

Investigations

Research Misconduct Investigations

Research misconduct damages the scientific enterprise, is a misuse of public funds, and undermines the trust of citizens in science and in government. For these reasons, pursuing allegations of research misconduct by NSF-funded researchers continues to be a focus of our investigative work. In recent years, we have seen a significant rise in the number of substantive allegations of misconduct associated with NSF proposals and awards. It is imperative to the integrity of research funded with taxpayer dollars that we ensure that NSF PIs carry out their projects with the highest ethical standards.

During this reporting period, we referred five cases to NSF which are summarized below. In the first case, NSF made a finding and took actions consistent with our recommendations. NSF's decisions are pending in the other four cases.

Professor Plagiarizes in CAREER Proposal

Our investigation confirmed that a professor at a South Dakota university extensively plagiarized in the CAREER proposal he submitted to NSF. The professor claimed that he mistakenly uploaded his draft proposal in NSF's electronic proposal system. He pointed to an internal university proposal as an example of the text he meant to submit to NSF; however, the university also discovered plagiarism in that proposal as well as plagiarism in his Ph.D. dissertation from another university. The professor resigned prior to any disciplinary action by the university.

Consistent with our recommendations, NSF made a finding of research misconduct; sent a letter of reprimand to the professor; required certifications and assurances for three years; prohibited him from serving as a reviewer of NSF proposals for three years; and required him to complete ethics training.

Doctoral Student Demonstrated Pattern of Purposeful Data Falsification

A doctoral student at a Pennsylvania university purposefully falsified data and conclusions in 5 manuscripts citing NSF support, 3 of which had been published. She also convinced an individual to manipulate data to cover up her earlier falsification. However, she subsequently cooperated with the university's extensive review of data from all of her projects which revealed additional misconduct involving funding from NSF and another federal agency. At the completion of the university investigation, the student, the

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Research misconduct investigations follow the investigative model outlined in NSF's Research Misconduct regulation,¹⁴ based on the government wide policy promulgated by the Office of Science and Technology Policy.¹⁵ This investigative model is unique in that it generally relies on awardee institutions to conduct their own independent investigations, subject to our review and further investigation, followed by NSF's agency adjudication.

When our office receives a research misconduct allegation, we first conduct a confidential inquiry to establish whether the allegation is substantive. This inquiry often involves confidential communication between our office and the accused subject and does not involve the subject's institution. If the subject is able to provide an adequate explanation to dispel the allegation, our inquiry closes and only the subject is aware that the matter was brought to our attention. This protects the subject's reputation from being unjustly tarnished by frivolous or minor allegations.

In cases where the allegation appears to have substance, we move into the investigation phase, which in most cases involves referring the case to the subject's institution. The institution conducts an investigation and provides us with its investigation report, which we review for fairness, accuracy, and completeness. If the institution's report is thorough and adequate for our purposes, we use the report as the basis for our independent investigation; if the university did not fully address all of the issues, we conduct additional investigation ourselves.

Based on the university's report and any additional investigation on our part, if we conclude that the subject committed research misconduct under NSF's definition (see sidebar), we write an investigation report, and provide the subject an opportunity to comment on our assessment of the evidence and recommended actions. After reviewing the subject's comments, we finalize the report and send it to NSF's Deputy Director for adjudication. If the Deputy Director concludes that the subject committed research misconduct and imposes actions, the subject can appeal the decision to NSF's Director, whose decision is final.

university, and the other federal agency entered into a three-party voluntary settlement agreement in which the university rescinded her graduate degrees, and she agreed not to apply for funding from the agency for 3 years. However, based on the actions of the university and the other federal agency, we did not believe that the government's interests were adequately protected because the other agency's voluntary exclusion did not have the full government-wide effect of a debarment.

Our further investigation also determined that the student's current employer is a federal contractor that produces reports and data analyses which it sells to both public and private sector clients. We identified two reports on which

¹⁴ 45 C.F.R. part 689.

¹⁵ 65 Fed. Reg. 76260 (12/6/00), available at http://www.ostp.gov/cs/federal_policy_on_research_misconduct.

the student was a coauthor, and the student admitted to us that she performed some of the data analysis in these reports and indicated that her current employer is unaware of the research misconduct finding at the university.

