that the tenured faculty members of the subject's Department, minus the subject and one of paper 1's two co-authors (co-author 1),⁹ had convened to discuss this matter. Tab 5, page 1. At this meeting, all the tenured faculty members that were "present considered the violation to be extreme," and directed the subject and co-author 1 to "immediately submit[] errata to the journals requesting the addition of said students [sic] names to the publications." Tab 5, page 3. The Dean formed a Faculty Integrity Committee (Integrity Committee) composed of five department chairpersons to "investigate" the "allegations that two faculty members of the [Department] have published papers that have included extensive material from M.S. theses without properly recognizing the source of the material." The Dean noted that "plagiarism [was] a serious offense" and that the University was "obliged to investigate any suspected incidence of it." Tab 6, page 1. The Integrity Committee found "no unequivocal evidence that there was substantial misappropriation of the students' intellectual property," and that the subject

acted somewhat capriciously in his assignation of co-authorships versus acknowledgments for "technical assistance," and further that he exercised poor

⁸ [REDACTED] hereafter "the Dean."

⁹ Co-author 1, [REDACTED] is a tenured faculty member. He and the subject are members of the same Department.

judgment in that he consulted neither with [co-author 1], nor with students [1] and [2], during the preparation and submission process associated with these papers. We also found evidence of a lack of forthrightness and honesty in [the subject's] dealings with these students, which we believe may be symptomatic of a generally hostile environment between [the subject] and his students and which may have exacerbated the students' perception of the lack of significant recognition of the contributions of their work to the papers in question. [Tab 6, page 4.]

Further, the Integrity Committee found that co-author 1 was "not culpable of any professional misconduct in this matter." One of its recommendations was that the subject "be censured by the Dean in a manner that he deems appropriate." Tab 6, page 4.

The Dean reviewed the Integrity Committee's report and other available information, and interviewed the students, the subject, and co-author 1. Tab 5, page 1. He found that co-author 1 was "not guilty of any academic misconduct with regard to the preparation and publication of the paper [1]." Tab 6, page 16. The Dean found that with respect to the "serious allegations of academic misconduct" that involved two students' theses, the subject was "guilty of two incidents of academic misconduct." Tab 6, page 14. The Dean told the subject that in view of "both of these instances," the subject was required to do the following as a way to rectify the situation:

- 1) "write separate letters of apology to the students in which [he] acknowledge[d] that [he] used their intellectual property and published it as though it was [his] own;" and
- 2) "write letters to the editors of the journals concerned in which [he] express[ed] regret at the oversight of acknowledging [student 1] as a co-author and [student 2's] contributions by proper reference to [student 2's] thesis, and expressed [his] desire to publish errata to these papers at [his] own cost." Tab 6, page 15.

In addition, the subject was told that he:

- 1) was "censure[d]" for his acts of academic misconduct;
- 2) should be aware that "any similar actions in the future may result in cancellation of [his] tenure contract and [his] separation from the University;" and
- 3) would "not be eligible for any salary increase for three years beginning with the current year." Tab 6, pages 14-15.

OIG's review of the Integrity Committee's report determined that it did not contain sufficient documentation to allow us to assess independently the evidence related to the allegations. We wrote to the Dean requesting that the University complete a final investigation report to document its conclusions and actions. We noted that the University's previous examination of the allegations had not been conducted pursuant to applicable institutional policies, and recommended that those policies be used as a guide in developing a final investigation report. Tab 7. The Senior Vice President for Research informed us that he had appointed an Investigation Committee.¹⁰

THE UNIVERSITY'S INVESTIGATION¹¹

The Investigation Committee's efforts were guided by the [REDACTED]. The Investigation Committee focused on the allegation that the subject "published two scientific papers using material from two graduate students' Master's theses without giving the students deserved authorship credit." Tab 8, page 5. During the course of the investigation, it examined whether the subject's actions could be considered: 1) plagiarism of the students' M.S. theses, and 2) retaliation against the students.¹²

