

# National Science Foundation

## Background

The Office of Management and Budget (OMB) issued government-wide guidelines under Section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Public Law 106-554) to ensure and maximize the quality, objectivity, utility and integrity of information disseminated by Federal agencies. OMB's interim final guidelines were published in the Federal Register at 66 FR 49718 on Friday, September 28, 2001. A final version of the guidelines was published in the Federal Register at 67 FR 8452 on February 22, 2002. In addition, each Federal agency is responsible for issuing its own Section 515 guidelines.

The OMB guidelines direct agencies to:

- (1) Issue their own information quality guidelines to ensure and maximize the quality, objectivity, utility and integrity of information, including statistical information, by no later than one year after the date of issuance of the OMB guidelines;
- (2) Establish administrative mechanisms allowing affected persons to seek and obtain correction of information maintained and disseminated by the agency that does not comply with the OMB guidelines or NSF guidelines; and
- (3) Report to the Director of OMB the number and nature of complaints received by the agency regarding agency compliance with OMB guidelines concerning the quality, objectivity, utility, and integrity of information and how such complaints were resolved.

OMB guidelines provide some basic principles for agencies to consider when developing their own guidelines including:

- (1) Guidelines should be flexible enough to address all communication media and variety of scope and importance of information products.
- (2) Agencies should have and meet basic information quality standards while being mindful of their core substantive mission, budgetary constraints, and the benefits of timely dissemination of information.
- (3) Agencies should adopt a common sense approach that builds on existing processes and procedures. It is important that agency guidelines do not impose unnecessary administrative burdens.

The National Science Foundation has developed the corresponding information quality guidelines. The NSF guidelines are designed to fulfill the OMB guidelines.

## **What is the Scope of these Guidelines?**

These guidelines apply to certain information disseminated by NSF on or after October 1, 2002, regardless of when the information was first disseminated. Consistent with the intent of OMB's guidelines, NSF's guidelines focus primarily on the dissemination of substantive information (reports, studies, and summaries) rather than information pertaining to basic agency operations.

The guidelines support the substantive mandate and primary mission of NSF as set out in the NSF Act of 1950, as amended, to promote the progress of science; to advance the National health, prosperity, and welfare; to secure the National defense; and for other purposes. The Act authorizes and directs NSF to initiate and support among other things:

- Basic scientific research and research fundamental to the engineering process,
- Programs to strengthen scientific and engineering research potential,
- Science and engineering education programs at all levels and in all fields of science and engineering, and
- An information base on science and engineering appropriate for development of national and international policy.

Investments, aimed at discovery, fund cutting-edge research projects proposed by individuals and groups of scientists and engineers. Because no one can predict these discoveries or anticipate all of the opportunities that fresh discoveries will produce, NSF's portfolio is large and diverse.

NSF is committed to the sharing of information and a free marketplace of ideas. These guidelines do not alter NSF's commitment to the full disclosure of information, subject to restrictions imposed by the Freedom of Information Act (FOIA) and Privacy Act. Examples of the types of NSF information both subject to and not subject to these guidelines are set forth below.

## **What information IS subject to the Information Quality Guidelines?**

Information that IS subject to the Information Quality Guidelines includes:

- Statistical information produced and disseminated by the agency.
- Studies and summaries prepared for public dissemination to inform the public about the impact of National Science Foundation programs.
- Studies, reports, and summaries prepared for use in formulating broad program policy, or for presenting and explaining program or policy initiatives, and disseminated by NSF through its web site or other means.

- If NSF is to rely on technical, scientific, or economic information submitted by, for example, a commenter to a proposed rule, that information would need to meet the appropriate standards of objectivity and utility.

