

# Investigations

## 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.

Our investigations yielded significant results during this reporting period, including resolution of a case against a major university with a \$1.2 million settlement and five-year compliance plan; recovery of more than \$875,000 in four ongoing cases; and arrests in two cases.

### *Recovery of \$11.4 Million of Wrongful Contract Charges*

We investigated overcharges by the contractor that provides support for the U.S. Antarctic Program. The overcharges, which were identified by an audit and referred to the Office of Investigations, occurred because the contractor reclassified allocations of indirect costs from its corporate parent headquarters as direct costs in the contract, in a manner inconsistent with its Disclosure Statement. This resulted in non-compliance with applicable Cost Accounting Standards. Following our investigation, we referred the matter to the U.S. Attorney's Office for consideration of civil action under the False Claims Act. After further investigation and coordination with the Department of Justice, the U.S. Attorney declined to initiate civil litigation and returned the matter to OIG to work with NSF management to develop a resolution.

Subsequently, NSF management entered into discussions with the contractor over the cost impact of the noncompliance. NSF and the contractor agreed that the total amount that the contractor mischarged was \$10.8 million in direct costs, as confirmed by the audit. Of this amount, NSF recovered \$6.9 million by reduction of the contractually authorized Annual Program Plan ceilings. The remaining \$3.9 million will be excluded from the final invoice. The indirect costs and award fees associated with these amounts constitute an additional \$600,000 of recovered funds.

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### ***College Misuses NSF and NASA Funds, Repays \$1.2 Million***

Our joint investigation with NASA OIG involving a PI at a Georgia college who submitted false claims to NSF and NASA grants over a five year period led to a settlement agreement requiring the college to reimburse the federal government \$1.2 million. The college also agreed to a five-year compliance plan and did not renew the PI's employment contract.

Our investigation revealed that the PI charged personal travel costs to an NSF grant and two NASA grants, used grant funds for personal purchases, and charged expenses for an art exhibit such as advertising and printing. The PI also charged the federal grants for activities related to his personal interest in art such as trips to attend art exhibits, festivals, and meetings with art experts all over the world.

### ***Company Owner Indicted for Fraudulently Obtaining Award Money from the STTR Program***

The owner of a South Dakota company was indicted by a federal grand jury for 11 counts of submitting false claims, making false statements to the government, wire fraud, and receiving stolen government money in relation to a \$150,000 Small Business Technology Transfer (STTR) award for a project to be carried out in conjunction with a South Dakota university. The company owner lied when he certified to NSF that the PI was primarily employed by the company, as required by the STTR program—in fact, the PI was not employed by the company. When the owner received the initial \$100,000 payment from NSF, he converted most of it for his personal use.

The company owner was arrested following his indictment, and his trial is scheduled to begin in November 2011.

### ***Florida Company Owner Arrested for Fraud and Misuse of NSF Logo***

Our investigation found that a Florida company was using the NSF name and logo fraudulently for commercial gain. The company posted NSF's logo on its website and falsely claimed that NSF inspected and audited its laboratories. NSF does not have the responsibility or authority to inspect commercial laboratories, or to endorse commercial products. NSF special agents, with assistance from agents with Homeland Security Investigations, executed a search warrant of the company and arrested the owner. The sworn complaint alleges that the owner committed wire and mail fraud, conspiracy, and misuse of a federal government seal.

### ***More Than \$875,000 Recovered in Four Ongoing Investigations***

Most investigations of wrongful charges to NSF awards result in repayment, restitution, or funds put to better use concomitant with the conclusion of criminal or civil legal action. In the following four cases, over \$875,000 of award funds were either recovered or retained by NSF and put to better use, even as the investigations continue.

