



United States Government Accountability Office

Testimony before the Subcommittee on Research and
Technology and the Subcommittee on Oversight,
Committee on Science, Space, and Technology,
House of Representatives

For Release on Delivery
Expected at 10:00 a.m. ET
Wednesday, May 24th, 2017

NATIONAL SCIENCE FOUNDATION

Preliminary Observations on Indirect Costs for Research

Statement of John Neumann, Director,
Natural Resources and Environment

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

GAO Highlights

Highlights of [GAO-17-576T](#), a testimony before the Subcommittee on Research and Technology, and the Subcommittee on Oversight, Committee on Science, Space, and Technology, House of Representatives

Why GAO Did This Study

NSF awards billions of dollars to institutions of higher education (universities), K-12 school systems, industry, science associations, and other research organizations to promote scientific progress by supporting research and education.

NSF reimburses awardees for direct and indirect costs incurred for most awards. Direct costs, such as salaries and equipment, can be attributed to a specific project that receives an NSF award. Indirect costs are not directly attributable to a specific project but are necessary for the general operation of an awardee organization, such as the costs of operating and maintaining facilities. For certain organizations, NSF also negotiates indirect cost rate agreements, which are then used for calculating reimbursements for indirect costs. Indirect cost rate negotiations and reimbursements are to be made in accordance with federal guidance and regulation and NSF policy.

This testimony reflects GAO's preliminary observations from its ongoing review that examines (1) what is known about NSF's indirect costs for its awards over time, and (2) the extent to which NSF has implemented guidance for setting indirect cost rates for organizations. GAO reviewed relevant regulation, guidance, and agency documents; analyzed budget data, a nongeneralizable sample of nine indirect cost rate files from fiscal year 2016 selected based on award funding; and interviewed NSF officials.

What GAO Recommends

GAO is not making any recommendations in this testimony but will consider making recommendations, as appropriate, as it finalizes its work.

View [GAO-17-576T](#). For more information, contact John Neumann at (202) 512-3841 or neumannj@gao.gov.