The Investigation Committee's chronology of the major events associated with this case established that, shortly after students 1 and 2 started their graduate studies under the direction of the subject, the subject left the University on a 1-year sabbatical. In his absence, co-author 1 was designated to supervise and assign grades¹³ for the subject's graduate students. About 1 month before the subject returned from his sabbatical, students 1 and 2 submitted separate conference abstracts of their work on which each was the first author and the subject was listed as a co-author. The students made their conference presentations shortly after the subject

¹⁰According to the [REDACTED] the Senior Vice President for Research [REDACTED] is the designated person for appointing an Investigation Committee if an inquiry determines that an allegation has substance. The Policy provides explicit guidelines for the University to follow concerning alleged misconduct in science with respect to notification of the Office of Scientific Integrity. The Policy contains no similar guidelines for notifying other Federal funding agencies.

¹¹We have attached to this report the directly relevant materials from the Investigation Committee's report. We would be pleased to provide additional information upon request.

¹²NSF's Misconduct in Science and Engineering regulation states that one form of misconduct in science is the "retaliation of any kind against a person who reported or provided information about suspected or alleged misconduct and who has not acted in bad faith." 45 CFR § 689.1(a)(2). This was not such a case because the acts described as retaliation—the alleged plagiarism of the students' theses in retaliation for the students leaving the subject's research group—occurred well before the misconduct allegations were brought to the administration's attention. Consequently, the alleged "retaliation" was not against someone who had reported, in good faith, an allegation of misconduct.

¹³In a memorandum dated [REDACTED] the subject requested that co-author 1 supervise and assign grades for several of his courses, such as courses for his graduate students' research and thesis. Tab 8, page 43.

returned to the University.¹⁴ A little over 1½ years later, about 2½ years after both students began working on their theses, their theses were approved and signed by their respective committees, which completed their degree requirements. About 3 months after students 1 and 2 completed their degree requirements, each submitted a conference abstract that again listed each student as the first author and the subject as the co-author. The subject took leave from the University again shortly after the students made their conference presentations. While the subject was away on leave, he prepared and submitted papers 1 and 2 to the journals. Tab 8, pages 55-56.

The Investigation Committee compared papers 1 and 2 to the students' theses. It was unable to compare these materials to the original laboratory notebooks because they were unavailable. Tab 8, page 20. The Investigation Committee found that text, figures, and a table were copied from student 1's thesis into paper 1 and that figures were copied from student 2's thesis into paper 2. Tab 8, pages 21-22. It determined that there was "no doubt that [paper 1]" was "taken from the Master's thesis of [the subject's] student, [1]." Tab 8, page 14. Also, paper 2 "contain[ed] figures from the Master's thesis of [the subject's] student, [2]." Tab 8, page 14. The Investigation Committee first considered whether the subject committed plagiarism. It concluded

that the original ideas for these works are directly traceable to earlier published works of [the subject], and that the [data] on which the papers are based were obtained upon his request and, indeed insistence, and that the interpretations of the [data] were dependent upon [the subject's] expertise. The Committee also conclude[d] that the original text prepared by [student 1] describing the experiment for inclusion in his thesis was extensively revised/rewritten by [co-author 1]. Because of the collaborative manner in which this work was conducted, the Committee finds it to be shared intellectual property. Hence, the Committee cannot characterize [the subject's] publication of this work as an act of plagiarism.¹⁵ [Tab 8, pages 14-15.]

Despite finding that the material was "shared intellectual property," the Investigation Committee noted that portions of the students' work and preparation for meeting presentations were completed in the subject's absence. Tab 8, page 23. The Investigation Committee said the subject "asserted" that student 1 "was 'not a self motivating or self initiating person'." Tab 8, page 22. The Investigation Committee, however, concluded that

¹⁴The students' individual lists of authored works are included in Tab 8, pages 57 and 58. Student 1 was credited with four publications, one conference proceeding, and four presentations. Student 2 was credited with one conference proceeding and three presentations.

¹⁵Although the Investigation Committee concluded that the subject had not committed plagiarism, its discussion appears to focus on student 1; the Investigation Committee does not discuss the materials apparently copied from student 2's thesis into paper 2 with any specificity.