- We determined that a PI at a Georgia university was also employed full-time as a tenured professor at a foreign university, unbeknownst to either institution. The PI resigned and accepted a position at a Massachusetts university. The PI had one active NSF award at the Georgia university—however, based on our recommendation, NSF terminated the award, resulting in \$295,933 funds put to better use.
- A second ongoing investigation disclosed that an employee at a Delaware university charged significant travel expenses to an NSF award that were unrelated to the award. The university found \$133,000 to be unallowable, and our investigation found an additional \$156,000 of fraudulent and unallowable costs. During our investigation, the employee manipulated account information and records to transfer improper costs off the award. Our investigation and the university's review are ongoing, and we anticipate additional recoveries.
- A joint investigation with the Department of Energy (DOE) regarding duplicate funding related to NSF and DOE awards, found significant evidence that the NSF award was duplicative. NSF accepted our recommendation and terminated the award, providing NSF with \$261,509 to put to better use. The matter was referred to the U.S. Attorney's Office, and the joint investigation is ongoing.
- In the fourth ongoing investigation, a PI at a Texas university improperly subcontracted work on his NSF grant to a company in which he had 25 percent ownership. The PI falsely represented to the university that the company was selected competitively. We confirmed the PI's misrepresentation, and the university immediately cancelled the subcontract and returned \$30,000 which had been charged to the grant.

### ***Two Former PIs Face Criminal and Civil Consequences for Fraud***

A former PI from a New Jersey university pled guilty to theft of federal funds in U.S. District Court. The PI submitted fraudulent claims to the university for travel associated with his research for two NSF grants and an Army contract. He fraudulently reported that he attended conferences in New York City, Miami, New Jersey, and China, and created false registrations and receipts to support his fraudulent reimbursement claims.

For two costly trips to China, the PI submitted receipts that obfuscated the fact that he was hundreds of miles away from the conferences he claimed to have attended. The university terminated the PI, and as part of the plea agreement, the former PI paid restitution of \$14,075 to NSF and \$5,744 to the Army. He was sentenced to one year unsupervised probation; and ordered to pay a \$5,000 fine. Civil claims based on the PI's fraud are pending.

A former professor of an Indiana university was indicted on federal charges of theft and mail fraud due to his misuse of NSF grant funds. Our investigation determined that the professor used NSF grant funds to purchase items for

personal use. The university conducted its own investigation and dismissed the professor. Based on our recommendation, NSF suspended the former professor government-wide, pending the conclusion of our investigation.<sup>1</sup>

### ***Two Awardees Repay Funds and Implement Strengthened Internal Controls to Avoid Future Wrongdoing***

Our proactive review of awards with no final project reports that had post award requests for funds, identified an award to a community college system that drew down \$225,000 over 15 months after the expiration of the award. A portion of the post-award funds had been used for payments to the project manager and external evaluator, as well as a duplicate payment to the PI. As a result of our investigation, the university returned \$31,764 to NSF and hired new personnel—including a chief administrative officer to coordinate administrative and financial efforts, and a grant compliance officer to assist faculty with reporting, in order to strengthen its internal controls to prevent similar unallowable payments in the future.

Our investigation involving a PI with three NSF awards found that the PI was using NSF award money for personal benefit. Our review of the PI's financial records revealed multiple charges made with purchase cards that were approved by the university, but did not have proper supporting documentation. The university acknowledged that it had not provided the proper oversight of the use of purchase cards and returned \$5,000 for mischarges to its NSF awards. The college made several administrative changes to strengthen its internal controls to prevent similar unallowable payments in the future, including implementing training on the use of purchase cards for federal awards and providing detailed guidance to its budget manager on allowable and unallowable charges.

### ***Criminal Wrongdoing by Four NSF Employees***

We found that four NSF employees committed criminal wrongdoing arising from their federal positions.

- A former NSF Senior Executive Service employee pled guilty in federal court to felony charges for making a false financial disclosure to NSF and for filing a false federal tax return.<sup>2</sup> The former employee was sentenced to two years probation, 200 hours of community service, and six months home detention with electronic monitoring. He was also ordered to pay restitution of \$15,393 and a \$100,000 fine. We recommended that NSF debar this individual for ten years, and NSF's decision is pending.
- Another NSF employee misused \$3,220 of transit subsidy funds. The employee signed up for the subsidy, received the SmarTrip® card used in the D.C. area transit system, and gave the card to her daughter to use while the employee continued to commute by car. She also applied for a higher subsidy when the subsidy cap was raised, as well as a \$945 "reimbursement" for commuting costs she had not incurred. The employee admitted

<sup>1</sup> March 2011 Semiannual Report, p.22.