May 24, 2017

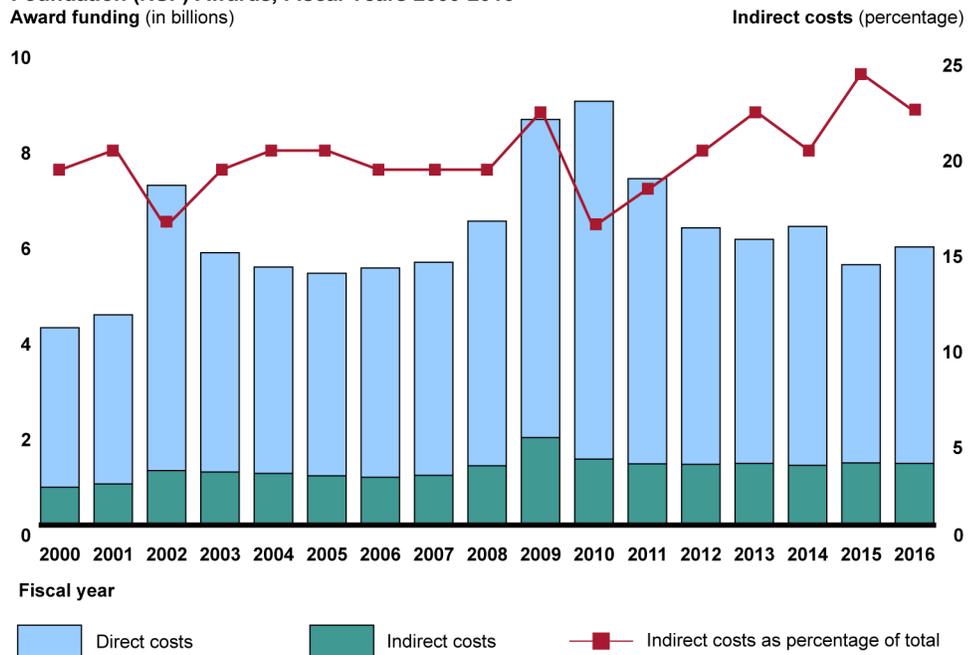
NATIONAL SCIENCE FOUNDATION

Preliminary Observations on Indirect Costs for Research

What GAO Found

GAO's preliminary analysis of National Science Foundation (NSF) data indicates that for fiscal years 2000 through 2016, indirect costs on NSF awards ranged from 16 percent to 24 percent of the total annual amounts awarded, though the percentage generally has increased since 2010 (see fig.). NSF officials stated that variation in indirect costs from year to year can be due to a variety of reasons, such as the types of organizations awarded and the disciplinary field of awards. GAO's observations are based on data from planned budgets on individual NSF awards, rather than actual indirect cost expenditures, because NSF does not require awardees to report indirect costs separately from direct costs in their reimbursement requests. According to NSF officials, collecting such information would unnecessarily increase the reporting burden on awardees.

Preliminary Analysis of Annual Direct and Indirect Costs Budgeted on National Science Foundation (NSF) Awards, Fiscal Years 2000-2016



Source: GAO analysis of NSF data. | GAO-17-576T

NSF has issued guidance for negotiating indirect cost rate agreements that includes procedures for staff to conduct timely and uniform reviews of indirect cost rate proposals. GAO's preliminary review of NSF's guidance and a sample of nine indirect cost rate files found that (1) NSF staff did not consistently follow guidance for updating the agency's tracking database with current data about some awardees, (2) the guidance did not include specific procedures for how supervisors are to document their review of staff workpapers, and (3) NSF had not updated the guidance to include procedures for implementing certain aspects of Office of Management and Budget guidance that became effective for grants awarded on or after December 26, 2014, such as the circumstances in which NSF can provide an awardee with an extension of indirect cost rates.

Chairwoman Comstock, Chairman LaHood, Ranking Members Lipinski and Beyer, and Members of the Subcommittees:

I am pleased to be here today to provide some preliminary observations from our ongoing review of the National Science Foundation's (NSF) oversight of indirect costs on awards to promote scientific progress by supporting research and education.¹ NSF funds billions of dollars in awards each year to institutions of higher education (universities), K-12 school systems, industry, science associations, and other research organizations. For example, NSF funds awards to support research on improving earthquake predictions; programs for increasing the number of students in science fields; and translation and online dissemination of scholarly research as a resource for scientists, historians, educators, and people involved in other areas of inquiry.

For most awards, NSF reimburses awardees for both direct and indirect costs incurred. Direct costs, such as salaries and equipment, can be attributed to a specific project that receives an NSF award. Indirect costs are not directly attributable to a specific project but are necessary for the general operation of an awardee organization. Such costs can include depreciation on buildings and equipment; the costs of operating and maintaining facilities; and general administration and expenses, such as salaries and expenses for management, personnel administration, and accounting.

To be reimbursed for indirect costs, organizations must properly identify and claim reimbursement for these costs in accordance with applicable federal guidance. The Office of Management and Budget's (OMB) *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards* (Uniform Guidance);² the Federal Acquisition Regulation;³ and NSF implementing policy govern how NSF is to reimburse indirect costs.

¹NSF awards include grants and cooperative agreements. A grant provides a specific level of support for an awardee to carry out an activity for a specified period of time. A cooperative agreement differs from a grant in that it provides for substantial involvement between NSF and the awardee in carrying out the activity supported by the award.

²Office of Management and Budget, *Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards*, 2 C.F.R. § 200 (Washington, D.C.: December 2014). In December 2014, NSF and other federal awarding agencies issued a joint interim final rule to implement this Uniform Guidance by incorporating it into their respective regulations for grants and agreements. NSF requested special accommodation from OMB with respect to the format of its implementing language. Specifically, NSF received approval from OMB to implement the Uniform Guidance using a policy rather than a regulation.

³Federal Acquisition Regulation, 48 C.F.R. pt. 31, *Contract Cost Principles and Procedures*, applies to for-profit organizations.

Under the Uniform Guidance and federal regulations, for an organization to be reimbursed for indirect costs, it generally must have a negotiated indirect cost rate agreement with its cognizant agency for indirect costs—the federal agency that is responsible for reviewing, negotiating, and approving the organization’s indirect cost rate.⁴ Because indirect costs cannot be specifically attributed to a particular research grant or cooperative agreement, they are allocated via an indirect cost rate that is applied to certain direct costs for each awarded grant. Federal agencies then use the indirect cost rate to reimburse indirect costs to the organization. The rate applies to all of the organization’s federal awards that are eligible for indirect costs, even if some awards are made by agencies other than the cognizant agency.

