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The National Science Foundation Open Government Directive Plan

April 2010

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I. EXECUTIVE SUMMARY

The National Science Foundation is committed to meeting President Obama's goal of transparency as specified in his January 21, 2009 memorandum: Transparency and Open Government. Office of Management and Budget (OMB) Director Orszag sent a memorandum to the heads of executive departments directing specific actions that need to be executed to implement the principles of transparency, participation and collaboration on December 8, 2009.

Since its creation in 1950, the NSF has viewed openness as a critical element for achieving the agency's mission to "To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense (NSF Act of 1950)." As a result, the agency has built a strong foundation of openness policies and practices that guide its research and education activities. New technologies, many of which received their basic funding from the NSF, now provide the means for the NSF to take these practices to the next level.

This NSF Open Government Plan, published on our Open Government Webpage, is in response to the OMB memorandum and describes how the NSF will "improve transparency and integrate public participation and collaboration into its activities." The NSF has always been an open agency making all of its data, within the constraints of confidentiality and privacy, openly available via its website. The NSF Open Government plan complements the NSF FY2006 – 2011 Strategic Plan[1] which identifies four core values: visionary, dedicated to excellence; broadly inclusive; accountable.

The key principle that will be applied in executing the elements of the NSF Open Government Directive Plan is: *Unless shown otherwise, the default position shall be to make NSF data and information available in an open machine-readable format.*

The National Science Foundation Open Government Plan will serve as the roadmap for our plans to improve transparency, better integrate public participation and collaboration into our core mission, and become more innovative and efficient. NSF views this plan as our roadmap to open government, and not as our destination. We fully expect to update the plan and make adjustments along the way to becoming a more transparent, participatory and collaborative agency.

As always, the NSF welcomes comments and suggestions (http://opennsf.ideascale.com) from the public as all federal agencies embark on this exciting new initiative. The NSF, from its senior management through the entire foundation, is committed to the principles set forth in this plan

[1] http://www.nsf.gov/about/performance/strategic_plan.jsp

II. NSF OPEN GOVERNMENT DIRECTIVE (OGD) IN CONTEXT

A. Open Government Directive: Overview

In one of his first actions after taking office, President Obama issued a memorandum stating the Administration's commitment to "creating an unprecedented level of openness in Government." The key principles of open government are transparency, public participation, and collaboration:

> ***Transparency*** *promotes accountability by providing the public with information about what the Government is doing.*
>
> ***Participation*** *allows members of the public to contribute ideas and expertise so that their government can make policies with the benefit of information that is widely dispersed in society.*
>
> ***Collaboration*** *improves the effectiveness of Government by encouraging partnerships and cooperation within the Federal Government, across levels of government, and between the Government and private institutions.*

On December 8, 2009, Peter R. Orszag, Director of the Office of Management and Budget (OMB), issued a memorandum to the heads of executive departments and agencies directing them to take the following steps toward the goal of creating a more open government:

1. Publish Government information online;
2. Improve the quality of Government information;
3. Create and Institutionalize a culture of open government; and
4. Create an enabling policy framework for open government.

To create and institutionalize a culture of open government (item 3 above), the memorandum states that "within 120 days [April 7, 2010] each agency shall develop an Open Government Plan that describes how the agency will improve transparency and integrate public participation and collaboration into its activities."

NSF has designated the Director of the Office of Cyberinfrastructure, as the agency's high level senior official accountable for Open Government. NSF met the OGD's January 22, 2010, deadline for identifying and publishing online at least three high value data sets through Data.gov; by publishing four high value data sets:

1. NSF Freedom of Information Act Report for October 1, 2008 through September 30, 2009
2. NSF Research Grant Funding Rates
3. NSF Graduate Research Fellowship Program Honorable Mention Recipients, 2000-2009

4. NSF Graduate Research Fellowship Program Award Recipients, 2000-2009

NSF also met the February 6, 2010, deadline for launching an Open Government Web page (http://www.nsf.gov/open). The page serves as the gateway to our open government activities and included the use of a Web platform provided by the General Services Administration to solicit public and staff input on NSF's Open Government Plan. That public engagement activity using the IdeaScale tool ran from February 6-March 19, 2010.

The NSF Open Government Plan is a roadmap for our efforts to:

- Improve transparency through identifying and making available to the public more high value data;
- Expand opportunities for public participation and better integrate public input into our programs and policies; and
- Seek out new or expanded opportunities for collaborations with other agencies throughout government and with private institutions through public-private partnerships.

The National Science Foundation Open Government Plan will serve as the roadmap for our plans to improve transparency, better integrate public participation and collaboration into our core mission, and become more innovative and efficient. NSF views this plan as our roadmap to open government, and not as our destination. We fully expect to update the plan and make adjustments along the way to becoming a more transparent, participatory and collaborative agency.

The National Science Foundation has made the Open Government Plan available on the NSF Open Government Web page: http://nsf.gov/open/. We are looking to the public to stay engaged in dialog with us and will be asking for comments on our Open Government Plan using the same IdeaScale platform that was used to solicit input from the public in February and March 2010: https://opennsf.ideascale.com/.

B. NSF Organizational Structure and Governance

The National Science Foundation is an independent federal agency created by Congress in 1950. The NSF mission is:

"To promote the progress of science; to advance the national health, prosperity, and welfare; to secure the national defense (NSF Act of 1950)"

The NSF is the only federal agency whose mission includes support for all fields of fundamental science and engineering. The NSF is the major source of federal funding for areas such as mathematics, computer science and the social sciences in addition to providing approximately 20 percent of all federal funding in basic research. NSF funds research and education in most fields of science and engineering to more than 2,000 colleges, universities, K-12 school systems, businesses, informal science organizations and other research organizations

throughout the U.S. Each year, the NSF processes over 40,000 proposals that result in over 10,000 awards supporting 200,000, on average, U.S. scientists, engineers, educators and students at universities, laboratories and field sites all over the United States and throughout the world.

NSF leadership has two major components: a Director who oversees NSF staff and management responsible for program creation and administration, merit review, planning, budget and day-to-day operations; and a 24-member National Science Board (NSB) of eminent individuals that meets six times a year to establish the overall policies of the agency. The Director and all Board members serve six-year terms. Each of them, as well as the NSF Deputy Director, is appointed by the President of the United States and confirmed by the U.S. Senate. At present, NSF has a total workforce of about 2,100 at its Arlington, VA, headquarters, including approximately 1,400 career employees, 200 scientists from research institutions on temporary duty, 450 contract workers and the staff of the NSB office and the Office of the Inspector General.

The NSF program staff is divided into the following directorates and offices supporting science and engineering research and education:

Biological Sciences	Computer and Information Science and Engineering
Engineering	Geosciences
Mathematical and Physical Sciences	Social, Behavioral and Economic Sciences
Education and Human Resources	Office of Polar Programs
Office of Integrative Activities	Office of International Science and Engineering
Office of Cyberinfrastructure	

An Assistant Director or an Office Director, as appropriate, heads each of these NSF organizational units. The Office of the Director is responsible for executive, business and administrative management functions. The Office of the Director includes the Office of Equal Opportunity Programs, the Office of the General Counsel, and the Office of Legislative and Public Affairs. Two additional administrative offices are the Office of Budget, Finance and Award Management and the Office of Information and Resource Management. These sections of NSF are devoted to financial management, award processing and monitoring, legal affairs, outreach and other functions.