<sup>2</sup> March 2011 Semiannual Report, pp.20-21.

responsibility and, because her actions constituted theft of federal funds, we referred the matter to the U.S. Attorney's Office. The employee agreed to a pretrial diversion: if she remains employed, repays the money, performs 50 hours of community service, and avoids other wrongdoing, she will not be prosecuted. We referred the matter to NSF management, which issued her a letter of counseling.

- The third employee, who was under investigation by the FBI, pled guilty to submitting false statements to several federal agencies in employment applications. The employee falsified information about prior arrests, convictions, terms of imprisonment, salary history, roles at previous federal agencies, and the unfavorable circumstances under which she resigned from a prior federal position. We referred this matter to NSF management, which terminated this employee.
- The fourth employee pled guilty after indictment by a Virginia grand jury, to forgery charges, identity theft, and possession of a controlled substance. She was sentenced to two years in prison with 361 days suspended, followed by two years supervised probation. We referred this matter to NSF management, which terminated this employee.

## RESEARCH MISCONDUCT INVESTIGATIONS

Research misconduct damages the scientific enterprise, is a misuse of public funds, and undermines the trust of citizens in government-funded research. It is imperative to the integrity of research funded with taxpayer dollars that NSF-funded researchers carry out their projects with the highest ethical standards. 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 research misconduct associated with NSF proposals and awards. The NSF definition of research misconduct encompasses fabrication, falsification, and plagiarism.

NSF takes research misconduct seriously, as do NSF's awardee institutions. During this reporting period, institutions took actions against individuals found to have committed research misconduct, ranging from letters of reprimand to delayed promotions and loss of salary. During this period, NSF's actions in research misconduct cases ranged from letters of reprimand to three years of debarment.

We referred nine cases to NSF, which are summarized below. NSF's decisions are pending in eight of the nine cases.

### ***Faculty Member Blames Students for Plagiarized Text in Multiple NSF Proposals***

A faculty member PI at an Illinois university plagiarized text into seven NSF proposals submitted over a period of five years. In the proposal containing the largest amount of plagiarism, an extensive section of text was copied directly

from a review article. The PI admitted that he gave the review article to a student so that the student could prepare background material for the proposal. However, despite his knowledge of the student's poor English composition skills, the PI did not recognize the text was copied. We agreed with the university's finding that the PI was responsible for the plagiarized content in all of the proposals. We recommended that NSF: make a finding of research misconduct; send a letter of reprimand; debar the PI for one year; require certifications and assurances for four years after debarment ends; prohibit the PI from serving as an NSF reviewer for three year after debarment ends; and require the PI to complete a course in the responsible conduct of research (RCR).

### ***Faculty Member Plagiarizes Text in Six NSF Proposals***

Another faculty member PI at the same Illinois university plagiarized text into six NSF proposals submitted over a three-year period. The PI admitted that he cut-and-pasted material from a variety of sources for the background and experimental sections of his proposals. He claimed that he intended to revise the text and provide references at a later time. The PI also blamed students for some plagiarized text in other proposals. The university found, and we agreed, that the PI was responsible for the content of the proposals, and that his standard practice of proposal preparation was flawed and showed a disregard for scholarly standards. We recommended that NSF: make a finding of research misconduct; send a letter of reprimand; require certifications and assurances for four years; prohibit the PI from serving as an NSF reviewer for four years; and require the faculty member to complete an RCR course.

### ***Multiple Cases of Plagiarism in SBIR Proposals***

One of our focus areas is fraud in NSF's SBIR program. In addition to activities we undertake as part of the CIGIE SBIR Working Group and a group of special agents from thirteen federal agencies discussed previously,<sup>3</sup> we also carry out proactive reviews of SBIR awards and awardees exhibiting fraud risk factors. As a result, we currently have more than 40 open matters involving SBIR companies and awards, and we anticipate that more will be forthcoming. When we identify issues that have arisen in multiple cases, we may recommend that the NSF SBIR program implement changes to address the issues, which we did recently, as discussed on page 11. In the three cases discussed below, which came to our attention through a variety of sources, we found significant amounts of plagiarism in SBIR proposals. As a result, in the fraud awareness presentation that we provide biannually to all of NSF's SBIR Phase I awardees,<sup>4</sup> we now emphasize that the standards of scholarly conduct are the same for SBIR proposals and awards as for all other NSF proposals and awards.