NSF is the cognizant agency for certain organizations, particularly nonprofits, but not for universities. For nonprofit organizations, the Uniform Guidance assigns cognizance to the federal agency with the largest dollar value of federal awards given to the organization unless different arrangements are agreed upon by the federal agencies concerned.⁵ As of February 2017, NSF’s Cost Analysis and Audit Resolution Branch had cognizance over approximately 110 organizations, mostly nonprofit and professional societies, museums, and operators of large shared-use facilities (such as accelerators, telescopes, and research vessels) that receive the largest dollar value of their federal awards from NSF.⁶ For universities, the Uniform Guidance assigns cognizance to the Department of Health and Human Services (HHS) or the Department of Defense (DOD), depending on which agency provided more funds to the university for the most recent 3 years.

To obtain an indirect cost rate, an organization submits a proposal with a proposed rate and supporting documentation (such as audited financial statements) to its cognizant agency. Generally, to calculate its proposed rate, an organization divides its total indirect costs (after adjustments) by the total direct costs across all of the organization’s federal awards for a particular time period.⁷ The resulting percentage is the proposed rate. After receiving a rate

⁴For the purposes of this testimony, the term cognizant agency refers to the federal agency with cognizance for indirect costs.

⁵Information on funding must be derived from relevant data gathered by NSF, according to the Uniform Guidance (2 C.F.R. § 200, Appendix III c(11)).

⁶According to NSF officials, the exact number of organizations for which NSF’s Cost Analysis and Audit Resolution Branch has cognizance changes from year to year depending on how many organizations receive the largest dollar value of their federal awards from NSF.

⁷Adjustments include the removal of unallowable, unallocable, and unreasonable costs from the claimed indirect costs.

proposal, the cognizant agency is to verify the organization's mathematical accuracy, confirm that unallowable costs have been excluded in accordance with regulations and agency guidance, reconcile the cost proposal to the audited financial statements, and determine the reasonableness of the proposed costs. Once the proposal has been reviewed, the cognizant agency and the organization negotiate and finalize a rate. The rate is then documented in a formal agreement that sets the rate for a period of 1 to 4 years. This rate is used as a mechanism for determining the proportion of indirect costs that may be reimbursed for federally funded awards.

In prior reports, we have raised concerns about the growth of indirect costs and the process for setting indirect cost rates at the National Institutes of Health (NIH). In September 2013, we found that reimbursements for indirect costs increased faster than those for direct costs on NIH research grants awarded to universities for fiscal years 2002 through 2012.⁸ In September 2016, we found deficiencies in cognizant agencies' design of internal controls for setting rates for organizations that received NIH awards.⁹ We found that these deficiencies increased the risk that rates used by NIH would include inappropriate indirect costs and result in federal agencies paying more than their share of the organizations' indirect costs.

My statement today reflects our preliminary observations from our ongoing review that examines (1) what is known about indirect costs of NSF awards over time and (2) the extent to which NSF has implemented guidance for setting indirect cost rates for organizations over which it has cognizance. The information in this statement on NSF's indirect costs for its awards over time is based on our preliminary analysis of data from NSF award budgets that include the amount of direct and indirect costs on awards made from fiscal years 2000 through 2016. To assess the reliability of the data, we performed testing, including confirming that the data contained no outliers in the data fields we used, and we interviewed NSF officials. We found the data sufficiently reliable for the purposes of presenting indirect costs of NSF awards over time. We also interviewed NSF officials about award budgets and reimbursements, including budgets and reimbursements for indirect costs. To determine the extent to which NSF has implemented guidance for setting indirect cost rates for organizations over which it has cognizance, we reviewed OMB's Uniform Guidance, the Federal Acquisition Regulation, and *Standards for*

⁸GAO, *Biomedical Research: NIH Should Assess the Impact of Growth in Indirect Costs on Its Mission*, GAO-13-760 (Washington, D.C.: Sept. 24, 2013).

⁹GAO, *NIH Biomedical Research: Agencies Involved in the Indirect Cost Rate-Setting Process Need to Improve Control*, GAO-16-616 (Washington, D.C.: Sept. 7, 2016).