### **What information is NOT subject to the Information Quality Guidelines?**

Information that is NOT subject to the Information Quality Guidelines includes:

- Distribution limited to government employees, or agency contractors or grantees.
- Distribution intended to be limited to intra- or inter-agency use or sharing of government information.
- Responses to requests for agency records under the Freedom of Information Act, the Privacy Act, the Federal Advisory Committee Act or other similar laws.
- Distribution limited to correspondence with individuals or persons regardless of the media used, such as electronic mail or fax. “Persons” for purposes of this provision includes any individual or person, including a partnership, association, corporation, business trust, legal representative, organized group of individuals, State, territorial, tribal, or local government or branch thereof, a political subdivision of a State, territory, tribal or local government or a branch of a political subdivision, or any federal governmental branch including members of Congress and their staff.
- Press releases, fact sheets, press conferences or similar communications in any medium that announce, support the announcement or give public notice of information that has been disseminated elsewhere.
- Archival records disseminated by Federal agency libraries or similar data repositories (e.g., inactive or historic materials and other data collections, including bibliographies or responses to reference requests pertaining to such materials).
- Outdated or superseded information that is provided as background information but no longer reflects NSF policy or influences NSF decisions, where NSF indicates (in a disclaimer or otherwise) that the materials are provided as background materials and do not represent NSF’s current view.
- Public filings in public dockets, including material filed by NSF or information submitted to NSF by any individual or person. The guidelines do not apply where NSF distributed this information simply to provide the public with quicker and easier access to materials submitted to NSF that are publicly available. This will generally be the case if NSF has not authored the filings, and is not distributing the information in a manner that suggests that NSF endorses or adopts the information, and NSF does not indicate in its distribution that it is

using or proposing to use the information to formulate or support regulation, guidance, or other agency decision or position.

- Dissemination of information intended to be limited to subpoenas or adjudicative processes, including the findings and determinations that the agency makes in the course of adjudications involving specific parties. For purposes of these guidelines these processes include:
  1. Court litigation, including briefs and attachments or other information submitted to a court;
  2. Administrative enforcement proceedings;
  3. Civil rights and personnel complaints and reviews;
  4. Debarment and suspension matters;
  5. Merit System Protection Board matters.

Adjudication is a matter involving specific parties that determines the rights and liabilities of the parties to the action. Adjudications have well-established procedural safeguards and rights to address the quality of factual allegations, and adjudicatory decisions and provide persons with an opportunity to contest decisions.

- Information pertaining to basic agency operations, including program publications (such as pamphlets and notices) that merely describe and explain programs and how to apply for grants.
- Procedural, operational, or policy manuals, and management information produced for the internal management and operations of NSF, and not primarily for public dissemination.
- Information accidentally, incidentally, or inadvertently publicly disclosed rather than initiated or sponsored by NSF.
- Views or opinions, where the presenter makes clear that what is being offered is someone's opinion rather than fact or NSF's views. In these cases, the presenter will include an appropriate disclaimer or some other means to indicate that the views expressed are his or her own and do not necessarily reflect the views of the agency.
- Research data, findings, reports and other materials published or otherwise distributed by employees or by agency contractors or grantees that are clearly identified as not representing NSF views. NSF grantees are wholly responsible for conducting their project activities and preparing the results for publication or other distribution. NSF promotes data sharing by its grantees through its data sharing policy and by data archiving by its grantees. NSF does not create, endorse, or approve such data or research materials, nor does the agency assume responsibility for their accuracy. NSF's encouragement of data sharing and archiving helps to ensure that researchers and the public have quicker and easier access to data and research materials. Distribution of research in this

manner is not subject to these guidelines even if NSF retains some ownership or other intellectual property rights because the Federal government paid for the research.

- Hyperlinks to information that others disseminate, as well as paper-based information from other sources referenced, but not approved or endorsed by NSF.
- Information presented to Congress as part of legislative or oversight processes, such as testimony of NSF officials, and information or drafting assistance provided to Congress in connection with proposed or pending legislation that has been disseminated elsewhere.

### **How can I seek correction of information that is subject to the Information Quality Guidelines?**

If you want to correct information that is subject to these Information Quality Guidelines, please follow the procedure below to seek correction of information disseminated by the National Science Foundation.