"[t]his [was] clearly not supported by the evidence; both [student 1] and [student 2] were active in his absence" Tab 8, page 22. The Investigation Committee determined that,

[w]hile it is impossible, in the absence of the necessary documentary evidence of notes and notebooks, to determine precisely which parts of the papers were whose responsibility, two conclusions can be made. First, both [student 1 and 2] were responsible, in [the subject's] absence, for beginning their projects and for obtaining sufficient results to prepare meeting presentations. Second, the fact that the thesis committees, including [the subject and co-author 1], signed the Master's theses of [student 1] and [student 2] indicates that the thesis committees recognized that the theses contained the work of the students. [Tab 8, page 23.]

After deciding that the subject had not committed plagiarism, the Investigation Committee proceeded to consider the allegations that the subject had failed to provide the students with authorship credit. The Investigation Committee established that the subject's own academic Department, "consider[ed] it to be accepted practice to award authorship to the student on any paper which include[d] work taken from the student's thesis."¹⁶ Tab 8, page 15. In addition, the Investigation Committee's review of the subject's general authorship practice with his previous students determined that the subject had "a commendable record of joint publication with these [other] students." Tab 8, page 15. It concluded that, although students 1 and 2 had similarly "benefited from [the subject's] generous authorship policy," including "nine (9) occasions of joint authorship for [student 1] and four (4) for [student 2],"¹⁷ the subject's exclusion of students 1 and 2 in this case

contrasts sharply with his earlier authorship decisions. The Committee also judges this exclusion to be a departure from [the subject's] home department norm. The Committee unanimously concludes that [the subject] did commit an act of scientific misconduct. [Tab 8, page 15.]

The Investigation Committee determined that, while the subject was away on leave, he "compiled both of the papers in question, decided on authorship, and submitted the papers." Tab 8, page 24. It also determined that,

[s]ince the misconduct that the Committee had identified is not plagiarism but is, rather, [the subject's] denying [student 1 and student 2] legitimate authorship credit, it is the attribution of authorship [sic] that constitutes misconduct in this case [Tab 8, page 30.]

¹⁶The tenured faculty in the subject's Department "considered the violation to be extreme." Tab 5, page 3.

¹⁷See footnote 14.

The Investigation Committee concluded that neither co-author 1 nor co-author 2¹⁸ committed misconduct in science. Tab 8, page 30. OIG has no evidence that co-authors on either paper 1 or paper 2 substantially participated in the authorship or attribution decisions in this case; consequently, they are not subjects in this investigation.

THE INVESTIGATION COMMITTEE'S CONCLUSION

The Investigation Committee

unanimously conclude[d] that [the subject] did commit an act of scientific misconduct by seriously deviating from his own accepted practice, by denying two students legitimate and deserved authorship credit on work taken from their Master's thesis [sic]. All Committee members judged this act to be willful. [Tab 8, page 16.]

It reasoned that the subject had

wanted to "punish" [the two students] for leaving his research group. This hypothesis seems tenable in light of [the subject's] apparently more restrictive authorship decisions once the students had rejected him as an advisor [Tab 8, page 16.]

The Investigation Committee reviewed the sanctions that were imposed by the Dean following the Integrity Committee's efforts and found that "[b]ased on the nature and correction of this misconduct, . . . these sanctions were not grossly inappropriate." Tab 8, page 17. The report stated that the errata had been published and the letters to the students written, as required by the Dean. Tab 8, page 17.

OIG'S ANALYSIS

For NSF to make a finding of misconduct, a preponderance of the evidence must show that the subject committed culpable acts with a culpable state of mind. OIG believes that the preponderance of the evidence supports the conclusion that the subject committed acts that fall within NSF's definition of misconduct in science, and that he acted with a culpable state of mind.