Internal Control in the Federal Government; reviewed NSF's guidance about the rate-setting process; and interviewed NSF officials.¹⁰ To further examine how NSF has applied its guidance, we reviewed reports from the agency's database for tracking indirect cost rate proposals, and we selected a nongeneralizable sample of nine rate agreement case files from the total population of rate proposals received and closed in fiscal year 2016 and stratified the population by award funding (i.e., high, medium, and low). In particular, we selected three rate agreement case files from each of the populations to understand the extent to which NSF applied its guidance. Our findings are not generalizable to rate agreements we did not review, though they provide illustrative examples of rate agreement case files.

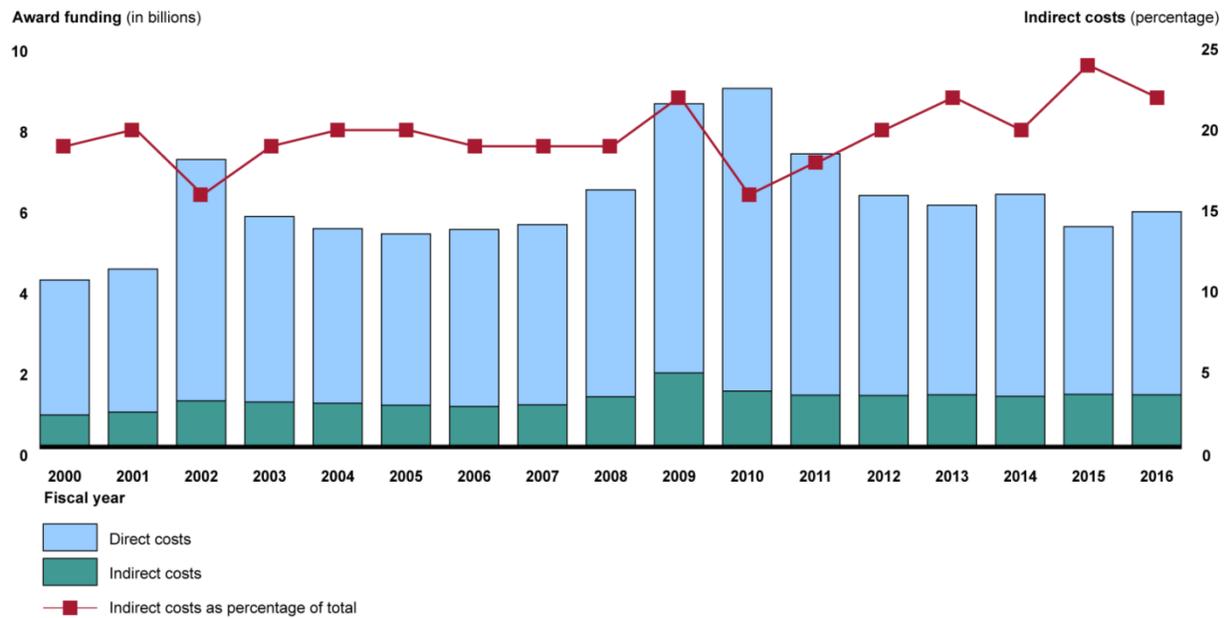
We are conducting the work upon which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. We shared the information in this statement with NSF to obtain its views, and NSF provided technical comments.

Indirect Costs on NSF Awards Ranged From 16 Percent to 24 Percent of Total Annual Award Funding from 2000 through 2016 and Differed by Type of Organization

Our preliminary analysis of NSF data indicates that for fiscal years 2000 through 2016, indirect costs on NSF awards ranged from 16 percent to 24 percent of the total annual amounts the agency awarded, though the percentage generally has increased since 2010. In fiscal year 2016, for example, NSF awards included approximately \$1.3 billion budgeted for indirect costs, or about 22 percent of the total \$5.8 billion that NSF awarded. Figure 1 illustrates annual funding for indirect costs over the 17-year period.

¹⁰GAO, *Standards for Internal Control in the Federal Government*, GAO-14-704G (Washington, D.C.: September 2014).

Figure 1: Preliminary Analysis of Annual Direct and Indirect Costs Budgeted on National Science Foundation (NSF) Awards, Fiscal Years 2000-2016



Source: GAO analysis of NSF data. | GAO-17-576T

Note: Award funding has not been adjusted for inflation.