We concluded that the student committed purposeful falsification as part of a larger pattern of misconduct. We have recommended that NSF: make a finding of research misconduct; send the student a letter of reprimand; debar her for 5 years; require her to complete ethics training; require her to seek either retraction or correction of the published work; require her to provide certifications and assurances for 3 years following the debarment period; and bar her from serving NSF as a reviewer, advisor, or consultant for 3 years following the debarment period.

Research Professor Fabricates and Falsifies Data in NSF Proposal

A research professor at a Nevada university fabricated images in his NSF proposal by assembling several smaller images into a larger image, and falsified the image description. The professor asserted that the fabrication and falsification were without consequence because experiments he conducted after submitting the proposal confirmed the images he had fabricated.

The university investigation recommended a finding of research misconduct, but the professor resigned before the university took action. We have recommended that NSF make a finding of research misconduct; send the professor a letter of reprimand; debar him for 2 years; require certifications and assurances for 3 years after the debarment ends; prohibit him from serving as a reviewer of NSF proposals for 3 years after the debarment ends; and require him to complete a course in ethics training.

Student Plagiarizes in Proposal Requesting Doctoral Funding

A doctoral student at a Nevada university acknowledged that he submitted a Doctoral Dissertation Improvement Grant proposal to NSF that contained material copied from two other sources. The student, who was the co-PI, asserted that this happened because he accidentally submitted an early draft of the proposal as a result of problems he was having with his computer when he was conducting fieldwork abroad.

We referred this matter to his university which concluded that although the student had plagiarized, his actions were careless and therefore did not constitute research misconduct. The university took several actions against the student including requiring him to write letters of apology to the university, NSF, and the authors of the source documents and denying him any additional departmental funding.

Although we agreed with the university's overall assessment, we concluded that the evidence demonstrated that the student acted recklessly, not carelessly, and therefore his actions constituted research misconduct. We recommended that NSF make a finding of research misconduct and that it take other actions including sending a letter of reprimand; requiring certifications for 1 year; and requiring completion of a course in research ethics.

PI and Co-PI Plagiarize in Joint and in Separate Proposals

We substantiated an allegation that a PI and a co-PI from a Wyoming university plagiarized in one joint NSF proposal, two other proposals by the PI, and a fourth proposal by the co-PI.

The university determined that the PI recklessly or knowingly committed plagiarism in three NSF proposals and that the co-PI recklessly plagiarized material in two NSF proposals and 3 published articles. The university required both individuals to complete ethics training, conduct a presentation on research ethics, and certify for two years that their proposals to federal entities do not contain plagiarism. We concluded that the co-PI's actions did not rise to the level of research misconduct. We agreed with the university that the PI's action constituted research misconduct and have recommended that NSF make a finding of research misconduct, send a letter of reprimand, and require certifications from the PI for one year.

OIG Reviews University Findings regarding Human Subject Regulation and Plagiarism

In the first case, we reviewed a university's actions related to alleged violations of NSF's human subjects regulation on an NSF-funded project. In the second, we reviewed findings related to plagiarism on an NSF award.

PI and co-PI Violated Human Subjects Regulation

The Federal Policy for the Protection of Human Subjects (Policy) imposes strict requirements on all federally funded research that involves people as the subjects of the research. At NSF, this includes all awards to develop and implement innovative ways to advance science, mathematics, and engineering education for students. Awards involving human subjects are overseen by panels at the awardee institutions called Institutional Review Boards (IRBs). On several occasions, we have found problems with awardees' compliance with the Policy.

We received information that a New Mexico university's IRB terminated work on an NSF-funded project and ordered a portion of the data destroyed because it found numerous violations of the Policy by the PI and co-PI. The violations included unapproved medical and cognitive testing and inappropriate data sharing. Our investigation concluded that although the PI and Co-PI should have been more cognizant of their responsibilities under the policy, they were in frequent contact with the IRB and believed they were complying with IRB policies. Therefore, we determined that no further action by NSF was necessary, and we sent letters to the PI, Co-PI, and the university IRB apprising them of the need to ensure compliance with federal, university, and grant Human Subject Regulations.