¹⁸Co-author 2 was [REDACTED] faculty member in the Department [REDACTED]

The Subject's Actions

The Investigation Committee found that the subject copied text, figures, and a table in paper 1 from student 1's thesis and copied three figures in paper 2 from student 2's thesis. OIG agrees with these findings and believes that a preponderance of the evidence supports the conclusion that the subject copied materials verbatim from his students' theses. The subject did not cite the copied material to the students' theses or include either student as a co-author on the papers. The Investigation Committee concluded that, in failing to provide authorship credit, the subject committed misconduct in science, but also determined that the subject did not commit plagiarism. OIG agrees that the subject committed misconduct in science, but believes that by copying materials from the students' theses without providing authorship credit or citation to the theses, the subject committed plagiarism.

The Investigation Committee argued that the subject's actions in copying materials from student 1's thesis into paper 1 and from student 2's thesis into paper 2 could not be plagiarism because: 1) "the original ideas for these works are directly traceable to earlier published works of [the subject];" 2) "the [data] on which the papers [were] based were obtained upon [the subject's] request and, indeed insistence;" 3) "the interpretations of the [data] were dependent upon [the subject's] expertise," and 4) co-author 1 had "extensively revised/rewritten" the text of student 1's thesis. On these bases, the Investigation Committee argued that "the collaborative manner in which this work was conducted" made it "shared intellectual property." Tab 8, pages 14-15. The fact that ideas in the theses were traceable to earlier work of the subject and that the students worked under the subject's guidance does not mean that the subject is entitled to claim the students' thinking and experimental efforts as his own. The subject's contributions to their theses efforts do not allow him to appropriate his students' work as his own, especially when he had previously recognized that the theses contained the work of his students.¹⁹

The Investigation Committee's findings that the subject did not commit plagiarism is also not consistent with the commonly understood meaning of plagiarism. Plagiarism is typically described as using the ideas or writings of another and presenting it as one's own.²⁰ In this case, the subject copied words, figures, and a table, verbatim into paper 1 and three figures

¹⁹In his letter of reprimand, the Dean found that the subject "used [the students'] intellectual property and published it as though it was [his] own." As he explained to the subject, the recognition of student 1 in paper 1 "for his 'technical assistance', [] falls short of proper attribution *since the University and [the subject], as his advisor, had already recognized the work as that of [student 1] when he was awarded the M.S. degree [emphasis added].*" Tab 6, pages 14-15. In discussing the source of the data reported in papers 1 and 2, the Investigation Committee itself said, "the fact that the thesis committees, including [the subject] and [co-author 1], signed the Master's theses of [student 1] and [student 2] indicates that the thesis committees recognized that the theses contained the work of the students." Tab 8, page 23.

²⁰"Webster II, New Riverside University Dictionary," The Riverside Publishing Company, 1988.

into paper 2, without appropriate acknowledgment to the theses. Thereby, the copied materials appeared to have been his and his co-authors' rather than his students' work. The subject did not include the students as co-authors on either paper; the subject acknowledged each student in each corresponding paper as providing "technical assistance." The subject's acknowledgments do not provide proper attribution for the materials taken from his students' theses.

State of Mind

In some cases, an individual's actions compel the inference that they were done purposefully. An honor society of scientists, *Sigma Xi*, The Scientific Research Society, described the intent associated with acts of verbatim plagiarism:

At one end there is a word-for-word copying of another's writing without enclosing the copied passage in quotation marks and identifying it in a footnote, both of which are necessary. . . . It hardly seems possible that anyone of college age or more could do that without clear intent to deceive.^[21]

The Investigation Committee concluded that, in this case, the subject's failure to properly acknowledge the students' work was a willful act. It viewed the subject's actions as a form of punishment in response to the students' decision to leave his research group. Tab 8, page 16. OIG believes that the preponderance of the evidence supports the conclusion that the subject at least acted knowingly when he copied material from the theses into different papers without providing authorship credit or citation to the student's theses.

OIG believes that the evidence shows that the subject, an experienced graduate student mentor and senior author, was well aware of the commonly accepted practices for proper attribution and authorship. Among these practices are naming the thesis author as the co-author on the paper²² or distinguishing the copied material and providing a citation to the thesis. In this case, the subject did not indicate in any way that the material copied from the students' theses was not original to his paper, and, therefore, OIG need not determine what type of recognition would have been sufficient and appropriate.