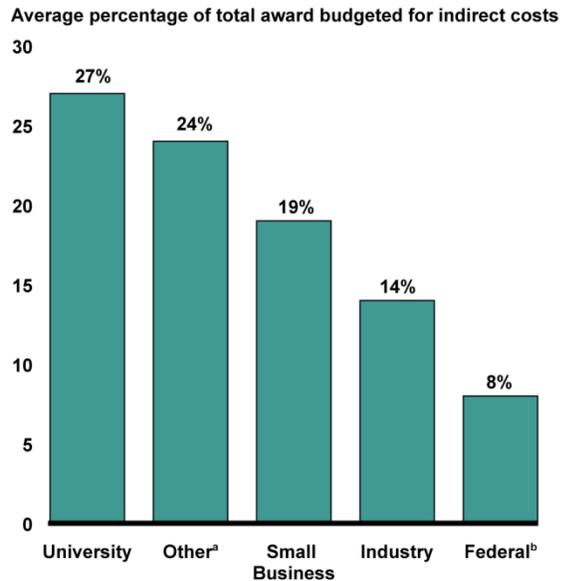
NSF officials told us that variation in indirect costs from year to year can be due to a variety of factors such as (1) differences in the types of organizations awarded, (2) the types of activities supported by the individual awards—research vs. individuals or students vs. infrastructure, (3) the type of research activity, and (4) the disciplinary field of awards. As part of our ongoing review, we plan to conduct further analysis of these factors.

The indirect costs on individual awards varied more widely than the year-to-year variations for each award. Most NSF awards included indirect costs in their budgets—for example, about 90 percent of the 12,013 awards that NSF made in fiscal year 2016 included indirect costs. Our preliminary analysis of those awards indicated that the proportion of funding for indirect costs ranged from less than 1 percent to 59 percent of the total award.¹¹

Our preliminary analysis also indicates that average indirect costs budgeted on awards varied across types of awardees. NSF’s data categorized awardees as federal; industry; small business; university; or other, a category that includes nonprofits and individual researchers. Figure 2 illustrates our preliminary analysis on the average percentage of total awards budgeted for indirect costs in fiscal year 2016, by type of awardee.

¹¹NSF does not allow indirect costs on certain awards, such as awards that pay for the salaries of graduate students who participate in NSF-funded research. NSF awards made in fiscal year 2016 included 1,246 awards with no indirect costs (about 10 percent of total awards in fiscal year 2016).

Figure 2: Preliminary Analysis of Average Percentage of Total National Science Foundation (NSF) Awards Budgeted for Indirect Costs, by Awardee Type, Fiscal Year 2016



Source: GAO analysis of NSF data. | GAO-17-576T

^aOther includes nonprofit organizations and individual researchers.

^bFederal includes some nonfederal entities such as the Federally Funded Research and Development Centers, which are public-private partnerships.

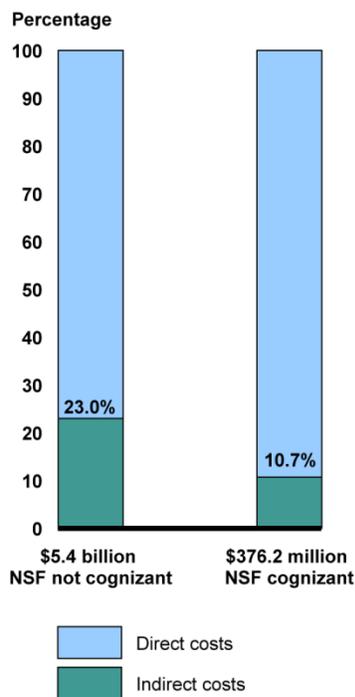
As shown in the figure, our preliminary analysis indicates that university awardees had the highest average indirect costs—about 27 percent of the total amount of awards—and federal awardees had the lowest average indirect costs—about 8 percent of the total amount of awards.¹² According to NSF officials, certain types of projects, such as those carried out at universities, typically involve more indirect costs than others. The officials said that this is because, for example, of universities' expense of maintaining scientific research facilities, which may be included as an indirect cost in awards.¹³ Because universities receive the bulk of NSF's award funding and have relatively high indirect costs, our preliminary analysis of NSF data indicates that universities accounted for about 91 percent of the approximately \$1.3 billion budgeted for indirect costs in fiscal year 2016. As previously noted, NSF does not set the indirect cost rate for the universities to which it makes awards, as those rates are set by HHS or DOD.