Where existing procedures -- for rulemakings, adjudications, other agency actions or information products -- provide well-established procedural safeguards that allow affected persons to contest on a timely basis the quality of information disseminated by NSF, the agency may use those procedures to respond to information quality complaints.

Where the NSF disseminates a study, analysis, or other information prior to the final agency action or information product, requests for correction will be considered prior to the final agency action or information product in those cases where the NSF has determined that an earlier response would: (1) not unduly delay issuance of the NSF action or information product and (2) the complainant has shown a reasonable likelihood of suffering actual harm from the NSF's dissemination if the agency does not resolve the complaint prior to the final NSF action or information product.

**Procedure to Seek Correction of Information Disseminated  
by the National Science Foundation  
under Section 515 of Public Law 106-554**

**Background**

In accordance with Section 515 of Public Law 106-554, codified at 44 U.S.C. § 3516, the National Science Foundation (NSF) has developed a procedure to allow affected persons to seek correction of information maintained and disseminated by NSF that allegedly does not comply with OMB or agency guidelines. To seek a correction under Section 515 of information disseminated on or after October 1, 2002, by the National Science Foundation, individuals should follow the procedure described below.

**Information  
Required**

State that your request for correction of information is submitted under Section 515 of Public Law 106-554

**Requestor Contact Information**

Include your name, your organizational affiliation, if any, and a mailing address, fax number, e-mail address, or telephone number. This information is needed to respond to your request and initiate follow-up contact with you for additional information or clarification, if required.

**Describe the Information You Believe Needs Correction**

Clearly describe the information you believe is in error and should be corrected. Include the name of the report or data product, where the information is located (if found on our web pages, please provide the web page address (url)), the date of issuance, and a detailed description of the specific information to be corrected. Please provide the "corrected" information, as you believe it should read.

**Description of How You are Using and are Affected by the Information**

Clearly explain how you are using and are affected by (that is, how you are hurt by or would benefit from a change in) the information you believe is in error and should be corrected.

**Reasons for Believing Information Should be Corrected**

Include specific reasons for believing the information should be corrected and specific recommendations for how it should be corrected. Requests for correction that are specific and provide evidence to support the need for correction will enable the National Science Foundation to provide a satisfactory response. Supporting documentary evidence will help in the review of the request. Requesters bear the burden of proof in establishing that they are "affected", and that the specific information fails to follow the OMB or agency guidelines.

**National Science Foundation Review of the Request**

Based on a review of the information provided, the National Science Foundation's Information Quality Officer and other personnel responsible for the information will determine whether a correction is warranted, and, if so, what action to take. Appropriate corrective action will be determined by the nature and timeliness of the information involved and such factors as the significance and importance the correction may have on the current or future use of the information, the magnitude of the error, and the costs and benefits that are likely to be derived from such a correction.

The burden of proof rests on the requestor to justify both the need for correction and the type of correction that is needed. NSF is not required to change, or in any way alter or depublish, the content or status of information simply based on the receipt of a request for correction.

**National Science Foundation Response**

The National Science Foundation will respond to the requestor by letter, e-mail, or fax, as appropriate. The response will normally explain the findings of the review and the actions the National Science Foundation will take in response. NSF will respond to requests for correction of information within sixty calendar days of receipt. If the request requires more than sixty calendar days to resolve, the National Science Foundation will inform the requestor that more time is required and indicate the reason why and provide an estimated decision date.

NSF may reject claims made in bad faith, or without justification. The Foundation need not respond substantively to such requests, nor to frivolous, repetitive, or stale requests, nor to requests not covered by these guidelines, or from persons who fail to establish that they are affected by the subject information. If NSF did not disseminate the information recently (i.e., within one year or the request), or it does not have a continuing significant impact on NSF projects or policy decisions or on important private sector decisions, NSF may regard the information as stale for purposes of responding to a correction request.

When the NSF determines that a correction of the information is warranted, revisions/corrections to the information in question will begin as quickly as practicable depending upon the Foundation's budget, resources, and priorities, as well as the complexity of the correction task itself.