The Office of Inspector General (OIG) provides independent oversight of the agency's programs and operations. The office is responsible for promoting efficiency and effectiveness in agency programs and for preventing and detecting fraud, waste, and abuse. By statute, the NSF OIG is independent from the agency, with the IG reporting directly to the National Science Board and the Congress.

C. NSF Open Government Directive Working Group

The NSF has created an NSF Open Government Directive Working Group (OGD-WG) charged with implementing the various activities specified in the directive. The group consists of:

- the OGD Senior Accountable Official, Chair
- representative from the Office of the General Counsel
- the NSF Chief Information Officer
- the NSF Chief Financial Officer
- representative from the NSF Office of Legislative and Public Affairs
- representative from the Directorate of Social, Behaviorial and Economic Sciences
- representative from the Office of Information & Resources Management
- representative from the Office of Budget, Finance and Award Management
- representative from the Office of Cyberinfrastructure

D. Key Stakeholders and their Roles and their Informational Needs

The NSF stakeholders consist of:

- the tax-paying American public
- academic institutions: graduate/undergraduate colleges and universities, 2-year and community colleges, K-12 schools
- the faculties in the above institutions
- the students in the above institutions
- not-for-profit institutions such as: aquariums, zoos, museums
- businesses conducting science and engineering research
- the news media (as a conduit to the public)
- other Government agencies

The informational needs of these stakeholders consist of being informed of funding opportunities available through the NSF, information on awards made, results of studies, reports and workshops supported by the NSF, results of meetings and various evaluation reports, and the discoveries, breakthroughs and other outcomes of NSF-supported research and education and their impact on society.

III. NSF STRATEGIC PLAN AND THE OPEN GOVERNMENT DIRECTIVE

A. Overview of the NSF Strategic Plan[2] and Key Principles

The NSF FY2006 – 2011 Strategic Plan[3] identifies four core values: visionary, dedicated to excellence; broadly inclusive; accountable. Broadly Inclusive and Accountable are particularly germane to the open government directive. As stated in the NSF Strategic Plan:

> ***Broadly Inclusive:*** *seeking and accommodating contributions from all sources while reaching out especially to groups that have been underrepresented; serving scientists, engineers, educators, students and the public across the nation; and exploring every opportunity for partnerships, both nationally and internationally.*
>
> ***Accountable:*** *operating with integrity and transparency, maintaining quality and relevance in administration, management and oversight.*

Clearly, these core values are consistent with the open government directive goals of transparency (Accountable), participation (Broadly Inclusive) and collaboration (Broadly Inclusive). As a result, incorporating the open government directive into the NSF "DNA" will be relatively straightforward.

The NSF Strategic Plan states NSF's vision as:

> *Advancing discovery, innovation and education beyond the frontiers of current knowledge, and empowering future generations in science and engineering.*

This vision is supported by four interrelated outcome goals: Discovery, Learning, Research Infrastructure and Stewardship:

> ***Discovery*** *- fostering research that will advance the frontiers of knowledge with the goal of establishing the nation as a global leader in fundamental and transformational science and engineering.*
>
> ***Learning*** *- cultivating a world-class, broadly inclusive science and engineering workforce, and expanding the scientific literacy of all citizens.*
>
> ***Research Infrastructure*** *- building the nation's research capability.*
>
> ***Stewardship -*** *supporting excellence in science and engineering research and education through a capable and responsive organization.*

The open government directive activities will more readily enable the NSF to engage stakeholders and keep them informed about NSF initiatives, directions and accomplishments. In addition, elements establishing the nation as a global leader in

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[2] NSF is in the process of updating its Strategic Plan 2010-2015

[3] http://www.nsf.gov/about/performance/strategic_plan.jsp

science and engineering and the expansion of scientific literacy will be enhanced by the open government directive.

The key principle that will be applied in executing the elements of the NSF Open Government Directive Plan is: *to maximize data that will be made available within the constraints of confidentiality and privacy concerns. Unless shown otherwise, the default position shall be to make NSF data and information available in an open machine-readable format.* The NSF is committed to publishing its data in machine-readable form and to seek public input and review on a regular basis.

That key principle will be complemented by the principles of maintaining an open and active dialog with the public at large and with the various NSF stakeholders and, to engage all NSF staff in actively participating in the directive.

Considered out of scope to this NSF open government directive plan is scientific data created as a result of research conducted by the research community with NSF support. Open access to such data is currently a topic of active discussion by the NSF Data Working Group, NSF management, the National Science Board and the research communities.

B. Open Government Strategic Goals and Outcomes

This open government plan will serve as the roadmap to improve transparency, better integrate public participation and collaboration into our core mission, and thereby enable NSF to become more innovative and efficient. NSF has had a long history of making its data readily available to the public via its Web site and other means, and the agency shall continue to do so. Complementing that data by making it available in machine-readable form or in more innovative and productive ways will further enhance NSF's openness.

NSF's open government strategic goal is nothing less than an increased public awareness and appreciation of NSF's mission and the agency's contributions to the American citizenry. This will be accomplished by providing data that inform the public about national scientific priorities; NSF funding opportunities; NSF awards made; Freedom of Information Act (FOIA) results; science and engineering advances generated with NSF support; and statistical data related to our funding and funding outcomes, to name a few.

IV. OPEN GOVERNMENT OPPORTUNITIES AND STRATEGIES

A. Transparency Initiatives and Prioritization

Responsibility for ensuring transparency at the NSF rests with the NSF Open Government Directive Working Group (OGD-WG) and with the NSF Senior Management Advisory Roundtable (SMART). The OGD-WG meets monthly to discuss new information that can be made available. Again, the default position is that all data and information will be made available consistent with confidentiality and privacy constraints. Within 60 days, the OGD-WG will complete a new inventory of data collected or generated by NSF, building on eGov content inventory, found at http://www.nsf.gov/policies/egov_inventory.jsp http://www.nsf.gov/policies/egov_inventory.jsp , and records retention schedule, found at http://www.nsf.gov/policies/records/index.jsp http://www.nsf.gov/policies/records/index.jsp. We will provide opportunities for our stakeholders and the public to determine which are high-value collections. We will then prioritize the conversion to open formats, based on stakeholder and public interest.

SMART meets weekly and the Open Government Directive Senior Accountable Official is a member of SMART. As a result there will be ample opportunity for keeping SMART members informed about open government directive activities and to enable discussion of any issues and to exploit any NSF related open government opportunities as they develop.