¹²NSF's federal category includes such entities as Federally Funded Research and Development Centers, which are sponsored by federal agencies for research and development tasks that are integral to their missions. The Department of Energy, DOD, and NSF sponsor the largest number of these entities by contracting with nonprofit, university-affiliated, or private industry operators.

¹³Because the Uniform Guidance allows flexibility in how organizations may categorize costs, the same type of cost, such as administrative support, may be categorized as direct by one organization and indirect by another.

Our analysis also showed that awards to organizations for which NSF had cognizance (e.g., nonprofits, professional societies, museums, and operators of large shared-use facilities) had lower average budgeted indirect costs than awards to organizations for which other federal agencies had cognizance. As shown in figure 3, our preliminary analysis of NSF data indicates that, on average, NSF budgeted about 23 percent of award amounts for indirect costs on awards to organizations for which NSF did not have indirect cost cognizance and about 11 percent for indirect costs on awards to organizations for which NSF had cognizance. Our preliminary observations show that in fiscal year 2016, NSF made most of its awards to organizations for which it did not have cognizance.

Figure 3: Preliminary Analysis of Average Percentage for Indirect Costs on Awards to Organizations for Which National Science Foundation (NSF) Does and Does Not Have Cognizance, Fiscal Year 2016



Source: GAO analysis of NSF data. | GAO-17-576T

Our preliminary observations show that among the approximately 110 organizations for which NSF has cognizance, negotiated indirect cost rates can vary because of the type of work being funded by awards and the ways in which different organizations account for their costs. For example, salaries for administrative or clerical staff may be included as either an indirect or direct cost, as long as they are consistently treated across an organization’s awards. Our preliminary analysis of the rate agreement case files for nine organizations in a nongeneralizable sample of files we reviewed showed the rates ranged from 5.5 percent to 59.8

percent. An organization may choose to budget indirect costs for an award at a level close to its negotiated indirect cost rate for the organization, or it may choose to budget the costs differently. For example, one of the organizations in our sample had a negotiated indirect cost rate of 51 percent in fiscal year 2016.¹⁴ In that year, the organization received one NSF award for \$535,277 that budgeted \$180,772 for indirect costs (or about 34 percent of the award)—a calculated indirect cost rate on the award of about 51 percent.¹⁵ Another organization in our sample had a negotiated indirect cost rate of 5.5 percent in 2016, and one of its NSF awards in fiscal year 2016, for \$1,541,633, did not budget for any indirect costs.

We based our preliminary analyses of indirect costs on data from the budgets of NSF awards—the only available NSF data on indirect costs. According to NSF officials, prospective awardees are required to provide direct and indirect costs in their proposed budgets using the organization’s negotiated indirect cost rate. After an award is made, NSF does not require awardees to report information about indirect costs when requesting reimbursements for work done on their awards for projects. Specifically, NSF’s Award Cash Management Service—NSF’s online approach to award payments and post-award financial processes—does not collect data about indirect costs, although NSF is permitted to do so by OMB guidance.¹⁶ According to NSF officials, doing so would unnecessarily increase the reporting burden on awardees.

NSF Guidance for Setting Indirect Cost Rates Has Not Been Consistently Implemented and Does Not Include Certain Details

Our preliminary review of NSF’s guidance for setting indirect cost rates and a nongeneralizable sample of nine indirect cost rate files indicates that NSF has issued internal guidance that includes procedures for staff to conduct timely and uniform reviews of indirect cost rate proposals, collect data, set rates, and issue letters to formalize indirect cost rate agreements. However, we also found that NSF staff did not consistently apply the guidance. The guidance

¹⁴That is, for every \$100 in modified total direct costs on an award (i.e., total direct costs minus exclusions, such as equipment and capital expenditures), the organization can seek reimbursement for an additional \$51 for indirect costs.

¹⁵The calculated indirect cost rate for the award was the budgeted indirect costs divided by the budgeted direct costs; in this case, \$180,772 divided by \$354,455 for a calculated indirect cost rate on the award of 50.99 percent.