NSF's Definition of Research Misconduct¹⁶:

- a. Research misconduct means fabrication, falsification, or plagiarism in proposing or performing research funded by NSF, reviewing research proposals submitted to NSF, or in reporting research results funded by NSF.
 1. Fabrication means making up data or results and recording or reporting them.
 2. Falsification means manipulating research materials, equipment, or processes, or changing or omitting data or results such that the research is not accurately represented in the research record.
 3. Plagiarism means the appropriation of another person's ideas, processes, results or words without giving appropriate credit.
 4. Research, for purposes of paragraph (a) of this section, includes proposals submitted to NSF in all fields of science, engineering, mathematics, and education and results from such proposals.
- b. Research misconduct does not include honest error or differences of opinion.

Graduate Student Misinterprets Advisor's Advice and Plagiarizes

An Ohio university informed us it had reviewed an allegation of plagiarism under an NSF award and concluded an investigation was warranted. The PI, who was also the department chair, was the thesis advisor for several students who worked on related research within his group over several years.

During the university investigation, one of the students who the PI advised stated that he had looked at copy of one of the PI's former student's thesis to check his work, but denied that he had copied text from the thesis of that student, who was also advised by the same PI. During the course of the university's investigation, the PI acknowledged that he encouraged students to use wording from former students' work, had not carefully explained the importance of citation, and that he accepted responsibility for not checking to see if text had been copied and for failing to explain the importance of citation.

Although the university acknowledged shortcomings in the PI's guidance, it concluded that the student was responsible for the plagiarism. As a result of these shortcomings, the university recommended the institution of a university-wide program to promote the responsible conduct of research for faculty, staff, and students. We sent the student a warning letter with guidance about proper citation practices, and the PI a letter of admonishment. We concluded that the PI's poor mentoring mitigated the student's conduct and that the university's actions were sufficient to protect NSF's interests.

¹⁶ 45 C.F.R. § 689.1.

Actions by NSF Management on Previously Reported Research Misconduct Investigations

NSF has taken administrative action to address our recommendations on six research misconduct cases reported in our March 2009 report. In each case, NSF made a finding of research misconduct and issued a letter of reprimand. NSF also took additional significant actions in response to our recommendations which are summarized below.

- **Associate Professor at a Texas University Plagiarized Into Seven NSF Proposals, Resulting in Awards Totaling \$420,000.**¹⁷ NSF debarred him for 18 months; required certifications and assurances for 2 years; and barred him from serving as an NSF reviewer for 2 years.
- **PI from a Northeastern University Plagiarized Text into Two NSF Proposals.**¹⁸ NSF proposed to debar the PI for 5 years; prohibited her from serving as an NSF reviewer, advisor, or consultant for 5 years; and directed her to submit certifications and assurances for three years following the expiration of the debarment. NSF's final decision on the proposed debarment is pending.
- **PI From a California Institution Submitted a Proposal In Which a Third of the Text Was Inadequately Cited.**¹⁹ NSF required certifications and assurances for 1 year; and barred him from serving NSF as a reviewer, advisor, or consultant for 1 year.
- **PI From an Indiana University Submitted a Proposal Containing Plagiarized Text.**²⁰ NSF required certifications and assurances for 2 years
- **Professor at Pennsylvania Institution Plagiarized Text into Two NSF Proposals.**²¹ The Deputy Director required certifications and assurances required for 3 years; the professor filed an appeal to the Director, which is pending.
- **PI at a Maryland University Submitted Three NSF Proposals Containing Plagiarized Text.**²² NSF required certifications and assurances required for 1 year; barred him from serving NSF as a reviewer, advisor, or consultant for 1 year.

¹⁷ September 2008 Semiannual Report, p.40; March 2009 Semiannual Report, p.44.

¹⁸ March 2009 Semiannual pp.45-46.

¹⁹ March 2009 Semiannual Report, p.46.

²⁰ March 2009 Semiannual Report, p.46.

²¹ March 2009 Semiannual Report, p.47.

²² March 2009 Semiannual Report, p.47.

Administrative Investigations

During the past six months, we conducted an administrative investigation of an NSF employee who abused the time and attendance system to receive pay for hours she did not work. We also found that a program manager violated NSF policies when he posted a confidential proposal on his university website.