As previously noted, NSF has always been an open agency making data, within the constraints of confidentiality and privacy concerns, openly available via its website. Much of the OGD-WG discussion will center on determining which of the information in the NSF inventory is of sufficiently high value to warrant conversion from existing formats to machine-readable formats such as comma-separated values (CSV) and extensible markup language (XML) files. Special attention will be paid to requests made by the public as to which data they feel might be of most interest. Currently, award data and spending data appear to have the most interest and thus of high-value.

Openness is an inherent part of NSF culture. As a result, NSF does not have any issues with what should be "opened", since all NSF data and information is openly available within the constraints of confidentiality and privacy concerns. The challenge is in determining which of all of the already available open data is of sufficiently high value to warrant converting to the accepted open formats specified in the open government directive. The strategy shall therefore be, to prioritize among these items using its potential as high value data as the principal criteria as well as requests from the public.

Information that can be found on the NSF website, www.nsf.gov, includes: National Science Board Meeting Announcements and meeting minutes; NSF solicitations; NSF

funding trends data; NSF budget information; NSF-related statistical information; lists of publications available for download; award and funding information; minutes from the various directorate, office and NSF-wide Advisory Committees; Committee of Visitor Reports for the various directorates and offices; an Events calendar; text of speeches given by the NSF Director and Deputy Director, a list of NSF-related congressional hearings, news releases and media advisories, factsheets about NSF programs and priorities, feature articles, audio podcasts and videos about NSF-supported research results, and the NSF Multimedia Gallery providing images and other visual media for educational and informational use. These, and other items, constitute items for consideration in the context of the open data directive.

To further enhance transparency, NSF is already actively supporting and participating in key government-wide open government-related initiatives to provide the public with insight into NSF-funded research, spending, and investments. These initiatives include:

- **Recovery.gov -** Provides a central, online location for taxpayers to track NSF spending and activities related to the American Recovery and Reinvestment Act (Recovery Act). Easily accessible, high-value NSF information available through Recovery.gov includes summaries of overall Recovery spending with progress tracked weekly, detailed weekly financial reports, and descriptions of NSF's Recovery plans, including overarching goals for Recovery funds and an accountability plan.
- **Data.gov** – Provides the public with easy access to NSF data in open and machine-readable formats. Initially, NSF has made four high-value data sets, including Freedom of Information Act data from 2008-2009, NSF funding rates for competitive research proposals from FY2009, and information about NSF Graduate Research Fellowship awardees and honorable mention recipients for the past ten years, available through Data.gov. NSF also offers easy, application-driven access to additional NSF data, such as important statistics regarding employment and education information for scientists and engineers, trend information across science and engineering indicators, and key information about NSF-funded grant awards, through three simple-to-use tools. Additionally, NSF will look into opportunities to provide additional high-value data through Data.gov based on input received from the public.
- **USASpending.gov** - Provides financial transparency at the transaction level into NSF financial assistance, including contracts and grants awards. Through this resource, the public can view key details about NSF contracts and awards for free in compliance with requirements set by the Federal Funding Accountability and Transparency Act of 2006. NSF has actively supported USASpending.gov and its mission since its inception and was the first agency to accurately match 100% of major investment contracts to USASpending.
- **Federal IT Dashboard** - Offers insight and transparency into NSF's IT portfolio as a whole, as well as into the significant individual technology investments that are critical in supporting NSF's mission and work. Through

NSF's IT Dashboard, the public can view plain language descriptions and comprehensible ratings for NSF technology investments, including ratings on tracking to cost and schedule, evaluation of the investment by the Foundation's CIO, and an overall rating for the investment based on a combination of the other three ratings. The Dashboard also offers information on how NSF technology investments align with the Foundation mission and objectives outlined in the strategic plan, and provides clear performance indicators for evaluating whether investments are meeting their targets. Additionally, the Dashboard offers easily accessible links to investment Exhibit 300s, offering the public a transparent view of NSF investments at the granular level.

In support of these initiatives, NSF has made data easily accessible to the public in machine-readable and open formats that can easily be shared via a variety of mechanisms (email, Facebook, Twitter, etc.), printed, or downloaded for use with data mining and extraction tools. Additionally, all resources offer mechanisms for the public to provide feedback, share their assessments of the quality of information available, and make suggestions for additional NSF information they would like to see made available.

While increasing transparency through government-wide open government related initiatives, NSF has also proactively identified and developed additional opportunities for improving transparency to the research community and the public. Prime examples of this are evident in Research.gov (www.research.gov) and its services.

Research.gov is a multi-agency community driven solution, led by NSF, that gives the general public, the scientific community, and Congressional staff easy and transparent access to key information and services from multiple agencies in one location. Through current services, such as Research Spending and Results, and new, upcoming services, including Project Outcomes Reporting for the General Public and Science and Innovation, NSF is leveraging Research.gov to improve clarity into federally-funded research and outcomes.

Research Spending and Results provides the public with information about how NSF and NASA grant award dollars are being spent, what research is being performed, and how the outcomes of the research are benefiting society. Research Spending and Results provides the high-value details about research awards that the public and the research community have requested, such as abstracts (descriptions of the planned research at the time the award was made) and publication citations (details and links to magazines and journals that have published the research). Information available through Research Spending and Results is provided in open, accessible formats (XML, CSV, and Excel) and is updated nightly to ensure the public is receiving current information in a timely manner.

The Project Outcomes Report for the General Public is a new report, written in plain language, that provides clear insight into the outcomes and broader impacts of NSF-

funded research and education in compliance with mandates set by the America COMPETES Act requirement: Publishing of Research Results. These reports, which provide snapshots of the outcomes at the end of an award, are authored by the researchers, providing the public with first person accounts from the individuals on the forefront of scientific discovery. The reporting tool will also provide the capability to include images to accompany reports and the ability for investigators to add to the report over time, so information about the broader, future impacts of the research can easily be made available. Report submission capabilities will be available on Research.gov by the end of the fiscal year and reports submitted will be available for the public to view online through Research Spending and Results within 24 hours of submission.

NSF is developing a new "Science and Innovation" resource on Research.gov that will make a collection of information describing the outcomes and impacts of NSF-supported research and education projects available to the public. The site will highlight investment outcomes that benefit society; going beyond the scientific advances. Visitors to Research.gov will be able to sort outcome information by scientific theme, state and territory, congressional districts and more. Science and Innovation will also convey basic information about major science and engineering research infrastructure supported by NSF. This resource will make available in one place information that NSF has collected from its research and education program staff for several years but did not provide to the public, as well as similar items that have appeared in diverse publications. Science and Innovation is expected to be released by June 2010.

Individually, these three Research.gov services, Research Spending and Results, Project Outcomes Reporting, and Science and Innovation, provide valuable insight into NSF-funded projects and their outcomes, but they are also designed to marry seamlessly with each other to provide the public with a clear, comprehensive picture of NSF awards. Additionally, the information provided through these services is just the beginning. NSF is actively soliciting feedback from the science and engineering community and the public on additional information they would like to see available through these services and Research.gov.