¹⁶NSF’s Award Cash Management Service implements the OMB-approved form for awardees to report financial data on their federal awards. The OMB-approved data elements for indirect expenses that federal agencies may collect include (1) type of rate (i.e., provisional, predetermined, final, fixed), (2) indirect cost rate in effect during the reporting period, (3) the base against which the rate was applied, (4) total amount of indirect costs charged during the reporting period, and (5) the federal share of the total amount of indirect costs.

also includes tools and templates for staff to use to consistently set rates and procedures for updating the agency's tracking system for indirect cost rate proposals. However, in our preliminary analysis of NSF guidance, we found that (1) NSF staff did not consistently follow guidance for updating the tracking system, (2) the guidance did not include specific procedures for how supervisors are to document their review of staff workpapers, and (3) NSF had not updated the guidance to include procedures for implementing new provisions issued under the Uniform Guidance.¹⁷

In 2008, NSF created a database to track indirect cost rate proposals and developed guidance for updating the tracking database with proposal information. However, our preliminary analysis of reports from the tracking database indicates that NSF staff have not consistently followed the guidance for updating the tracking database with current data about the awardees for which NSF has cognizance and the status of indirect cost rate proposals. For example, in our preliminary analysis, we identified eight awardees for which NSF was no longer the cognizant agency but that still appeared in the tracking database on a list of agencies from which proposals were overdue. Cognizance for these awardees had been transferred to other agencies from 2009 through 2014. In addition, we identified 46 instances in which NSF staff had not followed the guidance to update the tracking database to reflect the current status of awardees' proposals, including instances in which the tracking database was missing either the received date or both the received and closed dates.

In addition, while NSF's guidance describes procedures that staff are to follow for setting indirect cost rates, it only includes broad procedures for supervisory review—NSF's primary quality control process for setting indirect cost rates. The guidance does not describe specific steps that supervisors need to take when reviewing the work performed by staff when setting indirect cost rates, nor does it include how supervisors should annotate the results of their reviews in the workpapers. In our preliminary review of a nongeneralizable sample of nine NSF rate files, we did not find any documentation that a supervisor had reviewed the work performed by staff, such as verifying that staff had checked the accuracy of the total amount of awards over which an awardee's indirect costs were distributed. Such reviews are meant to provide reasonable assurance that only allowable, allocable, and reasonable indirect costs have been proposed and that such costs have been appropriately allocated to federally funded awards.

¹⁷National Science Foundation, *Standing Operating Guidance 2013-3: Indirect Cost Rate Proposal Review* (Arlington, Va.: May 13, 2013).

Moreover, our preliminary observations on NSF's guidance indicates that it does not include procedures for implementing certain aspects of OMB's Uniform Guidance, which became effective for grants awarded on or after December 26, 2014. For example, a new provision under the Uniform Guidance allows research organizations that currently have a negotiated indirect cost rate to apply for a onetime extension of that rate for a period of up to 4 years; however, NSF guidance does not specify criteria for NSF staff to determine the circumstances under which an awardee could be given an extension.

In closing, I would note that we are continuing our ongoing work to examine NSF's data on indirect costs for its awards over time and its implementation of its guidance for setting indirect cost rates for organizations over which it has cognizance. NSF awards billions of dollars to organizations each year and, given the constrained budget environment, it is essential that NSF ensures efficient and effective use of federal science funding. We look forward to continuing our work to determine whether NSF actions may be warranted to promote this objective. We plan to issue a report in fall 2017.

Chairwoman Comstock, Chairman LaHood, Ranking Members Lipinski and Beyer, and Members of the Subcommittees, this completes my prepared statement. I would be pleased to respond to any questions that you may have at this time.

GAO Contact and Staff Acknowledgments

If you or your staff members have any questions concerning this testimony, please contact me at (202) 512-3841 or neumannj@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this statement. Other individuals who made key contributions to this testimony include Joseph Cook, Assistant Director; Kim McGatlin, Assistant Director; Rathi Bose; Ellen Fried; Ruben Gzirian; Terrance Horner, Jr.; David Messman; Lillian Slodkowski; Kathryn Smith; and Sara Sullivan.

(101989)