**Right to Appeal Decision**

If the requester does not agree with the agency's decision, the requester may file an appeal with the NSF Chief Information Officer (CIO), 4201 Wilson Boulevard, Room 305, Arlington, VA 22230; Fax: (703) 292-9084; or e-mail requesting reconsideration within NSF of the agency's initial decision.

An appeal need not be in any particular format, but it must be in writing, and must be received by the CIO within thirty calendar days of the date of the agency's initial decision on the request. Clearly mark your appeal as a "Section 515 Information Quality " appeal to facilitate receipt and processing of

your appeal. Your appeal must include a copy of your initial request and the NSF response, together with any written arguments and documentation to support your appeal.

The CIO may review the agency's initial decision personally or may designate another NSF official who had no part in the initial decision to do so. As used here, "CIO" includes such a designated official. If the agency believes other agencies may have an interest in the resolution of an administrative appeal, the CIO will consult with those agencies about their possible interest.

The CIO will normally make a decision on an appeal within sixty calendar days of its receipt by the CIO. If the CIO cannot provide a decision within sixty calendar days, the CIO will send the requester a written explanation of the need for more time, and indicating the date when a decision can be expected.

**Contact point**

Request for correction of information under Section 515 of Public Law 106-554 must be in writing and sent to the National Science Foundation by mail, fax, e-mail or online to:

Section 515 Information Quality Officer  
4201 Wilson Boulevard, Room 305  
Arlington, VA 22230  
Fax: (703) 292-9084;  
e-mail: <mailto:infoqual515@nsf.gov>  
online at <http://www.nsf.gov/home/pubinfo/infoqual.htm>

**How can I correct information that is NOT subject to the Information Quality Guidelines?**

This process is not intended to substitute for other legally authorized processes, such as the Privacy Act 's amendment procedures or the rulemaking process. If the information you want to correct is not covered by these guidelines, you may not use the correction procedure provided here since it does not apply to such information. You may contact the responsible NSF office directly. Nothing herein requires that office to take any corrective action; the office may take whatever action it deems appropriate. For possible amendment of records about you as an individual that are contained in a NSF Privacy Act system of records see 45 CFR 613.4.



## **NSF's Information Quality Guidelines for Section 515**

The National Science Foundation (NSF) is an independent U.S. government agency responsible for advancing science and engineering in the United States across a broad and expanding frontier. NSF does not operate laboratories, but instead makes merit-based grants and cooperative agreements and provides other forms of support to educators and researchers in all fifty states and in the U.S. territories. NSF evaluates proposals for research and education projects using two criteria: the intellectual merit of the proposed activity and the broader impacts of the activity on society.

The National Science Foundation funds research and education in most fields of science and engineering, and in science and engineering education. Awardees are wholly responsible for conducting their project activities and preparing the results for publication. The Foundation does not assume responsibility for such findings or their interpretation.

NSF provides information to the public about the grants and proposal process, past and current results of NSF programs, the projected scope and impact of NSF programs in the future, and the effect of proposed changes to the nation's research, engineering and science education endeavors. NSF also collects statistical information on various aspects of scientists and engineers and research and development activities. Government planners and policymakers, academic institutions, researchers, educators and others use NSF's information products.

Information released by NSF is collected from several sources including but not limited to researchers, grantees, Committees of Visitors, Advisory Committees and statistical data collections. NSF is authorized and directed to initiate and support basic scientific research and research fundamental to the science and engineering process, as such scientific data are tested for plausibility as a part of the external assessment process. The NSF administrative data collection systems are regularly subject to internal and external review processes and are periodically updated and refined.

The guidelines below describe the basic standard of quality that NSF shall adopt, including objectivity, utility and integrity. NSF will take appropriate steps to incorporate information quality criteria into agency information dissemination practices.