B. Public Outreach and Participation

NSF's task of identifying and funding work at the frontiers of science and engineering is not a "top-down" process. NSF operates from the "bottom up," keeping close track of research in the United States and around the world, maintaining constant contact with the science and engineering community to identify ever-moving horizons of inquiry, monitoring which areas are most likely to result in spectacular progress and choosing the most promising people to conduct research and enhance education and learning.

Participation and citizen engagement are at the core of the way NSF conducts its business fulfills its mission. One of the cornerstones of NSF's success is its merit-review process. In making award decisions, NSF collects over 240,000 reviews per

year from experts in the science and engineering community. Subject matter experts drawn from the science and engineering academic and private-public communities provide these reviews. NSF Program Officers draw on the expert insights provided in these reviews to make informed decisions about the most promising projects to fund. NSF is constantly striving to increase both the size and diversity (gender, disabilities, ethnic, geographic, race, institutional, etc.) of the pool of reviewers to ensure that the merit review process benefits from broad input provided by individuals with a wide range of perspectives. This merit-review process, recognized as a gold standard internationally, shall continue to be a key element of NSF's public outreach and participation activities.

The agency's approach for soliciting input and feedback from the scientific community and the public has always been "early and often." To support this approach, NSF provides a variety of mechanisms both proactive (where the public can actively contact the Foundation) and direct (NSF reaches out directly to share information and solicit input), for the community and the public to interact with the agency and provide feedback. Examples of proactive forums the Foundation is employing to engage the public and the academic community and solicit their input include:

- **Open NSF webpage (http://opennsf.ideascale.com/) -** NSF used the IdeaScale tool provided by the General Services Administration to solicit public input on ideas and suggestions for its Open Government Plan. Through the site, the public can share their ideas or vote on and discuss ideas provided by other constituents.
- **American Customer Satisfaction Index –** An online pop-up survey, used widely across both the government and private sector, which NSF employs to measure user satisfaction with information services. This survey offers quantitative data that NSF can use to benchmark itself to ensure that it is continuing to meet the community's needs.
- **Feedback email aliases –** NSF has multiple email aliases that the public and research community can use to proactively reach out to the Foundation with questions or to provide feedback on a variety of topics, including NSF policy (policy@nsf.gov), NSF services (info@nsf.gov and feedback@research.gov), NSF's participation in Open Government (opengov@nsf.gov) and more.
- **Online feedback forms –** Available on the NSF website and Research.gov, the public can use feedback forms to proactively and anonymously submit feedback to the Foundation.

Feedback and inquiries received through online feedback mechanisms are heavily monitored and suggestions are compiled for review and consideration. NSF representatives respond directly to inquiries received through feedback aliases are and questions that appear frequently are incorporated into "Frequently Asked Questions" documents, which are posted online and distributed during outreach activities.

These online feedback mechanisms are complemented by a variety of interactive forums for direct outreach to the academic community, the public, and NSF staff to promote citizen participation. NSF frequently promotes awareness and provides updates about the agency, its policies and initiatives, and the information and services it provides to the research community through presentations and exhibit booths at key outreach events, such as meetings and conferences held by research associations comprised of members of NSF's core science and engineering community (the Federal Demonstration Partnership, the National Council of University Research Administrators, and the Society of Research Administrators).

Additionally, NSF holds twice yearly Regional Grants Conferences in different areas of the country to provide an opportunity for smaller academic institutions to learn more about the agency and its programs. Similarly, the agency sponsors "NSF Day" workshops to stimulate new interest in NSF programs at institutions that have not been among its traditional customers. NSF's participation in these activities provides a forum to disseminate information and to interact directly with citizens to hear their feedback and answer their questions first-hand.

In addition to in-person outreach, NSF interacts directly with the research community and public through online outreach mechanisms. NSF frequently participates in research and grants-focused webcasts, such as those held twice a year by the Grants Policy Committee, which are available to be viewed by any member of the public at no cost. Webcasts allow NSF to share key information and updates with a broad audience and also provide the opportunity for viewers to interact directly with the Foundation through email or phone call inquiries, which are answered on air. *Providing live webcasts of meetings was one of the most popular requests NSF received during the recent OpenNSF public dialog*. To educate the public and the community on NSF systems and services, NSF offers WebEx and videoconferences trainings. These trainings allow institutions and individuals in locations all across the country to easily and conveniently learn about the Foundation first-hand.

In order to ensure that NSF staff members are armed with the background needed to disseminate information to the research community and the public about participation opportunities, NSF fosters a culture of education. The Foundation holds interactive outreach activities to educate staff, such as town halls, brown bags, and demonstrations and provides detailed information online about participation opportunities and NSF initiatives (such as Open Government efforts) in visible forums that are accessible to all staff.

As mentioned earlier, NSF participated in the "IdeaScale brainstorming" exercise that was part of the open government directive initial activity. That particular exercise ended on March 19, 2010. However, it is NSF's intent to support a similar activity to solicit comments from the public on this plan and future activities. The goal is to continue to look for ideas, from the general public, related to open government along the lines of transparency, participation, collaboration and innovation.

Each of the various directorates and offices has an advisory committee whose membership is drawn from the academic and public-private sector communities and they meet twice a year. The membership is such that they represent the stakeholders of the particular directorate or office or might span several directorates and offices. These twice-yearly meetings are typically complemented by advisory committee task forces that meet on a more frequent basis. For example, the NSF-wide Advisory Committee for Cyberinfrastructure (ACCI) is gathering input from the researchers, industry and educators that use cyberinfrastructure. The ACCI established 6 Task Forces and has asked them to address long-term cyberinfrastructure issues.

By incorporating webcasts, video telecoms, wiki's and document sharing technologies the task forces are exploring, discussing and generating a collection of recommendations and ideas that will be used by the NSF in developing new programs and/or guiding existing activities.

An additional resource is the National Science Board, charged with establishing NSF policy, and meeting 6 times per year. The NSB is made up of 24 Members appointed by the President and confirmed by the Senate. The NSF Director is an ex officio Member. Members serve six-year terms and one-third of the Board is appointed every two years. NSB Members are drawn from industry and universities, and represent a variety of science and engineering disciplines and geographic areas. The advisory committees and the NSB will be presented the NSF Open Government Directive Plan with the intent of soliciting from them additional ideas and approaches on how to even further increase NSF's transparency, collaboration and participation activities and to solicit from them potential NSF high-value related data that could be added to the inventory. The NSB also creates task forces consisting of NSB members and complemented by additional staff. These task forces, meeting on a more frequents basis than the NSB itself, are constituted as necessary to enable the NSB to execute their due diligence.

Members of the NSF Senior Executive Service have been encouraged to include a stretch goal in the area of the open government directive. In addition, as members of NSF staff travel around the country giving presentations and participating in events, they will be encouraged to present NSF's interest in the open government directive and seek their active participation and inputs.

C. NSF Collaboration Activities

Collaboration is not new to the NSF. Collaboration is intrinsic to NSF culture and the way that the agency conducts its business. NSF encourages both inter- and intra-foundation collaboration initiatives. NSF is also actively engaged in activities that involve collaboration with other agencies, citizens, as well as across NSF staff. Examples of this are evident through NSF's partnerships with the science and engineering community and agencies on Research.gov and through the use of technologies that promote collaboration among NSF staff.