In the first case, we established that a researcher copied hundreds of lines of text into six SBIR proposals. The researcher copied broad swaths of text from documents authored by other SBIR firms, from patent applications, and from the scientific literature, without quotation, citation, or reference. None of the proposals was funded, and, while the cumulative amount of plagiarism was

<sup>3</sup> See March 2011 Semiannual Report, p.32.

<sup>4</sup> See, e.g., September 2009 Semiannual Report, p.32.

substantial, the amount in each proposal was not sufficient to warrant debarment. NSF agreed with our recommendations and: made a finding of research misconduct; sent a letter of reprimand; required three years of certifications and assurances; prohibited the PI from serving as an NSF reviewer; and required the researcher to complete an RCR course. The researcher appealed the finding, and NSF's decision is pending.

In a second case, the CEO/PI of a small business submitted an SBIR proposal containing a significant amount of text copied from six sources. The PI told us he did not know whether he or one of his colleagues copied the text, but he took full responsibility. He said the small two-person company previously had no process of proposal review, but that, due to the allegation raised, he was implementing policies to prevent and detect future plagiarism. We concluded that the PI committed plagiarism, and, based on our recommendations, NSF made a finding of research misconduct against the PI; sent him a letter of reprimand; required certifications for a period of two years; and required certification of attending an ethics class within one year.

In a third investigation, the president of a small business submitted six proposals containing plagiarism. During the investigation, he acknowledged the proposals contained inadequately cited text, but said the copying was unintentional. He attributed the plagiarism to his lack of awareness of the requirement to cite the same source whenever it is quoted throughout a proposal, and his focus on the research ideas contained within the proposals. He claimed he has taken corrective measures to ensure proper citation; however, the amended proposals he provided to our office to illustrate that he now understood rules of proper citation made it clear that he still did not understand how to adequately cite material he incorporates into his proposals. We concluded that the president recklessly committed plagiarism, and recommended that NSF: make a finding of research misconduct; send him a letter of reprimand; require certifications and assurances from him for a period of two years; and require certification of attending an ethics class within one year.

### ***Ghost Writing Research Faculty Member Plagiarizes in NSF Proposal***

A new research faculty member at a New York university plagiarized text and a figure from published articles in an NSF proposal submitted under the names of a university dean as PI and department chair as co-PI. The proposal did not name the research faculty member as an author of the proposal, contrary to NSF guidance on proposal preparation. The PI and co-PI asserted that inclusion of the research faculty member's name as senior personnel in the budget justification was sufficient to acknowledge his authorship. We disagreed and referred an investigation to the university, which determined that the research faculty member committed plagiarism. We concurred with the university and recommended that NSF: make a finding of research misconduct against the faculty member; require certifications and assurances for two years; require completion of an ethics course; and ban him from serving NSF as a reviewer, advisor, or consultant for two years.

### ***Department Chair Plagiarizes in Multiple NSF Proposals***

Our investigation determined that a department chair at a Michigan university plagiarized text and figures into three NSF proposals he submitted as PI. The PI implicated a laboratory manager in his department who provided some of the copied material in one of the proposals. However, the university investigation determined that the manager was unaware that the material was to be used in a proposal, did not edit or revise the proposal, and (contrary to NSF guidance) was not listed as an author. We agreed with the university's conclusion that the PI was responsible for the plagiarized content in all three proposals. We recommended that NSF: make a finding of research misconduct; send a letter of reprimand, require two years of certifications and assurances; prohibit the PI from serving as an NSF reviewer for two years; and require the PI to complete an RCR course.