NSF Employee Fails to Account Properly for Hours Worked

We received an allegation that an NSF employee was taking leave and failing to report it. We analyzed her time and attendance records, telephone records, and email folders. Based on this analysis, we concluded that she failed to account properly for her time worked and leave taken in order to receive pay and credit for hours she did not work. Specifically, we identified 10 days for which the employee was paid for time she did not work, 4 days she did not sign out, and 6 days she failed to account for her time accurately. As a result of this abuse, she earned \$974 for 49 hours she did not work. We referred the results of our investigation to NSF management, and their decision in this matter is pending.

NSF Program Manager Posts Confidential Proposal on His Personal Webpage

We substantiated an allegation that an NSF program manager, who was in a temporary position through the Intergovernmental Personnel Act, posted a recent NSF proposal on his university website where it was publicly available for a year. He had posted the proposal to make it available to two additional reviewers he had solicited, who were not in NSF's electronic proposal system. Publicly posting a confidential proposal violated NSF policy. NSF's *Policy and Award Manual* defines the proposal as one of the pieces of sensitive information program directors handle in the course of their duties, and NSF policy makes clear that pending proposals must be safeguarded and protected from unauthorized disclosure. In addition, this proposal would not have been, and is not, available through a Freedom of Information Act request.²³

The program manager's failure to include the reviewers in NSF's system precluded them from being screened for conflicts of interests. It also resulted in NSF not having an accurate system of records regarding its review process, which is important so decisions can be fully documented and in cases where review panelists are involved, NSF can comply with the Federal Advisory Committee Act.

Finally, it is important for NSF to know who has access to a proposal in the event of an unauthorized release or an allegation of plagiarism. A further problem resulting from the inappropriate use of reviewers outside of NSF's system is the fact that those reviewers did not receive an express promise of confidentiality, which NSF's procedures require. As a result, if the PI were to submit a Privacy Act request, NSF may not be able to withhold the identity

²³ 45 C.F.R. § 612.7(a)(4)(i).

of those individuals, as it does for all other reviewers. NSF has advised the program manager, who is no longer at the agency, that he must follow appropriate procedures if he returns to NSF.

NSF Takes Steps on Cases of Employee Misconduct

In recent years, we have referred a number of employee misconduct cases to NSF and made many management recommendations for improving NSF's workplace environment. NSF has taken several significant steps to address recommendations arising from employee misconduct investigations we reported in our March 2009 semiannual report. This misconduct involved improper use of NSF information technology resources, as well as phone, time and attendance misuse, and abuse of transit subsidies.

In response to our recommendation regarding improper internet use by eight employees, NSF installed internet filtering software that prevents access by NSF computers to inappropriate web sites such as gambling and sexually explicit adult sites. NSF is also exploring additional software that would filter incoming and outgoing emails and attachments to prevent inappropriate material from being received and sent from NSF information technology resources.

In addition, in September 2009 the NSF director issued a memorandum to all NSF staff detailing the safeguards, training, and policies that the agency has implemented pertaining to inappropriate use of government computers. This memorandum makes it clear that NSF has a zero tolerance policy for this type of misconduct and that NSF will strictly enforce this policy. We fully support these initiatives and look forward to their implementation.

In response to our recommendations regarding inappropriate computer use by eight employees, NSF removed two employees, suspended one for 60 days and reduced his grade, suspended one for 15 days and suspended two others for one day. Two had previously left NSF. The six remaining employees retain the right to appeal the action against them. In another case, NSF terminated an employee who inappropriately used his government computer to email sexually explicit material. After he filed a grievance, the action against him was changed to resignation.

NSF proposed to terminate two employees for time and attendance abuse; however, both resigned in lieu of being removed. NSF issued an Official Reprimand to an employee for excessive use of the phone during work hours. Finally, NSF implemented all of our recommendations regarding programmatic improvements to its transit subsidy program and took personnel actions against the four current employees who abused their government-provided transit benefits. Two were required to repay the excess subsidies they received, and two received oral counseling.

NSF recently issued a draft of the Director's "Employee Action Agenda" with a goal of creating a model workplace at NSF. We commend the agency for this agenda which includes goals of mandatory training for all managers and supervisors in harassment prevention, timely responses to misconduct, and the development of a formal performance management framework for individuals

under the Intergovernmental Personnel Act, among other things. We look forward to continuing to work with NSF to help ensure the integrity of the agency's operations and to prevent abuse of government resources.