The various NSF directorates and offices are encouraged to develop programs that span divisions within directorates, that span across directorates and offices that cooperate with activities taking place at other federal agencies or the private commercial sector and finally establish international relationships. An example of an existing collaboration is the Cyber-enabled Discovery and Innovation (CDI) initiative. CDI has participation from every programmatic directorate and office within NSF.

One CDI effort that could be especially relevant to both public participation in science and open government is a study by NSF-supported researchers of an online suite of citizen-science projects called Zooniverse to determine the implications of public involvement in large-scale scientific activities. Zooniverse was developed by the Citizen Science Alliance with projects ranging from an effort to track solar explosions to an effort to understand how galaxies merge. The goal of the new study is to develop a new methodology for using citizen science to unlock the potential for deriving knowledge from modern, large data sets. To learn more about this research project, see:
http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=116658&org=NSF.

A recent example of interagency collaboration can be found in the Decadal and Regional Climate Prediction using Earth System Models (EaSM) program, which involves NSF (indeed, the NSF participation spans several directorates and offices), the Department of Energy (DOE) and the United States Department of Agriculture (USDA). The objective of this new interagency effort is to produce high-resolution models for predicting climate change and its resulting impacts. The NSF provides computational resources to other federal agencies via its TeraGrid resource, with 50 percent of that resource being utilized by the National Institutes of Health, the Department of Energy, the National Aeronautics and Space Administration and the Department of Defense.

NSF co-chairs the interagency Networking and Information Technology Research and Development (NITRD) program (http://www.nitrd.gov/). The NITRD Program, chartered by Federal law, is the primary mechanism by which the Government coordinates its unclassified networking and information technology (IT) research and development (R&D) investments. Thirteen Federal agencies, including all of the large science and technology agencies, are formal members of the NITRD Program. These agencies work together to develop a broad spectrum of advanced networking and IT capabilities to power Federal missions; U.S. science, engineering, and technology leadership; and U.S. economic competitiveness. Their efforts increase the overall effectiveness and productivity of Federal networking and IT R&D investments, leveraging strengths, avoiding duplication, and increasing interoperability of networking and IT R&D products. NSF program officers participate in each of the NITRD Program Component Areas (PCAs). The work of each PCA is guided by an Interagency Working Group (IWG) or a Coordinating Group (CG) of interagency program managers. These groups meet monthly to

coordinate planning and activities of the multiagency projects in their specialized research areas.

NSF has co-funded awards with the Bill and Melinda Gates Foundation and the Kellogg Foundation as well as others. Recent examples of working with the commercial sector can be found in cloud-computing initiatives with Google and IBM, HP, Intel, and Yahoo; and, most recently, Microsoft. Inter-governmental collaboration can be found in the NSF Experimental Programs to Stimulate Competitive Research (EPSCoR) program where NSF co-funds awards supported by the various state and regional governments. The Office of International Science and Engineering (OISE) spearheads international collaboration initiatives. A recent example in the international space is the creation of a new framework for conducting international research being executed by the Heads of the Research Councils of the G8 states (G8-HORCs). The initiative aims at supporting excellent research on topics of global relevance that can best be tackled by a multinational approach.

Collaboration is an underlying principle of NSF's informal science education (ISE) program within the Directorate for Education and Human Resources. ISE invests in projects that promote lifelong learning of science, technology, engineering, and mathematics (STEM) by the public in a wide variety of informal learning environments, including museum exhibits, award-winning films, television and radio series, summer science camps, and community and other outreach programs. The emphasis is on enhancing STEM learning for people of all ages. Some examples of projects funded through the ISE program are found at http://www.nsf.gov/news/now_showing/ . A list of recent projects funded through the program, with links to the award abstracts are found http://www.nsf.gov/awardsearch/progSearch.do?WT.si_n=ClickedAbstractsRecentAwards&WT.si_x=1&WT.si_cs=1&WT.z_pims_id=5361&SearchType=progSearch&page=2&QueryText=&ProgOrganization=&ProgOfficer=&ProgEleCode=7259,7774&BooleanElement=true&ProgRefCode=&BooleanRef=true&ProgProgram=&ProgFoaCode=&RestrictActive=on&Search=Search#results .

Collaboration is also a common element in the way that NSF staff performs its work and NSF is facilitating this through the technologies it offers to staff. One notable example is SharePoint, a collaboration portal that staff can use to instantly access and share information securely anytime, anywhere. SharePoint offers a customizable suite of tools that can be tailored to NSF staff needs and is used to create workspaces where they can manage and collaborate on documents, share information, track action items, and stay connected online. To date, staff has leveraged SharePoint to connect and collaborate with individuals beyond their offices and branches and to establish efficiencies, such as automatic workflows. NSF will continue to research ways to further facilitate collaboration between staff through technology, looking for additional ways to leverage existing platforms, such as SharePoint, and identifying new technologies that will benefit staff.

For many years, NSF has worked closely with the research community; gathering input to guide the direction of NSF's innovative technology solutions in support of NSF's mission and the research community's needs, and NSF's approach to developing Research.gov has been no different. NSF's active collaboration and partnership with the research community is evident through Research.gov's service delivery model. New services for Research.gov are identified and prioritized based on input received from the research community. To test new services, NSF collaborates with volunteers from the community who participate in pilots and betas of new services and provide feedback and input on their experience. These collaborations allow the Foundation to ensure services meet user needs before releasing to the broader community.

With Research.gov, NSF has established collaborative partnerships with three federal research agencies, the National Aeronautics and Space Administration (NASA), the Department of Defense (DoD), and USDA's National Institute for Food and Agriculture (USDA/NIFA), in order to offer the research community and the public key information and services for these agencies in one location. These formal partnerships, established through Memoranda of Understanding, provide a shared platform for the research community to do business with agencies that share a common mission and business model. This collaboration provides the opportunity for agencies to work together to consolidate information resources, improve access to information about federally funded research, and implement government-wide standards. Examples of this on Research.gov include:

- **Policy Library** - Offers the research community, the public, and federal agencies consolidated access to government-wide and agency-specific policies, guidelines, and procedures for NSF and partner agencies in one location. The Policy Library also provides a visible location for notifying the public about draft government-wide and agency-specific policies available for review and comment in the Federal Register.
- **Research Spending and Results** –Displays information, available to the public, about how NSF and NASA grant award dollars are being spent, what research is being performed, and how the outcomes of the research are benefiting society.
- **Federal Financial Report** – Research.gov service to prepare and submit financial reports using the new government-wide standard form. NSF is interested in offering this service for use by other agencies in the future.
- **Research Performance Progress Reports** – A future Research.gov service to prepare and submit progress reports for research projects using the new government-wide standard form. NSF and NASA's collaboration to deliver this capability will encompass the full scope of service delivery, including planning, requirements gathering, technical implementation, and outreach once the service is available. Additionally, NSF is interested in opportunities to partner with other agencies to offer this new capability in the future.
- **Researcher Profile Update** – In part in direct response to feedback received through NSF's Open Government dialog with the public, the Foundation is

looking into opportunities to partner with other research agencies to provide a service to integrate researcher profiles across agencies, decreasing the administrative burden on researchers associated with maintaining multiple agency profiles. This will also allow researchers to proactively keep information up-to-date, such as institution affiliation and contact information, and volunteer for agency activities, such as participating on panel reviews for proposals.