NSF will review all applicable types of information products for their quality, including objectivity, utility and integrity, before they are disseminated. That is, NSF will subject these information products to a pre-dissemination review. NSF has traditionally looked for input from a range of sources and perspectives, to the extent practicable, and subjected draft materials to review processes involving various levels and offices as needed.

A basic level of quality will be ensured and established for information products applicable under these guidelines. In addition, on-going disseminated information will be reviewed on a regular basis to ensure the information is current and complies with these guidelines. OMB's guidelines define "quality" as an encompassing term comprising utility, objectivity, and integrity. Therefore, the guidelines may refer to these

three terms collectively as quality. At a minimum, NSF will set the following guidelines at levels appropriate to the nature and timeliness of substantive information to be disseminated.

## **Utility**

Utility involves the usefulness of the information to its intended users. NSF will assess the utility of information disseminated to the public. Utility is achieved by staying informed of both internal and external information needs and by developing new data or information products where appropriate.

NSF keeps abreast of information needs with respect to the analysis of NSF programs by conducting internal analyses of information requirements, convening and attending conferences, working with advisory committees and committees of visitors, and sponsoring outreach activities. To ensure the highest quality in processing and recommending proposals for award, qualified external experts review each program every three years. Committees of visitors report on the integrity and efficiency of the processes for proposal review and the quality of results of NSF's programs. Directorate advisory committees review internal self-assessments, reports, external evaluations and annual performance reports. NSF staff review and integrate recommendations into NSF information products.

NSF's ongoing publication series and other information products are reviewed on a regular basis to ensure that they remain relevant and address current information needs. Based on internal product reviews, consultation with users, and in response to changing needs and emphases, content of ongoing information products is changed, new products are introduced and others discontinued.

NSF prepares special reports and topical studies that address emerging information needs stemming from new or emerging areas of science and engineering, or proposed policy changes. Information is available on all proposals and awards along with collaborative projects, and international cooperative research and educational efforts.

## **Integrity**

Integrity refers to the security of information from unauthorized access or revision to ensure that the information is not compromised through corruption or falsification. NSF will ensure information is protected from unauthorized access, corruption, or revision (i.e., make certain disseminated information is not compromised through corruption or falsification). To ensure the integrity of its information, NSF has in place rigorous controls that have been identified as representing sound security.

NSF is highly protective of the confidentiality of information it holds through its policies and practices. NSF has in place programs and policies for securing NSF resources as required by the Government Information Security Reform Act (P.L. 106-398, Title X,

Subtitle G). These security procedures address all major components of information security and apply to all NSF operating components.

NSF is subject to statutory requirements to protect the sensitive information it gathers and maintains on individuals. These requirements are contained in several sources including the following:

- Privacy Act of 1974
- Computer Security Act of 1987
- Office of Management and Budget (OMB) Circulars A-123, A-127 and A-130
- Government Information Security Reform Act
- Federal Managers' Financial Integrity Act (FMFIA) of 1982

## **Objectivity**

Objectivity involves a focus on ensuring that information is accurate, reliable and unbiased and that information products are presented in an accurate, clear, complete and unbiased manner. NSF will ensure the objectivity of the information based on the best available science and practices. Objectivity is achieved by presenting the information in the proper context, identifying the sources of the information (to the extent possible, consistent with confidentiality protections), using reliable data and sound analytical techniques, and preparing information products that are carefully reviewed.

- **Reliable data sources used**

Much of the information disseminated by NSF is based on National Science Foundation administrative data files. These files contain information used to manage NSF programs. In support of these activities, NSF employs an outside contractor to review NSF's quality control methodology and processes to confirm the validity of its review processes. NSF administrative data are also covered under NSF's Financial Management Systems and conform to the high standards of financial accountability demanded by these systems. These financial management systems are mandated by the Office of Management and Budget and are designed to provide complete, reliable, consistent, timely and useful management information to enable agencies to carry out their fiduciary responsibilities.