### ***New Faculty Member Plagiarizes from a Declined NSF Proposal***

A new professor at a South Dakota university knowingly plagiarized a significant amount of text in a proposal he submitted to NSF as PI. When the PI had been a postdoctoral researcher, his mentor received a confidential proposal to review for NSF—instead of reviewing the source proposal himself, the mentor asked the PI to review it because of the PI's expertise in the particular methodology. When we brought the identical text to the PI's attention, he admitted that he copied from the proposal he received from his mentor. The university's investigation concluded that the PI had knowingly plagiarized, but there was not sufficient evidence to show that the PI was informed or aware of the confidential nature of the proposal he was asked to review. We concurred with the university and recommended that NSF: make a finding of research misconduct; require certifications and assurances for two years; require completion of an RCR course; and ban the PI from serving NSF as a reviewer, advisor, or consultant for two years.

The mentor admitted to not obtaining the required permission from NSF before sharing the proposal with his postdoc. Because there was no evidence that the mentor committed any other inappropriate acts, we admonished him about the importance of confidentiality in the peer review process and closed his case with no further action.

### ***PI Relied on Consultant's and Student's Plagiarized Text***

Our investigation concluded that a Texas PI plagiarized into an assessment paper, which he had prepared and provided to one of NSF's programs at the request of a program officer. The PI had received preprints of articles from a researcher, which he provided to a consultant and a graduate student who helped prepare the paper. The PI said he failed to recognize that the paper contained verbatim text from the preprints without citation. The university concluded that plagiarism occurred, and the PI's failure to adequately review the consultant's and graduate student's work constituted a significant departure from the accepted practices of the research community. The university concluded the PI recklessly plagiarized, and delayed the PI's appointment to a chaired professorship and denied him summer salary. We concurred with the



university and recommended that NSF: send the PI a letter of reprimand informing him it has made a finding of research misconduct against him; require him to complete an RCR course and provide certifications for one year.

### ***OIG Finds Insufficient Evidence That a Researcher Committed Research Misconduct***

Our office was notified by a Pennsylvania university that it had initiated an inquiry into allegations of research misconduct by an NSF-funded PI. The allegations included falsifying research data, and concealing, deleting, or otherwise destroying emails related to the data falsification. The university never received any formal allegations against the PI; rather, the university initiated its inquiry to pursue allegations based on publicly released documents and articles.

Following inquiry and subsequent investigation, the university determined there was no substance to the allegations. During our review of the university's investigation report, we were concerned that the university did not adequately review the allegation of data fabrication. Therefore, we initiated our own investigation and interviewed the subject as well as several experts in the research field who were critical of the subject's research. Much of the current debate related to these allegations focuses on the viability of the statistical procedures the PI employed, the statistics used to confirm the accuracy of the results, and the degree to which one specific set of data has an impact on the statistical results. These concerns are all appropriate for scientific debate and to assist the research community in directing future research efforts to improve understanding. Such scientific debate is ongoing but does not, in itself, constitute evidence of research misconduct. Therefore, based on our review of the information available and the aforementioned interviews, we determined that there was insufficient evidence to support an allegation of research misconduct.

### ***Actions by NSF Management on Previously Reported Research Misconduct Investigations***

NSF has taken administrative action to address our recommendations on seven research misconduct cases reported in previous semiannual reports. In each case, NSF made a finding of research misconduct, issued a letter of reprimand, and required completion of a course in ethics training. NSF also took additional significant actions in response to our recommendations as summarized below.

- In the case of a lab technician at an Illinois university who fabricated data for a series of assay measurements,<sup>5</sup> NSF debarred the individual for three years, required certifications and assurances for three years after debarment ends, and prohibited the technician from serving as a reviewer of NSF proposals for six years.

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<sup>5</sup> September 2003 Semiannual Report, p.10.