In addition to partnering on services, NSF collaborates with its partner agencies to promote awareness about Research.gov and the common research mission across the research community and the public. NSF and partner agencies employ shared outreach materials, such as fact sheets and online demos (available on CD and via YouTube), to educate stakeholders about the research mission, Research.gov, and its services. Additionally NSF and partner agencies work together on shared outreach opportunities. For example, NSF and partner agencies conduct joint presentations at key research association meetings.

These agency partnerships are just the beginning. NSF is interested in pursuing Research.gov partnerships with other federal research agencies and looking into opportunities to work with existing partners on new services and increased outreach opportunities.

NSF recognizes the value of collaboration at all these various scales of activity and shall continue to explore new and innovative methods to engage partners in ways that enhance the various missions, support the science, engineering and education communities and generate value to the American public.

D. Records Management

The National Science Foundation (NSF) is dedicated to a transparent approach to records management by maintaining thorough, accessible electronic records of agency business. One way that NSF offers clear insight into its electronic management processes is by posting its records retention schedule on the Foundation web site (http://www.nsf.gov/policies/records/index.jsp) where it is easily accessible to any member of the public. The schedule uses plain language to describe the different types of records that NSF is required to retain and the period for which they are retained. The NSF website provides the public with detailed information for accessing the different types of records, such as step-by-step instructions for submitting Freedom of Information Act (FOIA) requests. NSF is also actively identifying and leveraging opportunities to make records that do not contain sensitive or personally identifiable information readily available to the public. For example, records such as press releases, transcripts of official speeches, and formal publications are already made available to the public through the Foundation website.

NSF recently received approval from the National Archives and Records Administration for electronic archival of NSF's permanent records (in addition to

non-permanent records), such as records of grant awards that have been made by the Foundation. To support this, NSF is implementing a commercial-off-the-shelf electronic records management (ERM) solution, which will allow the Foundation to make records management more efficient by automating many of the related processes. For example, the Foundation will no longer need to spend valuable time and resources preparing and storing paper records or shipping them to NARA. The ERM system will integrate with other NSF systems to electronically pull and store retired records and then prepare and transmit the records quickly and seamlessly to NARA when they are ready for archival. Additionally, the ERM system provides key features, such as automatic notifications for when records are ready to be retired, which will help increase the timeliness of award archival.

NSF is also actively exploring opportunities to leverage the ERM system to further increase transparency to the public. For example, NSF is looking into the feasibility of providing records information through electronic reading rooms. Historically, to view NSF records, the public has had to either physically visit the Foundation or be sent copies of the records through the mail, both of which can take time and may result in indirect (e.g., travel costs) or direct (e.g., mail and copying costs) costs to the requestor. Additionally, before records could be made available, the records also had to be manually redacted to remove sensitive information, a time-consuming process. Through electronic reading rooms, members of the public could access and view requested records quickly and easily at no cost to them from anywhere across the country. Features available through these reading rooms could also be leveraged to automatically redact sensitive information, decreasing the amount of time and resources spent preparing records for public viewing. NSF will look at best practices from across the federal government and research opportunities such as these to identify the most appropriate and effective ways to leverage this technology for the ultimate benefit of the public.

V. OTHER OPEN GOVERNMENT ACTIVITIES

A. Freedom of Information Act (FOIA)

NSF has a long tradition of making its FOIA responses openly available and accessible to the public and hence there is no backlog in this area. FOIA data are currently available at http://www.nsf.gov/policies/foia.jsp covering the fiscal years 1998 through 2009 and are available in DOC, HTML, PDF and TXT formats. As part of the initial dataset population, in response to the Open Government Directive, the NSF has made available the FY2009 data in XML open standard format. Currently, the plans are to convert the existing datasets, FY1998-FY2009, to XML and provide access via www.data.gov and http://www.nsf.gov/open/ . It is anticipated this will be completed during FY2010. Making the results of NSF-supported research public was a popular suggestion among the people who provided ideas and comments during the public engagement activity that was part of developing our open government plan.

The NSF Office of General Council (OGC) corresponds electronically with FOIA requesters and recognizes the need for an open and active dialog with the NSF Chief Information Officer (CIO) and as a result has an ongoing communication with the CIO. In addition, the OGC is a member of the CIO's Security and Privacy Working Group as well as attends CIO council meetings on behalf of the CIO.

B. Congressional Requests for Information

Congressional requests for information typically are addressed to the NSF Director in the Office of the Director (OD). They are there assigned by the Congressional Affairs Section to the organizational unit, within the NSF, that has the necessary background and information consistent with providing a cogent response. The assignment is made with a timeframe as to when the response is required with the response sent to the requester following necessary clearance processes.

C. OLPA

The Office of Legislative and Public Affairs (OLPA) communicates information about the activities, programs, research results and policies of the National Science Foundation. OLPA employs a wide variety of tools and techniques to engage the general public and selected audiences including Congress, the news media, state and local governments, other Federal agencies, and the research and education communities.

The Foundation's activities to expand science literacy of all citizens rely to a great extent on collaboration and public participation. Examples include the following:

News From the Field

News From the Field is one of NSF's efforts to make the public aware of the results of foundation-supported research and education activities. Many of the research institutions receiving NSF support publish their own news releases describing

advances and breakthroughs achieved by their researchers and students, and naming the journals or other publications in which the results are announced. Since 2006, NSF has collected these news items and published brief summaries of them, along with links to the full news stories on the agency Web site, as "News From the Field." This brings together in one place a larger number of the discoveries made possible by NSF support. The public can receive automatic updates via an RSS feed or GovDelivery alert notification. With more than 2,600 news items published and the number increasing each day, News From the Field greatly enhances the public's ability to learn about the results of taxpayer-supported research. See http://www.nsf.gov/news/news_list.cfm?nt=12 for News From the Field.

International Science and Engineering Visualization Challenge

Visuals can communicate research results and scientific phenomena in ways that mere words cannot. As the need to increase science literacy grows more urgent, illustrations can provide immediate and influential connections between scientists and other citizens, and may be the best hope for nurturing popular interest. For these reasons, NSF partnered with the journal *Science* to create the "International Science & Engineering Visualization Challenge." The competition seeks to encourage and expand the participation of people engaged in communicating science, engineering and technology for education and journalistic purposes. Judges appointed by NSF and *Science* select winners in each of five categories: Photography, Illustrations, Informational Posters and Graphics, Interactive Games, and Non-Interactive Media. The winning entries appear in a special section in *Science* and *Science Online*, and on the NSF Web site. One of the winning entries is featured on the cover of *Science*, and each winner receives subscriptions to *Science* and *Science Online* and a certificate of appreciation. The challenge has resulted in a growing library of award-winning visualizations available for use by teachers, students and the public. The competition's first winners were announced in 2003, and submissions are now being accepted for the 2010 challenge. Plans for the future include the addition of a public engagement activity that would allow the public to vote for winners among the semi-finalists, similar to the selection of "People's Choice" winners in other award competitions. There are also early plans to develop a companion science and engineering visualization challenge aimed at high school students. See http://www.nsf.gov/news/special_reports/scivis/index.jsp for the International Science and Engineering Visualization Challenge.