The Division of Science Resources Statistics (SRS) fulfills the legislative mandate of the National Science Foundation Act to provide a central clearinghouse for the collection, interpretation, and analysis of data on scientific and engineering resources. In support of this mandate, SRS designs, supports and directs periodic surveys as well as a variety of data collections and research projects.

NSF-SRS sponsored surveys are contracted and conducted using methodologies that are consistent with generally accepted professional standards for all aspects of survey development, including sample frame development, statistical design of the survey sample, questionnaire design and testing, data collection, sampling and coverage

errors, non-response analysis, imputation of missing data, weighting and variance estimation. NSF surveys follow guidelines and policies set forth in the Paperwork Reduction Act and other regulations related to the conduct of government surveys.

As part of the clearinghouse function, NSF also prepares information products using data produced or maintained by other federal agencies, international governments and organizations, survey establishments and private and non-profit organizations. NSF staff producing statistical publications are knowledgeable about the content, structure and limitations of the data files. All external data are reviewed for relevance and are properly sourced and cited. Known limitations of the external data are clearly stated.

- **Peer review**

OMB guidelines state that in the scientific and research context, technical information subjected to formal, independent, external peer review is regarded as presumptively objective but rebuttable with the burden of proof on the complainant. When used, NSF employs competent and credible peer review meeting the general criteria recommended by OMB-OIRA to the President's Management Council (9/20/01) ([http://www.whitehouse.gov/omb/infreq/oira\\_review-process.html](http://www.whitehouse.gov/omb/infreq/oira_review-process.html)), namely that:

- (1) Peer reviewers are selected primarily on the basis of necessary technical expertise,
- (2) Peer reviewers are expected to disclose prior technical/policy positions they have taken on the issues at hand,
- (3) Peer reviewers are expected to disclose their sources of personal and institutional funding (private or public sector), and
- (4) Peer reviews are conducted in an open and rigorous manner.

- **Original and supporting data used in statistical data products**

NSF is committed to integrating the principle of information quality into every step in the development of information, including creation, collection, maintenance, and dissemination. NSF will take appropriate steps to incorporate information quality criteria into information dissemination practices and will ensure the quality of information disseminated in accordance with these guidelines.

All original and supporting data sources used in producing statistical data products are clearly identified either in the publication or on each individual table. Original data are clearly documented. Supporting data sources are clearly identified and all available documentation is provided. Documentation generally includes specification of variables used, definitions of variables when appropriate, coverage or population issues, sampling errors, disclosure avoidance rules or techniques, confidentiality constraints, and data collection techniques.

In addition, NSF will make use of the Paperwork Reduction Act (PRA) clearance process to help improve the quality of information that is collected, maintained, and disseminated in a way that is consistent with the OMB and these guidelines.

NSF will identify particular data that can practically be subjected to a reproducibility requirement given ethical, feasibility, or confidentiality constraints. OMB does not require that all disseminated data be subjected to a reproducibility requirement. For any such identified data, NSF will assure the reproducibility of those data according to commonly accepted scientific, financial, or statistical standards.

- **Analytical results and policy studies**

Analytic results, including estimates in statistical data products, and policy studies may be based on a wide array of data sources using a variety of sound analytical and statistical techniques. All data sources are sourced and cited. Analytic and statistical methods are clearly documented, including the specific data used, various assumptions employed, specific analytical methods applied, and statistical procedures employed. When analyses are based on estimates, the methodology used to produce the estimates is identified.

Technically qualified staff reviews all analytic results and policy studies to ensure that analysis is valid, complete, unbiased, objective and relevant. Some analytic results and policy studies are also reviewed by external subject matter experts who provide additional perspective and expertise.

NSF will provide sufficient transparency about the data and methods so that an independent reanalysis could be undertaken by a qualified member of the public except when compelling interests override, such as privacy, trade secrets, intellectual property, or other confidentiality protections. In situations where public access cannot occur, NSF shall apply rigorous robustness checks to analytic results and document the check undertaken.