- We reported on a graduate student at a Vermont university conducting NSF-funded research who intentionally falsified data and results, initially withholding the truth regarding her actions from her advisor, the PI.<sup>6</sup> NSF accepted our recommendation to debar the student for three years, and require certifications and assurances for three years following the debarment period.
- NSF debarred a Florida PI for two years for receiving funding from three agencies for the same project.<sup>7</sup>
- NSF proposed a one-year debarment of a Louisiana university administrator who knowingly copied a funded NSF proposal into his own proposal for a substantially similar project.<sup>8</sup> NSF also required certifications, assurances, and a ban from serving as a reviewer of NSF proposals for 3 years following the debarment period. The final debarment notice is pending.
- NSF required three years of certifications and assurances and prohibited service as an NSF merit reviewer for an Indiana university professor who plagiarized in two proposals.<sup>9</sup>
- NSF required a PI at an Alabama university who plagiarized in three NSF proposals to submit certifications and assurances for two years.<sup>10</sup>
- NSF required certifications and assurances from a PI at an Alabama university who plagiarized into two proposals he submitted to NSF.<sup>11</sup> NSF also barred the PI from serving NSF as a reviewer for one year.

## ADMINISTRATIVE INVESTIGATIONS

### *Employee Abuses NSF's Electronic Systems*

Our investigation, in response to an allegation of time and attendance abuse, found that an NSF employee often manually changed her sign-in time and frequently failed to sign out. The employee also used her NSF position to engage in several deceptive schemes. She falsified her NSF Earnings and Leave Statement to have it show she made less than she did, so she could claim greater subsidy for her child at a child care center. She sent an email to her co-worker asking him to lie to social services about being her supervisor, how much she earned at NSF, and her leave status. The employee also permitted family members to identify her as their work supervisor on their résumés, even though the employee is not a supervisor at NSF and none of her family members has ever been employed at NSF. We referred the matter to NSF management for consideration of appropriate personnel action, which is pending.

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6 March 2011 Semiannual Report, p.24.

7 September 2010 Semiannual Report, p.12.

8 September 2010 Semiannual Report, p.9.

9 March 2011 Semiannual Report, pp.25-26.

10 March 2011 Semiannual Report, p.25.

11 March 2011 Semiannual Report, p.26.

## MANAGEMENT IMPLICATION REPORTS

### *Review of NSF Wireless Device and Service Purchases*

Our review of wireless device and service purchases made by NSF offices identified nearly \$530,000 in such purchases in FY 2009 and more than \$660,000 in FY 2010. NSF owns more than 700 wireless devices, including smart phones and tablets, for approximately 1,500 staff.

We found that NSF's ad hoc, decentralized process for purchasing wireless assets and services has resulted in a myriad of devices and plans across the Foundation, and frequently even within individual offices. NSF does not have a policy for the procurement and use of wireless devices and services, nor does it have any policy regarding which NSF staff *need* wireless devices or which devices are appropriate for their needs.

Further, individual offices within the agency generally purchase devices and plans on an item-by-item basis. Because the purchases are small and not made centrally, NSF had not taken advantage of economies of scale or government-wide purchasing programs through the General Services Administration.

We identified wide ranges in the costs paid for the variety of wireless devices, service plans, international charges, and roaming expenses across the Foundation. For example, one office issued 40 smart phones to its staff with a variety of service plans that ranged from \$50 to \$100 per month. Another office provided smart phones to 5 of its program officers with expansive plans for \$150 per month.

In addition to these matters, we found that many of NSF's wireless devices had not been certified to meet federal encryption standards. To protect the integrity of the data stored on agency wireless devices, OMB has required federal agencies to use only devices that comply with federal encryption standards. NSF carried out its own testing and risk analysis, and concluded that the security on the non-compliant devices was adequate.

We concluded that, in the current fiscal environment, NSF's practice of purchasing wireless assets and services without a policy warrants reassessment. We recommended that NSF:

- Develop and implement an agency-wide policy on the purchase and use of wireless devices, which should include assessment of which staff positions actually need wireless devices, the device functions needed to perform official duties, guidelines for appropriate use, the service plans needed to perform official duties, and the providers from which those devices and service plans are available. NSF agreed to do so.
- Provide centralized procurement of wireless devices and service plans to ensure NSF can monitor and manage costs, and receive the benefit of economy of scale purchasing, taking advantage of relevant GSA contracts. NSF agreed to prepare an assessment of the costs, benefits, and feasibility of a centralized approach to procurement of wireless devices, including programs offered by GSA.