The Investigation Committee stated that the subject had "directed the graduate work of four other students. He [had] a commendable record of joint publication with these students." Tab 8, page 15. It determined that the subject "markedly deviat[ed] from his own accepted

²¹ Sigma Xi, The Scientific Research Society, *Honor in Science* 15 (1984) (quoting *Definition of Plagiarism*, in Wesleyan University, Middletown, CT, *The Blue Book, Documents of Interest to Members of Teaching Staff and the Student Body* 59-60 (1984-85) and noting as the original source Harold C. Martin et al., *The Logic and Rhetoric of Exposition* (3d ed. 1969)).

²² In these circumstances, it is common practice to acknowledge the thesis as the original source of the material with phrases like "in partial fulfillment of the requirement for a M.S. degree."

practice by denying two students legitimate and deserved authorship credit on work taken from their Master's theses." Tab 8, page 14. OIG believes that the subject's "marked[] deviati[on]" from his own established practices is further evidence that, in failing to provide attribution for material taken from his students' theses, he at least acted knowingly.

Seriousness

In failing to provide authorship credit or appropriate citation for the materials he took from the students' theses, the subject seriously deviated from accepted practices in the scientific community. In the subject's Department and in the broader scientific community, the extensive collaborative effort associated with an advisee-advisor relationship is a responsibility to treat the work of others' honestly. Advisors accept this responsibility as part of their role in training and preparing future scientists intellectually, technically, and ethically in their chosen fields. For example, the tenured faculty in the subject's Department stated that

[w]e take the position that it is standard, correct and usual in United States academia for students [sic] names to be listed as co-authors on any open literature publications which resulted from their thesis or dissertation work. It is not a matter of who is right and who is wrong, it is one of following a procedure which is unquestioned in United States academic research regimen. [Tab 5, page 4.]

The American Association of University Professors (AAUP) has stated that

professors who have the guidance of students as their responsibility must exercise the greatest care not to appropriate a student's ideas, research, or presentation to the professor's benefit; to do so is to abuse power and trust.

In dealing with graduate students, professors must demonstrate by precept and example the necessity of rigorous honesty in the use of sources and of utter respect for the work of others.^[23]

Sigma Xi, The Scientific Research Society, stated with respect to the work produced by a graduate student under a mentor's supervision that

[t]he graduate student is also entitled to the same treatment in respect of written work from laboratory heads or supervisors that the latter would expect from journal editors and referees: the work should not be unduly delayed nor misappropriated. What to the student may seem undue delay may legitimately be

²³AAUP, *Statement on Plagiarism, in Policy Documents and Reports*, 79, 80 (1990) (statement numbers omitted).

seen by the supervisor as a refusal to accept work of an inadequate standard. The supervisor should be prepared to send back substandard work for as long as he or she is prepared to have the student remain in the department. However, if that work is taken and "improved" by the supervisor and published without the student's knowledge or permission, that is a different matter: call it plagiarism or plain theft.^[24]

The subject's actions are made more serious because, when he ignored his responsibilities as a mentor, which the evidence shows he knew, he deprived students under his supervision of the appropriate acknowledgment for their efforts, the loss of which diminished the development of their individual reputations and credentials in the field.²⁵

Publication is the coin of the realm and authorship is analogous to patents for inventions and copyright for creative works of literature, art, music, and computer software It is also critical for professional development because one's publication record is the basis for hiring, and career advancement through promotion, tenure, and awarding of funds for further research.^[26]

The subject's behavior seriously deviates from that expected of an experienced member of the scientific community and graduate student mentor.

Finally, the subject expressed no remorse about what he had done. The Integrity Committee report stated that "[w]hen [the subject] was asked if he felt it would be appropriate to send an errata, he said no rule was broken but he might do one as a good will gesture." Tab 6, page 13. In his letter to the Investigation Committee, he concluded that he "want[ed] to reiterate that [student 1] and [student 2] received more help from [him] and others than any of [his] previous students, and [he was] deeply disturbed about their ungrateful attitude exhibited towards [him]." Tab 8, page 68. Significantly, the Dean directed the subject to "write separate letters of apology to the students in which you acknowledge that you used their intellectual property and published it as though it was your own." Tab 6, page 15. The subject did not do this in the letters he sent to the students. Tab 6, pages 21, 23.