- **Editorial review for accuracy and clarity of information in publications**

All statistical products go through a thorough reports review process before publication. All information products are edited and proofread before release to ensure clarity and coherence of the final report. Text is edited to ensure that the report is easy to read and grammatically correct, thoughts and arguments flow logically, and information is worded concisely and lucidly. Tables and charts are edited to ensure that they clearly and accurately illustrate and support points made in the text, and include concise but descriptive titles. Tables and charts clearly indicate the unit of measure and the universe being examined and all internal labels (column heads, row stubs, and panel headings) should accurately describe the information they contain. All changes made to a manuscript during the editing process are checked by a proofreader and reviewed and approved by the author.

- **Policy for correcting errors**

If an error is detected before an initial mailing, NSF includes an errata notice with the mailing. If the mailing has been sent out, NSF issues an errata sheet with all subsequent publications, and as appropriate, sends the errata sheet to all those who

received the initial notice. Errata notices are put on the Web version to inform both new and repeat site visitors about the mistake, and the corrected version of the document is posted on the Web.

## **Influential**

If an agency is responsible for disseminating "influential" information, guidelines for dissemination should include a high degree of transparency about data and methods to facilitate its reproducibility by qualified third parties. At NSF, scientific, financial, or statistical information is considered influential if it will have a genuinely clear and substantial impact on important public policies or important private sector decisions. The accuracy of this information is significant due to the critical nature of these decisions. A clear and substantial impact is one that NSF is firmly convinced has a high probability of occurring. If it is merely arguable that an impact will occur, or if it is a close judgment call, then the impact is probably not clear and substantial. The impact must be on "important" public policy or private sector decisions that are expected to occur. Even if information has a clear and substantial impact, it is not influential if the impact is not on a public or private decision that is important to policy, economic, or other decisions. NSF's information that is subject to Section 515 should be highly transparent and capable of being reproduced by qualified persons.

At NSF, the responsibility for determining if information is influential lies with the directorates that disseminate the information. Directorates will identify information that can practically be subjected to a reproducibility requirement given ethical, feasibility, or confidentiality constraints depending upon the context of their specific programs. Directorates may or may not do this in conjunction with the relevant scientific and technical communities. Absent such designations, NSF directorates will determine whether information is influential on a case-by-case basis, using the principles articulated in these guidelines.

The "influential" designation is intended to be applied to information sparingly. NSF should not designate information products or types of information as influential on a regular or routine basis. Nor should NSF actually place an "influential" label in the title page or text of an information product.

## **Transparency**

Transparency refers to a clear description of the methods, data sources, assumptions, outcomes, and related information that will allow a data user to understand how the information product was designed or produced. Guidelines to ensure transparency in statistical information cover dissemination of information, including both presentation and the reporting of information sources and limitations.

NSF's statistical guidelines call for identification and documentation of all internal data sources used in producing estimates and projections and clear descriptions of methods used to produce estimates or to develop model projections to make the results as transparent as possible. Data released as part of the clearinghouse function are clearly sources and cited.

NSF achieves transparency through wide dissemination of its information. NSF policy is to make the fullest possible disclosure of information, subject to restrictions imposed by the Freedom of Information Act (FOIA) and Privacy Act, to any person who requests information, without unnecessary expense or delay. Most NSF documents, reports and other data products are available to the public in both printed and electronic documents. They are announced on the NSF web site and most electronic versions can be accessed and downloaded directly from the NSF web site.

The National Science Foundation is committed to making every document on its web site accessible to the widest possible audience. NSF works to ensure, to the extent feasible, that documents are accessible to persons using special screen reading software and hardware. NSF's Office of Equal Opportunity Programs (OEOP) is responsible for coordinating the agency's compliance with Sections 501 and 504 of the Rehabilitation Act of 1973, as amended.