- Require each user who possesses or receives a wireless device to acknowledge, in writing, his or her understanding of the appropriate use guidelines, and recognition that the device is federal government property and the user has no right of privacy; if feasible, implement a banner notice for all NSF-provided wireless devices, providing the same information provided when logging into NSF's computer network; address the issue of security and use of wireless devices in its annual IT security briefings; and update its internal policy on personal use of IT resources to include wireless devices and services. NSF agreed to all of these recommendations.

### ***Changes Recommended to the SBIR / STTR Program to Reduce Risk of Fraud***

We reviewed recent investigations related to the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, to determine whether NSF could reduce the risk of fraud by requesting additional information from awardees. One recurrent issue involved the requirement that SBIR / STTR companies carry out a certain percentage of the research work themselves. We identified SBIR / STTR firms that did not either own or rent space to perform the funded work. In some cases, these companies improperly used facilities at research universities that were available to them through outside positions they held at the universities.

The PIs on SBIR / STTR awards are required to be primarily employed by the company during the award. Several investigations identified company owners taking advantage of students or family relationships to circumvent this rule. In these cases, the individuals identified by the companies as PIs were not the individuals responsible for the proposed research, but named as PIs in the proposals only because the persons conducting the research were ineligible due to the primary employment rule. In some cases, issues with company facilities and PI relationships were interrelated, because professors created outside companies with students, spouses, or other family members identified as PIs and the actual research was all carried out in the PI's university laboratory.

To address these vulnerabilities, we recommended that NSF take the following actions regarding the SBIR / STTR programs:

- Require proposals to contain contracts, agreements, or letters of support from research institution partners that are submitted or signed by someone other than an individual named as working on the project or receiving funds;
- Require awardees using outside facilities to provide proof of an existing rental or facility use agreement upon the start of an award and in the interim and final reports;
- Require awardees to list all company officers and disclose their primary employers prior to each award; and
- Require awardees to disclose any family or student / postdoc / professor relationships or potential conflicts of interests between company personnel and subcontractor personnel prior to each award.

NSF's response to these recommendations is pending.

## ***Security Issues at NSF Raise Concerns***

As a result of several investigations, we initiated a review of contractor employee background investigations, as well as a broader assessment of NSF's system for ensuring physical security for NSF's staff and infrastructure.

Our assessment of NSF's physical security policies and procedures identified numerous vulnerabilities. NSF management responsible for security were aware of these issues, were receptive to addressing the vulnerabilities we pointed out, and are taking affirmative steps to address them. Therefore, we are working with NSF management, monitoring and assessing the steps they are taking to address these sensitive issues.

NSF contracts with private companies to provide a variety of services. Each NSF contractor employee who requires routine physical access to NSF or to NSF computer systems for more than six months is required to have a background investigation. Following an investigation in which we learned that a contractor employee had not undergone a required background investigation for eight months, we reviewed NSF's current policies and practices regarding the entrance process for contractor employees to determine if contractor employees are complying with these policies and practices. We found that NSF did not have a central office or database to maintain such information about these contractor employees, and therefore, we could not assess the extent to which contractor employees comply with the background investigation requirement. As a result, NSF does not have a mechanism to determine which contractor employees are at NSF, or whether those employees have undergone required background investigations.

The issues we identified raise significant security concerns with respect to compliance with requirements of the contractor employee entrance process. Accordingly, we recommended that NSF:

- Take appropriate action to ensure that: all contractor employees who require a background investigation are identified; that the background investigations are conducted as soon as is practicable (preferably before they begin work at NSF); and that appropriate action is taken in a timely manner when the background investigation raises issues; and
- Confirm that its processes for ensuring that NSF employees obtain background investigations in a timely manner, and ensuring that employees and contractor employees who require security clearances obtain them in a timely manner and maintain them, are functioning well.

NSF's response to these recommendations is pending.