²⁴*Sigma Xi*, The Scientific Research Society, "*Honor in Science*," 22 (1984).

²⁵Student 2 had no published journal papers to her credit at the time the Investigation Committee wrote its report (See footnote 14). The Dean did not require or expect the subject to make student 2 a co-author on paper 2, but rather expected him to properly acknowledge student 2's thesis as the source of three figures in the paper, which the subject did. Tab 6, pages 21, 22, 26 and 29. Although paper 2 could be listed on student 2's resume as the Investigation Committee stated (Tab 8, page 17), there would be no support for any claim of authorship she might make.

²⁶Stephanie J. Bird & David E. Housman, *Conducting and Reporting Research*, Professional Ethics, Spring/Summer 1995, at 127, 145.

OIG'S CONCLUSION REGARDING MISCONDUCT IN SCIENCE

OIG concludes that a preponderance of the evidence supports the finding that the subject at least acted knowingly when he copied text, figures, and a table from student 1's thesis into paper 1, which represented over half of the contents of the paper, and when he copied three figures from student 2's thesis into paper 2 without providing authorship credit or appropriate citation. OIG concludes that he was aware of his responsibilities as a mentor to help establish his students in their scientific careers. One of the essential components of this effort is the development of a publication record. By failing to provide authorship or properly cite their work, the subject deprived the students of appropriate credit for their work and of the opportunity to establish necessary credentials in their field. We agree with the Investigation Committee's unanimous conclusion that the subject "did commit an act of scientific misconduct by seriously deviating from his own accepted practice, by denying two students legitimate and deserved authorship credit on work taken from their Master's thesis [sic]." Tab 8, page 16. Further, OIG believes in doing this he committed plagiarism. We, therefore, conclude that the subject committed misconduct in science.

OIG'S RECOMMENDED DISPOSITION

Under 45 C.F.R. § 689.2(b) in NSF's misconduct in science and engineering regulation, NSF officials, in deciding what actions are appropriate when misconduct is found, should consider the intent with which the subject acted, the seriousness of the misconduct, any evidence of a pattern, and finally, the relevance of the misconduct to other funding requests or awards involving the institution or individual. As discussed above, OIG believes that the subject acted at least knowingly when he failed to provide authorship credit or appropriate citation for his students' theses material.

OIG believes that plagiarism is unacceptable in the scientific community. The subject's actions in these two instances is even more serious because it deprived *students* under the subject's direct supervision of appropriate acknowledgment for their work, a form of recognition essential to the development of their individual reputations and professional credentials. The subject's actions are counter to the scientific community's and NSF's understanding and expectation of a mentor's responsibilities. NSF has a strong, long-standing commitment to standards of excellence in the education of future generations of scientists.²⁷ NSF programs are designed to "expose students and new scientists and engineers to emerging best professional practices"²⁸ The evidence shows that the subject's actions, rather than

²⁷See, e.g., National Science Foundation Act of 1950 § 3, 42 U.S.C. § 1862; NSF, Working Draft GPRA Strategic Plan FY 1999-2003 (12 August 1997) (prepared pursuant to the Government Performance and Results Act of 1993 § 3, 5 USC § 306).

²⁸Draft NSF GPRA Strategic Plan, 12 August 1997, page 8.

exemplifying these "best practices" for the students, embroiled them in a serious misconduct in science case at an early stage in their careers: a disquieting episode for Master's of Science students, who have little experience with the accepted practices of the scientific community or with NSF.

The Investigation Committee argued that the subject's two acts did not represent a pattern of behavior, but that, given the relationship between the students²⁹ and their departure from the subject's research group, the two acts should rather be viewed as a single act against the students. Tab 8, page 31. This finding contradicts the Dean's statement, in his letter of reprimand to the subject, that he found the subject "guilty of two incidents of academic misconduct." Tab 6, page 14. OIG agrees with the Dean's finding. The evidence shows that the subject committed two distinct acts of plagiarism when he separately copied material from each of two student's sole-authored theses into two different papers. The material from the two theses was not commingled in the two papers. OIG believes these two separate acts are evidence of a pattern of misconduct.