Civil and Criminal Investigations

We investigate violations of federal civil and criminal statutes by applicants for and recipients of NSF funds, as well as NSF employees and contractors. When we find substantial evidence of wrongdoing, we refer cases to the Department of Justice for prosecution, and recommend administrative action by NSF in appropriate circumstances.

University Returns \$31,521 to NSF and Conducts Training on Federal Requirements

We received allegations that a PI at a Massachusetts university purchased equipment for his children's use, double-billed NSF and other funding sources for his travel expenses, and traveled with his office administrator and charged her expenses to NSF grants. The PI's university had reviewed the PI's past and present federal and non-federal research activity and found no evidence of wrongdoing by the PI; however, it identified \$31,521 of questioned costs, as well as areas for improvement for the PI and the grant administrators in his department. As a result, the university returned \$31,521 to NSF, and the PI and his department's grant administrators received training on federal requirements and university policies.

NSF Receives \$10,758 in Settlement of Allegations of Excessive Faculty Salary Charges by University

A multi-agency investigation led by the Department of Defense (DOD) OIG determined that a Massachusetts university overcharged salary for several faculty members to numerous awards from the Department of Energy, DOD, and NSF. Without admitting that its faculty salary charges were excessive, the university changed its policy to prevent this type of mischarging in the future and paid \$636,500 to settle the matter. NSF's share of this settlement, based on its proportionate share of the mischarges, was \$10,758.

Criminal Convictions Result in Debarments by NSF

NSF has taken action in response to our recommendations on several criminal convictions we reported in our March 2009 report.

- NSF debarred a former research center employee for 5 years after she pled guilty to 17 counts of mail fraud and 5 counts of theft from an organization receiving federal funds following her use of state-issued purchase cards to buy items for personal use. She was also sentenced to 32 months in prison and ordered to pay restitution of over \$300,000.
- NSF debarred for 5 years an individual who pled guilty to impersonating an NSF official to lure women to participate in a fake NSF project. He was also

ordered to pay more than \$80,000 in fines and penalties and sentenced to 5 years probation with real-time monitoring of his computer use, and to 6 months home detention.

In four other cases in which we recommended that NSF impose 3-year debarments, NSF issued Notices of Proposed Debarment that are pending. The cases include:

- A research center employee who received kickbacks for contracts—this individual was sentenced to 12 months home detention and ordered to pay more than \$80,000 in restitution;
- A university employee who used a government purchase card for personal use and charged more than \$11,000 to an NSF award—the university terminated her and paid NSF back; she pled guilty to embezzlement, was sentenced to 5 years probation, and was ordered to pay full restitution;
- A PI who improperly charged over \$280,000 to an NSF award—the university returned the improperly charged money to NSF and terminated the PI; and
- A PI who improperly managed an NSF award and failed to disclose conflicts of interests.

NSF Imposes Oversight Requirements on University that Misspent Award Funds

After an OIG investigation disclosed problems with use and management of NSF award funds at a Georgia university, pursuant to our recommendations NSF placed the university on advance monitoring and imposed special payment conditions on all of its NSF awards. Although we ultimately determined that this case did not warrant civil or criminal prosecution or debarment, we recommended that NSF take administrative action to protect its award funds.

We are pleased to report that NSF OIG has again received 5 U.S.C. §2302(c) certification from the Office of Special Counsel (OSC). We have maintained this certification for over six years.

5 U.S.C. §2302, Prohibited Personnel Practices, at §2302(c), requires that all federal employees be informed of the rights and remedies available to them under the prohibited personnel practice and whistleblower retaliation protection provisions of Title 5. OSC established its 2302(c) Certification Program to facilitate efforts to meet these statutory obligations.

To gain this certification, we ensured that informational posters were displayed throughout our work areas; ensured information about prohibited personnel practices and the whistleblower protections was provided to current employees and to new employees as part of an orientation process; ensured supervisors were trained on these subjects; and established a link to OSC on the OIG webpage. Both OIG and the National Science Board are 2302(c)-certified.