## ***Human Subjects Research Concerns at Two Universities***

In partnership with NSF, OIG is investigating the use of NSF award funds by two universities and their procedures for approving and monitoring human subjects research resulting in combined total of \$300,000 in funds put to better use. In the first instance, a professor at a California university submitted a

progress report to NSF that described research activities outside of the scope of the NSF award. The PI had not sought NSF's prior approval for the change in scope. NSF suspended the award and subsequently determined that the PI had further changed the scope of the project by terminating a collaborative subaward, again without the requisite NSF preapproval.

In the second instance, NSF suspended a Texas university professor PI's awards when the university notified NSF that it had suspended the PI's research. Although the university subsequently lifted the suspension, after the NSF program and OIG requested details about the university's decision making, the university re-suspended the PI's work and conducted a second, extensive review. It ultimately reinstated the work, allowing the PI to use the collected data. NSF has not lifted its suspension and as a consequence did not fund the next grant increment. Both NSF and OIG have ongoing concerns about the adequacy of the university's monitoring and oversight of sensitive research involving human subjects and its management of award funds.

NSF recently alerted program officers about a university that merely conceptually approved the human subjects research in a proposal. NSF has directed program officers to scrutinize proposals carefully to ensure that PIs obtain the appropriate IRB approval for conducting research involving human subjects.

## Follow-Up from Previous MIRs

### *NSF Takes Steps to Reduce Costs of Refreshment Purchases for Meetings*

We reviewed NSF's expenditure of nearly \$500,000 a year to provide refreshments for merit review panelists and others attending meetings at NSF.<sup>12</sup> We concluded that NSF would benefit from more centralized purchasing, and recommended that, if NSF chooses to continue providing such refreshments, it should centralize its procurement to improve control over the process and ensure it is carried out reasonably, consistently, and responsibly. NSF decided that, because it is "crucial that panels operate in an environment that maximizes thoughtful and efficient deliberation," it will continue to provide refreshments comprising an array of pastries, fruit, and hot and cold beverages. NSF committed to taking specific steps to control and reduce costs, and has taken the following actions:

- NSF instituted a \$25 daily limit per panelist on light refreshments, and urged responsible NSF staff to look for opportunities to spend below the \$25 maximum per panelist. NSF estimated that this will save approximately \$50,000 annually, reducing the cost of refreshments from approximately \$500,000 per year to \$450,000. We will review cost data provided by NSF to assess the efficacy of this limit.
- NSF issued a staff bulletin to reinforce best practices regarding the purchase of light refreshments, which defined "light refreshments" and gave specific examples of appropriate and inappropriate purchases.

NSF has begun exploring the costs and benefits associated with further centralization of purchasing light refreshments, and the establishment of a fully centralized purchasing process if the benefits are determined to outweigh the costs. This process is continuing and is scheduled to be completed by March 1, 2012. We have urged NSF to aggressively assess the risks and internal controls associated with the various options it is considering, and to also ensure that those employees that are currently purchasing refreshments are seeking the most cost effective deals.

### ***NSF Concludes Actions to Address Recommendations in Response to Review of Oversight Plans for Projects Involving International Subawardees***

We reviewed Oversight Plans for institutions collaborating with international subawardees in an NSF program.<sup>13</sup> The lead institutions were required to submit and implement Oversight Plans to ensure subawardee compliance with a variety of requirements. Our review determined that the Plans generally did not substantively address all of the requirements, and recommended improvements. NSF agreed and stated that it would: modify language in the next solicitation to ensure collaborative Plans that fully address the program's requirements; and encourage current grantees to develop Plans that explain how they will address RCR training and research misconduct enforcement.<sup>14</sup>

NSF modified its solicitation for the next round of proposals for the program to clearly require Oversight Plans that address all of the program's requirements. NSF also wrote to the current grantees and asked them to provide a summary of the current Oversight Plan that includes a description of how the grantees would address RCR training and research misconduct enforcement—however, most of the awardees did not substantively improve their Plans in this regard. NSF does not intend to take any further action to improve these awardees' Plans; accordingly, we will conduct another review of this program to assess awardees' compliance with all of the program's requirements.