NSF Multimedia Gallery

NSF maintains a collection of illustrations, photos, animations, videos and audios covering all areas of science and engineering that the agency supports. Content for the NSF Multimedia Gallery (MMG) consists of works created by staff and contractors (as works for hire), and also by others outside of the agency who have granted NSF permission to make their materials available for educational and informational purposes. To date, the MMG collection includes more than 2,200 images. See http://www.nsf.gov/news/mmg/ for the Multimedia Gallery.

Science360.gov

NSF is preparing to launch Science360.gov, a new multimedia Web portal devoted to science, technology and engineering. Content on the site will include extensive collections of audio and video materials, images and articles. NSF contacted about 140 science-focused audio providers for the purpose of creating formal agreements for sharing audio programs and, so far, there are agreements with 65 of them. Discussions continue with others who have indicated their interest in collaborating with NSF. There are more than 75 video suppliers who have given NSF approximately 500 videos, to date. The Science360.gov site will allow visitors to select content on the site to create their own collections, and that customized content will be stored on the site as well. Users will be able to select and organize podcasts for their own audio networks, for example. Podcasts, videos and images are now being featured in daily updates distributed by the Science360 News Service. See http://news.science360.gov/files/ for the News Service. The Science360.gov Web site is expected to launch in mid-2010.

VI. NSF OPEN GOVERNMENT INITIATIVES

A. Tools and Social Media

To continue to increase participation, NSF has recognized that social media are becoming increasingly important tools for engaging with our stakeholders and with citizens. We have established a Facebook page (http://www.facebook.com/US.NSF) that we are using to connect with others interested in science and engineering, and to engage in dialogs with the public about NSF's activities. We also have a YouTube site (http://www.youtube.com/user/VideosatNSF) where we make science-themed videos available for viewing and for comments. We are developing a Flickr site (http://www.flickr.com/photos/nsf_beta) that will make available research and education photos and illustrations for others to use in communicating science. And we have a number of Twitter feeds, including the main NSF feed (http://twitter.com/NSF) to extend our communication and outreach activities. Our Twitter feed has attracted more than 28,000 followers. NSF lists all of the social media it is currently using at http://www.nsf.gov/social/ . To guide NSF's further use of social media, the agency has established a working group to research social media best practices from across the government and private sector and formulate recommendations for the most appropriate and effective ways for the Foundation to leverage social media.

B. Flagship Initiatives

NSF funds basic research and so it is totally consistent that NSF flagship activities include research components that can contribute to the open government directive.

One activity that the NSF is currently funding and could be especially relevant to both public participation in science and open government is a study by NSF-supported researchers of an online suite of citizen-science projects called Zooniverse to determine the implications of public involvement in large-scale scientific activities. Zooniverse was developed by the Citizen Science Alliance with projects ranging from an effort to track solar explosions to an effort to understand how galaxies merge. The goal of the new study is to develop a new methodology for using citizen science to unlock the potential for deriving knowledge from modern, large data sets. To learn more about this research project, see: http://www.nsf.gov/discoveries/disc_summ.jsp?cntn_id=116658&org=NSF.

Another promising activity is in the area of assessment of research investments as exemplified by the STAR METRICS project[4]. Working with the Office of Science and Technology Policy (OSTP), the National Institutes of Health (NIH) as well as other agencies that comprise the National Science and Technology Council (NSTC) a data-driven analytical capability is being developed to assess the impact of federal investments in science and engineering education.

[4] Science and Technology in America's Reinvestment---Measuring the Effect of Research on Innovation, Competitiveness, and Science

The NSF is still in the process of evaluating additional candidates for exciting flagship initiatives that highlight NSF's commitment to science and engineering research and education and invite the public to submit suggestions. One such potential activity is given below:

Ask a Scientist/Engineer

One activity that the NSF is excited about we're calling "Ask a Scientist or Engineer". Did you ever have a science question you wish you had an answer to from a recognized scientist? This is along the lines of the proverbial: Why's the sky blue? With this flagship initiative the public would be invited to submit questions via the NSF open government website. The questions will be evaluated by a panel of science and education experts and ranked. The top 10 questions will receive answers from a top scientist or engineer. The person submitting the question will receive his/her answer via a telephone call from the scientist/engineer and the answer will be published on the NSF open government website.

VII. PROGRAM EVALUATION

As previously stated, each Directorate/Office has an Advisory Committees (AC) associated with that NSF unit. These ACs will be tasked, in addition to their current activities, with providing an evaluation for that unit's participation in the NSF Open Government Directive. This will be complemented by the periodic meetings of the NSF OGD Working Group which will look at the comments/suggestions being made by the public to our open government website: http://opennsf.ideascale.com. An evaluation will be made as to NSF's ability to provide timely responses to viable suggestions.

Finally, the opportunity exists to use the Committee of Visitors, an external body of experts convened to evaluate specific Divisions and/or programs within the foundation, as a mechanism to evaluate participation in the open government initiative.

A. Issues

Open access to data generated by the principal investigators being funded by NSF is an issue that the NSF and the NSB are currently actively addressing. The NSF has a Data Working Group, one of whose tasks is to collect information and look at mechanisms and related matters on the topic of open access to data. This is an issue not only for the NSF but for other agencies as well. Indeed, it is a global issue as different countries attempt to address this need and as we increase our international collaborations.

An additional area that receives public commentary has to do with access to other data requested. There is some data that NSF cannot provide, as NSF needs to observe confidentiality and privacy concerns. Like all Federal agencies, the NSF is bound by the Privacy Act of 1974 to protect the confidentiality of the records it maintains about individuals. Further, even when data are not covered by the Privacy Act, it may be necessary to assure respondents (both individuals and institutions) that we will not divulge the information they provide to us except in a format that will not permit identification of the respondent. We are, of course, obligated to honor all such assurances. NSF confidentiality guidelines also restrict the release of individual proposals, or similar documents, sent to the NSF for consideration[5]. The Foundation receives proposals in confidence and protects the confidentiality of their contents

[5] NSF Proposal and Award Manual (PAM) 2009: NSF Manual #10

APPENDIX 1: DEVELOPMENT OF THE OPEN GOVERNMENT PLAN

NSF sought input from the public in developing its Open Government plan. The agency's OpenNSF engagement used the IdeaScale public dialog application. NSF promoted the dialog through a variety of outreach methods, including an item in the Current (NSF newsletter), a news release, items distributed to NSF's GovDelivery and RSS subscribers, announcements on NSF's Twitter and Facebook (social media) sites, an all-staff memorandum, and email blasts to key external groups such as the news media, public information officers at research institutions, and members of science and engineering societies and organizations that are interested in science policy. A link to the dialog was prominently featured on the NSF Web site's home page and also on the agency's Open Government page.