The University's actions addressing the subject's misconduct do not fully protect Federal funds. These actions fail to provide assurances that the subject will adhere to the community's high mentoring and scholarship standards as well as those expected by NSF, thereby protecting NSF's interests in educating the next generation of scientists and engineers. To protect Federal funds we recommend that NSF's Deputy Director take the following four actions:

- (1) NSF should send a letter of reprimand to the subject stating that it has concluded that he committed serious deviations from accepted practice and thus misconduct in science when he copied material from his students' theses into two papers without providing authorship credit or appropriate citation.³⁰
- (2) NSF should require, for 3 years from the date of the final disposition of this case, that a University official, who understands the acceptable community standards for the supervision of graduate student development and training, provide a signed annual assurance that the subject has adhered to the community's mentoring and scholarship standards in connection with NSF-supported activities.³¹

²⁹Students 1 and 2 met during their graduate careers and eventually married each other. OIG does not think that the personal relationship between the students determines whether the subject committed one or two acts. The evidence shows that the subject, sequentially, committed two acts that victimized two different students.

³⁰This is a Group I action. 45 C.F.R. § 689.2(a)(1).

³¹Id.

(3) NSF should require, for the same period, that whenever the subject is an author on a paper, conference abstract, presentation, or report involving NSF-supported activities, he provide a letter signed by all the participants in the project certifying that they have been appropriately acknowledged for their efforts.³²

(4) NSF should require for the same period that the subject send copies of the University official's assurances and the certifications to the Assistant Inspector General for Oversight in the Office of Inspector General for retention in that Office's confidential file on this matter.

THE SUBJECT'S RESPONSE TO THE DRAFT INVESTIGATION REPORT

The subject's response³³ to OIG's draft investigation report contained no new information that would cause us to modify our report. Tab 9. In his response, the subject reiterated many of his earlier arguments and the Committees' conclusions that he had not committed plagiarism.³⁴ However, the Investigation Committee and OIG agreed that the subject had committed misconduct in science.

The subject criticized the handling of the allegations against him by the institution and the chair of his Department. OIG's review of the Committees' reports and supporting documentation showed that the subject was made well aware of the allegations against him and that he had ample opportunity to respond, which he did.³⁵

The subject claimed that the Investigation Committee's report inaccurately stated the cost of some equipment, presentation and paper submission dates, arrival and departure dates for himself and the students, and incorrectly identified who wrote the titles and contents of abstracts that were not part of our investigation. However, even if these statements are inaccurate, none of them changes OIG's findings or conclusion that he seriously deviated from

³² Id.

³³ As part of the subject's response to OIG's draft investigation report, he indicated that he had not received item 2 (NSF misconduct regulation, 45 C.F.R. § 689) that was listed as an enclosure in OIG's cover letter for the draft report. OIG sent a copy of that regulation via overnight federal express to him. OIG noted, however, that the subject was sent a copy of the 2 June 1995 letter to the Dean concerning the institution's investigation, which included the regulation as an attachment. Tab 7.

³⁴ Our investigation report discusses these conclusions (pages 3, 6, and 7) and explains why we do not agree with them (pages 9-11).

³⁵ The subject quotes passages from an article quoting the current Chairman of the National Science Board, in which the Chairman discusses the desirability of keeping investigations confidential and separating the investigative and adjudicative functions at NSF. Although these practices are desirable, their less than perfect implementation by a university does not necessarily compromise the outcome of its investigation. In our view, in this case the institution's investigation of this matter was fundamentally fair to the subject.

accepted practices when he denied two students legitimate and deserved authorship credit on work taken from their Master's theses and that, by doing so, he had committed plagiarism.

The subject continued to express no remorse for what had occurred and to blame the students for their shortcomings and behavior.