## **Reproducibility**

OMB guidelines state that "capable of being substantially reproduced" means that "independent reanalysis of the original or supporting data using the same methods would generate similar analytic results subject to an acceptable degree of imprecision. Even in situations where the original and supporting data are protected by confidentiality concerns, or the analytic computer models or other research methods may be kept confidential to protect intellectual property, it may still be feasible to have the analytic results subject to the reproducibility standard. For example, a qualified party, operating under the same confidentiality protections as the original analysts, may be asked to use the same data, computer model or statistical methods to replicate the analytic results reported in the original study. For more information on this term, please refer to the OMB guidelines.

NSF has a commitment to transparency about how data and analytic results are generated, including the specific data used, the various assumptions employed, the specific analytical methods applied and the statistical procedures employed. Many estimates and projections included in NSF information products are not directly reproducible by the public because the underlying data sets used to produce them are

either confidential or proprietary. In such situations, NSF will apply rigorous robustness checks and document what checks were undertaken. NSF has several statistical publications based on publicly available data that are fully reproducible by the public.

In agreement with the U.S. Federal Statistical organizations quality guidelines issued in the Federal Register June 4, 2002, the NSF's statistical guidelines emphasize the Division of Science Resources Statistics commitment to quality and professional principles of practice in the following manner:

- Use of modern statistical and survey practices and theory in all technical work.
- Use of appropriate internal and external expertise in areas relevant to our mission.
- Ongoing quality assurance programs to continuously improve.
- Documentation designed for users to assess the suitability of the information for their needs.
- Proper due diligence for fitness of use of external data and information with clear notation of any limitations of the data or information.
- Review of information produces and documentation by technically qualified staff (or independent experts when appropriate.)

NSF's statistical guidelines are available at <http://www.nsf.gov/sbe/srs/stat/htm> These guidelines are subject to modifications and updates on a periodic basis.

### **Analysis of Risks to Human Health, Safety and the Environment**

Very little, if any, information that NSF disseminates is based on an analysis of the risks to human health, safety or the environment. For the purposes of these guidelines, risk is defined as the likelihood that injury or damage is or can be caused by a substance, technology or activity. The OMB guidelines provide special considerations that must be taken into account in risk assessments that provide the basis for dissemination of influential information. The Guidelines state that "With regard to analysis of risks to human health, safety, and the environment maintained or disseminated by the agencies, agencies shall either adopt or adapt the quality principles applied by Congress to risk information used and disseminated pursuant to the Safe Drinking Water Act Amendments of 1996 (SDWA) (42 U.S.C. 300g-1(b)(3)(A) and (B))." As the occasion arises, NSF will adopt or adapt the SDWA as appropriate.

### **Pre-dissemination review procedures**

Before disseminating information to members of the public, the originating directorate of NSF shall ensure that the information is consistent with the OMB and NSF guidelines and shall determine that the information is of adequate quality for dissemination. NSF directorates may develop supplemental guidelines for the pre-dissemination review process. NSF will treat information quality as integral to every step of development of information, including creation, collection, maintenance, and dissemination. This will



allow NSF to substantiate the quality of information it has disseminated through documentation or other means appropriate to the information.

### **Paperwork Reduction Act**

It is important that NSF make use of OMB's Paperwork Reduction Act (PRA) clearance process to help improve the quality of information that NSF collects and disseminates to the public. NSF is already required to demonstrate in PRA submissions to OMB the "practical utility" of a proposed collection of information that are planned to be disseminated. In addition, for all proposed collection of information that will be disseminated to the public, NSF shall demonstrate in the PRA clearance submissions to OMB that the proposed collection of information will result in information that will be collected, maintained, and used in a way consistent with OMB and NSF information quality guidelines.

These guidelines are suggestions, recommendations, and good practices for NSF. They are not, were never intended to be, and should not be construed as, legally binding rules, regulations, or mandates. NSF does not consider these guidelines judicially reviewable, nor do they provide any new adjudicatory authority. These guidelines are intended only to improve the internal management of NSF and to inform NSF staff and the public of the processes NSF uses in addressing data quality issues. They create no right or benefit, substantive or procedural, enforceable at law or equity, by any party against the United States, its agencies, including NSF, officers, employees, or any person.