NSF permitted the public's ideas and comments to be posted to the OpenNSF dialog site without pre-moderation. The agency's moderation team monitored the site, removed ideas and comments that violated the terms of participation, moved ideas that did not address open government issues to an off-topic site, responded to questions or directed them to the proper authority, and interacted with the public through moderator comments and/or emails to contributors.

The OpenNSF site received 59 ideas, 85 comments and 529 votes. Ideas were submitted by 46 different authors. The 10 most popular ideas, based on the vote totals (positive votes minus negative votes), were:

1. Require all taxpayer research to be freely available (83 votes)
2. Public funding = public viewing/require all publicly funded projects to publish as open access and all data and code shared as open source (56 votes)
3. NSF should live webcast all meetings (36 votes)
4. Fund proposals, not projects near completion (28 votes)
5. Better explain knowledge economy/need a "Marshall Plan"-type mobilization to ensure citizens understand the importance of innovative, scientific research and how that translates into the many various impacts on our economy. (18 votes)
6. Open source desktop software/implement non-proprietary computer desktop to NSF employees, contracts and grantees (17)
7. Publicize OLPA products to K-12 superintendents and teachers (14)
8. Connect NSF scholars to government jobs (14)
9. Open category for SBIR/ a "what do you have that we don't know about" category (14)
10. Conflict of interest transparency (13)

The ideas, along with comments and discussion, can be viewed on the OpenNSF dialog site (http://opennsf.ideascale.com).

APPENDIX 2: NSF OPEN GOVERNMENT DIRECTIVE DATA COLLECTION

NSF data collections available at http://www.nsf.gov/open/ as of April 7, 2010 are shown below along with brief descriptions of their contents. These will be augmented periodically as new high-value datasets are identified and converted to the necessary machine-readable format.

NSF Freedom of Information Act Report for October 1, 2008 through September 30, 2009
Statistical information on the number of FOIA requests received and processed by NSF in FY09, response times for FOIA requests, the number of appeals received, and other statistics on NSF's FOIA program.
NSF.gov | Data.Gov

NSF Graduate Research Fellowship Program Award Recipients, 2000-2009
NSF's Graduate Research Fellowship Program (GRFP) provides three years of support for graduate study leading to research-based masters or doctoral degrees in disciplines relevant to the mission of the Foundation. This dataset includes GRFP award recipients.
Data.Gov

NSF Graduate Research Fellowship Program Honorable Mention Recipients, 2000-2009
NSF's Graduate Research Fellowship Program (GRFP) provides three years of support for graduate study leading to research-based masters or doctoral degrees in disciplines relevant to the mission of the Foundation. This dataset includes GRFP Honorable Mention recipients.
Data.Gov.

NSF Research Grant Funding Rates
FY 2009 NSF funding rates for competitive research proposals by organizational unit. The funding rate is calculated by dividing the number of awards by the number of awards and declines.
Data.Gov.

SESTAT
SESTAT is a database of the employment, education, and demographic characteristics of the nation's scientists and engineers. The data are collected from the following three surveys, which have been sponsored every two years since 1993 by the National Science Foundation (NSF):

- National Survey of College Graduates (NSCG)
- National Survey of Recent College Graduates (NSRCG)
- Survey of Doctorate Recipients (SDR).

Only the NSRCG and SDR were conducted in 2001.
Information from these surveys has been integrated into the SESTAT database. The SESTAT database allows for analyses of different components of the science and

engineering workforce. When accessing SESTAT, the user may select the integrated database for 1993, 1995, 1997, or 1999. In addition, data from the individual surveys maybe accessed for special analytical purposes. Access to some data may be restricted due to confidentiality considerations.
Data.Gov

Research Spending and Results
Research.gov Research Spending and Results is an online, user-friendly platform to access and search detailed information about federally funded science and engineering research and education, giving the general public, the scientific community and Congress visibility into the results achieved with federally-funded research. Research awards are easily searchable by agency, awardee, award amount and date, state and congressional district (where award was made and the work is being performed), and key word such as a field of science. Information can be reviewed online or exported to various file formats, such as XML, CSV and XLS. Detailed information on federally funded research can be found for multiple agencies. Information provided for each award includes: Award recipient (institution and researcher), Award Amount and funds obligated to date, Period of Performance, State and Congressional district of where the award was made and where the work is being performed., Award Abstract describing the research effort, Citations of Journals Published as a result of the award.
Data.Gov

Key Science and Engineering Indicators: Digest 2010
This digest of key S&E indicators draws from the National Science Board's Science and Engineering Indicators report. The digest serves to draw attention to important trends and data points from across Indicators and to introduce readers to the data resources available in the report.
Data.Gov

NSF Grants Management and Information on Research Spending and Results
Here you can also find information about how NSF and NASA grant award dollars are being spent, what research is being performed, and how the outcomes of the research are benefiting society.
Research.Gov

Comprehensive Information on Federal Spending by Agency and Spending Type
Have you ever wanted to find more information on government spending? Have you ever wondered where Federal contracting dollars and grant awards go? Or perhaps you would just like to know, as a citizen, what the Government is really doing with your money.
USASpending.Gov

NSF Spending Under the American Recovery and Reinvestment Act of 2009
Recovery.gov is the U.S. government's official website providing easy access to data related to Recovery Act spending and allows for the reporting of potential fraud, waste and abuse.

Recovery.Gov Track the Money

Performance of NSF Major IT Investments
The Performance Dashboard tracks information technology (IT) investments self-reported by federal agencies and departments as "major". Major investments (Agency's Exhibit 300s) represent only a portion of the agency's entire IT portfolio (Agency's Exhibit 53).
IT Dashboard

APPENDIX 3: LIST OF ACRONYMS

CDI	Cyber-enabled Discovery and Innovation
CIO	Chief Information Officer
CSV	Comma Separated Values
DoD	Department of Defense
DoE	Department of Energy
EaSM	Decadal and Regional Climate Prediction using Earth System Models
EPSCoR	Experimental Programs to Stimulate Competitive Research
FOIA	Freedom of Information Act
G8-HORCs	Heads of the Research Councils of the G8 states
ISE	Informal Science Education
NASA	National Aeronautics and Space Administration
NSB	National Science Board
NSF	National Science Foundation
OD	Office of the Director
OGC	Office of General Council
OGD	Open Government Directive
OGD-WG	Open Government Directive Working Group
OIG	Office of Inspector General
OISE	Office of International Science and Engineering
OLPA	Office of Legislative and Public Affairs
OMB	Office of Management and Budget
OSTP	Office of Science and Technology Policy
SMART	Senior Management Advisory Roundtable
STEM	Science, Technology, Engineering and Mathematics
USDA	United States Department of Agriculture
XML	eXtensible Markup Language